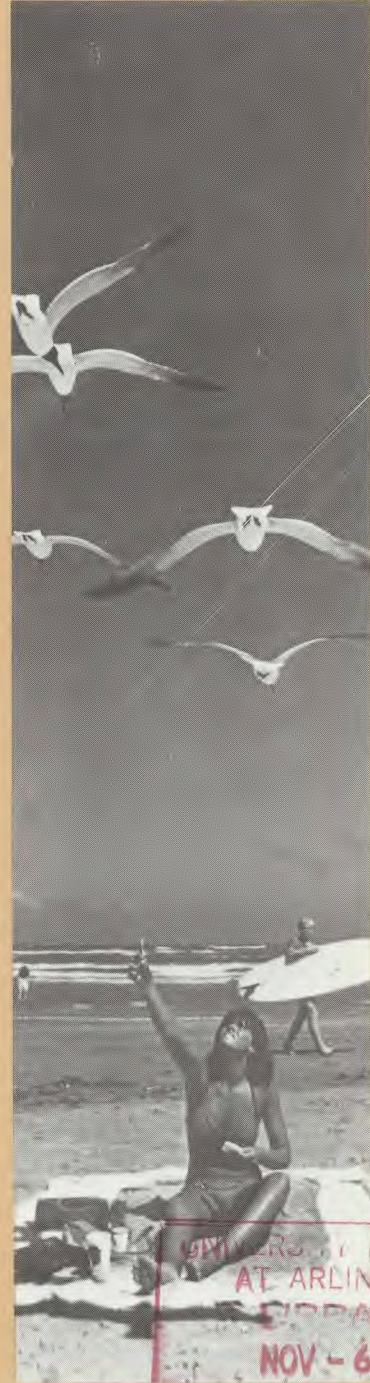
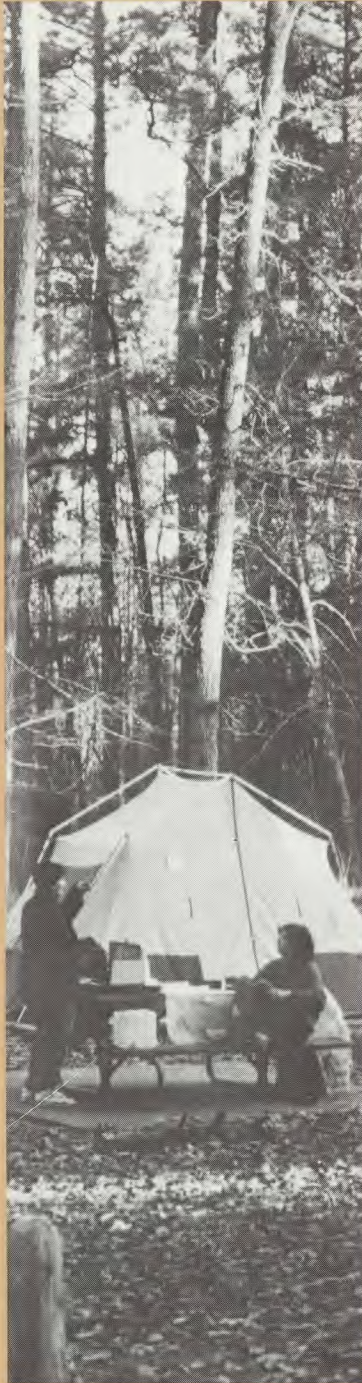




1990 TORP— ASSESSMENT AND POLICY PLAN



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1990 TORP— ASSESSMENT AND POLICY PLAN



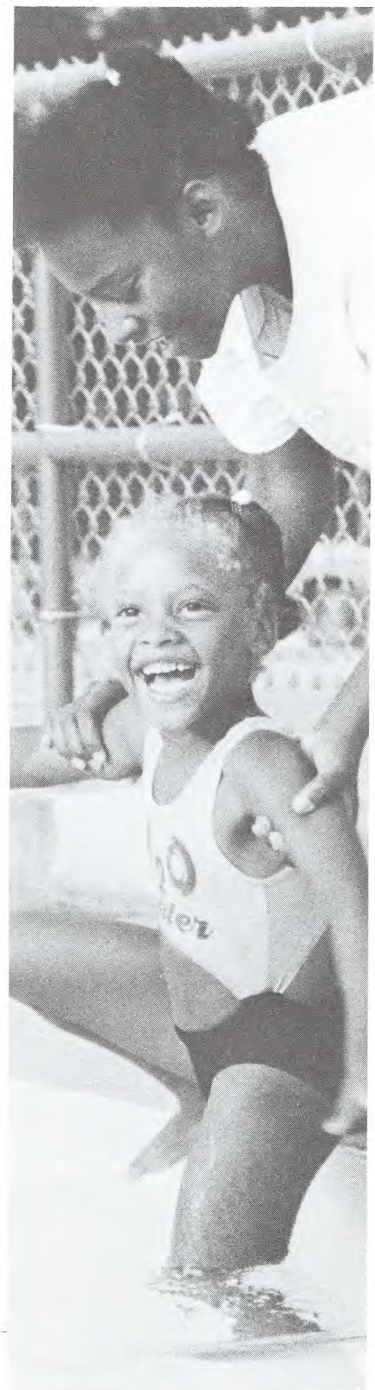
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STATE OF TEXAS
OFFICE OF THE GOVERNOR
AUSTIN, TEXAS 78711

WILLIAM P. CLEMENTS, JR.
GOVERNOR


Dear Fellow Texan:

It is my pleasure to present the 1990 Texas Outdoor Recreation Plan. This plan recommends actions to meet the current and future recreation needs of Texans and visitors to our state. It reflects extensive public input by a wide variety of individuals, groups and organizations, and we gratefully acknowledge the many contributions of those who participated in the planning process.

Our state's many fine parks and recreational facilities provide opportunities for Texans to enjoy themselves in a variety of natural settings. In addition, spending on outdoor recreation ranks as one of the major sectors of the Texas economy. Recreation will no doubt continue to assume a growing importance in our lives.

The challenge we face today is to continue to meet the recreational needs of a growing, changing and diverse population. Meeting this challenge will require careful planning, cooperation, and public involvement. Only by continuing to work together can we attain the goal of providing outdoor recreation in a quality environment. This we must do not only for the next five years of the plan, but for all current and future generations.

Sincerely,


William P. Clements, Jr.
Governor of Texas

WPC:SWB/ta/pon

ACKNOWLEDGEMENTS

Thanks are due to the many government agencies, institutions, organizations, and individual citizens who contributed to the **1990 Texas Outdoor Recreation Plan (TORP)**. The plan would not have been possible without the assistance and cooperation of these groups. The following major contributors are recognized here for their efforts:

FEDERAL AGENCIES

National Park Service
Soil Conservation Service
U. S. Army Corps of Engineers
U. S. Fish and Wildlife Service
U. S. Forest Service

STATE AGENCIES

General Land Office
Governor's Office
Texas Agricultural Extension Service
Texas Department of Commerce
Texas Forest Service
Texas Historical Commission
Texas River Authorities, Water Districts, and Special Districts
Texas State Department of Highways and Public Transportation
Texas Water Commission
Texas Water Development Board

TWENTY-FOUR REGIONAL COUNCILS OF GOVERNMENT

LOCAL AGENCIES

County governments
Municipal governments
Quasi-public organizations

PRIVATE ORGANIZATIONS

Texas Recreation and Parks Society

Numerous informal contacts with various institutions and individuals were a great help in developing the plan. These contributions are much appreciated. Additionally, a special thanks goes to the many individual citizens who took time from their schedules and work to provide their views and suggestions during the formal TORP meetings and reviews.

Finally, thanks go to the departmental staff, too numerous to cite, for their continuous support and assistance throughout the entire project.

1990 TORP —
ASSESSMENT
AND
POLICY PLAN

TABLE OF
CONTENTS

State Summary

| | |
|---|----|
| Acknowledgements | iv |
| Introduction | 1 |
| Chapter 1 - Outdoor Recreation Issues and Recommendations | 7 |
| Financing Parks and Recreation | 7 |
| Local Park Funding | 8 |
| Fewer Grant Dollars Available | 8 |
| User Fees to Finance Recreation Costs | 9 |
| Privatization, An Alternative to Public Funding | 10 |
| Improving Outdoor Recreation Implementation Programs | 11 |
| Planning and Public Input | 11 |
| Public Information and Education | 11 |
| Cooperation, Coordination, and Building Partnerships | 12 |
| Technical Assistance | 12 |
| Liability and Outdoor Recreation | 14 |
| Increased Lawsuits | 14 |
| Recreational Facilities/Resources | 14 |
| Recreational Programs | 15 |
| Private Sector in Recreation | 15 |
| Managing Visitors and Recreational Use | 15 |
| Recreational Conflicts | 15 |
| Annoyances and Illegal Behavior in Recreation Areas | 16 |
| Recreational Access | 17 |
| Recreational Safety | 18 |
| Recreational Impacts and Use | 18 |
| Meeting Recreational Open Space Needs | 19 |
| Definitions of Open Space | 19 |
| Lack of Understanding of Open Space | 19 |
| Growth Impacts on Recreational Open Space | 19 |
| Conserving Natural Resources for Recreational Use | 21 |
| Loss of Land-Based Recreation Opportunities | 21 |
| Degradation of Recreation Waters | 21 |
| Degradation of Coastal Resources | 23 |
| Declining Air Quality | 24 |
| Public Behavior and Resource Management | 24 |
| Identifying Resources to Conserve | 25 |

**TABLE OF
CONTENTS,**
Continued

| | |
|--|----|
| Rivers and Outdoor Recreation | 27 |
| River Resource Assessment | 27 |
| Recreation and Water Quality | 28 |
| Recreationist - Landowner Conflicts | 28 |
| Recreational Access | 29 |
| River Conservation | 29 |
| Tourism and Outdoor Recreation | 30 |
| Economic Benefits of Recreation Attractions | 30 |
| Coordinating Development and Promotion of Attractions | 31 |
| Funding Assistance for Tourism | 32 |
| Adverse Aspects of Tourism | 32 |
| Maintenance and Renovation of Parks and Recreation Facilities | 33 |
| Maintaining Parks and Recreation Facilities | 33 |
| Renovation and Rehabilitation of Parks and Recreation Facilities | 34 |
| Chapter 2 - Existing and Recommended Roles of Outdoor Recreation Providers | 35 |
| Chapter 3 - Outdoor Recreation Resources | 41 |
| Chapter 4 - Participation in Outdoor Recreation Activities | 51 |
| Chapter 5 - Outdoor Recreation Resource and Facility Needs | 59 |
| Chapter 6 - The Economic Impact and Value of Outdoor Recreation in Texas | 63 |
| Chapter 7 - President's Commission on Americans Outdoors | 67 |

Regional Summaries for the Twenty-four State Planning Regions

Appendixes

| | |
|---|-----|
| Appendix A - Tables | A.1 |
| Appendix B - Planning and Research Methods | B.1 |
| Appendix C - Outdoor Recreation Planning Guidelines | C.1 |
| Appendix D - Glossary | D.1 |

TABLES

State Summary

| | |
|---|----|
| 2.1 Existing General Outdoor Recreation Responsibilities for Federal Agencies | 36 |
| 2.2 Existing General Outdoor Recreation Responsibilities for State, Regional, and Local Agencies | 37 |
| 2.3 Recommendations to Meet 1995 Statewide Outdoor Recreation Facility/Resource Needs, by Administration | 40 |
| 3.1 1986 Supply of Parks/Recreation Areas: Land, Facilities, and Water in Texas, by Administration | 45 |
| 4.1 Projected Outdoor Recreation Participation in Texas by Activity in Total Annual User Occasions, 1990, 1995, 2000 | 52 |
| 4.2 Projected 1995 Outdoor Recreation Participation in Texas by Activity in Annual User Occasions per Participant | 52 |
| 4.3 Projected 1995 Outdoor Recreation Participation Summed for Fifteen Urban-type Activities by Region Residents in Texas | 53 |
| 4.4 Projected 1995 Outdoor Recreation Participation Summed for Eleven Resource-based Activities by Region Residents in Texas | 55 |
| 4.5 Projected 1995 Outdoor Recreation Participation Summed for Eleven Resource-based Activities at Destination Regions by Region Residents and Texans from Outside the Regions | 55 |
| 4.6 Total Projected Outdoor Recreation Participation Summed for Twenty-six Activities at Destination Regions by Region Residents and Texans from Outside the Regions, 1990, 1995, 2000 | 56 |
| 5.1 Additional Outdoor Recreation Facilities/Resources Needed Statewide, 1990, 1995, 2000 | 60 |
| 6.1 Estimated 1987 Recreation Equipment Expenditures in Texas | 64 |

Regional Summaries

| | |
|---|---|
| 1 1986 Supply of Parks/Recreation Areas: Land, Facilities, and Water in Region __, by Administration | * |
| 2 Projected 1995 Per Capita Outdoor Recreation Participation Generated by Residents of Region __ and Texans (in Annual User Occasions) | * |
| 3 Projected Outdoor Recreation Participation in Region __ by Region __ Residents, Texans from Outside Region __, and Regional Totals, 1990, 1995, 2000 | * |
| 4 Projected Outdoor Recreation Participation in Region __ by Residents of Region __, 1990, 1995, 2000 .. | * |
| 5 Additional Outdoor Recreation Facilities/Resources Needed in Region __, 1990, 1995, 2000 | * |
| 6 Ranking of Outdoor Recreation Facility/Resource Needs in Region __ Through 1995 | * |
| 7 Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs in Region __, by Administration | * |

Appendixes

| | |
|--|------|
| A1 Texas Population Projections for Planning Regions and MSAs | A-3 |
| A2 1986 Texas Population Estimates for Cities and Places | A-4 |
| A3 1986 Supply of Parks/Recreation Areas: Land, Facilities, and Water per Thousand for 1990 Population | A-11 |
| A4 Additional Outdoor Recreation Facilities/Resources Needed per Thousand Population, 1990, 1995, 2000 by Planning Region | A-14 |
| B1 1987 Suitable Surface Acres of Freshwater Lakes for Boating, Boat Fishing, and Water-skiing (BFS) .. | B-5 |
| B2 1990 TORP Participation Adjustment Factors for Facility/Resource Use | B-11 |
| B3 1990 TORP Land Conversion Factors | B-11 |
| C1 General Guidelines for Outdoor Recreation Planning | C-3 |
| C2 Outdoor Recreation Capacity Analysis | C-4 |

FIGURES

State Summary

| | | |
|-----|--|----|
| 1 | 1990 TORP Components | 1 |
| 2 | Public Input in the Development of the 1990 TORP - Assessment and Policy Plan | 5 |
| 3.1 | Ecological Regions of Texas | 41 |
| 3.2 | Projected 1990 Texas Population, by State Planning Region | 43 |
| 3.3 | Metropolitan Statistical Areas in Texas | 44 |
| 3.4 | 1986 Population Density in Texas, by State Planning Region | 44 |
| 3.5 | 1986 Parkland per Thousand Population in Texas, by by State Planning Region | 44 |
| 3.6 | 1986 Total Parkland in Texas by Development Status | 46 |
| 3.7 | 1986 Parkland in Texas, by Administration | 47 |
| 3.8 | 1986 Outdoor Recreation Supply in Texas, by Government Level | 47 |
| 3.9 | 1986 Outdoor Recreation Supply in Texas Provided by the Commercial Sector | 48 |
| 4.1 | Projected 1995 Statewide Percentage of Population Participating in Outdoor Recreation Activities | 51 |
| 4.2 | Projected 1995 Percentage of Participation Occasions in Texas by Outdoor Recreation Activity Type | 52 |
| 4.3 | Projected 1995 Per Capita Outdoor Recreation Participation Occasions by Region Residents | 54 |
| 4.4 | Projected 1995 Participation Occasions in Twenty-six Outdoor Recreation Activities at Destination State Planning Regions | 55 |
| 4.5 | Projected 1995 Statewide Percentage of Non-participants in Outdoor Recreation Activities | 58 |
| 5.1 | Land Acres Needed to Meet Outdoor Recreation Resource and Facility Needs in 1995 in Texas, by State Planning Region | 59 |
| 5.2 | Priority Classes for Projected 1995 Outdoor Recreation Needs in Texas, by State Planning Region | 61 |
| 6.1 | 1987 Statewide Economic Impact of Visitors to Ninety- two Texas State Park Sites | 64 |
| 6.2 | 1987 Direct, Indirect, and Total Economic Impact of Expenditures at Ninety-two Texas State Park Sites | 65 |
| 6.3 | Components of Total Economic Value of a Public Recreation Resource | 65 |

Regional Summaries

| | | |
|---|--|---|
| 1 | Region __ Characteristics | * |
| 2 | Region __ Projected 1995 Percentage of Population Participating | * |
| 3 | Destinations of Region __ Residents for Resource-Based Activites | * |
| 4 | Origins of Participants Who Recreated in Region __ for Resource-based Activities | * |

Appendixes

| | | |
|----|---|-----|
| B1 | 1990 TORP Development Process | B-2 |
| B2 | Planners' TORP Assignments, by State Planning Region | B-3 |
| B3 | 1990 TORP Regional Public Review Meetings, October 1988 | B-3 |
| B4 | Conversion Factor Formula | B-6 |
| B5 | 1990 TORP Conversion Factors | B-7 |

Maps

| | | |
|-----|--|---|
| 1.1 | 1990 TORP State Planning Regions | 2 |
|-----|--|---|



STATE
SUMMARY



INTRODUCTION

The goal of the TORP is to increase and improve the quality of outdoor recreation opportunities in Texas.

LEGAL AUTHORITY FOR THE 1990 TORP

The Texas Parks and Wildlife Department (TPWD) develops the **Texas Outdoor Recreation Plan (TORP)** under legal authority granted by the Texas Legislature. Various sections of the Texas Parks and Wildlife Code specify this authority. Attorney General's Opinion No. C-518, issued September 30, 1965, supports the authority that the TPWD is the proper agency of this state to allocate outdoor recreation grant funds and to carry out the state recreation planning requirements of the federal Land and Water Conservation Fund (LWCF) Act (Public Law 88-578).

COMPONENTS

The 1990 TORP is the state's sixth edition of a statewide comprehensive outdoor recreation plan since the passage of the LWCF Act in 1965. The 1990 TORP is comprised of four separate components (figure 1):

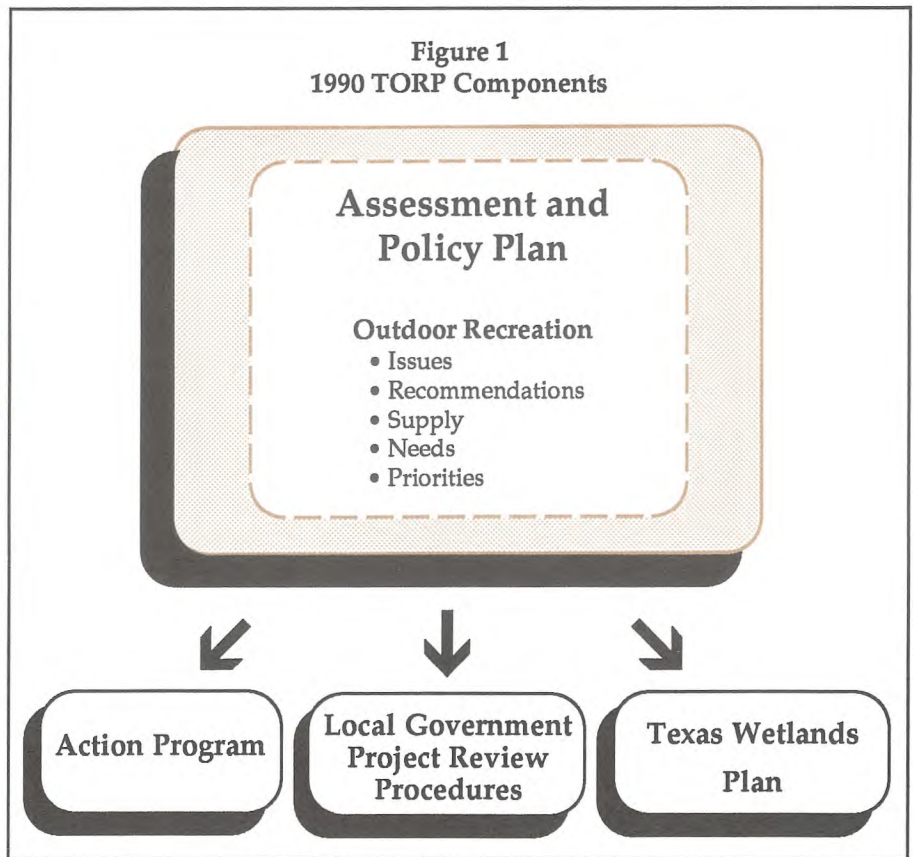
- Assessment and Policy Plan
- Local Government Project Review Procedures
- The Texas Wetlands Plan
- Action Program

This document, the **Assessment and Policy Plan**, presents outdoor recreation data for the twenty-four state planning regions (map 1.1) and the state as a whole. The demand, supply, needs, and issues of outdoor recreation in Texas are presented in this document. Recommendations to enhance outdoor recreation opportunities and the roles and responsibilities of recreation providers are also addressed. The

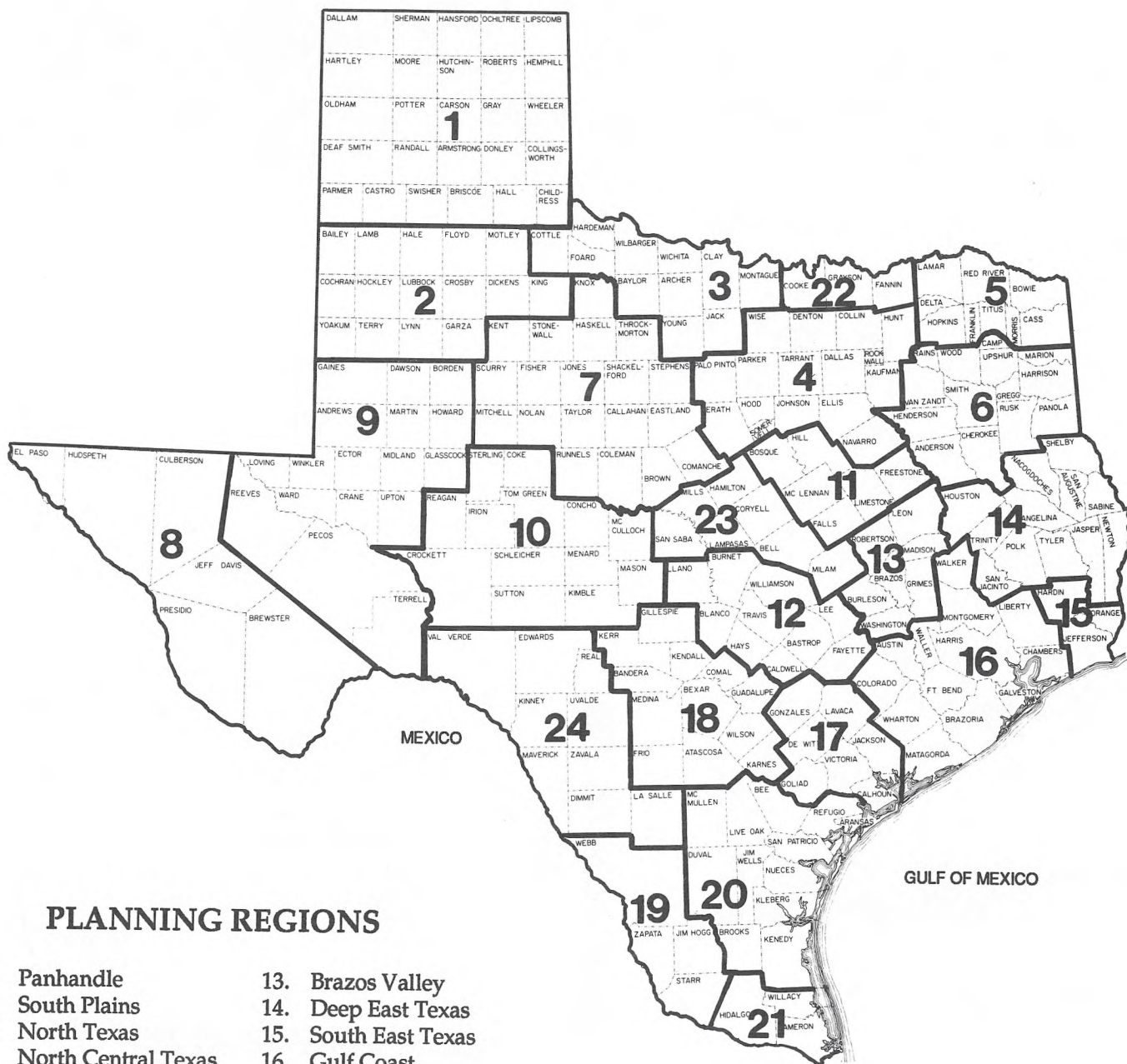
Assessment and Policy Plan is revised and distributed every five years.

The **Local Government Project Review Procedures** is an addendum to the **Assessment and Policy Plan** that describes the procedures the TPWD uses to evaluate proposed recreation projects submitted by local political subdivisions for financial assistance. Both LWCF and Local Park and Open Space Fund (LPF) monies are awarded

Figure 1
1990 TORP Components



Map 1.1 1990 TORP State Planning Regions



PLANNING REGIONS

- | | |
|------------------------|-----------------------------|
| 1. Panhandle | 13. Brazos Valley |
| 2. South Plains | 14. Deep East Texas |
| 3. North Texas | 15. South East Texas |
| 4. North Central Texas | 16. Gulf Coast |
| 5. North East Texas | 17. Golden Crescent |
| 6. East Texas | 18. Alamo |
| 7. West Central Texas | 19. South Texas |
| 8. Upper Rio Grande | 20. Coastal Bend |
| 9. Permian Basin | 21. Lower Rio Grande Valley |
| 10. Concho Valley | 22. Textoma |
| 11. Heart of Texas | 23. Central Texas |

on the basis of these procedures.

The Texas Wetlands Plan was published in 1988 as an addendum to the 1985 TORP to meet requirements of the Emergency Wetlands Resources Act of 1986 (EWRA), enacted November, 1986. This act requires the state to address wetlands as an important outdoor recreation resource in the TORP to remain eligible to receive LWCF monies. The Wetlands Plan will continue as an addendum to the 1990 TORP.

The TORP's implementation component is the **Action Program**, which is updated every two years. It is based on the issues and recommendations identified through the planning process.

Public input to the 1990 TORP revealed a growing demand for open space activities as well as those that require development.



GOAL AND OBJECTIVES

The 1990 TORP has one goal and five objectives.

GOAL: Increase and improve the quality of outdoor recreation opportunities in Texas.

OBJECTIVE 1: Provide outdoor recreation data and information to guide the allocation of public and private resources for outdoor recreation.

OBJECTIVE 2: Guide the allocation of LWCF, LPF, and Boat Ramp Program monies and other resources for appropriate recreation uses and needs.

OBJECTIVE 3: Encourage the appropriate utilization of resources for outdoor recreation in concert with the protection of cultural and natural resources and private property rights.

OBJECTIVE 4: Coordinate outdoor recreation planning in Texas.

OBJECTIVE 5: Encourage public and private cooperation and input in addressing the outdoor recreation issues facing Texas.

While outdoor recreation is the

focus of the plan, cultural resources and resource protection also play important roles in the implementation of the plan. Implementation activities involve a broader web of decisions than just those in outdoor recreation.

THE TORP DEVELOPMENT PROCESS AND PUBLIC INPUT

The TORP development process is explained in detail in Appendix B. Public input is a key element in TORP development and is detailed in figure 2.

TORP development involves substantial public input. "Public" in the 1990 TORP is defined as all Texas residents and out-of-state visitors to Texas who participate in outdoor recreation activities.

The process recognizes the importance of the representativeness of public input and makes every effort to have public involvement reflect the full spectrum of views and opinions. Figure 2 shows the wide mix of approaches used to solicit public input to develop the 1990 TORP. Major efforts were as follows:

-Citizen Participation. Both recreationists and non-recreationists were given an opportunity to express their participation in outdoor recreation activities, preferences, and concerns through citizen surveys.

-Regional Coordination. From 1986-1988, TORP planners conducted 160 interviews with resource managers, officials, and private interests across Texas to obtain their ideas on the issues, problems, and directions that statewide outdoor recreation planning should take.

-Public Reviews. About two thousand individuals and organizations were invited to 26 public meetings held across Texas in October, 1988 to receive public comment on the 24 regional drafts of the 1990 TORP. News releases were also sent to newspapers and radio stations. Private organizations, in turn, informed interested citizens, such as landowners. Total meetings attendance was

950 persons representing federal, state, and local agencies, private groups, and landowners.

-State Summary Workshop. In May 1989, 2,200 individuals and organizations were invited to participate in a state summary workshop held in Austin on June 23-24, 1989. This public workshop gave participants an opportunity to serve on a multi-disciplinary team to evaluate and

comment on the 1990 TORP State Summary Draft.

-Texas Review and Comment System (TRACS). In October, 1989, 842 draft copies of the **Assessment and Policy Plan and Action Program** were mailed to federal, state, and local governmental agencies; private organizations; and individuals for review and comment. Thirty-seven comment letters were received and

acted upon. This review provided another opportunity for public input on the 1990 TORP.

All of these forms of public input were used to develop recommendations for the 1990 TORP. The final steps in the development process include review and approval by the governor and the National Park Service.

USES OF THE TORP

The basic function of the TORP is to provide information and recommendations to minimize uncertainty in the decision-making process of allocating outdoor recreation resources. In Texas, the TORP is the comprehensive framework for the presentation and dissemination of outdoor recreation information.

Once approved by the National Park Service, the TORP meets the primary requirement for participation in the LWCF. On the state level, it guides LPF funding. The recreational issues and resource/facility needs identified

in the **Assessment and Policy Plan** are the cornerstones for developing both the action plan and the scoring criteria for LWCF/LPF projects.

Independent of the federal and state requirements, the TORP is a blueprint for coordination for all recreation providers in the state. The TORP has state and regional components which enable recreation providers to compare their operation to state and regional trends. Knowledge of state and regional trends will help recreation providers assess whether these trends will affect their opera-

tions and to what extent.

TORP data is continually updated and is available to public, commercial, and private entities. Public and private entities often request TORP data to develop environmental impact statements. Another common use of the TORP data is for marketing research, such as business location analyses.

The TORP also often serves as a model for local parks and recreation departments. Some local entities have used the TORP to develop their own local needs assessments.

RECOMMENDATIONS

Recommendations, the heart of the 1990 TORP, are based on public input. Public input is first analyzed and then evaluated. Some recommendations are comments received directly from the public. Others were produced by the staff after analysis and evaluation of public input. In many instances, public input may identify issues and problems but may not include suggestions for recommendations.

Once compiled, all recommendations were placed in the 1990 TORP and submitted to the public for review and comment (figure 2). All recommendations were then reevaluated based on public input. Many were revised, some deleted, and others added.

Recommendations reflect actions to address an issue or problem. Recom-

mendations may elicit one of three responses from an entity or individual:

- Review and revise current priorities to enable the entity or individual to act on the recommendation.
- Request more resources to enable the entity or individual to act on the recommendation.
- Take no action on the recommendation.

Key points to remember about 1990 TORP recommendations are that:

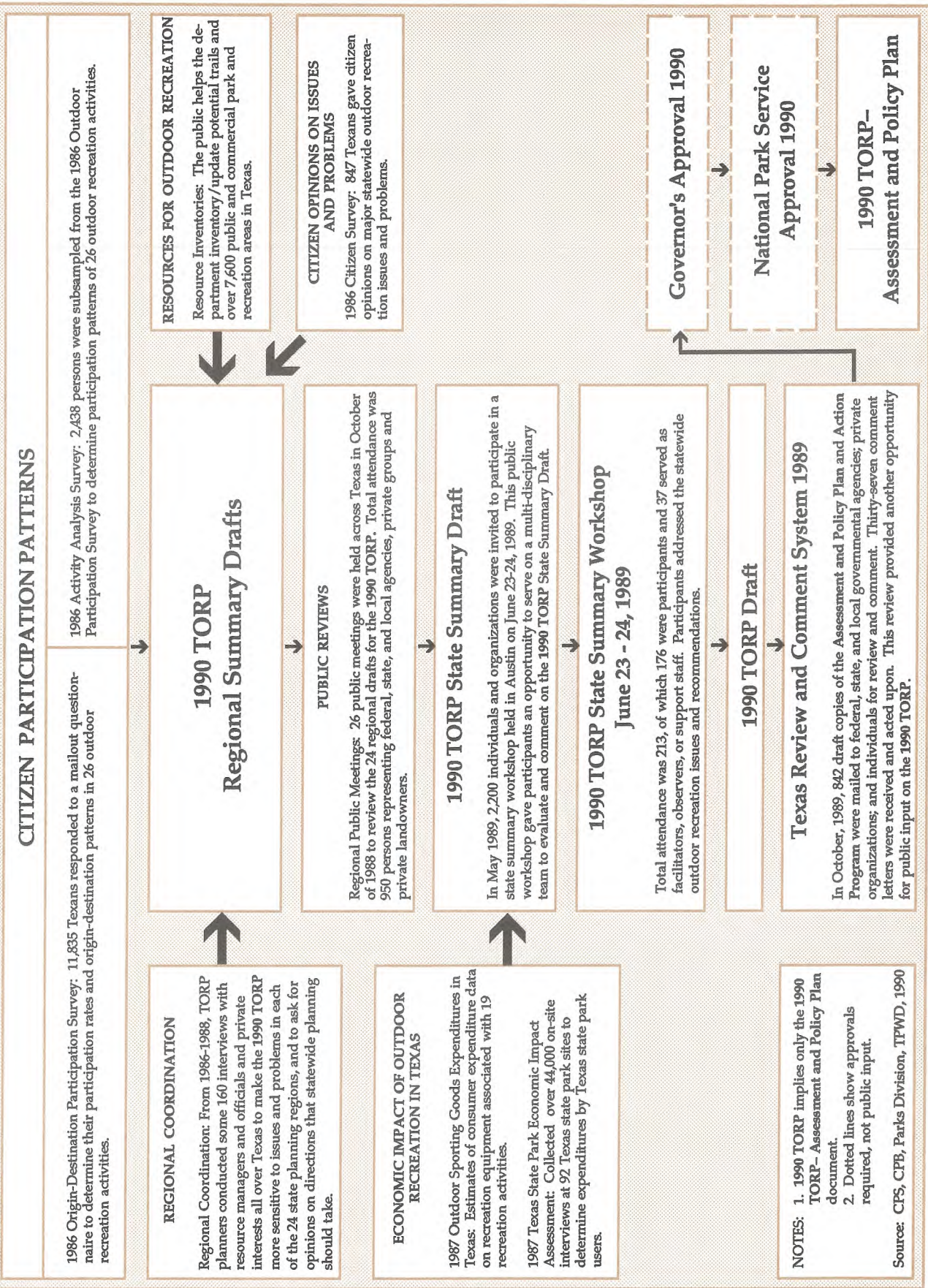
- Recommendations do not imply the availability of financial or other resources to act on the recommendation.

- When acting on recommendations, consider impacts on those served and those impacted but not served.

- Although the 1990 TORP is the official statewide outdoor recreation plan, approved by the governor, implementation of recommendations is at the discretion of the entity or individual unless required to do so by statute.

- While recommendations have legal implications for some agencies, particularly federal agencies, recommendations do not create legal requirements without proper actions through the appropriate legal process.

Figure 2
PUBLIC INPUT IN THE DEVELOPMENT OF THE
1990 TORP—ASSESSMENT AND POLICY PLAN





CHAPTER 1

OUTDOOR RECREATION ISSUES AND RECOMMENDATIONS

While activities like soccer continue to grow in popularity, funding for park and recreation programs has declined.

INTRODUCTION

This chapter presents the top nine issues facing outdoor recreation in Texas and recommends actions to resolve these issues. Issues and recommended actions are based on:

- over 160 interviews of recreation managers and officials and interests across the state;
- discussions with 950 persons attending twenty-six meetings in the twenty-four planning regions (map 1.1);
- comments received at a statewide meeting in Austin from 213 participants representing federal, state, and local agencies; private and commercial entities; and quasi-public organizations;
- research of secondary sources; and
- public surveys of citizens in Texas.

Issues presented are of sufficient statewide scope to impact the success or failure of efforts to meet public recreation needs, although every issue does not necessarily affect every provider. Likewise, recommended actions are often based on solutions already used and proven effective by some entities in Texas, but may not apply to all suppliers.

FINANCING PARKS AND RECREATION

The lack of funding to finance parks and recreation opportunities and services is affecting all levels of recreation providers in most areas of Texas. The economic downturn of the mid-1980s caused many state and local public recreation agencies to experience either budget reductions, or needs that exceeded existing budget levels. The federal deficit, subsequent budget freezes, and spending priorities forced federal land managing agencies in Texas to alter and accomplish their objectives with reduced funding. Staff reductions,

slowdowns in new park acquisition and other capital improvements, program cuts, and less frequent maintenance resulted from funding shortfalls. Recreation providers have had to come up with innovative responses to supplement traditional funding sources. Volunteer and nonprofit group assistance, public/private cooperation, intergovernmental coordination, partnerships, user fees, and privatization are a few of such responses.

Comments received during the public input process reveal that the

public is demanding a wider variety and higher quality of outdoor recreation opportunities. With a depressed economy, citizens tend not to travel longer distances as frequently for their recreational pursuits, which places more of a strain on parks and recreation facilities closer to population centers. People sometimes seek recreation in nearby cities because their own community may lack quality facilities. Thus, one community subsidizes recreation for another community which does not provide for its citizens.



Donations and cost-sharing can alleviate park funding shortfalls.

Local Park Funding

Park and recreation departments are often viewed as a lower priority compared to other public services. Hence, park and recreation department budgets are vulnerable during economic downturns. Some cities have combined their parks and recreation department with other city functions. Because both departments have maintenance staff and functions, the public works department has been the most popular place to put the parks department. This move toward "efficiency" is often the first step of a downward spiral for local park and recreation services. The result of these mergers is that fewer recreation professionals, if any, are employed, and park bond money and user fees collected are diluted in the larger department's functions. Available grant monies and alternative, innovative funding methods are not pursued, and interagency cost-sharing coordination opportunities are missed by these communities while larger communities, with professional staff, actually become more aggressive in seeking these funding alternatives.

Rural areas traditionally have had low funding bases, and recent declines in property values in many areas have eroded this base. Consequently, many county governments have not had the resources to provide basic services nor adequate recreation facilities.

At the same time, available funds have been reduced and the costs to maintain and renovate existing park sites have increased. This is of great concern to recreation providers throughout the state. Most realize the

importance and cost effectiveness of protecting past recreational investments and are learning how to use available resources more effectively. However, in some areas services have been reduced and/or sites closed to concentrate funds elsewhere. (See "Maintenance and Renovation of Parks and Recreation Facilities" for further discussion.)

Interagency coordination and cooperation can provide recreation opportunities in many cases where funding is limited. Cost-sharing in the acquisition and development of parks often results in higher quality sites that are better utilized. (See "Improving Outdoor Recreation Implementation Programs" for further discussion of partnerships.)

Parks can sometimes indirectly contribute to financing themselves, because an attractive parks system can be a strong selling point in encouraging new industry and fostering economic development.

Recommendations:

For the Texas Legislature:

Grant city or county governments authority for alternate funding sources to help fund urban open space acquisition.

For the Texas Parks and Wildlife Department and the Texas Agricultural Extension Service:

Increase efforts to conduct workshops to keep local recreation providers abreast of current grant monies available.

For county governments and regional councils of governments:

Increase efforts and commitments to assist rural communities in satisfying regional outdoor recreation needs.

For recreation providers:

Develop long-range outdoor recreation plans and periodically assess the needs of constituents to assure that public needs are met.

Consider entering into joint use, cost-sharing partnerships with other public or private recreation providers to acquire and develop outdoor recreation opportunities.

Avoid duplication of services by improving coordination and cooperation with other providers.

Solicit donations/bequests from local constituents and industries.

Manage existing budgets more effectively.

Continue to pursue innovative funding methods.

Stress parks and recreation facilities as a selling point in attracting new industry and fostering economic development.

Increase education and public awareness of the importance of parks and recreation.

Fewer Grant Dollars Available

The two primary sources of outdoor recreation grants for financial assistance to local governments in Texas are the federal Land and Water Conservation Fund (LWCF) and the state Local Parks, Recreation and Open Space Fund (LPF). Both of these funds have experienced declines in monies available. The federal LWCF appropriation to Texas was less than \$1 million in 1988, or only 5.1 percent of the level received in 1979 (the highest funding level in the program's history).

In 1986, the Report of the President's Commission on Americans Outdoors recommended the creation of a dedicated trust fund. Once created, the interest generated from this fund would be used for the Land and Water Conservation Fund or a similar program. This would provide a more

consistent level of funding.

The state Local Parks Fund receives revenue from a portion of the state cigarette tax. Because smoking rates are declining, fewer dollars are available for local recreation grants. In recent years this fund has suffered a reduction in absolute dollars. When inflation is considered, the reduction in real dollars is severe. During public input meetings held throughout Texas in October, 1988, many participants suggested a tax on sporting goods equipment to supplement the Local Parks Fund. The success of the federal excise tax on fishing and hunting equipment was mentioned as a precedent. People who participate heavily in outdoor recreation activities, and hence buy more sporting goods, would pay for a greater share of providing park opportunities. This would also provide grant funding levels that would be more correlated with recreation participation and inflation than current funding sources.

Currently in Texas, portions of the taxes on fuel used in non-road recreation vehicles, such as off-road vehicles and motorboats, are not returned to provide opportunities for these recreational activities. While a small portion of the motorboat fuel taxes is put into the Texas boating safety fund and the Texas boat ramp program, national averages are used to calculate the proportion of boat fuel used versus road use. Twenty-six percent of Texans freshwater-boat every year compared to only 18 percent nationwide as indicated in the 1982 National Recreation Survey.

Many northern states build and maintain snowmobile trails with gas taxes generated by snowmobile use. A similar program could be initiated in Texas for off-road vehicles.

Recommendations:

For Congress:

Enact the recommendation of the President's Commission on Americans Outdoors to create a dedicated outdoor recreation trust fund.

For the Texas Legislature:

Continue to fund and support the Local Parks, Recreation and Open Space Fund.

Propose a constitutional amendment to permanently dedicate funding for the Local Park Fund.

Appoint a committee to explore the full range of options to find outdoor recreation financing alternatives.

Enact legislation to give local governments the option to create park districts.

For local recreation providers:

Support federal legislation to establish a dedicated trust fund, or similar mechanism, to provide funding for outdoor recreation.

Seek assistance from federal and state government agencies for grants and technical assistance.

Develop alternative, local sources of funds, such as fees, park foundations, gift catalogs, donations, etc.

For the Texas Parks and Wildlife Department:

Include, as a regular part of the Policy and Assessment portion of the TORP, information on the review and revision process for the "Local Government Project Review Procedures."

User Fees to Finance Recreation Costs

The public's willingness to pay for quality outdoor recreation experiences, both in time and money, offers possible solutions to address lack of funding. Entrance and user fees are one method to supplement traditional funding sources.

Entrance fees work best and are more readily accepted by the public at resource-based recreation areas with controlled access and on-site staff. Special programs, services, and organized sports leagues often have user fees associated with them. These require specialized supervision, instruction, and/or facilities which may be utilized by a relatively small group of citizens. To finance these opportunities entirely by general funds means that non-users subsidize those who utilize the service.

Entrance and user fees at public sites can help address commercial recreation providers' fears of unfair competition. However, more research is needed on pricing public parks and recreation opportunities to guide the setting of fees. For example, the quality and uniqueness of the park site (substitutability) should be considered. Over

66 percent of the respondents to the "1987 Recreational Issues in Texas: A Citizen Survey" indicated that they would pay higher entrance and user fees at a better quality park. Only ten percent of the respondents indicated that they would not go to a park that charged fees. Fees and charges were the most popular choice of ways to fund parks and recreation.

Urban parks traditionally have not charged user fees. In most cases, it is impractical to collect fees at urban sites, and many believe that public recreation opportunities should be free. They feel that urban parks are simply part of the green space necessary to make urban areas liveable, and therefore, are comparable to other public services for which the public pays no user fees, such as education and police and fire protection.

Opponents of entrance and user fees have argued that these fees discriminate against those with lower incomes. However, research shows that nominal entrance fees at resource-based sites are not one of the primary reasons that lower income groups forego these opportunities. Entrance fees are relatively insignificant when compared with other recreation costs and time incurred to enjoy a resource-based recreation opportunity.

Current federal laws prohibit the Corps of Engineers from collecting entrance fees at their recreation areas.



Mandatory dedication ordinances, such as that enacted by College Station, are an example of innovative funding.

Recommendations:

For Congress:

Restructure user and entrance fees at federal recreation sites and authorize all federal agencies to collect entrance fees at project recreation sites.

For recreation providers:

Assess users' willingness and ability to pay for recreation opportunities. Consider charging user/entrance fees where economical and practical using a fee structure plan that sets fees fairly. Consider waivers or fee reductions for people with disabilities and the economically disadvantaged.

Privatization, An Alternative to Public Financing

Most recreation providers in Texas, to varying degrees, are contracting with the private or quasi-public sectors to provide park and recreation services. The extent of privatization ranges from as little as paying someone to teach gymnastics one night a week to the complete development, construction, and operation of a facility.

Facilities with higher user fees such as golf courses and marinas that can be developed on public resources will often attract private financing. The private company will develop, operate, maintain the facility, and retain a portion of the profits. Unlike most public

park departments, these companies often specialize in managing a particular facility. These partnerships usually are in the form of lease-back agreements where the facility reverts back to public ownership after a period of time.

Well-managed concessions in public parks can increase the diversity of recreation opportunities and provide economic benefits. More people are now realizing the positive economic impacts that outdoor recreation opportunities have on travel-related enterprises and nearby communities.

Other positive aspects of privatization are that greater numbers of opportunities can be offered with limited public funds, and a portion of liability responsibilities are shifted to the contractor. Potential negative aspects of contracting surround the loss of control over contracted programs and the ability to shift staff responsibilities when needed. Privatization might also result in below-standard or inadequate facilities. These endeavors must be managed carefully to assure that the quality of the program or facility is kept at satisfactory levels and all citizens have an opportunity to participate.

In some cases, recreation facilities previously supplied by the public sector are now provided by private commercial entities. Commercial softball complexes are springing up in many parts of the state. These are not only near bigger cities but also in rural communities where regional needs are high and provide a larger market.

Voluntary, non-coercive agree-

ments with private citizens to allow public recreation use on private lands, or recreational easements can increase the recreation opportunities for the public and reduce the landowner's property taxes.

Recommendations:

For recreation providers:

Where consistent with the environmental value of the site, consider integrating concessions into public recreation sites to increase services and revenues.

Estimate the benefits and costs, including environmental impacts, of contracting appropriate services to the private sector and consider doing so when it appears to be cost effective and/or the level of service can be improved.

Develop appropriate standards and initiate periodic inspections of the quality of concessions services.

Provide incentives to private landowners to encourage them to permit public recreational access to private lands where needed and practical.

For the commercial sector:

Invest in outdoor recreation facilities and opportunities. Research innovative, successful enterprises to determine their applicability to given markets.



The commercial sector will play an increasingly important role in meeting future recreational needs.

Implementing an effective program to satisfy the public's outdoor recreation demands is becoming an increasingly challenging task for recreation providers. Today, funding for public services in general, and parks and recreation opportunities in particular, is heavily scrutinized (see "Financing Parks and Recreation"). At the same time, the public desires higher quality and greater variety in parks and recreation opportunities than in the past. Recreation providers are finding that innovative implementation methods must supplement available funding to address public outdoor recreation demands. Effective planning, cooperative partnerships, public information and education, and technical assistance can help recreation providers implement their recreation programs.

Planning and Public Input

Assessing public outdoor recreation needs and determining a plan of action to guide recreation-providing entities are important to assure that these needs are addressed in the most efficient manner possible. If needs are not accurately identified, implementation efforts to satisfy outdoor recreation needs may be insufficient or wasted.

Many local parks and recreation departments have a master plan to guide their actions. Master plans are useful as long-range department directional guides, but may not be responsive to the dynamic needs of the recreating public. Recreation providers must keep in mind that planning is a continuous process, and that one master plan is not an end to the planning process. Some local recreation providers conduct periodic public needs assessments to focus on specific actions and time periods and to identify trends, but many do not. Some recreation providers feel that they know what their public wants without conducting needs assessments. Their perceptions are usually based upon reactions to vocal special interest groups rather than surveys statistically designed to determine the needs of the entire population.

Outdoor recreation planning conducted by most county, state, and federal agencies is often of the long-range,

master plan variety. The integration of public input and needs assessments in these processes is difficult and not always adequate.

Recommendations:

For the Texas Parks and Wildlife Department:

Continue to assure that public input is integrated into the Texas statewide comprehensive outdoor recreation planning process and when planning state-funded outdoor recreation opportunities.

Actively seek input from all populations, such as minorities, the elderly, and people with disabilities.

Improve methods of obtaining broad-based public input.

Provide guidelines to assist local recreation providers in conducting needs assessments.

Evaluate the effectiveness of existing TORP planning projects and needs assessments.

For counties and councils of governments:

Assist rural communities in the planning and development of outdoor recreation opportunities.

For local recreation providers:

Conduct periodic public outdoor recreation needs assessments to assure that needs are accurately identified.

Evaluate the effectiveness of existing implementation programs.

Respond to changing public outdoor recreation needs.

Public Information and Education

An often overlooked implementation program is informing the public of existing outdoor recreation opportunities. Recreation providers may assume that everyone knows where parks and recreation facilities are located, but this



Adequate public input is necessary to effectively implement recreation programs and meet public needs.

is not always so. Over 25 percent of the 11,835 respondents to the 1986 Origin/Destination Participation Study indicated that lack of information was a reason for not participating more in outdoor recreation.

Generally, the public is more interested in the availability of the recreation site than the agency responsible for managing it. Research in Texas shows that the public is often unaware of which agency manages a site. This makes it difficult for them to find information about the site.

Today, marketing is a term that is becoming more familiar to outdoor recreation providers. The active promotion of resources and advertising to encourage greater participation and visitation are increasing. Promotion of an underutilized site can help redistribute use from crowded sites and reduce the need to create new opportunities.

Educating the public and decision-makers about the benefits and values of recreation and the environment is another useful implementation tool. Education allows the public to better appreciate parks and recreation resources, and it promotes better public stewardship of public lands. An appreciative public is less likely to misuse public lands, which can reduce maintenance and repair costs. A better-educated public is also more apt to respect and act more responsibly toward private property.

Recommendations:

For the Texas Parks and Wildlife Department:

Increase environmental and recreation education and information efforts.

Apply marketing concepts to inform the public and meet outdoor recreation needs.

Increase efforts to inform the public of existing and accessible outdoor recreation opportunities.

Identify unmet needs of potential state park users and develop strategies to address these needs.

Allocate more funds for public education and use the mass media to increase environmental education and information programs aimed at litter and vandalism.

Improve signs and information to better inform the public of parks and recreation opportunities.

For recreation providers:

Coordinate and cooperate with educational institutions and the private sector to teach environmental education.

Educate decision-makers and the public about the values of parks and recreation opportunities.

Inform the public of existing parks and recreation facilities, and market underutilized sites to increase their use and take pressure off overutilized sites.

Establish a program to educate users of parks and outdoor recreation facilities on their responsibilities.

Encourage and emphasize the development of interpretive centers and facilities to educate the public in cultural and natural resources as a means of increasing visitor satisfaction.

Use more aggressive techniques to better inform the public and market parks and recreation opportunities to Texans.

Develop more effective ways to distribute tourist information.

For institutions of higher education:

Conduct research needed to develop/improve methodologies to assess and determine "value" in various economic impact studies.

Cooperation, Coordination, and Building Partnerships

Because of scarce public funds, many recreation providers seek partnerships to share the costs and responsibilities for providing these opportunities. Partnerships between public recreation providers and private entities, quasi-public entities, nonprofit groups, and other public entities can be found in many forms in Texas. Results of these cooperative arrangements, in general, have been very promising.

Joint use of facilities, cost-sharing to create recreation opportunities, lease and maintenance agreements, grants, and technical assistance are examples of the most common forms of partnerships. These arrangements can be for the life of the project. Many cities and school districts have either formal or informal joint use agreements. The school will use the facility during school hours and the general public can use the park or facility other times. Or, partners may assume different responsibilities in the maintenance or development of the recreation facility.

Coordination and cooperation with

Mexico is important because of the various recreational resources that Texas and Mexico share, including the Gulf of Mexico, the Rio Grande, and Falcon and Amistad reservoirs. The Chihuahuan Desert International Biosphere Reserve encompasses land on both sides of the border. Actions or impacts that occur on one side usually affect both nations. A key problem in coordinating recreation issues with Mexico is that Texas has not officially designated a lead agency.

Recommendations

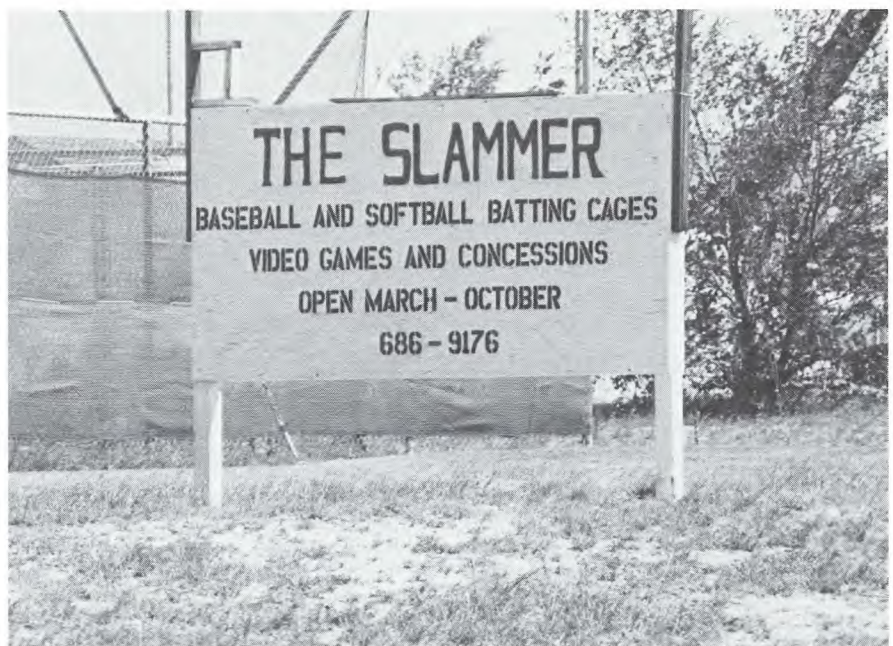
For the Texas Legislature:

Coordinate with Mexico on recreational issues and to promote international cooperation on the protection of recreational resources.

For recreation providers:

Seek partnerships with other entities to provide outdoor recreation opportunities, carefully weighing the pros and cons before entering partnership agreements. Assure that the public is best served by partnership arrangements.

Ensure that all segments of the public (such as low income residents) retain access to public lands and recreation opportunities that are put in private hands.



Encouraging private investment and concessions at public recreation sites is a way to build partnerships and increase opportunities.

Form regional outdoor recreation committees to share ideas and concerns.

Consider private recreation investments and concessions at public recreation sites.

Stress coordination and cooperation among all groups.

For river authorities:

Increase the provision of water-related recreation opportunities and actively pursue partnerships with other recreation providers.

For border chambers of commerce and recreation providers:

Work with Mexico in the development and expansion of outdoor recreation opportunities and special events.

For the Texas Recreation and Parks Society (TRAPS) and related professional organizations:

Create an outdoor recreation committee or branch to foster coordination and cooperation among recreation providers and land management agencies.

Technical Assistance

During public input phases to the 1990 TORP planning process, many local officials and recreation providers voiced a need for greater outdoor recreation planning and implementation technical assistance from state and federal levels of government. These needs included ways to fund outdoor recreation projects, information about current outdoor recreation grant programs, outdoor recreation research that can be applied by local recreation providers, and planning assistance. Technical assistance in these areas exists now, but its effectiveness and sufficiency must be addressed.

Smaller cities and rural communities often express a need for technical assistance on funding and obtaining available grant monies. Knowledge of existing grant programs and alternative funding methods is limited due to a lack of park and recreation departments, staff with limited park and recreation experience or education, and

staff turnover. To administer a grant program fairly, it is imperative that all eligible parties be fully informed of its existence. Because the Texas Parks and Wildlife Department (TPWD) administers many of the primary outdoor recreation grant sources (the state Local Parks Fund, the Boat Ramp Program, the Beach Cleaning Program, and the federal Land and Water Conservation Fund), this agency is most often perceived as the one that should provide technical assistance on funding.

The TPWD currently provides a variety of outdoor recreation technical assistance. Workshops are periodically conducted throughout the state that cover available grant programs and alternative funding methods. Publications regarding funding topics are available upon request. The Local Assistance Branch of the TPWD offers planning assistance to small cities (under 7,500 population) and rural counties (under 15,000 population), again upon request. The Technical Assistance Program of the TPWD Wildlife Division offers wildlife habitat management technical guidance to private landowners.

Other public institutions providing technical assistance include the National Park Service, the Texas Agricultural Extension Service, councils of government, and Texas colleges and universities. Some of these, however, are limited by law on the amounts and types of assistance they can provide. Private, nonprofit groups that also can provide help are organizations such as the Rails-to-Trails Conservancy, American Rivers, and the Texas Recreation and Parks Society. Various private consultants offer assistance with many aspects of outdoor recreation planning and grant proposal preparation

Recommendations:

For the Texas Parks and Wildlife Department:

Continue to inform those eligible of available outdoor recreation grants and how to pursue these funds.

Increase efforts to provide outdoor recreation technical assistance to local governments.

Regularly evaluate and revise existing technical assistance programs to respond to changing public needs.

Train county-level entities such as councils of governments and county extension agents to help identify assistance needs and provide information about available grants.

Request assistance from the National Park Service to conduct statewide planning projects.

Assist landowners to increase non-game resources and improve management of significant natural resources.

For councils of governments and the Texas Agricultural Extension Service:

Increase efforts to inform small communities about available outdoor recreation grant programs and technical assistance.

For the Texas Recreation and Parks Society (TRAPS):

Create a small communities branch or committee to focus on small community needs and to increase the information transfer between these entities.

Continue to offer needed technical assistance at TRAPS regional workshops.

For local recreation providers:

Continue to seek technical assistance from state agencies and other entities when needed.

Inform incoming decision-makers about the values of parks and recreation facilities and current grant programs.

Encourage the use of local professional resources, such as landscape architects, environmental planners, and engineers, to provide expertise in recreation planning.

Create citizen parks and recreation boards, encouraging minority representation, to keep abreast of current grant programs and possible funding alternatives.

For the National Park Service and American Rivers, Inc.:

Continue to provide technical assistance upon request to assist in state river and trail planning projects.

Liability issues in outdoor recreation have negatively impacted insurance rates, availability of facilities and programs, and volunteer programs. Improvements in safety measures have been positive benefits.

Increased Lawsuits

Recreation providers have noted that recreationists are more likely to sue for injuries sustained in recreational situations than they were in the past. At the same time, recreationists are seeking more challenging experiences such as hang gliding and rock climbing.

Some court judgments appear unreasonable and have set precedents that may become an invitation for others to sue. Insurance carriers in turn raise premiums on coverage or refuse to underwrite certain recreational facilities and activities.

Insurance and tort law need a comprehensive assessment. The state legislature has already taken some steps by

directing a number of studies that would serve as the basis for legislation. National organizations are also assessing this issue and developing recommendations.

In 1987, the Texas Legislature authorized local governments to band together in self-insurance pools. The entities may issue bonds to fund the pools and use ad valorem taxes to service the bonds.

Recommendations:

For recreationists:

Before engaging in recreational activities, become better educated on the risks and laws associated with the recreational activities pursued.

Be more responsible for one's actions in recreational settings.

Obtain adequate insurance for participation in high risk recreational activities.

For recreation providers and landowners:

Keep abreast of changes in insurance and tort law and encourage support for legislation to regulate insurance and tort reforms.

For the Texas Legislature:

Enact further insurance and tort law reforms to limit liability of public and private recreation providers, and volunteers.

Recreational Facilities/ Resources

Vandalized, outdated, and/or poorly maintained facilities increase a recreation department's exposure to risk.

Parks and recreation departments could reduce their liability by having a comprehensive risk management plan in place. Comprehensive risk management plans include extensive emphasis on maintenance programs, regular safety inspections, record-keeping, and employee/volunteer education. Once park users report facility/resource hazards, prompt action to correct the problem must be taken. Failure to correct problems increases vulnerability in the case of a lawsuit.

The emphasis on safety in the design and construction of park facilities has greatly increased in the past decade. Older facilities may contain inherent design flaws that, although often costly, must be corrected. The National Recreation and Parks Association annually offers a "Park and Recreation Safety School" and "Park Planning and Maintenance School" both of which help train staff to identify and correct potentially dangerous situations. The Consumer Product Safety Commission has published guidelines for the design and construction of park facilities. Adhering to these nationally recognized guidelines can help to reduce the liability potential of recreation providers.



To promote safety, recreation providers should post appropriate signs warning recreationists of possible hazards.

Recommendations:

For recreationists:

Report promptly any problems encountered with recreational facilities/resources.

For recreation providers:

Renovate and replace old, worn, vandalized, or obsolete equipment to keep facilities safe; develop long-range capital improvement plans to fund future rehabilitation.

Institute comprehensive risk management plans and place one person in charge of safety programs, with authority to correct problems.

Encourage the public to report hazards.

Train staff, planners, and designers to identify and remedy hazards.

Educate park staff on current liability statutes and case law.

Post appropriate signs to warn recreationists of potential hazards.

Follow recommendations and guidelines of the Consumer Product Safety Commission.

Explore and encourage the development of self-insurance pools.

Recreational Programs

The "pay to play" trend in recreation helps recreation providers recover some costs but has an adverse effect on

liability issues. If a fee is charged for a service, the user only has to prove negligence on the part of the provider in a lawsuit, rather than gross negligence if the service is free. In a court of law, negligence is much easier to prove than gross negligence. Commercial recreation providers are exposed to even more financial risk than their public counterparts because of recent legislative limits on damage awards against public providers.

A related problem is that waivers and similar agreements between the recreationist and the provider may not be upheld in court. "At your own risk" signs may not provide adequate protection in a court of law.

Recommendations:

For the Texas Legislature:

Consider enacting statutes to give validity to waivers, releases, and indemnification agreements between recreationists and providers.

For recreation providers:

Require user groups such as leagues and teams to carry their own accident insurance or to participate in self-insurance pools.

In adult recreation programs, use waivers, releases, or agreements to indemnify the provider from liability, making the acknowledgement of risk explicit.

Evaluate the advantages and disadvantages of contracting services to

the private sector to spread the risk of liability.

Private Sector in Recreation

Liability issues are also having an adverse effect on voluntarism, at a time when self-reliance and alternative funding sources are encouraged to compensate for budget cutbacks. Volunteers in park programs fear they may be named as defendants in liability suits and no longer offer their services. Recreation providers, on the other hand, fear they may be sued by volunteers involved in accidents while volunteering their services.

Liability is also an obstacle for public access to private lands for recreation uses where such access is desirable and appropriate. Landowners fear they may be sued for recreation injuries. Again, waivers and indemnification agreements could help this situation, but the validity of these instruments is uncertain.

Recommendations:

For the Texas Legislature:

Strengthen volunteer protection statutes and recreational use statutes.

Enact statutes to relieve landowner liability attributable to ordinary negligence where public access is gained.

For recreation providers:

Train volunteers in safety procedures and assure they are adequately supervised.

MANAGING VISITORS AND RECREATIONAL USE

As outdoor activities grow in popularity, visitor and recreation management becomes more critical to providing a high-quality outdoor experience while protecting the natural resource. Managers have to maintain a delicate balance among recreation, visitor safety and enjoyment, and conservation.

Recreational Conflicts

Managing visitors means being aware of recreational conflicts and trying to minimize them. Conflicts may

result when recreationists seek different types of experiences. The recreational needs of boaters, fishermen, swimmers, and skiers occasionally clash in confined areas. Similarly, user conflicts occur on multi-use trails especially if the trail is heavily used. Bicyclists, joggers, and walkers all travel at different speeds resulting in potentially dangerous passing situations. These conflicts can be minimized by proper park design, regulations, and lake zoning.

Similar conflicts may occur between recreationists and private land-

owners, whose property may be near to, or adjoin, public recreation areas. Such conflicts are becoming more frequent on rivers because river recreation has become more popular in recent years. People seeking recreation may trespass on private land intentionally or unknowingly. The more unscrupulous are sometimes responsible for vandalism, theft, poaching, or littering. Landowners, on the other hand, will at times try to deny the public the lawful use of a public stream. Confusion, misinformation, and misunderstanding about laws,

rights, or ownership contribute to the problems. Resolving such conflicts requires better communications among the different groups and clarification of state law.

Recommendations:

For recreation providers:

Reduce user conflicts, where possible, through such means as establishing activity seasons, segregating activities, redistributing use, and zoning.

Educate the public on the rights of and responsibilities of both land-owners and recreationists.

Educate the public about conflicts of use and the rules to mitigate them.

Increase emphasis on surveillance and law enforcement to deter trespass and other abuses of individual and private property rights.

For the Texas Legislature:

Clarify, strengthen, and revise as necessary, laws relating to private property rights and laws regarding public use of state waterways, lakes, wetlands, bays, and beaches.

Annoyances and Illegal Behavior in Recreation Areas

Annoyances include all the kinds of things that can make an outdoor recreation experience disappointing or less enjoyable. Crowded recreation areas, full campgrounds, unwanted noise, and heavy traffic are some of the more common frustrations the visitor encounters. Some visitors are insensitive to basic park and outdoor etiquette and lack consideration for their neighbors. Park managers can reduce or prevent these kinds of distractions by such means as limits on visitor numbers, close supervision, staff visibility, and traffic control.

Vandalism and litter are widespread, persistent, and costly problems throughout the state. Vandalism is probably more prevalent at local parks because of their intense use, but federal, state, and commercial parks are not immune from it. Unsightly litter plagues not only parks, but scenic roads and highways. The "Don't Mess With Texas" anti-litter campaign has helped greatly to raise public awareness, but

more efforts are needed. Vandalism and litter are costly in tax dollars and lost recreation opportunities. Damage or defacement of natural or archaeological resources like trees, rocks, or pictographs may be irreparable.

Knowing the reasons for vandalism can sometimes provide the manager with insights into solving the problem. Motives vary greatly. Frequently, the reasons are simply mischief or rebellion. Substance abuse is sometimes a factor, or the motive may be dissatisfaction with existing facilities. Vandalized facilities that aren't repaired invite more vandalism. Facilities neglected due to lack of maintenance are also targets of vandals.

Poaching of fish, plants, and wildlife is widespread. The illegal harvest of fish and wildlife can threaten their populations, destroy public resources, and interfere with game management practices. Plant poaching occurs where there are rare or endangered plants with commercial value.

Parks have sometimes become places for alcohol and drug abuse, practices inconsistent with the legitimate public use of recreation areas. Drug or alcohol abuse while recreating, such as when operating a powerboat, also can be dangerous to others. Many serious accidents and drownings on the state's lakes and waterways can be traced to excessive alcohol consumption.

Protecting park visitors from crime is another major concern of recreation providers. Some urban parks in high-crime areas are dangerous, and parks in remote areas are sometimes unsafe because of their isolation. Even visitors at well-patrolled, relatively safe parks are sometimes victimized by theft. Assaults, rape, and other forms of violence, are infrequent in most parks, but visitors are voicing an increasing concern about safety from crime.

Recommendations:

For educators and recreation providers:

Stress education as a means of deterring improper and illegal behavior. Teach, as part of the curriculum in educational institutions, behavior that fosters respect for public and private property and natural resources. Initiate educational programs specifically targeted at the problems of vandalism, litter, substance abuse, and poaching.

For recreation providers:

Encourage and foster cooperative efforts to create awareness of illegal behavior, prevent it, and apprehend offenders. Seek and encourage the help of visitors in reporting violations. Work closely with law enforcement agencies. In cities, establish "park watch" and "adopt-a-park" programs.

Try various approaches or combinations of approaches to deal with or discourage illegal acts, including fee systems, access control, increased surveillance, rehabilitation of offenders, vandal-resistant fixtures, lighting, and immediate repair of vandalized facilities.

For federal, state, and local law enforcement agencies:

Increase emphasis on surveillance and law enforcement at public parks to increase visitor safety and deter illegal activities.

Strengthen efforts to combat crime and illegal behavior in parks and recreation areas. Fully prosecute perpetrators of vandalism, littering, poaching, and other illegal acts; include public service and/or civil restitution as a part of penalties.

Pursue high level, interagency agreements to insure strong, uniform law enforcement in parks and recreation areas.

For federal, state, and local governments:

Participate in, and promote the "Don't Mess With Texas," "Keep Texas Beautiful," and other anti-litter campaigns.

Promote, encourage, and organize litter clean-ups for parks, beaches, lakes, rivers, and other recreational areas.

For the Texas Parks and Wildlife Department:

Develop and promote environmental education and awareness programs such as Project WILD.

Publicize, promote, and seek support for the Operation Game Thief anti-poaching program.



Crowding, noise, and lack of consideration for others are some common frustrations for park visitors.

Work with other agencies to provide technical assistance, workshops, publications, and educational materials addressing basic outdoor courtesy and the problems of vandalism, litter, and poaching.

For the Texas Legislature:

Consider strengthening poaching laws to include asset seizure and forfeiture and more comprehensive legislation to better protect fish, wildlife, and plant species, especially rare and endangered plants and animals and entire habitats.

Increase funding for enforcement and surveillance to prevent the theft and destruction of artifacts and antiquities.

Enact beverage container laws which promote recycling, require deposits, and prohibit detachable metal tabs and plastic connecting devices.

Recreational Access

Managing access enables park operators to protect resources, control visitors, and better regulate recreational use. Park access can be free and open or it may be controlled through such means as entrance gates, fee systems, or permits. Access to fragile areas or resources can be regulated, limited, or prohibited to protect such resources. Access control also contributes to visitor safety.

The complete lack of access to public lands and waters restricts or denies recreation opportunities to potential users. Some reservoirs, coastal beaches, and bays have limited access, frequently due to surrounding private property or development. River access is generally confined to public parks, boat ramps, bridges, and road crossings. Restricted access can cause congestion at existing access points and encourage trespass.

For the approximately 15 percent of the population with disabilities, the terms access and accessibility mean more than permission to make use of a resource, as described above. "Accessible" describes sites, buildings, and facilities that can be approached, entered, and used by physically disabled people. Also, the population is aging, people live longer, and the elderly often experience physical limitations.

Both federal and state laws require construction and rehabilitation projects using government funds to make portions of the projects accessible. New park sites are likely to offer some accessible opportunities, but many older parks still have architectural or environmental barriers to people with mobility and sight impairments. Because of the wide range of disabilities, some existing park facilities that do not meet the American National Standards Institute (ANSI) accessibility guidelines could still be useable by some disabled individuals if managers made minimal modifications or simply provided information on the facilities' characteristics.

Recommendations:

For federal, state, and local governments:

Consider describing and clearly marking public parks, lands, and access points to navigable streams, public lakes, wetlands, bays, and beaches to define the limits of public ownership.

Ensure there is adequate access to existing recreation areas and provide public access points to navigable streams, public lakes, wetlands, bays, and beaches where access is limited or restricted.

Involve landowners in the development of programs and incentives to encourage them to allow recreational use of their land.

For recreation providers:

Furnish users of public waters and adjacent landowners with information on the rights and responsibilities of recreationists regarding private riparian property, public access points, access locations, and river mileages between access sites.

Use access control as a management tool to prevent crowding, protect resources, increase visitor enjoyment, and enhance safety.

Assess the design characteristics of recreation and support facilities in parks in view of their suitability for serving visitors with a variety of

disabilities. Prepare and distribute literature on park facilities which meet ANSI standards and those which could be termed "easy access."

Develop short and long range plans to redesign and rehabilitate facilities to make more areas of parks accessible to visitors with physical disabilities.

Recreational Safety

Visitor safety is always a major concern of recreation providers, but liability concerns have caused park managers to become even more safety conscious. To reduce the possibility of lawsuits, some providers have removed, closed, or limited the use of some facilities, reducing recreation opportunities for everyone. While recreation managers can do much to provide safe recreation, they cannot prevent irresponsible or careless behavior, a frequent factor in injuries.

With the increasing appeal of water-based recreation, more people seek the state's rivers, lakes, bays, and beaches for outdoor pursuits. Commensurate with this trend are increasing numbers of water-related accidents and fatalities due to congestion, carelessness, alcohol abuse, weather, or other factors. Sudden weather changes, thunderstorms, and high winds can be dangerous in the open gulf, bays, or large impoundments. Activities like water-skiing and swimming are not always compatible in confined areas, and this problem is intensified when lake levels are low. Poor judgement, failure to use personal flotation devices, and failure to recognize hazards commonly contribute to deaths and accidents.

Recommendations:

For recreation providers:

Implement comprehensive risk management plans for parks and facilities that include regular safety inspections, maintenance, and warning signs. Place one person in charge of safety programs with authority to correct problems.

Renovate and replace old, worn, vandalized, or obsolete equipment to keep facilities safe. Develop

long-range capital improvement plans to fund future rehabilitation.

Follow the recommendations of consumer safety organizations such as the U.S. Consumer Safety Commission.

Train staff to identify and correct potential hazards immediately. Encourage the public to report possible hazards.

Continue, and strengthen if necessary, enforcement of Texas water safety laws, local ordinances, and other regulations governing water safety and safe boating. Encourage public cooperation in reporting violations and unsafe practices. Strictly enforce laws prohibiting operation of a motorized watercraft while intoxicated.

Promote awareness and public education in water safety and boating laws.

For the Texas Legislature:

Examine alternatives that could increase water and boating safety and reduce water-related accidents and fatalities. Such alternatives might include stronger law enforcement measures and more emphasis on boating and water safety programs.

Recreational Impacts and Use

Recreation and resource protection can often conflict in managing visitors and recreation. Resources, including land, water, vegetation, and wildlife, can be damaged by excessive use, vandalism, litter, poaching, or other disturbing effects. Unique but fragile resources such as Big Bend and Guadalupe Mountains national parks are especially vulnerable because controlling recreational use of such vast areas is difficult due to their size and remoteness. Excessive recreational use can destroy ground cover or otherwise damage the resource. Because people concentrate near water for recreation, beaches, bays, wetlands, streams, and lakes may become adversely impacted. Excessive use may contribute to erosion. Some wildlife species undergo stress from human contact. Indiscriminate or irresponsible camping or trail

and off-road vehicle use can cause long-term, extensive damage to soil and vegetation. Coastal dunes are vulnerable to vegetative cover damage. Increased park visitation, limited staff, and reduced funding have contributed to the overuse problems. (See "Conserving Natural Resources for Recreational Use" for further discussion.)

Not all parks are overused. Some, because they may be little known or not easily accessible, could accommodate more visitors and use. This would help relieve the pressure on the popular, more heavily visited areas and make better use of underused parks.

Recommendations:

For recreation providers:

Provide for visitor enjoyment while protecting resources by considering the full range of management alternatives, including access control, physical design, fee systems, and closer monitoring.

Determine and establish carrying capacities for backcountry areas and fragile resources. Set limits of acceptable use. Regulate or control use when visitation reaches critical limits. Explain the purpose of visitor restrictions to secure public support and cooperation. If possible, rotate facilities to new areas to allow impacted areas to recover.

Develop education programs to instruct visitors in the proper use of backcountry and fragile areas. Encourage an ethic that fosters respect for natural resources.

Consider permit systems for areas not now regulated to control backcountry use and limit impacts, especially for fragile resources.

Develop, and update regularly, resource management plans for parks and recreation areas to protect resources and ecosystems and to identify problem areas.

Promote underutilized or less popular parks and recreation areas to relieve pressure on heavily visited areas. Consider differential fees and other ways to encourage off-season use and ease high-season visitation of popular areas.

Public input received during the development of the 1990 Texas Outdoor Recreation Plan showed a growing concern and appreciation over the need for more open space for outdoor recreation and other purposes. As an issue, open space for outdoor recreational use is complex and overlaps many other issues. Open space for outdoor recreation use is just one of the many types of open space. This issue focuses on meeting recreational open space needs rather than the broader concept of open space, which is beyond the scope of this plan.

Definitions of Open Space

In the broader sense, open space is defined as land, water, and atmosphere, public or private, predominantly natural and undeveloped. Examples of open space under this broad definition include parks and recreation areas, natural areas, rivers and streams, greenbelts, agriculture and related rural industries, and clean air, to name only a few. In the narrower sense, recreational open space, a subset of open space and also a subset of parkland, is defined as undeveloped land and/or water areas devoted to recreational activities which are compatible with conserving open space for designated purposes. Intensely developed parks with facilities which preclude participation in open space activities would not be defined as recreational open space.

Lack of Understanding of Open Space

While it is important to define open space, it is more important to understand its function from a regional to the local level. With proper planning, open space can function as a tool to shape growth and development, resulting in communities more desirable as living spaces. Poor planning, or the lack of planning, for the use of open space to shape the environment remains a problem, however. Only by first understanding the function of open space for outdoor recreation and other purposes from the local to regional level, and then planning accordingly, will outdoor recreational needs be met.

Recommendations:

For recreation providers:

Educate the public and decision-makers on the role that recreational open spaces play in adding to community quality of life, community attractiveness, and the value of these to economic development.

For counties and cities:

Determine the function of "recreational open space" for planning purposes.

Plan for open space needs from the local to regional level.

Implement open space plans.

For the Texas Parks and Wildlife Department and other appropriate applied research entities:

Provide assistance to cities and counties in evaluating the quality, types, and quantities of open space needed.

Growth Impacts on Recreational Open Space

High rates of population growth (18 percent) since 1980, largely concentrated in metropolitan areas, have outpaced public efforts to meet outdoor recreation demand. Rapid private development raised land prices, reduced local supplies of undeveloped lands, and resulted in increased density of development. Vocal urban publics responded with a demand for passive open/green space to provide natural green buffers in urbanizing areas.

Texas's early 1980s boom economy was accompanied by high rates of immigration. Rapid private development was not matched by equal rates of public investment in infrastructure, including parks. Once behind, communities faced escalating land and development prices. The mid-to-late 1980s economic downturn slowed population growth and land development and resulted in lower land values and diminishing local and state revenues. More affordable land remained out of the reach of some communities experiencing reduced tax revenues and resulting budget reductions.

Escalating land prices in the early 1980s resulted in the development of marginal lands such as flood plains, stream corridors, abandoned railroads, and utility corridors which previously provided open space contrasts in urban environments. Privately owned open space lands in urban areas have been lost to development. Heavy use and intense facility development of some existing public recreation land result in adverse impacts on open space resources.

Though experiencing slower growth, rural communities may also experience increased demands for outdoor recreation opportunities. Smaller municipalities and unincorporated rural areas may lack parks. Rural land



Recreation providers should place a priority on open space preservation, especially passive development of urban floodplains.

use changes may displace public recreation previously allowed on private lands.

Some states, such as New Jersey, have enacted open space fund programs to meet open space needs. Funds available through Texas's Local Parks, Recreation and Open Space Fund (LPF) are decreasing in annual revenues and cannot meet existing demands for the acquisition and development of local park areas. An interest has been reported in a state-funded open space



Nature study and hiking on trails with minimal clearing are recreation activities compatible with conserving natural open space.

program in Texas which would provide local governments with financial incentives to acquire permanent open/green space areas.

Recommendations:

For all appropriate entities:

Acknowledge and accommodate open space plans in growth management policies.

For recreation providers:

Make recreational open space preservation a priority, particularly passive development of urban floodplain and stream corridors for greenbelts.

Accelerate cooperation with local nonprofit groups and willing private landowners to protect open space by seeking donation or bargain-sale lands, less-than-fee-simple ownership, transfer of development rights, and scenic or conservation easements.

Create, review, or amend local floodplain ordinances to maintain natural buffers along stream corridors.

Adopt voluntary or mandatory park dedication ordinances.

Inventory current publicly owned lands and examine which tracts have park or open space potential. Dedicate these lands for this purpose.

Implement strategies to distribute existing park use to minimize harmful long-term resource impacts.

Inform landowners of Chapter 23, Subchapter F, of the Property Tax Code, which may provide reduced property taxation if land is voluntarily declared for recreation or scenic use, and Chapter 75 of the Civil Practices and Remedies Code which limits liability for recreation use of private property.

Develop various incentive programs to encourage private landowners to manage their land for public non-consumptive recreation. Consider voluntary landowner agreements, leases, conservation and recreation easements that are economically attractive to landowners, and ways to limit landowners' liability exposure.

For smaller municipalities, counties, and citizen groups in rural areas with no parks or limited recreation opportunities:

Seek to obtain recreation opportunities from public and private lands, including holding ponds, abandoned properties, overgrown drainages, or floodplain areas.

Develop and implement master plans which address park and open space needs of both residents and their rural neighbors.

For the Texas Parks and Wildlife Department:

When acquiring parks, emphasize sites accessible to urban areas.

For the Texas State Department of Highways and Public Transportation and other transportation officials:

Give greater consideration in transportation planning to provide for bicycling routes.

Retain the scenic qualities of the natural landscape when improving or constructing new roadways and bridges.

For the Texas Legislature:

Provide counties authority to manage and protect open space and other significant natural and cultural resources.

Evaluate existing recreational and scenic use provisions of private property tax laws to determine their success in encouraging more recreation opportunities.

Increase grant funding for additional local government land acquisition of open/green space areas.

Grant city or county governments authority for alternate funding sources (e.g., a tax on real estate transactions) to help fund open space acquisition.

For private landowners:

Consider dedicating land for recreation and take advantage of available tax reductions.

Seek assistance from agencies which offer guidance on managing private land to enhance hunting and non-consumptive wildlife opportunities.

Many outdoor recreation activities directly depend on high-quality natural resources. Without natural beauty and bio-diversity, the objects of nature study and wildlife observation are lost. Fishing and hunting depend on sufficient populations of game species and sport fisheries, and those species in turn depend on suitable habitats to survive and thrive. Fresh and saltwater swimming is not safe without available, clean water resources, and floating rivers require sufficient water flows. Numerous other outdoor recreation activities depend on natural resources. Campers, hikers, and picnickers, for example, prefer to pursue their activities at sites with pleasant, if not outstanding, scenery.

A variety of threats affects almost every type of outdoor recreation resource in Texas. Land and water development, some agriculture and forestry practices, urbanization, public misbehavior, and inappropriate parkland and water resource management are only some of the causes that degrade recreation resources. As resources become more threatened by the demands of a growing population, resource conservation becomes more critical.

Natural resource conservation and recreational use are not always compatible. Agencies with the dual mission of providing recreation and conserving natural resources must balance these two mandates. Recreation use problems and recommendations are discussed in greater detail under "Managing Visitors and Recreational Use" in this chapter.

Loss of Land-Based Recreation Opportunities

Recreation providers increasingly experience pressure from constituents to provide undeveloped parkland in addition to recreation facilities. Public input into the TORP emphasized citizens' desire for more nature preserves; for large tracts of land to support activities like nature study, wildlife observation, hiking, primitive camping; for access to water resources; and in general, for more open spaces where unstructured outdoor recreation activities can occur. Many would like to see these opportunities close to their homes.

In some areas, habitat lost to land-altering activities, such as reservoir and highway construction, overgrazing by livestock, extensive brush control, and stripmining, adversely affect hunting and non-consumptive wildlife opportunities. Draining and altering wetlands decreases habitat for migrating and resident populations of waterfowl and other wildlife species and can reduce recreational opportunities in these areas. Most of the same land-altering activities threaten the diversity of vegetative species whose natural communities have potential to attract nature study enthusiasts if sites are protected.

Poorly planned urban developments do not recognize the environmental sensitivity of some areas. These developments can create or increase environmental problems. The result is a patchwork approach where an environmental problem is addressed, such as clearing and widening a creek for flood control, and creating another problem, such as erosion promoted from lack of vegetation.

Resource alteration often occurs as the direct or indirect result of government projects, programs, and tax structures. Federal and state subsidy programs have encouraged water and land development, and alterations of agriculture land and wetlands. These activities might not have taken place without government assistance. Local entities often resort to structural solutions for flood control because government funds are available. Some agencies have recognized the adverse impacts of their programs and revised them, but problems still remain. Development activities under the Land and Water Conservation Fund (LWCF) and the Local Park Fund (LPF) have also been cited as examples of programs that need to be more sensitive to natural resource impacts.

Recommendations:

For the Texas Legislature:

Provide counties authority to manage and protect open space and other significant natural and cultural resources.

For all levels of government:

Exercise full authority to guide development away from the most sensitive resources. Strictly enforce local, state, and federal environmental laws, regulations, and policies.

Review existing statutes, policies, regulations, and practices and revise those which encourage or subsidize activities that adversely impact natural resources.

For recreation providers:

Leave portions of parks undeveloped and set aside pristine or fragile areas for low impact activities.

For sponsors of development projects:

Consider all "element occurrences" (rare, threatened, and endangered species and natural communities) inventoried in the Texas Natural Heritage Program (TNHP) database as resources to be avoided, preserved, or mitigated.

Evaluate the recreation potential of resources which would be impacted by the project and avoid, preserve, or mitigate valuable resources; consult all existing resource databases.

Degradation of Recreation Waters

Freshwater resources support many popular recreation activities. Degraded water quality can reduce opportunities for contact recreation and fishing in both reservoirs and streams. Impacts on water quality include wastewater discharges, hazardous waste disposal, pollution from oil drilling operations, and urban and agricultural runoff. Increased land development and impervious cover in the watersheds contribute to greater flooding, erosion, and siltation. Soil erosion increases turbidity which adversely impacts fish. Many reservoirs are silting in much faster than reservoir sponsors projected. Some are now too shallow to permit boating.

Fish kills are a special concern. Regulating agencies do not have enough

resources to check more frequently on self-reported information such as discharges, pesticide use, etc. Gradual deterioration of water quality often goes unnoticed until a fish kill occurs. Agencies investigating fish kills recognize the need for long-term research, but no agency is mandated and funded to perform this function. Algae found in the Pecos River during fish kills exemplifies the need for long-term research. A comprehensive rivers assessment has the potential to encourage the type of monitoring and research needed to address this issue.

Reservoirs continue to be constructed without including recreation as a project purpose. In other situations, project sponsors use lake recreation to justify reservoir construction without thoroughly assessing the lost values of the inundated free-flowing stream and other resources.

Once reservoirs are constructed, lake recreation demands and other water allocations compete with in-stream uses below the dam. The economic importance of reservoir fisheries for tourism and recreation often overshadows downstream uses. Reservoir constituents often oppose water allocations that they feel will reduce the pool level, but dam releases to downstream purchasers of water rights benefit boating and fishing recreationists on the

river. Release schedules, however, may not coincide with peak recreation use times.

The quality of some recreational experiences suffers from shoreline development around reservoirs and along rivers. Both types of shores are typical locations of second home development. Reservoir and river users find less satisfaction from the visual impact of houses compared to the natural terrain. For some reservoirs, even those developed with public funds, shoreline development can be so extensive that there are few if any public access points. (For further discussion and recommendations on rivers, see "Rivers and Outdoor Recreation" in this chapter.)

Recommendations:

For federal, state, and local governments:

Increase emphasis on water quality research, monitoring, and enforcement. Address non-point source pollution. Provide funds for more research on fish kills. Continually review water quality standards and adopt additional or more stringent standards where appropriate.

Approve expediently the best available technology to improve the quality of discharges.

Determine and implement ways to improve coordination and cooperation among all agencies involved in water planning, financing, and development, and in the regulation of water quality.

Take quick, forceful action against polluters to clean up affected streams and lakes. Broadly publicize actions to discourage other offenders.

Emphasize and encourage water conservation.

For the International Boundary and Water Commission and the governments of the U.S., Mexico, Texas, New Mexico, Chihuahua, Coahuila, Nuevo Leon, and Tamaulipas:

Continue discussions on the full range of water pollution issues on the Rio Grande and implement solutions such as development of joint sewage treatment plants.

For the Texas Legislature:

Enact measures to effect statewide watershed management programs that would balance water allocations, manage water conservation programs, and monitor water suitable for recreation and fish and wildlife habitat.



Poor water quality can reduce opportunities for fishing in reservoirs and streams.

Amend the Texas Water Code to further define and clarify instream uses (such as preservation of aquatic resources, including bays and estuaries) as beneficial uses of state water.

Authorize and fund a river conservation program to identify river segments with unique or extraordinary values in their natural, free-flowing state. Those segments recommended for preservation would be determined by an assessment or study to identify the full range of uses and values for the segments of certain rivers.

Authorize impounders of state waters to develop a state-approved reservoir recreation plan and provide, according to the plan, functional access points and lakeside facilities at any reservoir project suitable for outdoor recreation.

For the Texas Parks and Wildlife Department:

Implement water conservation in the state park system, including water-saving devices.

For lake managers:

Monitor all pollution problems.

Degradation of Coastal Resources

The Texas coast attracts both in-and out-of-state visitors who enjoy beach activities, saltwater fishing and boating, and bird watching. The economies of many coastal communities rely heavily on the recreation and tourism industry, yet other coastal economic activities like shipping, oil development, and land development can create detrimental impacts on the same resources that support recreation-based tourism.

Hotels, condominiums, and beach homes provide places for coastal visitors to stay, but placing those structures in sensitive dune areas contributes to beach erosion where dune sand is unavailable for beach replenishment. Developments built side by side can also limit beach access by local recreationists and day users, creating de facto private beaches. Damage to dunes also occurs from off-road vehicle riding and even foot traffic from beach goers.

Unclean beaches create serious problems for recreationists and beach



Wildlife habitat can offer outdoor educational, as well as recreational, opportunities.

managers. Irresponsible visitors contribute to the litter problem and cause safety hazards when they leave glass containers. Research indicates that the greater source of beach litter comes from ships and off-shore rigs dumping solid waste outside state waters. Currents make Gulf beaches the recipients of an international waste problem.

Off-shore oil development, oil spills, and oil tankers flushing their tanks at sea threaten beaches and coastal waters. Since sources impacting beaches are beyond the control of local managers, some state funds are available for beach cleaning. Many local managers contend the funds are less than adequate.

The Gulf, bays, marshes, and wetlands are coastal resources with many values important to recreation. The direct use of the waters by fishermen, boaters, waterfowl hunters, and birders is obvious. These environments also serve as habitats, breeding grounds, and nurseries for the species which are critical to the success of fishing, marsh hunting, and observation. Impacts on habitats include dredging for navigational channels and canal home development and disposing of dredged materials in open bays and wetlands. Dredged materials can be put to beneficial uses such as beach nourishment, soil building for uplands, and island replenishment. Often, however, dredging entities are unwilling to adequately plan for disposal and to bear the cost to transport dredged material where it is needed.

Navigational cuts can affect the delicate balance of salt and freshwater in the estuaries by allowing saltwater intrusion. Reduced freshwater inflow from rivers also contributes to increased salinity. Fisheries and waterfowl habitats may be adversely affected by this imbalance.

In 1989, the Texas Legislature authorized the General Land Office (GLO) to develop a coastal zone management plan for Texas to address coastal resource issues with an integrated approach. The Coastal Barrier Resources System is another protection mechanism that has been suggested because it is felt that there are still some undeveloped areas that need inclusion in the system.

Recommendations:

For the Texas Legislature:

Amend the Texas Dunes Protection Act to include the entire Gulf Coast (only 39 of 377 Gulf-facing coastal miles are currently protected), to require coastal counties to designate a dune protection area and institute a permitting system, and to strengthen enforcement power of the General Land Office.

Require all local sponsors of navigational projects to prepare long-range navigational dredging and disposal plans which assure adequate coastal resources protection by encouraging beneficial uses of dredged material, and to submit plans to appropriate state agencies for approval.

Continue to fund the acquisition of disposal sites, for dredged materials from the Gulf Intracoastal Waterway.

Continue and increase funding for the beach cleaning program.

Give counties authority to control vehicular traffic on beaches and to regulate glass containers on beaches.

For the GLO:

Develop and implement a state coastal management plan.



Air pollution affects visibility miles away and can cause breathing difficulty during outdoor aerobic activities.

For the federal government with state support:

Continue to work for the immediate designation of the Gulf of Mexico as a "special area" under the international MARPOL treaty to prohibit dumping of solid waste from ships.

For the state of Texas:

Determine if there are other areas suitable for inclusion in the Coastal Barrier Resources System and work for their inclusion.

For governmental entities with responsibilities over coastal lands and marine resources:

Adopt an ordinance, if one does not exist, prohibiting glass containers on beaches.

Adopt ordinances to control vehicular traffic on beaches and dunes.

Identify situations where dredged materials from navigation projects can be used to restore or enhance (the ecological value of) rookery islands, marshes, or beaches.

For citizens and recreationists:

Continue to participate in volunteer beach clean-ups and erosion control efforts.

Avoid recreation activities in dune areas.

Declining Air Quality

Poor air quality impacts recreation in several ways. In the large urban-industrial areas, polluted air can cause breathing difficulty during outdoor aerobic activities. Air pollution affects visibility and thus the quality of the recreation experience. In mountainous areas, the problem is exaggerated by smog settling in basins. As the source of acid rain, air pollution has the potential to damage plant, animal, and water resources with recreation values.

Causes of air pollution include industrial emissions. When pollution originates from Mexico and adjacent states, management becomes more complicated.

Recommendations:

For federal and state air quality protection agencies:

Continue to monitor air pollution and conduct research to determine its impacts on water sources, vegetation, and wildlife.

Initiate legal action against polluters in the U.S. to stop further pollution. Continue to require urban areas to develop plans and meet deadlines for cleaning the air.

For the federal government:

Enter discussions with Mexico on air pollution issues.

For the state of Texas:

Establish and fund a statewide reforestation program as an air quality measure.

For urban recreation providers:

Develop greenbelt trails and bike routes to encourage walking and bicycling for recreation and transportation.

Offer public transportation to congested park sites where appropriate.

For industry:

Adopt best available technology to reduce air emissions.

For citizens:

Examine personal and household practices to determine where altering behavior could reduce negative impacts on air quality.

Public Behavior and Resource Management

Visitor needs and conservation can come into conflict in managing parks and resources. Wildlife and plants can be harmed by constructing facilities in habitat areas. Sometimes park areas desired by nature enthusiasts for a "wilderness-like" recreation experience may be the same areas in demand for placing recreation facilities. In the national forests, recreation and wildlife habitat must compete with other forest activities under the multiple use management philosophy.

Visitors can also impact resources by malicious or unknowing acts. Littering, taking plants, exceeding game and fish limits, and not staying on designated trails are some visitor behaviors that can damage resources. Some especially sensitive resources can suffer from simply too much recreation use.

Some recreation activities are perceived as detrimental to resources. Off-road vehicles are noisy and damage vegetation, with subsequent erosion problems. Many agencies have decided to ban the activity from their lands altogether. Many conservationists support these decisions. The current lack of legitimate places to ride, however, contributes to illegal use on public and private land. Some providers feel horseback riding and off-road bicycling

can damage trails. Like off-road vehicle enthusiasts, these users have limited places to pursue their activities.

The public often does not realize the impact of recreational activity on resources and the ecological balance. Some environmental education programs do exist to inform the public and schoolchildren, but people still fail to understand the seriousness of problems. Some detrimental actions occur outside of parks, but the results can end up in public resources. Littering, dumping household trash, and the use and disposal of non-biodegradable products are only some of the common ones.

Recommendations:

For managers of resource parks and public lands:

Consider leaving large portions of parks undeveloped for wildlife habitat and low impact recreation activities.

Determine and establish carrying capacities for areas with fragile resources; explain to the public the purpose of such visitor restrictions.

Develop interpretive programs to inform visitors of resources and the need to protect them.

Provide separate receptacles in parks for recyclable materials.

For recreation providers:

Perform thorough resource evaluations on park sites before preparing development plans. Invite the public to give input into the development and management plans of parks, natural areas, and public lands.

Study the impacts of off-road vehicles (or other activities perceived to be detrimental to resources) at sites where use has occurred. Close sites with unacceptable impacts, but consider relocating the activities to other suitable locations. Continue to monitor effects.

For educational institutions and nonprofit organizations:

Develop education programs to teach the public how to use and protect natural resources; educate them on the values of bio-diversity, wetlands, and wildlife habitats.

Adopt Project WILD as an environmental education supplement to school instruction.

For recreation user groups and citizens:

Develop an outdoor ethic and work toward reflecting that ethic in personal and organizational actions.

For the U.S. Forest Service:

Assess more fully the benefits of outdoor recreation so it more adequately competes with other forest activities under the multiple use management concept.

For the Texas Legislature:

Enact beverage container laws which require deposits and prohibit detachable metal tabs and plastic connecting devices.

Enact legislation prohibiting the use of styrofoam food and drink containers in Texas. Require biodegradable products.



Big Thicket National Preserve was established to protect the remnants of a complex biological crossroads.

Identifying Resources to Conserve

Many citizens, government entities, and members of the commercial sector support the conservation of natural resources, but their ideas on what constitute prime resources may differ. Conservation organizations, agencies with conservation missions, and private landowners often stress the existence value of resources, regardless of whether the public can visit them. Public and private entities which have dual roles of conserving resources and providing recreation seek resources which can do both.

A variety of entities have programs which attempt to identify resources for conservation. In some cases, there may be a duplication of effort. Where entities have different missions and jurisdictions, their inventories may not be suitable for each other's use and may even conflict. If the efforts of public and private resource conservers and recreation providers were coordinated, the result could be a systematic approach to resource conservation that identifies and conserves a system of sites that can meet both needs.

At the state level, the Texas Parks and Wildlife Department identifies significant resources through the state park system, the wildlife management areas system, and the relatively new Texas Natural Heritage Program (TNHP). This latter program is an inventory and tracking system designed to identify areas of natural diversity.

The state park system and the wildlife management areas provide recreation opportunities while managing and conserving the resources. Since the TNHP system focuses on species preservation, the impact of recreation visitors may not be acceptable. Species preservation sites may also lack the aesthetic-scenic features desired by most nature viewers.

At the local level, some cities identify resources for preservation through land use plans and park acquisition plans. Only a few counties have developed open space plans that identify types of resources to preserve.

Various conservation organizations have inventoried natural areas, and some also manage sites. Many prime natural areas and habitats are located on private land. Some sensitive sites have fared well under the stewardship

of private landowners. Many owners, if aware of such resources on their property, would manage their land to preserve them. Landowners are often more willing to work with nonprofit groups than with government entities.

Many sites with unique and sensitive resources exist within the boundaries of public land. Even conservation agencies have not always identified all the areas which need special protection. The public sometimes mistakenly feels that public land resources are safe from degradation.

Recommendations:

For the Texas Natural Heritage Program:

Continue to work with cooperative private landowners to preserve sensitive sites.

Cooperate with regional and local entities interested in using the TNHP as a model for identifying priority conservation sites with local and regional significance.

For recreation providers:

Continue to acquire parkland with both resource and recreation values.

For conservation and other non-profit organizations:

Initiate or continue innovative projects to acquire or secure the protection of sites with significant natural resources.

For citizens:

Support with donations and volunteer labor the work of nonprofit land trusts.

For private landowners:

Continue to manage lands to preserve sensitive sites.

For all levels of government:

Identify, within their jurisdictions, resource conservation sites needing protection; develop plans to preserve, through non-coercive acquisition or other protection measures, sites which represent the highest quality examples of the jurisdiction's biodiversity and the most threatened rare examples. Refer to the TNHP as a model for rating sites.

Work with conservation organizations willing to manage sites for resource conservation and controlled visitation.

Cooperate with landowners desiring to protect sensitive resources under the landowner's stewardship.

Maintain and protect biodiversity in natural areas and promote reintroduction of extirpated species where feasible.

For the Texas Legislature:

Create a new dedicated fund to acquire conservation sites, natural areas, and wetlands.

Fund a TPWD landowner contact program to encourage voluntary participation in cataloging and categorizing significant fish and wildlife habitat and plant communities on private land.



Viewers of this scene on the Pecos River may not realize the many competing demands for river resources.

RIVERS AND OUTDOOR RECREATION

River recreation issues tie inextricably to many of the statewide water problems. Continuing population growth in Texas and conflicts over water use have put much pressure on the state's rivers and streams. Threats from pollution, erosion, drought, and heavy demand become more apparent daily. Water needs for cities, agriculture, industry, recreation, and other sectors frequently conflict. Reservoir development for municipal water supply, for example, is inconsistent with the need for free-flowing streams for boating, fish habitat, and freshwater inflows.

River Resource Assessment

To adequately address river issues and resolve the conflicts, there is a need for information on the many beneficial, and competing, values of rivers. A rivers assessment is an effective, proven way of collecting this information. It is defined as a planning method to objectively and systematically identify, evaluate, and comparatively assess a variety of river corridor resources of value to the public. Its purpose is to determine priorities among river interests, improve decision-making, and reduce conflict among competing river uses. The essence of a rivers assessment is cooperation among the different interests, full public involvement, and consensus-building for decision-making. By gathering better information, a rivers assessment can provide direction and promote understanding among different groups. A rivers assessment is:

- comprehensive, and would include as many of the major streams as resources would permit, and
- broad in scope, in that it involves all interests impacted by rivers, and considers a wide spectrum of river values important to these interests, including values such as agricultural, water supply, recreational, natural, fish and wildlife, industrial, historical, etc.

The study process is critical to the success of a rivers assessment. In fact,

the process itself can be as important as the findings and information collected. One of the first steps in the process is the identification of river resource value categories. Categories would be determined by all the entities represented in the assessment. Here are some examples of river resource categories that an assessment might include:

- Water resources
 - Water supply
 - Water quality classification
 - Aquifer protection areas
- Geologic and hydrologic features
 - Gorges
 - Rapids
 - Waterfalls
 - Fossil and mineral deposits
 - Other significant geologic features
- Wildlife
 - Game species
 - Nongame species
- Natural areas
 - Natural areas
 - Fragile areas
 - Ecologically unique or significant areas
- Historic resources
 - Historic districts, structures, and buildings
- Fisheries
 - Inland game fish
 - Anadromous fish
- Endangered species
 - Plants
 - Animals
- Recreational boating
 - Boat fishing
 - Boating for pleasure
- Archeological features
 - Known archeological sensitivity
 - Expected archeological sensitivity
- Corridor character
 - Urban river corridors
 - Undeveloped river corridors

- Public lands
 - Public lands
 - Public access points
- Agricultural river areas
 - River-related farmlands
 - River-related ranchlands
- Industrial river areas
 - Prime river-related industrial sites
- Timber management river areas
 - Prime river-related timber areas
- Utility river areas
 - River-related utility sites

Regardless of the river resource categories chosen, they should:

- Accurately reflect the overall value of rivers and streams.
- Reflect the interests of public agencies, private groups, and individuals.
- Acknowledge the resource responsibilities of state and federal agencies.

Recommendations:

For the Texas Parks and Wildlife Department:

Serve as the lead agency in the conduct of a comprehensive rivers assessment for Texas.

Initiate preliminary actions necessary to conduct a rivers assessment in 1990; conduct the assessment from 1990-1992.

For the Texas Legislature:

Provide state agencies the necessary funds to participate in and conduct a rivers assessment.

Act on the recommendations produced in the rivers assessment.

For river-related interests:

Participate in the rivers assessment.

Recreation and Water Quality

Pollution significantly impacts river recreation in Texas, affecting virtually every river. Pollution sources include runoff, sewage, chemicals, pesticides, petroleum, chlorides, and acid rain. Runoff due to impervious ground cover in the watershed is a particular menace because it contributes to increased pollution, flooding, erosion, and siltation. As a result, poor water quality in some streams endangers public health, making swimming, fishing, and even boating hazardous. According to the Texas Water Plan, some fifteen hundred miles of streams in Texas are too polluted for swimming or fishing. Large fish kills are becoming more frequent. Water pollution reduces recreation opportunities and detracts from the quality of the recreation experience. Economic benefits from the tourism and recreation industries may be lost because of pollution. Bad publicity over water pollution can be long-term and costly to the visitor industry.

In Texas, a number of federal, state, regional, and local agencies are responsible for regulating water quality. While many do a good job, their efforts are fragmented, responsibilities may overlap, and effective coordination and cooperation are limited. Many agencies lack funds to monitor pollution adequately and enforce water quality standards, and policies and priorities sometimes conflict. Coordination becomes even more complex on international water quality issues, such as pollution of the Rio Grande, where the U.S., Mexican, and state governments of both nations must work together.

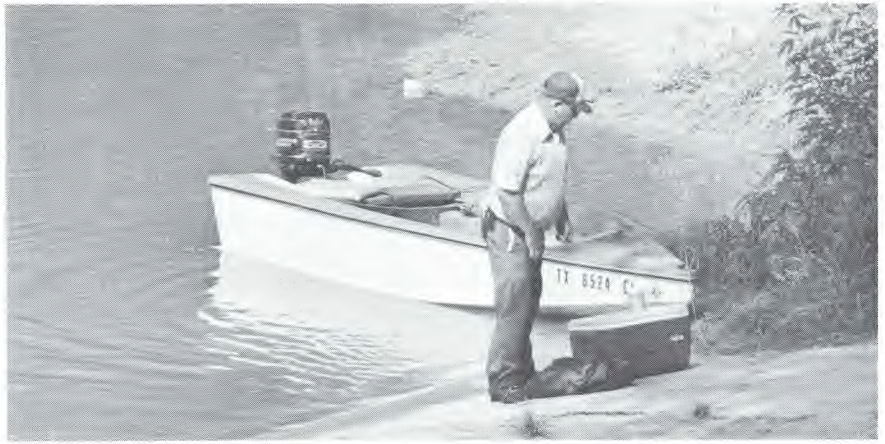
Recommendations:

For federal, state, and local governments:

Increase emphasis on water quality research, monitoring, and enforcement. Address non-point source pollution. Provide funds for more research on fish kills. Continually review water quality standards and adopt additional or more stringent standards where appropriate.

Determine and implement ways to improve coordination and cooperation among all agencies regulating water quality.

Take quick, forceful action against polluters to clean up affected



Providing legal access points for fishermen and other river recreationists may discourage trespassing.

streams and lakes. Broadly publicize actions to discourage further pollution.

For federal, state, and local agencies directly or indirectly responsible for water quality:

Encourage and establish "river watch" programs to monitor, detect, and react to pollution and fish kills promptly.

For the Texas Legislature:

Fund additional studies and encourage agencies and universities to conduct research on water quality problems.

For the International Boundary and Water Commission and the governments of the U.S., Mexico, Texas, New Mexico, Chihuahua, Coahuila, Nuevo Leon, and Tamaulipas:

Continue discussions on the full range of water pollution issues on the Rio Grande and implement solutions such as development of joint sewage treatment plants.

Recreationist-Landowner Conflicts

As public recreational use of state rivers increases, so do the conflicts between landowners and recreationists. Many people are unaware that most riparian land is private. Others are aware, but disregard the rights of property owners. Incidents of trespass, litter, vandalism, poaching, and live-

stock harassment are becoming more numerous, and the recreation-seeking public is often the culprit. Harassment and threats by landowners to people legally using state waterways are also well documented. Too many recreationists fail to recognize and respect private property rights, while some landowners fail to respect the right of the public to use the state waterways legally.

Often, the sources of these problems are confusion, misunderstanding, or misinformation about laws, rights, or ownership. Laws governing public use of Texas's waterways and the demarcation line between public and private riparian property are confusing and sometimes ambiguous. State law gives the public the right to use navigable streams for recreation in Texas, but there is no state agency to manage recreational uses. To attempt to resolve this ambiguity, landowners have requested that the state publish a list of navigable streams.

Recommendations:

For educators, recreationists, recreation providers, and landowners:

Cooperate to prevent trespass and other abuses of private property by educating the public on these issues. Teach, as part of the curriculum in educational institutions, an ethic that fosters respect for public and private property and natural resources.

For recreation providers:

Educate river users on the rights and responsibilities of both landowners and recreationists.

For river users:

Contact local officials to determine the legality of using any stretch of river.

For government, landowners, recreationists, and conservationists:

Cooperate and work together to resolve the conflicts and problems resulting from the increasing recreational use of public waterways.

For federal, state, and local governments:

Increase emphasis on enforcement of existing laws against trespass, vandalism, litter, and poaching.

Institute fines for restitution.

For the Texas Legislature:

Clarify and strengthen or revise as necessary, laws relating to riparian private property rights and laws regarding public use, including navigation, of state waterways (rivers, lakes, wetlands, bays, and beaches).

For the State Attorney General:

Prepare and distribute guidelines which clearly explain public rights and private property owners' rights in the recreational use of state waterways.

Clarify boundaries between public waters and private ownership.

Recreational Access

Responding to the 1986 "Recreational Issues in Texas: A Citizen Survey," 67 percent of the respondents agreed that "more public recreation areas are needed along rivers and streams." When asked, "Which three of these areas" (given eight choices) "would you most like to visit in Texas?" 61 percent cited a river or stream.

Because most riparian land is private, river recreation access is often limited. The public can legally access public streams from parks, other public lands, boat ramps, or highway rights-of-way, but crossing private property without the owner's permission is illegal.

The lack of public access to popular

river stretches restricts or denies the public recreation opportunities and encourages trespass. There is little public land adjacent to Texas waterways, and few road crossings exist in many areas. Rights-of-way at most existing highway road crossings were not designed to serve as recreational access points, and the State Highway Department is not equipped to manage them for recreation. Recreationists entering, parking, and leaving these areas create traffic safety problems. Litter problems are compounded because trash receptacles are sometimes stolen, destroyed, or used by area residents to dispose of their own household refuse. Unsafe conditions arise when users start fires for picnicking or camping, and there are no facilities for contained fires. County road crossings pose the same problem.

Better information on existing public access points and the rights of adjacent private property owners could discourage trespassing to reach public waters. Landowners, however, are concerned that this will simply increase river use and that river recreationists will continue to stop and recreate on private lands between the public put-in and take-out points. A related concern is the maintenance of these access points. Even at current use levels, poorly maintained access points pose problems for adjacent landowners.

Recommendations:**For federal, state, and local governments:**

Consider describing and clearly marking public parks and river access points to navigable streams to define the limits of public ownership.

Provide, with appropriate public input, public access points or parks along navigable recreational rivers where access is limited to discourage trespass. Provide for access by persons with disabilities.

When constructing bridges or river crossings, consider providing stream access areas with properly maintained parking and sanitation facilities.

For recreation providers:

Provide river users with information on the location of public access

points and river mileages between access sites to clearly indicate private lands off limits to recreationists.

River Conservation

As limited water supplies are threatened by increasing demand and pollution, recreation will compete more with other river uses. The demand for water sometimes exceeds what the streams provide, and the many kinds of needs are not always compatible. Reservoir development causes the loss of river recreation opportunities, free-flowing streams, and fish and wildlife habitat. According to the 1988-89 Texas Almanac, the number of major reservoirs in Texas has grown from eleven in 1920 to nearly two hundred today. Other kinds of alterations like channelization, dredging, and shoreline development affect not only recreation, but a stream's ecology and scenic values. Water allocation for urban use and agriculture impacts stream recreation, habitats, and freshwater inflows to wetlands, bays, and estuaries. Instream flows and freshwater inflows to bays are vital for fresh and saltwater fish populations, waterfowl, and wildlife. While some type of balance is needed among river development, water allocation, and stream protection, the interested parties have thus far failed to agree on the proper balance, and at what cost.

A river conservation program based on a comprehensive rivers assessment would be one way to protect rivers and help attain this balance. An assessment could determine river values for conservation, development, and water allocation according to agricultural, industrial, recreational, natural, and municipal uses. A river conservation program could protect those river segments with unique natural values in their free-flowing state against dams, channelization, or similar threats. The purpose of the program would be river conservation with little or no acquisition of private riparian property.

Recommendations:**For the Texas Water Development Board:**

Amend the Texas Water Plan to recognize stretches of rivers and streams that should remain in a natural state based on a rivers assessment.

For federal, state, and local governments:

Set a high priority on flood plain preservation and greenbelt development along urban streams to protect waterways and provide recreation.

Emphasize and encourage water conservation to minimize the need for reservoir development and protect free-flowing streams for recreation, fish, and wildlife.

For the Texas Legislature:

Enact measures to effect statewide watershed management programs that would balance water allocations, manage water conservation programs, and monitor water suitability for recreation and fish and wildlife habitat.

Amend the Texas Water Code to recognize instream uses, such as conservation of aquatic resources (including bays and estuaries), as beneficial uses of state water.

Authorize and fund a river conservation program to identify river segments with unique or extraordinary values in their natural, free-flowing state. Those segments recommended for preservation would be determined by an assessment or study to identify the full range of uses and values for segments of certain rivers.



Reservoir development causes the loss of river recreation opportunities, free-flowing streams, and wildlife habitat.

TOURISM AND OUTDOOR RECREATION

The tourism industry is the economic activity generated by travel for leisure or recreation. A large portion of tourism results from the public's desire to participate in outdoor recreation activities. Even when the primary motive to travel is business or visiting relatives or friends, recreation is often sought enroute and at the destination.

Interest in outdoor recreation-related tourism is increasing in Texas. Though many community leaders and recreation providers are touting its benefits, tourism has its detractors, and there are those who have yet to examine the opportunities for developing tourist attractions. Improvements in the tourism industry are occurring as

the result of coordinated efforts, but finding funding for recreation-related tourism projects is still a problem.

Economic Benefits of Recreation Attractions

Community leaders, government officials, and parks and recreation professionals are beginning to appreciate the benefits of tourism. During the economic downturn of the mid 1980s, community leaders and economic development planners began to capitalize on the potential of some of the recreation resources in their areas. The recreation and tourism industry can create jobs, encourage a more diversified

economy, and thus help moderate recessions.

The U.S. Travel Data Center estimated that the travel industry in Texas, which includes all trips away from home of 100 miles or more, totaled \$17.2 billion in gross business receipts for 1986. For the same year, the industry generated \$3.8 billion in payrolls, \$606 million in state taxes, and \$392 million in local taxes. A study titled "1983 Outdoor Recreation Trip Expenditures in Texas" conducted by the Texas Parks and Wildlife Department (TPWD) indicated that Texans spent nearly \$9.3 billion on recreation trips (in-town and out-of-town) in Texas for twenty outdoor recreation activities.

Sightseeing/driving for pleasure topped the list in travel expenditures with over \$2 billion. Another TPWD study, "1987 Texas State Park Economic Impact Assessment", indicated that the economic impact to the state of Texas of visitor expenditures to ninety-two state park sites was close to half a billion dollars per year.

Towns near or adjacent to high-quality natural resource-based recreation areas such as national and state parks, forests, reservoirs, waterways, and the Gulf Coast, receive significant economic impacts from expenditures made by outdoor recreationists. Resource attractions combined with mild winters allow communities in the Rio Grande Valley to benefit from the spending of "Winter Texans." People with disabilities also form a potential tourist market. With recent technological advances, many people who were prevented by physical limitations from participating in tourist attractions can now actively participate, as long as basic needs are met.

Some park and recreation departments have partly justified projects as tourism/economic development ventures. The development of sports complexes is an example. Cities in Texas compete for the privilege to host one of the various state sports tournaments. The economic benefits to the hotel and food/beverage business resulting from tournaments and other special events have been documented.

While some communities have been very effective in developing recreation resources and attracting tourists, there are still communities not taking advantage of these opportunities. Communities often develop industrial parks to attract industry while neglecting outdoor recreation resources that could strengthen a community's attractiveness to industry, bring in tourist dollars, and improve the quality of life in these communities for residents and visitors. Recreational resources are sometimes sacrificed to other economic developments rather than using recreational resources to complement these other developments.

Recommendations:

For recreation providers:

Analyze the value and benefits that parks and recreation opportunities provide; educate constituencies about these values.

Maintain the appearance of public parks to foster civic pride and promote the city.

Analyze the potential to attract regional/state events when planning new facilities.

For the Texas Parks and Wildlife Department:

Provide technical assistance to local communities assessing the economic benefits of recreation and tourism.

For the Texas Department of Commerce and other appropriate entities:

Conduct research on the economic impact of outdoor recreation-related tourism.

Conduct statewide research on tourism potential and disseminate the findings to the appropriate communities.

Continue to work with local entities to create awareness of the potential benefits of tourism.

For chambers of commerce, visitor/convention bureaus, and other appropriate entities:

Develop information on tourism potential and benefits to educate local groups.

Coordinating Development and Promotion of Attractions

Many areas in the state have an abundance of recreation resources with tourism potential which need only to be promoted. Other resources could be improved by offering more facilities, activities, and events. Communities without major recreational attractions are beginning to recognize the advantage of packaging attractions as a region for maximum effect and return on promotion efforts. Equally important is the development of complementary attractions. A good example of a regionally coordinated effort is the Tourism Advisory Committee of the Golden Crescent Regional Planning Commission, which includes Victoria County and six surrounding counties.

Some PARs are working very successfully with chambers of commerce, convention and visitor bureaus, and tourist councils. Festivals, tourna-

ments, races, and other special events are activities organized and promoted jointly.

Nonprofit organizations have played an important role in the development of outdoor recreation opportunities. In many cases these organizations were formed to plan and organize a particular special event. Some of these events have become self-supporting and are making money.

Efforts to attract tourists need to be coordinated. One example of not coordinating is when different entities schedule festivals or events that conflict and thus divide the target market. Often, when this occurs, none of the hosts involved breaks even, and the recreationist is left with the impression that the event was disorganized and poorly publicized.

Coordination and cooperation recently developing among state and federal agencies is a major positive trend at the state level. Under the leadership of the Texas Department of Commerce's Tourism Advisory Committee, a strategic travel and tourism plan for the state was developed by TDOC, Texas Department of Highways and Public Transportation (TDHPT), Texas Parks and Wildlife Department (TPWD), Texas Historical Commission (THC), Texas Department of Public Safety (DPS), Texas Department of Agriculture (TDA), and Texas A&M University.

Work of TDOC's Tourism Advisory Committee resulted in the State Agency Tourism Council, which is composed of the aforementioned agencies, and the Texas Federal/State Tourism Coordinating Committee. By coordinating efforts, members of the State Agency Tourism Council can determine where agency missions overlap or conflict and whether laws pertaining to tourism promotion are helping or inhibiting Texas's tourism industry. The Federal/State committee was established in early 1989 for a one-year period to identify tourism coordination needs between federal and state entities.

Another noteworthy coordination effort was the establishment of the Texas Tourism and Recreation Information Program (TTRIP) at Texas A&M University. TTRIP was created to coordinate and develop data and information in support of the recreation and tourism industry.

Recommendations:

For the Texas Department of Commerce and other appropriate entities:

Conduct a statewide study to identify communities that could benefit from a regional approach to tourism; provide special technical assistance to these tourist regions.

Increase technical assistance programs on tourism development and marketing.

For recreation providers:

Supply recreation information to chambers of commerce and related industries such as hotels, motels, and restaurants.

For recreation providers, tourist development agencies, and chambers of commerce:

Improve coordination and promote regional and local attractions and events to foster the recreation and tourism industries. Continually seek to improve the marketing and packaging of events, sites, and attractions.

Examine the possibilities of developing new activities, attractions, and events to draw more visitors, encourage existing clientele to stay longer, and expand the tourist season.

For local communities:

Work together to develop and promote tourism on a regional basis.

For councils of governments:

Establish regional tourism committees to serve as coordinating entities for regional tourism efforts.

For the members of the State Agency Tourism Council:

Implement the strategic travel and tourism plan for the state.

Review existing enabling legislation and legal barriers and recommend changes to improve the development and marketing of tourist attractions in Texas.

For the Texas State Department of Highways and Public Transportation, and other transportation officials:

Increase highway signs for recreation attractions.

Provide automobile and bicycle touring maps and signs to encourage sightseeing and the use of scenic roadways.

Offer more tourist information stations on entry highways.

For Texas Tourism and Recreation Information Program:

Improve the distribution of information on the TTRIP program and its available services.

Improve communications with entities that contribute the data coordinated through TTRIP.

Funding Assistance for Tourism

Funding of outdoor recreation resources as tourist attractions faces a number of problems. The federal economic development grant program gives priority to industrial development projects, not to tourism development.

Economic development is not a criterion for awarding grants under either the Land and Water Conservation Fund (LWCF) or the Local Park Fund (LPF). In fact, until 1987, LWCF guidelines excluded projects where the primary demand was generated by tourists. The TORP does not include the out-of-state demand for outdoor recreation resources. Communities interested in applying for these funds have two options: ignore out-of-state demand in justifying the project or produce local estimates of out-of-state demand. It is generally easier to quantify facilities needed by residents.

Some individuals at the local level note that the state park system policy does not include economic development as one of the factors used to consider the acquisition and development of state park units. They feel that the appropriate decision-makers should reassess this policy.

Another potential funding source for outdoor recreation resources that serve as major tourist attractions is the local hotel/motel occupancy tax, also known as the hospitality or bed tax. The problem reported with this funding source is that the law is unclear and communities are interpreting it differently. The law is clear on tourist attractions such as convention centers and museums, but does not address outdoor recreation resources such as

beaches, sports complexes, and hunting/fishing areas.

Some attractions, like historic parks and sites, do not take full advantage of the user's willingness to pay entrance fees. Fees are sometimes not set high enough to cover the costs of record-keeping. Often the fees collected do not go back to support the specific sites.

Out-of-state tourism promotion by the state receives only one-half percent of the state's portion of the hospitality tax. This level of commitment needs to be reassessed vis-a-vis the increasing competition between Texas and other states for the tourism dollar.

Recommendations:

For appropriate state agencies:

Assess grant programs and determine program changes that could bolster the availability of funds for tourist-oriented outdoor recreation.

For the Texas Legislature:

Increase the state's investment in tourism.

Clarify the use of the local hotel/motel tax relative to outdoor recreation resources that serve as tourist attractions.

Fund TPWD to determine out-of-state outdoor recreation demand and its economic benefits for the 1995 TORP.

For entities that manage historic parks, sites, and museums:

Maximize the potential of user fees to support the operation and development of the site that collects them.

Adverse Aspects of Tourism

Tourism may provide economic benefits to the host community, but it also has some associated costs. Residents may have to compete with the tourists for the use of limited resources.

Out-of-state visitors and even urban Texans visiting rural areas may be unaware of the extent of private property in Texas and the restrictions to its use. Their lack of knowledge or sometimes intentional disregard of property rights may result in hostility between local landowners and visitors and can lead to strong opposition to tourism.

Crowded conditions can degrade resources and facilities. Extensive development near natural resources to meet the recreational demand generated by tourists can degrade the resources. For a complete discussion of recreational use impacts on natural resources, see the issue titled "Conserving Natural Resources for Recreational Use."

Tourists not only affect recreational resources but the public infrastructure

and services of the host community as well. Traffic control, medical care, sanitation, and law enforcement are some of the services recreationists may affect. When these conditions occur, conflicts may arise between residents who derive direct economic benefits from tourists and those residents who do not.

The lines seem to be drawn between those who perceive tourism as something positive for the community and those who feel that the negative

impacts outweigh the benefits. Like most activities, tourism has costs and benefits. Communities need to discuss the trade-offs involved, determine the total impacts and costs of tourists, and then decide whether to pursue the industry.

Recommendations:

For community leaders:

Encourage dialogue at the community level to determine whether to pursue the tourist industry.

For recreation providers and other appropriate entities:

Develop needs assessments that address the recreation demand generated by tourists.

Identify adverse impacts of tourists and costs associated with tourists and coordinate with appropriate entities to address the problems.

For all entities involved in tourism planning and development:

Be sensitive to the natural resource base which supports recreational attractions.

Include information about private property on tourist literature promoting attractions that could impact adjacent property owners.



Cities in Texas compete for the privilege of hosting sporting events that bring economic benefits to the area.

MAINTENANCE AND RENOVATION OF PARKS AND RECREATION FACILITIES

Input from recreation providers and the public sector alike stressed the importance of maintaining and renovating existing park resources. At the same time, it was expressed that performing these tasks is becoming increasingly difficult and more costly to accomplish. A general consensus among participants of the 1990 TORP State Summary Workshop was that maintaining and renovating existing recreation sites should be a high priority for recreation providers.

Maintaining Parks and Recreation Facilities

Maintaining existing parks and recreation facilities has become an increasing financial burden for most recreation providers. Repair and maintenance costs are rising, and many older facilities were not designed with low maintenance in mind. Often, maintenance costs increase as facilities age. Even today, some new facilities are constructed with little consideration

given to future maintenance costs.

At the same time, citizens seem to be seeking higher quality park experiences in terms of opportunities and the level of maintenance. In separate surveys conducted by the Texas Parks and Wildlife Department and the city of Temple, citizens ranked the maintenance of existing park facilities higher than acquisition or new park development.

When funding is scarce and staff reduced, it is very hard to keep up with

maintenance responsibilities. Failure to do so increases the liability exposure for recreation providers. Park maintenance funds are often one of the first areas cut by municipalities to reduce projected budget deficits. In some areas, maintenance responsibilities have increased while staffing was reduced. In other areas, less utilized sites were closed to concentrate funds at more popular sites. These savings today may turn into financial losses in the future if these opportunities are ever reopened or replaced.

In some instances it appears that the on-going costs of maintaining a park site was not adequately considered when the site was developed. One possible solution that has been integrated into some local parks projects is a maintenance trust fund. At the time of acquisition and development of a project, an additional 25 percent of project costs would be put into an interest-bearing trust fund. Interest generated by this fund is then used to pay for maintaining the facility. This financing method is not practical in all situations, but it is a good example of the innovative thinking necessary to finance public park and recreation opportunities as traditional funding sources become scarce.

Park grant funds are traditionally used for capital improvements while maintenance has been viewed as the responsibility of the recreation provider.

Protecting past investments in public parks is important. Many recreation providers in Texas have been successful in using volunteers to maintain or renovate certain park facilities through one-time group projects, or long-term

Adopt-A-Park programs. Civic, church, and sports organizations are often willing to help maintain or improve parks.

Recommendations:

For recreation providers:

Weigh future maintenance and operation costs when planning and designing new parks and recreation facilities; consider how they are to be financed; anticipate and plan for fluctuations in funding cycles.

Create a maintenance trust fund if feasible.

Utilize volunteers where practical.

Implement a regular maintenance schedule and keep detailed records of inspections and repairs.

Renovation and Rehabilitation of Parks and Recreation Facilities

Over time, park facilities eventually age and wear out. The quality of construction, intensity of use or misuse, and the amount of maintenance and upkeep are the primary factors that determine how long a facility lasts.

Quite a few park facilities were built during the 1930s by the Civilian Conservation Corps and the Works Project Administration. They have stood the test of time but now are in need of renovation and repair.

As a facility ages, often routine maintenance cannot keep up with deterioration, resulting in unsafe facilities which must either be renovated or

replaced. Renovated park sites can reduce maintenance costs, especially with improvements in the technology of materials and the design of park facilities.

In addition, citizens' recreational needs and preferences change over time, resulting in the need for different types of recreational facilities.

Renovation projects are eligible to receive funding assistance from both the Land and Water Conservation Fund and the Local Parks and Open Space Fund. However, requests for these grants are greater than the availability of funds, and renovation projects must compete with new park acquisition and development projects for funding. Projects funded are those that satisfy the greatest recreational needs.

Architectural barriers pose problems for those with mobility impairments. Many older facilities were built without considering the mobility impaired, which may be a primary reason to renovate. As our population ages, accessibility of the mobility impaired will continue to be an important issue.

Recommendations:

For Congress:

Revive and fund the Urban Park and Recreation Recovery (UPARR) program, or similar program, to rehabilitate recreation facilities in low-income and inner city urban areas with special fiscal problems.

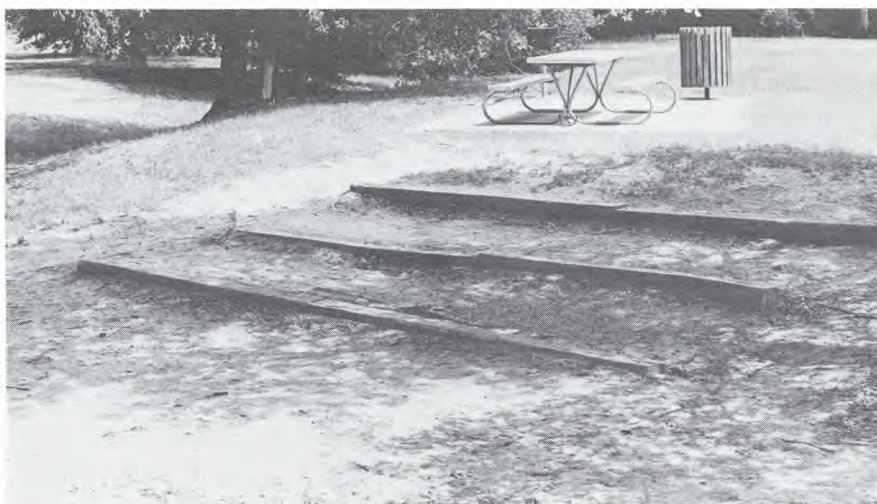
For recreation providers:

Renovate or replace aged recreation facilities to continue to serve the public's outdoor recreation needs and reduce the potential liability exposure created by these situations.

Assess local recreational needs to determine how the facility should be renovated, altered, or replaced. Consider demographic changes in a park's service area when improving existing parks.

Assure that renovated facilities are accessible to all. Consider modifying older facilities to increase their accessibility for people with disabilities.

Develop a long-range capital improvements program to fund rehabilitation of old facilities and replacement of those with outdated designs.



Erosion control protects park resources.



CHAPTER 2

EXISTING AND RECOMMENDED ROLES OF OUTDOOR RECREATION PROVIDERS

The Texas Parks and Wildlife Department manages a variety of recreational, natural resource, wildlife, and historical sites throughout the state.

INTRODUCTION

Outdoor recreation opportunities in Texas are provided by a variety of local, state, and federal governmental agencies; and commercial, private, and nonprofit entities. Existing programs that can help recreation providers develop recreation opportunities, current roles of recreation providers and facilitators, and recommendations suggesting the actions that providers take to meet outdoor recreation needs through the year 1995 are discussed in this chapter.

Tables 2.1 and 2.2 show the existing programs and responsibilities of federal agencies and state and local agencies, respectively. Many of the planning, technical assistance, grants, research, and training programs indicated on these tables are specific to the providing agency's responsibilities. These often do not directly help to provide outdoor recreation opportunities but rather indirectly affect the character and quality of outdoor recreation resources.

ROLES OF OUTDOOR RECREATION PROVIDERS AND FACILITATORS

Federal Roles

Federal recreation providers in Texas include the National Park Service, the U.S. Army Corps of Engineers, the U.S. Forest Service, and the U.S. Fish and Wildlife Service. The National Park Service manages resources of national significance primarily for protection but encourages recreational use that does not harm the quality of the site. The other three agencies manage land and water resources for multiple uses, one of which is recreation.

Traditionally, the federal sector has provided resource-based activities such as camping, picnicking, fishing, boat-

ing, swimming, and trail use. The federal government, through the Land and Water Conservation Fund, administered by the National Park Service, assists state and local recreation providers in the acquisition and development of parks. The National Park Service has a program to assist state and local recreation providers plan for river and trail recreation opportunities. The U.S. Soil Conservation Service offers erosion and watershed management technical assistance to recreation providers.

The Corps of Engineers and the U.S. Forest Service will consider sharing

recreation development costs with local entities to provide recreation opportunities on federal lands. The Bureau of Reclamation constructs reservoirs that offer recreation opportunities; it does not manage parks or facilities, but it too will consider sharing costs with other governmental entities to provide them.

Recently, the U.S. Forest Service has developed and adopted a "National Recreation Strategy." This mandate is to increase the recreational opportunities available on national forests and to better understand the public's recreational needs so they can be addressed. This strategy has led to the develop-

ment of a new grant program called Challenge Grants that are available to public and private recreation providers to develop recreation opportunities in the national forests.

Roles for the National Park Service to consider:

Continue to acquire and manage resources of national significance. Evaluate and address any adverse effects on local taxpayers and adjacent landowners.

Continue to provide environmental education and information to the public.

Complete the authorized acquisition of the Big Thicket National Preserve as funding allows.

Increase funding and technical assistance for trails and waterways programs.

Roles for the U.S. Army Corps of Engineers to consider:

Increase efforts to establish cooperative agreements with state and local governments and the private sector to develop and operate parks on Corps land, and where appropriate, to provide law enforcement support for those parks.

Continue to upgrade existing parks and increase maintenance to improve recreation experiences.

Continue to work with volunteer and user groups to expand available recreation opportunities.

Roles for the U.S. Forest Service to consider:

Continue to provide a diversity of high-quality outdoor recreation opportunities.

Implement recommendations of the National Recreation Strategy.

Maintain existing dedicated trail corridors in a natural state.

Inform the public of the recreation opportunities available on forest lands.

State Roles

The Texas Parks and Wildlife Department (TPWD) is the primary recreation provider at the state level. TPWD acquires, manages and continually improves the state park system which includes parks, natural areas, historical parks, and fishing piers. TPWD also manages the state's fish and wildlife resources and wildlife management areas.

Two financial and technical assistance programs to aid local recreation

**Table 2.1
Existing General Outdoor Recreation Responsibilities for Federal Agencies**

| AGENCY | Provide Basic Recreation Opportunities | Planning and/or Technical Assistance | Provide or Administer Financial Assistance/ Grants/Loans | Resource Management | Regulation | Zoning Power | Research | Training | Advisory and Information |
|--|---|---|---|----------------------------|-------------------|---------------------|-----------------|-----------------|---------------------------------|
| Department of Agriculture | | | | | | | | | |
| Farmers Home Admin. | | x | x | | | | x | x | |
| U.S. Forest Service | x | x | x | x | | | x | x | x |
| Soil Conservation Svc. | | x | x | x | | | x | x | x |
| Department of Commerce | | | | | | | | | |
| Nat. Oceanic & Atmos. Admin. | | x | x | | | | x | x | x |
| National Marine Fisheries Svc. | | x | x | x | x | | x | x | x |
| Department of Defense | | | | | | | | | |
| U.S. Army Corps of Engineers | x | x | x | x | x | | x | x | x |
| Department of Energy | | | | | | | | | |
| Federal Energy Regulatory Commission | | | | x | x | | x | x | x |
| Env. Protection Agency | | | | | | | | | |
| | | x | x | x | x | | x | x | x |
| Department of Housing & Urban Development | | | | | | | | | |
| | x | x | x | | x | | x | x | x |
| Department of the Interior | | | | | | | | | |
| U.S. Fish & Wildlife Service | x | x | | x | x | | x | x | x |
| Bureau of Reclamation | x | x | x | x | | | x | x | x |
| National Park Service | x | x | x | x | x | | x | x | |
| Department of Transportation | | | | | | | | | |
| Federal Highway Administration | | x | x | | | | x | x | |
| International Boundary & Water Commission | | | | | | | | | |
| | | | x | | x | x | x | | |

Source: Data compiled by SWPCS, CPB, Parks Division, TPWD from 1988 Catalog of Federal Domestic Assistance, Executive Office of the President, Office of Management and Budget, USGPO, Washington, D.C.

providers are administered by the Texas Parks and Wildlife Department. The federal Land and Water Conservation Fund (LWCF) and the state Local Parks, Recreation, and Open Space Fund (LPF) are financial assistance programs for the acquisition and/or development of outdoor recreation areas and facilities. LWCF monies are provided through the National Park Service to the TPWD, which administers the program. LPF monies are state funds provided from one cent per pack

of the state tax on cigarettes.

Since 1966, the TPWD has allocated more than \$139 million in federal LWCF monies. Over \$69 million in state LPF monies have been used since its beginning in 1979. These funds have been used primarily for assistance to local governments for purchasing park land and developing outdoor recreation facilities. Other LPF monies have also been used to acquire and develop state parks. Any city, county, river authority, and some special districts of the

state may apply to the TPWD for this financial assistance. All applications for assistance are evaluated to determine if the project provides regional needs shown in the Regional Summaries of this document. Projects are also evaluated using the criteria described in the **Local Government Project Review Procedures**, an addendum to this document.

The Local Assistance Branch in the Parks Division of the TPWD provides site planning assistance to cities with

Table 2.2
Existing General Outdoor Recreation Responsibilities for State, Regional, and Local Agencies

| AGENCY | Provide Basic Recreation Opportunities | Planning and/or Technical Assistance | Provide or Administer Financial Assistance/ Grants/Loans | Resource Management | Regulation | Zoning Power | Research | Training | Advisory and Information |
|----------------------------------|---|---|---|----------------------------|-------------------|---------------------|-----------------|-----------------|---------------------------------|
| STATE | | | | | | | | | |
| Parks & Wildlife Dept. | x | x | x | x | x | | x | x | x |
| Conservation Foundation | | x | | | | | | | x |
| Soil & Water Cons. Bd. | | x | x | x | | | | | x |
| Forest Service | x | x | | x | x | | x | x | x |
| Dept. of Community Affairs | | x | | | | | | x | x |
| Water Commission | | x | x | | x | | | | |
| Water Development Board | | x | x | | x | | | | |
| Highways & Public Trans. | x | x | | x | | | | | x |
| Dept. on Aging | | x | | | | | | | x |
| Historical Commission | | x | | | | | x | x | x |
| Agricultural Ext. Service | | x | | | | | x | x | x |
| Gov. Budget & Planning Office | | x | | | | | | | x |
| General Land Office | | x | | x | x | | | | x |
| Universities | | x | | | | | x | x | x |
| Natural Resources Info. Sys. | | | | | | | | | x |
| Dept. of Agriculture | | x | | | x | | x | | x |
| Air Control Board | | x | | | x | | x | | x |
| Dept. of Health | | x | | | x | | x | | x |
| Dept. of Commerce | | x | x | | | | x | x | x |
| Railroad Commission | | | | | x | | | | x |
| Attorney General | | x | | | x | | x | | x |
| Comptroller | | x | x | | x | | x | x | x |
| Property Tax Board | | x | | | x | | x | x | x |
| MHMR | x | x | | | | | | | x |
| Board of Insurance | | | | | x | | | | x |
| Indian Commission | | | | | | | | | |
| Dept. of Human Services | | | | | | | | | |
| Texas Education Agency | | | | | | | | | |
| Dept. of Public Safety | | | | | | | | | |
| REGIONAL | | | | | | | | | |
| Regional Councils of Governments | | x | x | | | | x | x | x |
| River Authorities | x | x | x | x | | | | | x |
| LOCAL | | | | | | | | | |
| Counties | x | x | x | x | x | | | | |
| Municipalities | x | x | x | x | x | x | | | |
| Special Districts | x | x | | x | | | | | |
| School Districts | x | x | | | | | | | |

Source: Data compiled by SWPCS, CPB, Parks Division, TPWD, 1988, from multiple sources.

populations under 7,500 and counties with populations under 15,000. Other assistance programs operated by the TPWD include a fish stocking program for public waters, lake and pond management information, a Gulf beach cleaning program, a boat ramp grant program, hunter and boater education programs, an archery and firearm range development program, the Type II hunting program, public information through the department's magazine and television programs, habitat management assistance, and many other services.

Local recreation providers have suggested that the TPWD evaluate the methodologies and data collection methods it uses to consider local grant requests. Specifically, it was suggested that attention be given to developing local standards for open space, natural areas, and wetlands. Identifying newly emerging sports was also cited as a need, so that grant programs can be more responsive to local desires.

The Texas Forest Service manages four state forests with some recreation facilities. They also provide technical assistance and information to landowners and public agencies regarding forestry practices and management.

Other state entities that do not administer recreation land have roles too. The General Land Office owns land with potential for recreational development and may lease lands under certain conditions. The Texas State Department of Highways and Public Transportation provides bicycle and pedestrian trails on some highway rights-of-way. The Texas Conservation Foundation, which acts as a trustee for donated land or land purchased with donated funds, may play a role in early stages of the acquisition of recreation land and preserves. Various state universities in Texas conduct outdoor recreation-related research and provide technical assistance. The Texas Agricultural Extension Service conducts research and provides technical assistance to local governments. The Texas Department of Commerce assists with local and regional tourism planning. The Texas Railroad Commission has the responsibility of notifying appropriate state and local agencies of abandoned railroad rights-of-way. These abandoned corridors often have scenic or historical qualities and can be converted into new recreational opportunities such as hike and/or bike trails.

Many state universities in Texas conduct research in various aspects of the parks, recreation and leisure service fields. Much of this research can be directly applied by recreation providers and universities are receptive to working directly with public agencies. Universities also provide various levels and types of technical assistance that can aid recreation providers. The Agricultural Extension Service at Texas A&M University is probably the most active in this area.

Roles for the Texas Parks and Wildlife Department to consider:

Continue providing resource-oriented outdoor recreation opportunities in natural environments by acquiring and developing park sites of statewide or regional significance.

Continue giving priority to sites within one-and-a-half hour drives from major metropolitan areas.

Continue to serve as a clearinghouse for information on federal, state, and private grants and assistance programs.

Promote the values of parks and recreation programs at the local level.

Increase technical assistance efforts to local recreation providers and evaluate the effectiveness of existing programs.

Evaluate data collection and analysis methodologies used to estimate activity participation and facility needs. Consider developing local standards for open space, natural areas, and wetlands.

Continue to research and monitor the introduction of exotic wildlife species to assess their impacts and take actions to prevent environmental damage or harm to native species.

Roles for the Texas State Department of Highways and Public Transportation to consider:

Increase the provision of public bicycle and pedestrian trails and routes within public rights-of-way.

Coordinate with other recreation providers to increase public access at road crossings to navigable streams where existing access is limited.

Increase efforts to retain and promote scenic roadways, provide maps and signs for these resources.

Regional Roles

Councils of government in Texas were originally established to provide coordination between the state and local entities. They also provide planning and technical assistance to local governments but in recent years have been limited by reduced funding and staff levels.

River authorities are established by the state legislature to manage specific rivers and watersheds and provide for the water needs of citizens. River authorities are authorized to provide recreation opportunities but vary in the extent that they act on this authorization. River authorities will consider cost-sharing with other local government entities to provide water-based recreation opportunities. Some special districts also provide outdoor recreation opportunities.

Roles for councils of governments to consider:

Continue to act as the coordinating entity between the state and local governments.

Continue to offer assistance and coordination of regional outdoor recreation and open space planning as funding allows. Give greater emphasis to rural outlying communities.

Organize regional tourism packages to promote economic development.

Roles for river authorities to consider:

Increase public access to navigable streams and public reservoirs.

Monitor and control use as needed.

Provide waterfront parks and greenbelts through cooperation with local public and private entities.

Local Roles

The local sector comprises county and municipal governments. Counties acquire and develop parks which serve citizens of an area larger than a single municipality but less than statewide. Municipalities typically provide recreation facilities in or near urban areas for

local residents. Urban parks also serve to satisfy open space needs and help to define the character of the city. Local recreation providers tend to be more heavily involved in recreation and leisure programming to address a wider variety of public leisure needs.

Roles for counties and municipalities to consider:

Implement county/city cooperative agreements, especially where region-wide park departments would be more effective and equitable.

Establish cooperative agreements with other entities, such as school districts, navigation districts, drainage districts, and river authorities to expand the supply of facilities available to the public.

Emphasize low maintenance facilities and landscaping, and multi-use facilities for greater efficiency of operation.

Continue to address local public needs for basic urban outdoor recreation opportunities.

Involve citizen input in planning parks; conduct periodic public needs assessments.

Utilize volunteers and nonprofit organizations, where practical, to help provide public recreation opportunities.

Acquire parkland, greenbelts, natural areas, and open spaces.

Avoid unnecessary competition with the private sector; where practical, consider integrating commercial enterprises in public parks.

Support the planning and coordination activities of councils of government.

Commercial Roles

Commercial sector recreation roles refer to enterprises which own or lease recreation land and operate facilities open to the general public, usually for a fee. Recommendations include expanding existing enterprises and initiating new enterprises that have potential as profit making ventures.

The commercial sector also meets special recreation needs, such as tour and fishing guide operations, resorts, archery and firearm ranges, and recrea-

tion support and supply shops. Commercial sector operation of concessions at public parks is becoming increasingly popular and can benefit both the public and private sectors.

Roles for the commercial sector to consider:

Continue to provide profit-making recreation opportunities.

Engage in cooperative projects with governmental units, particularly in providing concessions at public parks.

Private Sector Roles

The roles of organized citizens and individuals increase as government becomes less able to totally fund leisure services. The private sector is defined here to include private landowners, and nonprofit organizations such as sports leagues, user groups, and conservation organizations. Quasi-public organizations such as civic and church groups in many areas of the state provide outdoor recreation opportunities and programs and are also included in this sector. Private clubs whose memberships and services are not open to the public are not discussed.

The private landowner is closely related to the commercial sector. Many landowners find it profitable to lease their land for hunting on their own, or through the Type II hunting program. Many unique areas are found on private land. Land along public streams and around public reservoirs is often privately owned.

Volunteer groups can play a major role in the development and maintenance of facilities and in program operations. Adopt-a-park programs, for example, have been successful in many areas to maintain park sites. Citizen involvement of this sort also adds credibility to funding requests presented to decision-makers. It also helps instill a sense of pride in public facilities and often leads to reduced vandalism and litter.

Roles for private landowners to consider:

Conserve and protect natural resources, and when appropriate, consider providing the public with opportunities to visit and enjoy them, either free or for a fee.

Recognize the public's right to use navigable streams.

Consider entering into the Type II hunting program to increase the hunting and non-consumptive opportunities available to the public and increase landowner revenue generated by the resource.

Roles for nonprofit organizations to consider:

Organize and/or manage youth recreational opportunities.

Provide political and financial support for the acquisition and development of recreation land.

Organize outings to teach environmental awareness and promote stewardship of public and private lands.

SPECIFIC RECOMMENDATIONS TO MEET 1995 FACILITY NEEDS

Table 2.3 summarizes recommendations for meeting 1995 facility needs for federal, state, regional, and local levels of government. Recommendations for each agency or government level are the sum of the regional recommendations (table 7, Regional Summaries). The recommendations are based on the current roles and policies of the agencies in providing recreation, the types of facilities they now provide, the

agencies' potential for providing more facilities, and profit potential for the commercial sector.

Federal

As the leading supplier of total recreation land in Texas, the federal government should continue to provide facilities that primarily meet national, statewide, or regional demand. It is

recommended that the federal sector continue to provide natural areas and facilities for resource-based activities such as boating, camping, fishing, hiking, picnicking, swimming, and help meet the needs for playground areas (table 2.3).

State

It is recommended that the Texas Parks and Wildlife Department help meet the 1995 needs for boat ramps, campsites, fishing structures, trail miles, picnic tables, playground areas, and square yards of swimming. The Texas State Department of Highways and Public Transportation is recommended to help provide multi-use trail (bike/walk/jog) miles.

Regional recreation providers are river authorities, water districts, special districts, and similar agencies. These entities should help meet regional and

local recreation needs. While the extent of involvement in recreation varies among individual agencies, many entities in this group are uniquely able to provide access to water and facilities because they control water and frequently, adjoining lands. These agencies should help furnish the needs for boat ramps, campsites, fishing structures, trails, playgrounds, and freshwater swimming.

Local

Many of the outdoor recreation facilities analyzed in the needs analysis are typically found in urban settings close to population centers. Consequently, it is recommended that county and municipal governments and organizations have the responsibility for providing many of the 1995 statewide facility needs. Municipal recreation entities have the responsibility of providing

recreation opportunities to satisfy the local urban-based recreation needs of their community. County governments are encouraged to be a provider of recreation opportunities that serve a regional area.

Commercial

Private enterprise should provide facilities which are potentially profitable or which support other profit-making facilities. Facilities for which the commercial sector could have a major responsibility in providing include boat lanes, campsites, fishing structures, golf holes, horseback riding trails, off-road vehicle riding acres, and square yards of swimming. Private business can be a secondary supplier of baseball fields, basketball goals, trail miles, playground areas, soccer/football fields, softball fields, swimming pools, tennis courts, and open space.

Table 2.3
Recommendations to Meet 1995 Statewide
Outdoor Recreation Facility/Resource Needs, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | | STATE | | | | | REG. | LOCAL | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 547 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 434 | 10 | 23 |
| Basketball Goals | 1413 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 204 | 1199 | 0 | 10 |
| Boat Ramp Lanes, FW | 846 | 11 | 6 | 6 | 8 | 38 | 4 | 0 | 0 | 118 | 250 | 100 | 5 | 300 |
| Boat Ramp Lanes, SW | 314 | 5 | 6 | 0 | 5 | 15 | 4 | 0 | 0 | 6 | 68 | 35 | 20 | 150 |
| Campsites | 10809 | 300 | 10 | 170 | 305 | 1586 | 326 | 0 | 0 | 783 | 1576 | 185 | 135 | 5421 |
| Fishing Structures, FW Lin.Yd. | 22392 | 330 | 200 | 400 | 1715 | 2345 | 325 | 0 | 0 | 2532 | 3788 | 3191 | 250 | 6730 |
| Fishing Structures, SW Lin.Yd. | 10925 | 0 | 0 | 0 | 0 | 1500 | 450 | 0 | 0 | 348 | 1900 | 1900 | 0 | 4827 |
| Golf Holes | 509 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 162 | 0 | 275 |
| Hiking Trail Miles | 457 | 23 | 23 | 22 | 35 | 100 | 58 | 0 | 0 | 42 | 73 | 67 | 5 | 9 |
| Horseback Riding Trail Miles | 345 | 16 | 0 | 20 | 58 | 43 | 15 | 0 | 0 | 2 | 70 | 24 | 0 | 97 |
| Off-road Vehicle Riding Acres | 2047 | 0 | 0 | 130 | 200 | 0 | 0 | 0 | 0 | 0 | 331 | 304 | 0 | 1082 |
| Picnic Tables | 40 | 10 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 5 | 15 | 0 | 0 |
| Playground Areas, Equipped | 4760 | 6 | 0 | 9 | 103 | 49 | 0 | 0 | 0 | 46 | 480 | 3857 | 19 | 191 |
| Soccer/Football Fields | 1104 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 177 | 846 | 50 | 31 |
| Softball Fields | 899 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 | 594 | 45 | 90 |
| Swimming, FW Sq.Yd.(000) | 6202 | 151 | 0 | 200 | 897 | 586 | 0 | 0 | 0 | 500 | 730 | 1006 | 343 | 1790 |
| Swimming, SW Sq.Yd.(000) | 9231 | 0 | 0 | 0 | 0 | 1000 | 0 | 0 | 0 | 0 | 4821 | 1810 | 500 | 1100 |
| Swimming, Pool Sq.Yd.(000) | 313 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 227 | 9 | 40 |
| Tennis Courts | 3496 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 376 | 2706 | 100 | 314 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 1297 | 30 | 33 | 20 | 52 | 92 | 32 | 33 | 0 | 46 | 275 | 643 | 0 | 41 |
| Developed Land Acres | 44618 | 703 | 458 | 759 | 1845 | 2993 | 928 | 264 | 0 | 1215 | 8987 | 17148 | 834 | 8482 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

OUTDOOR RECREATION RESOURCES



Texans are attracted to water-based recreation sites, especially during the warm summer months.

INTRODUCTION

Texas contains an abundance of quality outdoor recreation resources and is noted for its diversity of recreational opportunities. Landforms range from forest to prairie to mountains. Rivers, lakes, and Gulf Coast waters are significant recreation magnets, attracting millions of recreationists annually. Statewide, over seventy-six hundred recreation sites provide 3,693,624 acres of parkland and 1,578 miles of trails.

RECREATION SETTING

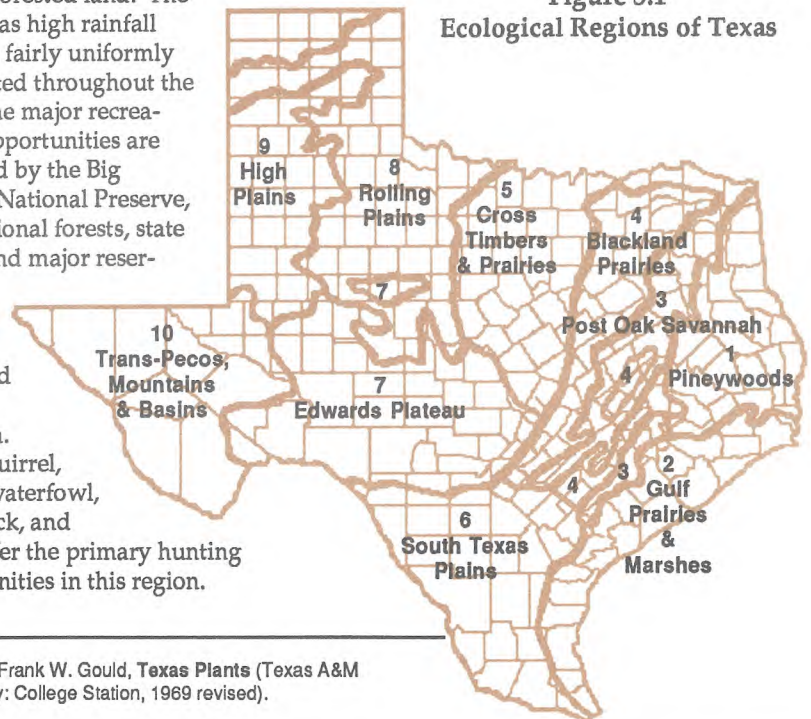
Climate, soils, topography, and biotic factors produce different environmental conditions that result in diverse recreational opportunities. A number of classifications have been developed to study the Texas environment. One of the most widely accepted classifications is the ten-region system developed by Frank W. Gould, which is presented in figure 3.1. The ten ecological regions identified under this system are: Pineywoods; Gulf Prairies and Marshes; Post Oak Savannah; Blackland Prairies; Cross Timbers and Prairies; South Texas Plains; Edwards Plateau; Rolling Plains; High Plains; and Trans-Pecos, Mountains and Basins.¹

Pineywoods

The Pineywoods region in the eastern part of the state is approximately 15 million acres of gently rolling

to hilly forested land. The region has high rainfall which is fairly uniformly distributed throughout the year. The major recreational opportunities are provided by the Big Thicket National Preserve, four national forests, state parks, and major reservoirs such as Toledo Bend and Sam Rayburn. Deer, squirrel, rabbit, waterfowl, woodcock, and quail offer the primary hunting opportunities in this region.

Figure 3.1
Ecological Regions of Texas



Source: Frank W. Gould, *Texas Plants* (Texas A&M University: College Station, 1969 revised).

Gulf Prairies and Marshes

The Gulf Prairies and Marshes region contains approximately 9 million acres of land along the coast of Texas from Port Arthur to Brownsville. The prairies are dissected by streams flowing into the Gulf, and the low wet marshes are immediately adjacent to the coast. The region has warm temperatures most of the year, high humidity, and annual rainfall ranging from twenty to fifty inches.

This region offers some of the major recreational resources in the state with beaches, bay and deep sea fishing, national wildlife refuges, the Padre Island National Seashore, state parks, and other saltwater resources managed by local recreation providers. Waterfowl, quail, pheasant, and dove offer significant hunting opportunities. The whooping crane, the peregrine falcon, and the bald eagle are some of the endangered species in this region that play a major role in wildlife observation.

Post Oak Savannah

The Post Oak Savannah region occupies approximately 8 million acres of rolling to hilly land and has an annual rainfall of thirty-five to forty-five inches. It spans from Bowie County in the north to Guadalupe County in the south. Lake Bob Sandlin, Lake Palestine, Lake Limestone, and Somerville Lake offer water-oriented recreational opportunities in this region. The Attwater Prairie Chicken National Wildlife Refuge, Bastrop, Buescher, and Fairfield Lake state parks are some of the recreational sites in this region. Deer, squirrel, rabbit, dove, and quail offer hunting opportunities.

Blackland Prairies

The Blackland Prairies region has about 11 million acres of gently rolling to nearly level land. This region is extensively cultivated because of its fertile blackland soils. Annual rainfall is thirty to forty inches, increasing from west to east. Dallas, Waco, Austin, and San Antonio are found in this region. Water-oriented recreational opportunities are provided by resources such as Lake Tawakoni, Lake Ray Hubbard, and Clear Creek Reservoir. Hunting opportunities are limited to dove, quail, and rabbit.

Cross Timbers and Prairies

The Cross Timbers and Prairies region comprises about 17 million acres of rolling to hilly and deeply dissected land, with rapid surface drainage. The annual rainfall is twenty-five to forty inches. Fort Worth, Denton, and Killeen are among the major population centers in this region. State parks in the region are Lake Arrowhead, Lake Brownwood, and Lake Lewisville. Other major recreational attractions are Lake Texoma and Dinosaur Valley State Park. Deer, quail, turkey, rabbit, squirrel, and waterfowl provide hunting opportunities in this region.

South Texas Plains

The South Texas Plains region is roughly 20 million acres of level to rolling land, which is dissected by streams flowing into the Gulf of Mexico. This region covers a roughly triangular area formed by Brownsville, Del Rio, and the area just south of San Antonio. Annual rainfall is sixteen to thirty-five inches, increasing from west to east. This region has large areas of cultivated land and large cattle ranches. Some of the major resources in this region are the Santa Ana Wildlife Refuge, the Rio Grande, Falcon Reservoir, Choke Canyon Lake, and Lake Corpus Christi. Hunting and wildlife observation opportunities are diverse: deer, quail, turkey, javelina, chachalaca, waterfowl, rabbit, and squirrel. Endangered species of special concern along the Rio Grande corridor are the ocelot, margay, and jaguarundi.

Edwards Plateau

The Edwards Plateau region occupies about 24 million acres of "Hill Country" in West-Central Texas. The topography ranges from about a hundred feet to more than three thousand feet. The region is dissected by several river systems and has a well drained surface. Precipitation varies from less than fifteen inches in the west to over thirty-three inches in the east. The region is predominately range land, with cultivation largely confined to deeper soils and valley bottoms. The highland lakes, Enchanted Rock and Lost Maples state natural areas, Garner

State Park, and the Guadalupe River are among the major recreational resources in this region. Guest ranches and fishing camps are also common. Deer, turkey, dove, quail, rabbit, squirrel, and javelina offer hunting opportunities. The black-capped vireo, an endangered species, and the golden-cheeked warbler, a threatened species, are both found in this region.

Rolling Plains

The Rolling Plains region has about 24 million acres of gently rolling to moderately rough terrain. Narrow, intermittent stream valleys dissect this region. Elevation ranges from eight hundred to three thousand feet. Precipitation ranges from about twenty-two inches to thirty inches, increasing in the eastern portion. Well over half of this region is still range land, with cattle as the primary livestock. Abilene and San Angelo are the major population centers in this region. Some of the recreational resources in this area are Lake Meredith National Recreation Area and Alibates Flint Quarries National Monument. The hunting opportunities are varied: white-tailed deer, mule deer, quail, turkey, prairie chicken, pheasant, rabbit, and waterfowl.

High Plains

The High Plains region occupies about 20 million acres and is separated from the Rolling Plains by the Caprock Escarpment. It is a relatively level high plateau ranging from three thousand to forty-five hundred feet in elevation. The region has playa lakes which are important to waterfowl and sometimes cover more than forty acres after heavy rains. Rainfall is variable from year to year. The average is from fifteen to twenty-one inches, but some years have less than twelve inches and others more than forty-five inches. Extended droughts occur in this region. Amarillo, Lubbock, and Midland-Odessa are the major population centers in the region. Recreational resources in the region include playa lakes, national wildlife refuges, and national grasslands. Pheasant, waterfowl, antelope, mule deer, white-tailed deer, quail, and dove provide hunting opportunities in this region.

Trans-Pecos, Mountains and Basins

The Trans-Pecos, Mountains and Basins region has about 19 million acres of mountains and arid valleys in the extreme western part of Texas. The region varies from desert valleys and plateaus to wooded mountain slopes. The elevation range is from about twenty-five hundred to eighty-five hundred feet. Rainfall over most of the region is below twelve inches, with increasing precipitation at higher elevations. El Paso is the major population center in the region. Most of the land is still native range, with cultivation limited to irrigated valleys. Ranching operations usually involve cattle, sheep, and Angora goats. Major recreational attractions include Big Bend and Guadalupe Mountains national parks, Davis Mountains State Park, and Hueco Tanks State Historical Park. Mule deer, white-tailed deer, antelope, javelina, quail, dove, and turkey provide hunting opportunities in the region. Big-horn sheep are currently under restoration in this region.

POPULATION

High rates of population growth in the state continue to put pressure on recreational resources and facilities. The population of the United States grew by 13.3 percent between 1960 and 1970, and by 11.5 percent during the 1970-80 decade. The population of Texas grew at a higher rate with 16.9 percent during the 1960-70 decade and 27.1 percent the following decade, bringing the state's population to 14,229,000 in 1980. By 1985, the state's population was estimated at 16,389,000.

This plan uses the population projections prepared by the Texas Department of Health in 1986. Based on those projections, the state's population is expected to grow by 24 percent between 1980 and 1990, and by 15.2 percent during the 1990-2000 decade. During the 1980-90 decade, state population growth slowed, but is still expected to exceed the national rate.

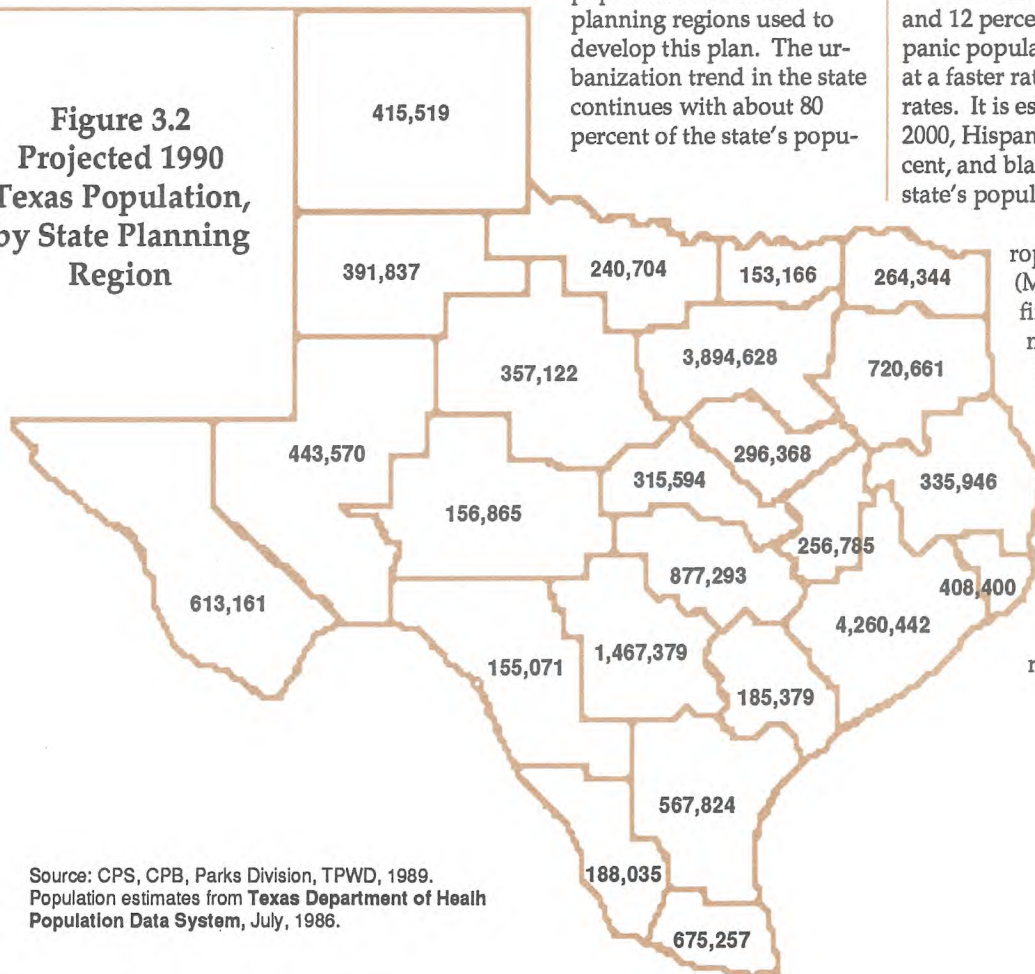
Figure 3.2 shows the 1990 projected population for the 24 planning regions used to develop this plan. The urbanization trend in the state continues with about 80 percent of the state's popu-

lation living in urban areas. One of the results of this trend is the need to provide rural recreational opportunities close to population centers. Population analysis by county indicates that the state's most rural counties are experiencing a decline in population, while suburban counties have the most rapid growth. Out of 254 counties, 110 declined in population in 1984-85.

The median age of the state population rose to 29.3 years in 1985, indicating that the population continues to age as the baby-boomers enter middle-age. Shifts can be expected in outdoor recreation participation patterns as the population ages, although the emphasis on lifelong recreational activities will probably have a stabilizing effect. Youth recreational activities will continue to be significant in the Hispanic population because the higher birth rates of this group result in higher proportions of children and youth.

The state had 21 percent Hispanics and 12 percent blacks in 1980. The Hispanic population will continue to grow at a faster rate because of higher birth rates. It is estimated that by the year 2000, Hispanics will make up 26 percent, and blacks 12 percent, of the state's population.

Figure 3.2
Projected 1990
Texas Population,
by State Planning
Region



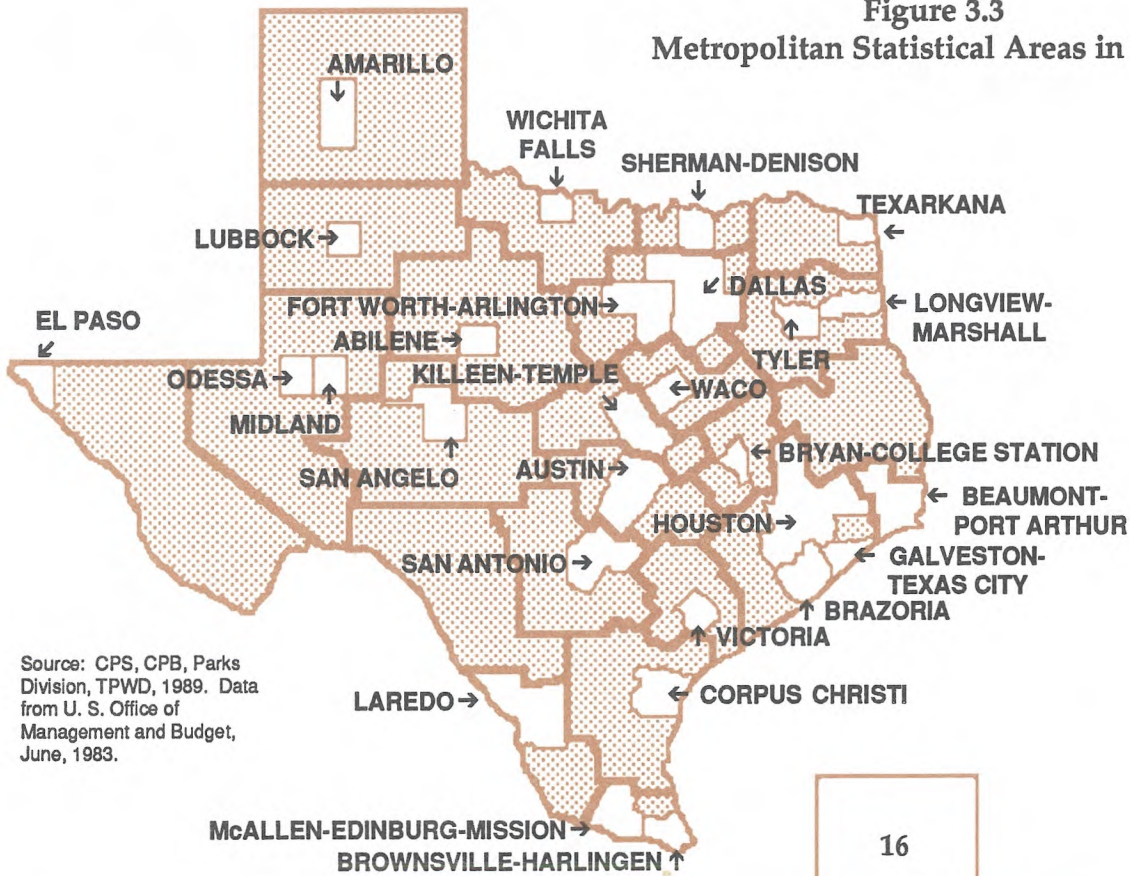
Source: CPS, CPB, Parks Division, TPWD, 1989.
Population estimates from Texas Department of Health
Population Data System, July, 1986.

Figure 3.3 shows the metropolitan statistical areas (MSAs) of Texas, as redefined by the federal government in June 1983. Texas has the highest number of MSAs in the nation.

Houston, Dallas, and San Antonio are among the ten largest cities nationwide.

Figures 3.4 and 3.5 show population density and parkland per thousand population, respectively.

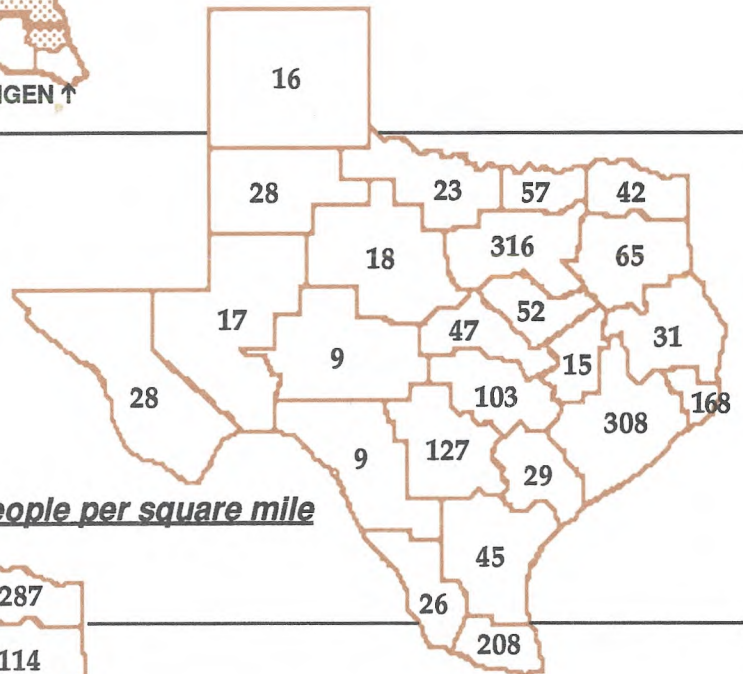
Figure 3.3
Metropolitan Statistical Areas in Texas



Source: CPS, CPB, Parks Division, TPWD, 1989. Data from U. S. Office of Management and Budget, June, 1983.

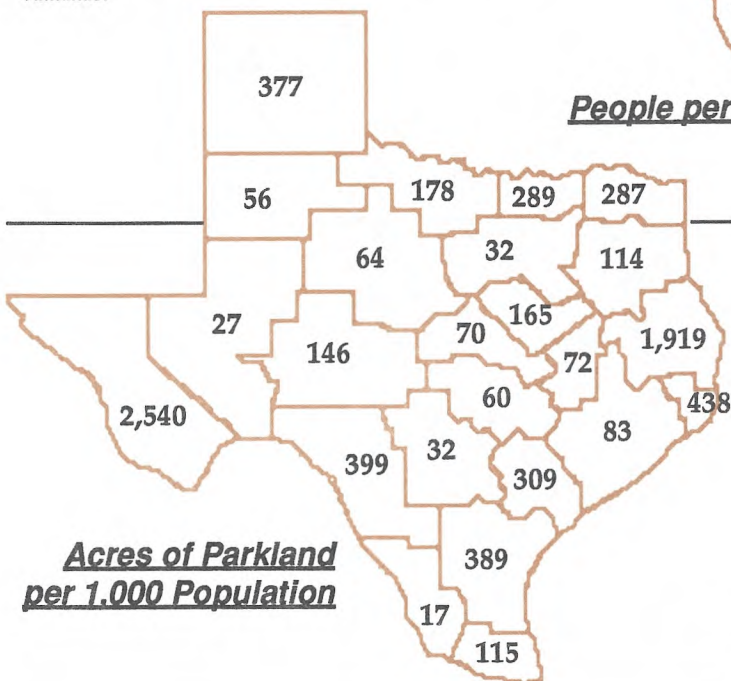
Figure 3.4
1986 Population Density in Texas, by State Planning Region

Sources: CPS, CPB, Parks Division, TPWD, 1989. Data from "Estimates of the Total Populations of Counties and Places in Texas for July, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; 1988-1989 Texas Almanac.



People per square mile

Figure 3.5
1986 Parkland Per Thousand Population in Texas, by State Planning Region



Acres of Parkland per 1,000 Population

Sources: TORIS, CPB, CPS, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1988" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University.

Recreational water resources in Texas consist of freshwater lakes, rivers, streams, and saltwater bays, estuaries, and the Gulf. It is estimated there are over 3 million surface acres of both fresh and salt water in Texas. Of this total, there are approximately 1.2 million surface acres of fresh water suitable for boating, fishing, and water-skiing (table 3.1). For saltwater recreation, there are approximately 3.9 million square yards designated for swimming. Water is important not only for water-based activities, but as a focus for parks

and a variety of other activities, such as camping, picnicking, hiking, and nature study.

Some of the state's most scenic and desirable rivers for recreation are in the Hill Country. Rivers like the Guadalupe, San Marcos, and Frio attract summertime crowds from all over the state, but recreational use is sometimes limited by dry conditions. Because of limited rainfall, West Texas rivers are small but still popular recreation resources. With its greater rainfall, East Texas is blessed with many beautiful

streams with plentiful water. Most of these are wide, slow-moving rivers that cut through the eastern woodlands and broad coastal plains.

About three-fourths of the state's freshwater lake acres are located in the eastern half of Texas. The many large reservoirs here provide abundant opportunities for all types of outdoor recreation. While there are fewer reservoirs in the western half, West Texans value their lakes highly and will travel great distances to recreate on them.

Several reservoirs are under con-

Table 3.1
1986 Supply of Parks/Recreation Areas: Land, Facilities, and Water in Texas, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | COMMERCIAL | TOTAL |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|---------|-------------|------------|---------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | |
| Number of Parks/Rec. Areas | 42 | 19 | 46 | 255 | 129 | 58 | 13 | 12 | 55 | 564 | 4596 | 186 | 1672 | 7647 |
| Total Parkland Acres | 1039823 | 248808 | 488078 | 233727 | 432859 | 682298 | 35 | 5242 | 4753 | 39927 | 162569 | 19690 | 335815 | 3693624 |
| Developed Land Acres | 3628 | 359 | 2374 | 18531 | 12919 | 139 | 9 | 428 | 1400 | 17154 | 69210 | 6719 | 40109 | 172977 |
| Developable Land Acres | 7189 | 5826 | 77246 | 70136 | 115056 | 302 | 21 | 273 | 3348 | 19136 | 69643 | 8546 | 250183 | 626904 |
| Preserved or Unsuitable for Development (Acres) | 1029005 | 242624 | 408458 | 145060 | 304884 | 681858 | 5 | 4541 | 5 | 3637 | 23717 | 4425 | 45523 | 2893742 |
| Baseball Fields | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 293 | 1446 | 85 | 43 | 1868 |
| Basketball Goals | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 4 | 193 | 1974 | 54 | 77 | 2307 |
| Boat Ramp Lanes, FW | 36 | 8 | 44 | 606 | 102 | 6 | 0 | 9 | 94 | 112 | 261 | 69 | 766 | 2113 |
| Boat Ramp Lanes, SW | 0 | 4 | 0 | 4 | 8 | 0 | 0 | 0 | 0 | 50 | 33 | 38 | 157 | 294 |
| Campsites | 742 | 36 | 919 | 5996 | 6365 | 33 | 0 | 0 | 906 | 2816 | 2486 | 714 | 64843 | 85856 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 25700 | 7650 | 142770 | 42102 | 6000 | 0 | 0 | 32540 | 29038 | 93796 | 15942 | 58526 | 454064 |
| Fishing Structures,FW Lin. Yd. | 256 | 7920 | 93 | 2635 | 3147 | 100 | 0 | 0 | 1588 | 1271 | 12766 | 2599 | 23147 | 55522 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 67490 | 11793 | 0 | 0 | 0 | 0 | 11617 | 31300 | 23440 | 14778 | 160418 |
| Golf Holes | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 27 | 0 | 311 | 1881 | 54 | 1626 | 3944 |
| Hiking Trail Miles | 235 | 2 | 168 | 33 | 139 | 0 | 0 | 0 | 2 | 9 | 32 | 10 | 10 | 640 |
| Horseback Riding Trail Miles | 133 | 0 | 10 | 15 | 49 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 85 | 324 |
| Lake Acres (BFS Suitable),FW | | | | | | | | | | | | | | 1185395 |
| Off-road Vehicle Riding Acres | 1775 | 0 | 420 | 835 | 33 | 0 | 0 | 0 | 0 | 1656 | 234 | 0 | 6328 | 11281 |
| Picnic Tables | 287 | 56 | 213 | 2087 | 4116 | 0 | 1 | 43 | 440 | 8663 | 20750 | 756 | 5255 | 42665 |
| Playground Areas, Equipped | 0 | 0 | 0 | 1 | 137 | 0 | 0 | 0 | 8 | 272 | 3196 | 51 | 323 | 3988 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 152 | 1271 | 25 | 7 | 1457 |
| Softball Fields | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 140 | 1416 | 26 | 21 | 1608 |
| Swimming, FW Sq.Yd. | 256000 | 0 | 32609 | 388425 | 510775 | 0 | 0 | 3 | 158890 | 160775 | 2304067 | 130373 | 2239410 | 6181327 |
| Swimming, SW Sq.Yd. | 1232000 | 0 | 0 | 0 | 1497799 | 0 | 0 | 0 | 0 | 798667 | 149183 | 141650 | 122680 | 3941979 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 12156 | 0 | 0 | 278 | 0 | 24534 | 367247 | 10832 | 92317 | 507364 |
| Tennis Courts | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 4 | 1 | 209 | 2591 | 136 | 179 | 3125 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 14 | 24 | 4 | 10 | 83 | 12 | 0 | 2 | 0 | 69 | 325 | 54 | 15 | 614 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

struction or are being filled. Some of these will be major statewide attractions, providing a variety of water-related recreation opportunities. The major ones include Cooper in region 5; Wallisville, region 16; Richland Creek, regions 4 and 11; and Stacy in regions 7 and 10.

The Texas Gulf Coast is a major state, as well as national, recreation and tourism attraction. Beaches, bays, and estuaries provide saltwater fishing, boating, swimming, beachcombing and

a host of associated activities. Among the more important recreational attractions and resources are Sea Rim, Goose Island, Galveston Island, and Mustang Island state parks; Padre Island National Seashore; and state and federal wildlife refuges.

Fisheries management plays a major role in improving resources for recreation and commercial fishing. This plan recognizes the importance of managing these resources and recognizes the Texas Oyster Fishery Man-

agement Plan and all other fisheries management plans developed by the Fisheries Division of the Texas Parks and Wildlife Department (TPWD). Property used in hydropower projects may provide outdoor recreation opportunities. TPWD law enforcement reports a need for accessibility to these properties during the entire life of the projects. Accessibility by law enforcement officials should be a consideration during, but not limited to, the licensing and relicensing of these projects.

PARKLAND

The supply of outdoor recreational sites and facilities is monitored through the Texas Outdoor Recreation Inventory System (TORIS). The system is intended to include all recreation areas open to the general public either free or for a fee. The information is reported to the TPWD on a voluntary basis by recreation providers. While data on the system can be updated on a continuing basis, periodic statewide updates are conducted. The last statewide update was made in 1986. Federal, state, local, and commercial recreational resources are included in the inventory system. A revised data collection instrument was used for the first time during this planning cycle.

Table 3.1 shows the parkland in the state by administration. Statewide, there are 7,647 recreational sites and 3,693,624 acres of parkland, which account for 2.2 percent of the total area of the state. Since publication of the 1985 TORP, total parkland reported increased by 38.8 percent. The newly acquired Big Bend Ranch and Devils River state natural areas make up about 23 percent of the added parkland.

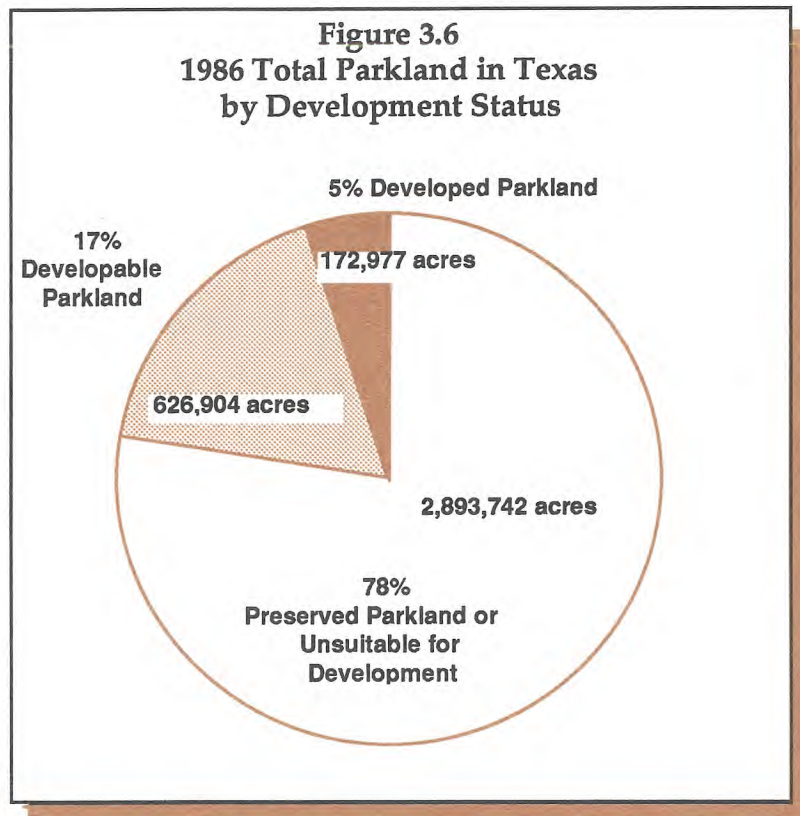
Figure 3.6 shows the development status of the parkland in the state. Figures 3.7 through 3.9 are graphic representations of the administrative categories for parkland and recreational resources and facilities.

The 7,647 recreational sites represent a 17 percent increase from the 1985 TORP. Thirty-eight percent of the new sites are commercial enterprises such as campgrounds, indicating a good response rate from the commercial sector. It is generally more difficult to update

data for the commercial sector than for the public sector. The response rate for the commercial sector was improved this planning cycle due to the assistance of the Texas Association of Campground Owners (TACO). This collaboration with TACO almost doubled the supply of campsites reported for the commercial sector.

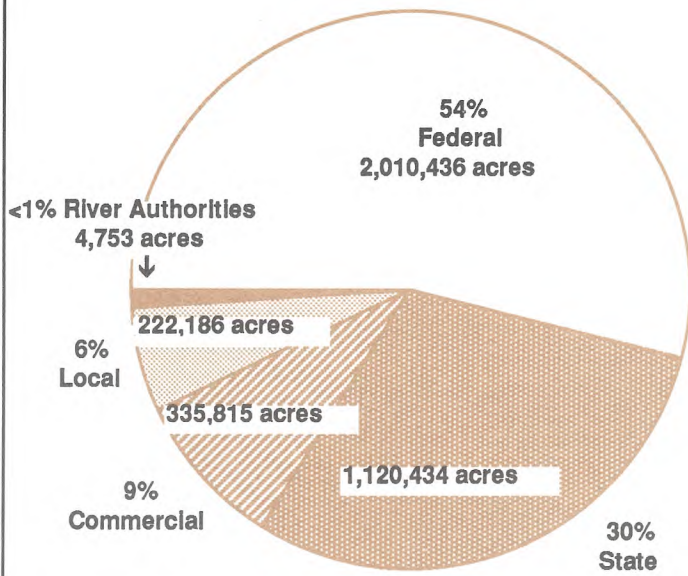
Federal Resources

Federal resources include national parks, wildlife refuges, forests and recreation areas managed by the U.S. Forest Service, the National Park Service, the U.S. Fish and Wildlife Service, and the U.S. Army Corps of Engineers. The federal government provides



Source: TORIS, CPS, CPB, Parks Division, TPWD.

Figure 3.7
1986 Parkland in Texas, By Administration



Source: TORIS, CPS, CPB, Parks Division, TPWD.

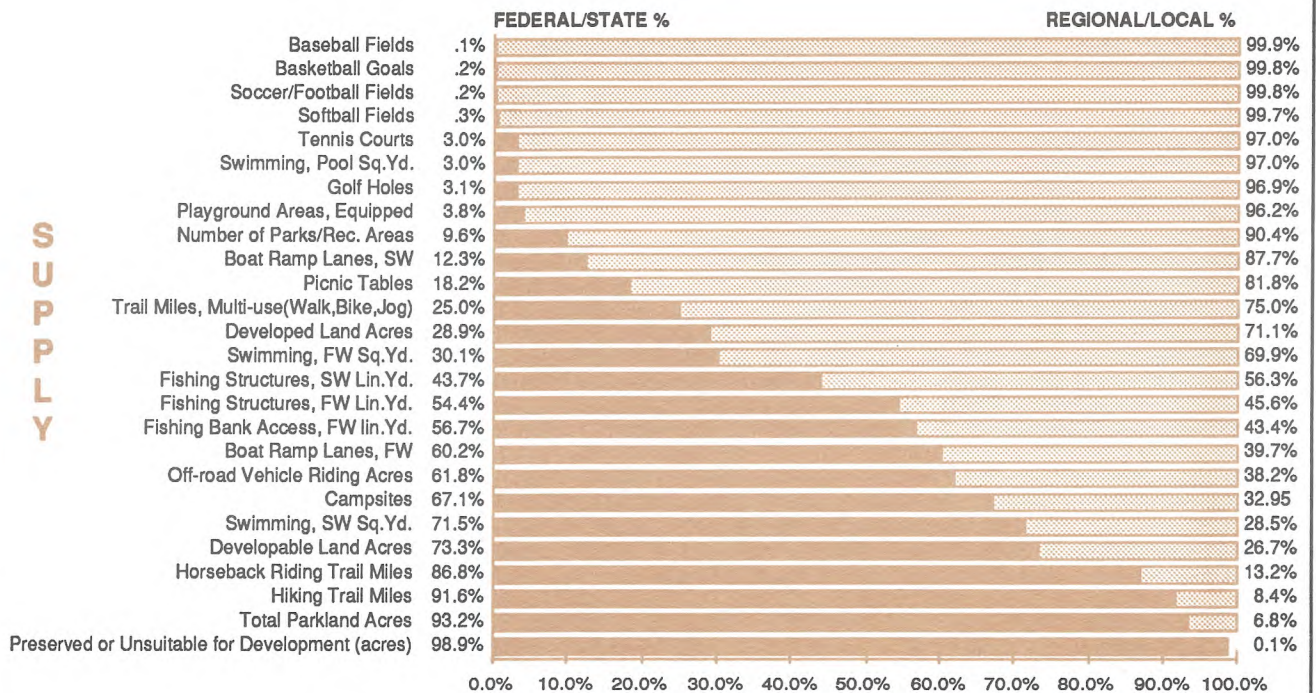
2,010,436 acres in parkland, representing 54.4 percent of the state's land for outdoor recreation (table 3.1). This represents a 27.7 percent increase from the 1,574,245 acres of parkland reported for the 1985 TORP. Most of the additional federal land does not come from newly acquired land but rather from passive recreation areas not previously reported.

State Resources

State government provides 30.3 percent of the recreational land in the state with 1,120,434 acres of land (table 3.1). Land under TPWD programs comprises most of the state category. Other entities included are the Texas Department of Highways and Public Transportation (TDHPT) and the Texas Forest Service (TFS).

Land administered by TPWD is divided into two programs: the state park system and the wildlife management areas. Acreage figures for the state park system were updated in

Figure 3.8
1986 Outdoor Recreation Supply in Texas, by Government Level



Source: TORIS, CPS, CPB, Parks Division, TPWD.

January, 1989 and include the Big Bend Ranch and Devils River natural areas. The wildlife management areas, which include Type I and Type II areas, were updated in the fall of 1987.

The state park system has 432,859 acres of land, excluding all water resources, and accounts for 11.7 percent of the state's total parkland.

Type I and Type II wildlife management areas totaled 682,298 land acres in 1987 and make up 18.4 percent of the state's total recreational land. This figure fluctuates from year to year because of the dynamic nature of the Type II program. Most Type I areas are owned and administered by TPWD, while most Type II areas are leased by TPWD from public and private entities. Type I areas are more restricted than Type II areas in the number of hunters

permitted and the number of days the areas are open for hunting. It has been reported that Type II areas are also being used for non-consumptive recreation unrelated to hunting activities. If this trend develops, the recreational opportunities offered by these areas will be broadened considerably.

Regional Resources

The "regional" column in table 3.1 represents the recreational resources provided by river authorities. River authorities provide 4,753 acres of parkland and represent .1 percent of the total state parkland. Current figures cannot be compared to the 1985 TORP because river authorities, special districts, and state agencies were all combined under one category.

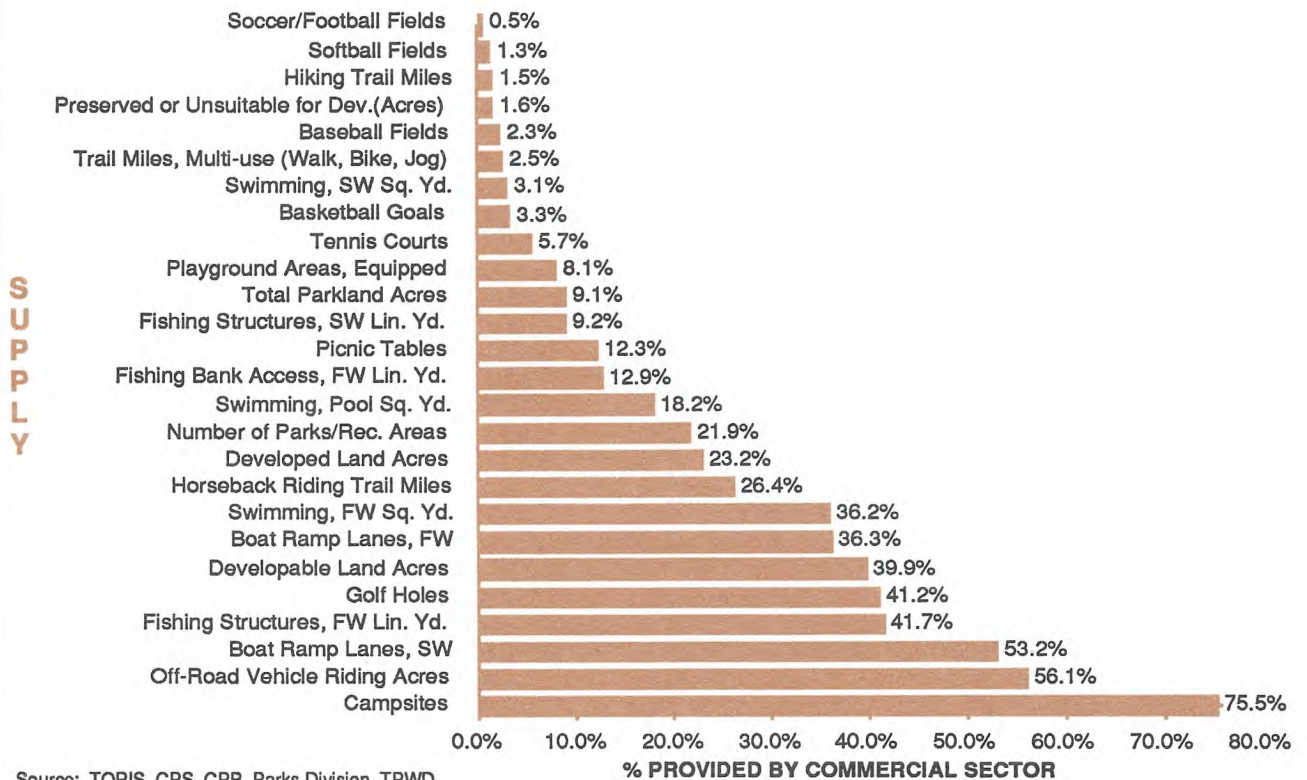
Local Resources

Counties, cities, and other local entities, such as special districts and civic organizations, provide 222,186 acres of parkland at the local level (table 3.1). This represents 6 percent of the state's parkland. Almost three-fourths of the local land is provided by cities, while counties provide 18 percent.

Commercial Resources

Commercial recreation land decreased from 335,952 acres in the 1985 TORP to 335,815 acres in this plan (table 3.1). This sector accounts for 9 percent of the state's parkland. Guest ranches are among the largest commercial sites. One ranch resort is reported at 200,000 acres, which is 59 percent of the commercial recreational land in the state.

Figure 3.9
1986 Outdoor Recreation Supply in Texas
Provided by the Commercial Sector



Source: TORIS, CPS, CPB, Parks Division, TPWD.

NATURAL AREAS

Rather than include a static list of natural areas as presented in previous plans, the 1990 TORP utilizes a computerized information system which tracks sites of biological significance. The Texas Natural Heritage Program (TNHP), within the Endangered Resources Branch of TPWD's Resource Protection Division, maintains this system. By referencing this system of data bases in the TORP, areas of importance are included in the planning stages of conservation and development efforts. The dynamic nature of the information system affords consideration to areas under investigation during the five-year cycle of the TORP. Guidelines have been established to nominate sites that agencies, organizations, or private individuals feel should be evaluated for inclusion in the program.

The TNHP is a system which objectively and systematically inventories sites for statewide and national significance. Heritage programs operating in each of the fifty states all use a similar methodology. Regional organizations, such as councils of governments, could coordinate with the TNHP to identify natural areas that have regional or local significance. Cooperative efforts could be encouraged with entities that have biologists on their staff or are willing to hire biological consultants to perform these services.

TRAIL RESOURCES

Interest in trails is increasing in Texas. The supply of trails reflects that heightened interest. The 1,578 miles of hiking, horseback riding, walking, biking, and jogging trails indicate a 14 percent increase since the 1985 TORP.

Federal agencies provide the largest number of trail miles (648). The National Park Service accounts for 382 miles, and the U.S. Forest Service provides 182, excluding the miles for off-road vehicles (ORVs). The state park system, with 271, is another major provider of trail miles. Historically, trails were developed on large public land holdings. The trend toward urban trails, however, has placed cities in the lead with 388 miles. Since the 1985 TORP, trails provided by the local sector (counties, cities, and special districts) have increased 53 percent. Cities are placing a priority on linear parks. When the Federal Emergency Management Administration made floodplain regulations an eligibility requirement for participation in the federal flood insurance program, cities began to disallow development in the floodplains. This encouraged developers to donate those lands for greenbelt parkland.

The President's Commission on Americans Outdoors, in its 1986 report to the president, cited a vision of close-

to-home recreation based on greenways. The commission recommends a network of recreation land and water corridors linking the places where people live with urban and rural resources. Greenways can provide recreation opportunities for some of the most popular activities (walking, bicycling, jogging), habitats for wildlife, access to water resources, community pride, quality of life, and visual relief from urban development. The 68th Texas Legislature authorized the establishment of a Texas Trails System. The purpose of such a system would be to provide high-quality outdoor recreation, scenic, historic, and expedition trails and to encourage the use and development of trails within a system.

Many existing corridors have the potential to be converted to trails. Cities in Texas have been actively engaged in protecting their river and creek corridors for linear trail parks. Abandoned railroads and utility rights-of-way make usable greenways. Lake perimeters are often in public ownership and could be the sites of new trails. Many new state and local park acquisitions can support trail development. Volunteers usually enjoy developing and maintaining trails and can assist in providing more trail miles at lower costs.

FACILITIES

The data collection instrument to inventory parkland and facilities was revised and used for the first time during this planning cycle. The purpose of the revision was to better define some data items and to improve data collection. Some of these revisions affect data comparability between this plan and previous plans. An overview of the most significant revisions is as follows:

- Basketball goals are enumerated now instead of inventorying basketball supply solely on the basis of full courts.
- Picnic tables in picnicking areas are now reported separately from those in camping areas. This eliminated double counting problems in reporting picnic tables.

- The number of playgrounds and the number of pieces of playground equipment are now enumerated. The number of acres devoted to playgrounds was the resource inventoried previously.

The number of baseball and softball fields increased by 8 percent and 10 percent, respectively. Football fields decreased by sixty-two fields, while soccer fields increased by 281 fields representing a 33 percent increase. It is possible that some of these football fields were simply converted to soccer fields. After all, it was not until toward the end of the planning cycle that recreation providers began to report a tapering off in soccer.

The supply of basketball goals increased by 12 percent, but most of the increase may be the result of enumerating half basketball courts in conjunction with full courts. The number of tennis courts increased by 7 percent from the 1985 figure of 2,924. Golf increased by 4.4 percent during this period. Semi-private golf courses are inventoried, but exclusively private golf courses are not included.

The supply of campgrounds grew by 88 percent. This is not all new supply but rather the result of a coordinated effort with TACO to improve the response rate among commercial recreation providers. Figures for picnic tables and playgrounds cannot be compared because of the changes made in reporting method.

CHAPTER 4

PARTICIPATION IN OUTDOOR RECREATION ACTIVITIES



Softball, played by both men and women of all ages, is the most popular of all the organized sports activities.

INTRODUCTION

In 1986 the Texas Parks and Wildlife Department collected data from Texas residents on their outdoor recreation participation. The study showed that Texans recreate for a variety of reasons. Seventy-one percent of respondents gave "enjoying nature and the outdoors" as a reason they participate. "Being with family or friends" was cited by 53 percent of respondents, while 52 percent reported that "quiet and peaceful places" motivate them to be outdoors. Forty-seven percent use outdoor recreation to "get away from daily responsibilities." Exercise motivates 23 percent and adventure, only 18 percent.

This chapter reports statewide projected total participation, activities popular with Texans, and regional differences. It also includes a discussion of trends and non-participation. Most of the data derive from the 1986 Origin-Destination Participation Survey. Some trends are based on research found in the 1986 Report of the President's Commission on Americans Outdoors and on observations of recreation professionals.

STATEWIDE PARTICIPATION

Table 4.1 ranks projected participation in each of twenty-six outdoor recreation activities. The top five activities tend to occur near where people live, allowing frequent participation. Three of the top four activities (walking for pleasure, bicycling, and jogging) are trail-related, although all of the participation does not occur on trails. These three activities combined with the three other trail activities account for 47 percent of all the recreational participation projected to occur in these twenty-six activities in 1995 (figure 4.2). This figure also shows the percentage of participation in activities dependent on water, land resources, and sports facilities.

Figure 4.1 shows the twenty-six activities ranked by the percentage of the population projected to participate

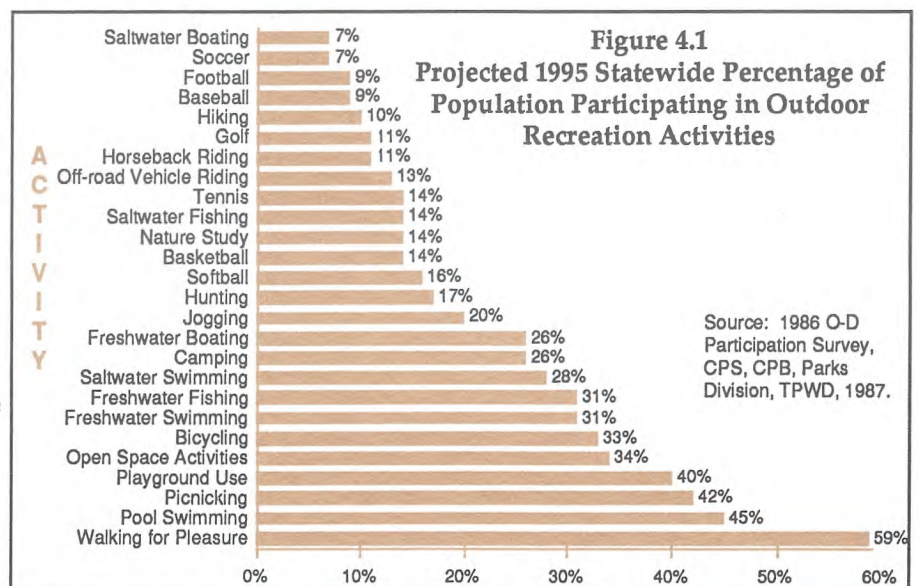
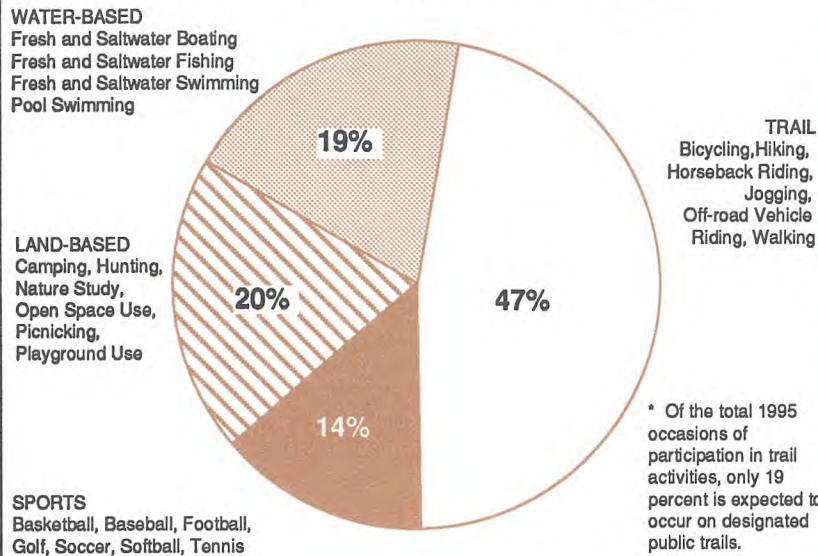


Figure 4.2
Projected 1995 Percentage of Participation Occasions
in Texas by Outdoor Recreation Activity Type



at least once in 1995. The activity popular with the greatest number of Texans (59 percent) is projected to be walking for pleasure or exercise. Its popularity will far outpace the second most popular activity, pool swimming with 45 percent. Nine other activities will capture the participation of more than a quarter of the population annually.

Table 4.2 shows the twenty-six activities ranked by the number of annual user occasions per participant for the year 1995. A user occasion is each time someone participates at each site regardless of the length of participation. Activities which rank high in occasions per participant tend to be typically urban sports and exercise activities in which individuals who participate do so rather frequently. The three top activities (bicycling, jogging, and walking for pleasure) are trail activities.

Table 4.1
Projected Outdoor Recreation Participation in Texas
by Activity in Total Annual User Occasions, 1990, 1995, 2000

| Activity | Annual User Occasions (In Thousands) | | |
|-------------------------|---|------------------|------------------|
| | 1990 | 1995 | 2000 |
| Walking for Pleasure | 259,351 | 281,912 | 304,515 |
| Bicycling | 189,637 | 203,312 | 217,011 |
| Pool Swimming | 114,081 | 121,797 | 129,526 |
| Jogging | 97,052 | 102,932 | 108,823 |
| Playground Use | 86,414 | 91,656 | 96,908 |
| Open Space Activities | 57,168 | 60,567 | 63,970 |
| Freshwater Fishing | 42,548 | 45,699 | 48,857 |
| Freshwater Swimming | 37,281 | 39,346 | 41,415 |
| Picnicking | 33,434 | 35,571 | 37,712 |
| Softball | 32,626 | 34,452 | 36,281 |
| Camping | 30,397 | 32,584 | 34,775 |
| Basketball | 28,703 | 30,708 | 32,716 |
| Baseball | 27,143 | 29,147 | 31,155 |
| Off-road Vehicle Riding | 24,241 | 25,789 | 27,341 |
| Tennis | 23,643 | 25,277 | 26,914 |
| Hunting | 23,573 | 25,184 | 26,800 |
| Golf | 23,107 | 25,177 | 27,250 |
| Saltwater Swimming | 20,931 | 22,338 | 23,747 |
| Soccer | 20,895 | 22,279 | 23,665 |
| Nature Study | 15,360 | 16,719 | 18,081 |
| Football | 13,769 | 14,799 | 15,830 |
| Saltwater Fishing | 13,025 | 14,072 | 15,120 |
| Horseback Riding | 13,170 | 14,038 | 14,908 |
| Freshwater Boating | 10,344 | 11,003 | 11,663 |
| Hiking | 6,734 | 7,235 | 7,736 |
| Saltwater Boating | 2,340 | 2,520 | 2,700 |
| State Total | 1,246,967 | 1,336,114 | 1,425,420 |

Table 4.2
Projected 1995 Outdoor Recreation
Participation in Texas by Activity in Annual
User Occasions Per Participant

| Activity | Annual User Occasions Per Participant |
|-------------------------|---------------------------------------|
| Bicycling | 32.5 |
| Jogging | 27.4 |
| Walking for Pleasure | 25.2 |
| Baseball | 16.5 |
| Soccer | 16.2 |
| Pool Swimming | 14.2 |
| Golf | 12.2 |
| Playground | 12.0 |
| Basketball | 11.4 |
| Softball | 11.2 |
| Off-road Vehicle Riding | 10.6 |
| Tennis | 9.8 |
| Open Space Activities | 9.4 |
| Football | 8.4 |
| Hunting | 8.0 |
| Freshwater Fishing | 7.7 |
| Horseback Riding | 6.6 |
| Freshwater Swimming | 6.6 |
| Camping | 6.5 |
| Nature Study | 6.3 |
| Saltwater Fishing | 5.4 |
| Picnicking | 4.4 |
| Saltwater Swimming | 4.2 |
| Hiking | 3.7 |
| Freshwater Boating | 2.3 |
| Saltwater Boating | 1.9 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and figure and an explanation of research methods. See Appendix D for an explanation of terms.

Activities which rank low in occasions per participant tend to occur at resource attractions that require people to make out of town trips. While these trips may take several days to make, they are made less frequently than shorter trips taken for recreational purposes.

A further discussion of each recreational activity can be found in a technical report by the Texas Parks and Wildlife Department titled **Texans Outdoors: An Analysis of Participation in Outdoor Recreation Activities**. In the report, the analysis of each activity shows which Texans are more apt to

participate. Figures for age, sex, income, and ethnicity indicate the percentage of each cohort that participates in the activity. The report also shows the typical occasion duration and the percentage of annual participation by month.

REGIONAL COMPARISONS

Origin-Destination Concept

The 1986 Origin-Destination Participation Survey, a mail survey, asked Texans in which of twenty-six outdoor recreational activities they participated in 1985 and how many days they participated (origin data). For eleven resource-based activities, respondents were asked which places they recreated (destination data). Information collected on an origin basis shows how much participation is generated by the residents of each of the twenty-four planning regions. Knowing where people recreate allows the allocation of projected recreation participation and the determination of needs for facilities and resources for each of the twenty-four planning regions.

The limitations of a mail survey did not allow participation data to be collected for all twenty-six activities on a destination basis. Prior research showed that in fifteen "urban-type" activities the majority of participation would occur within thirty miles of where people live, that is, within the region where they live. For eleven resource-based activities, respondents were asked to identify the places where they recreated in 1985. Projections for these resource-based activities assume origin-destination patterns in the survey year will continue into the future.

Participation Patterns of Region Residents

Table 4.3 shows participation generated by residents of each of the state planning regions in fifteen activities most likely to occur in the regions where the participant lives. In thousands of annual user occasions, the varying amounts of participation among regions can be explained primarily by population.

Table 4.3
Projected 1995 Outdoor Recreation Participation
Summed for Fifteen Urban-type Activities*
by Region Residents in Texas

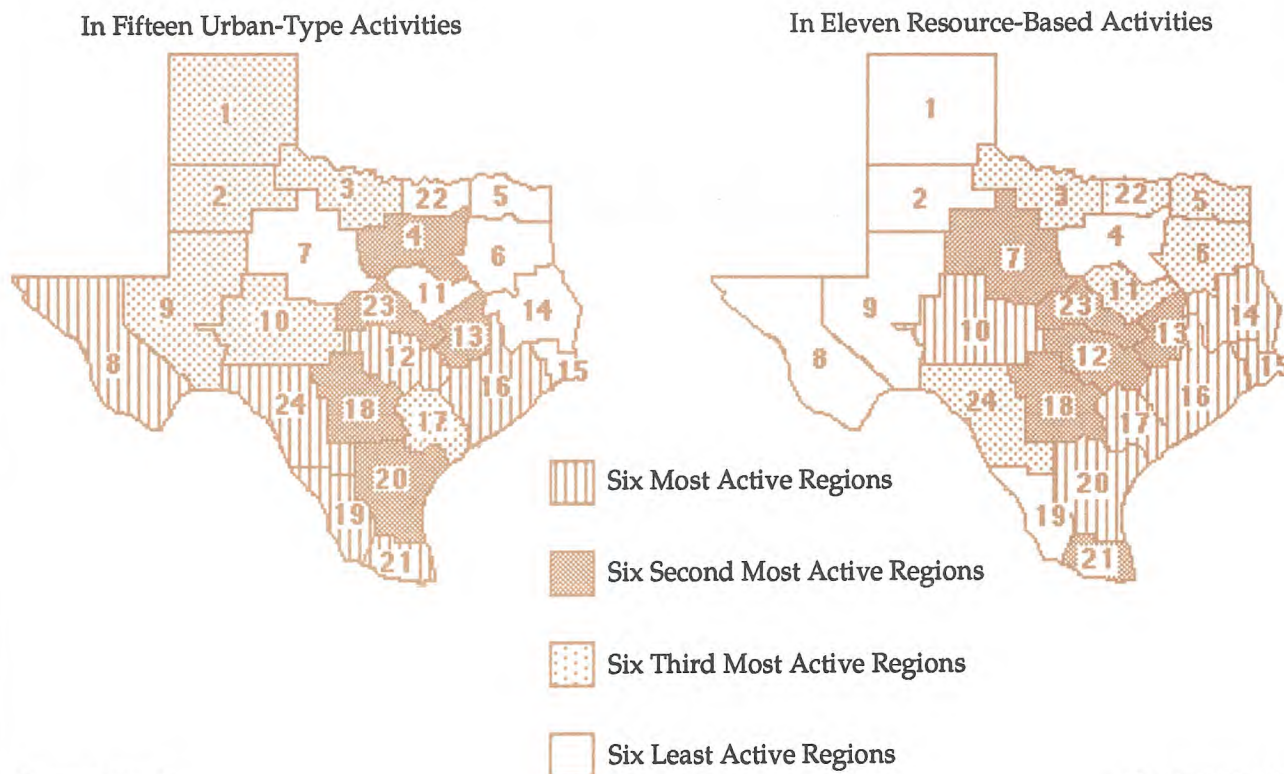
| <u>Region</u> | <u>Annual User Occasions Per Capita</u> | <u>Annual User Occasions (In Thousands)</u> |
|--------------------|---|---|
| 1 | 54.4 | 23,504 |
| 2 | 54.8 | 21,808 |
| 3 | 53.3 | 13,130 |
| 4 | 56.2 | 235,670 |
| 5 | 49.1 | 13,398 |
| 6 | 47.7 | 37,155 |
| 7 | 52.3 | 19,613 |
| 8 | 61.9 | 40,986 |
| 9 | 52.3 | 25,553 |
| 10 | 52.5 | 8,795 |
| 11 | 50.9 | 15,586 |
| 12 | 60.2 | 58,182 |
| 13 | 59.6 | 17,137 |
| 14 | 46.8 | 16,719 |
| 15 | 58.2 | 24,217 |
| 16 | 60.6 | 282,544 |
| 17 | 52.2 | 10,064 |
| 18 | 57.6 | 90,260 |
| 19 | 60.6 | 12,907 |
| 20 | 58.9 | 35,745 |
| 21 | 59.6 | 44,466 |
| 22 | 48.8 | 7,547 |
| 23 | 56.4 | 18,767 |
| 24 | 60.5 | 10,090 |
| State Total | 53.9 | 1,083,842 |

* Participation was summed for the fifteen urban-type activities for which destinations were not collected: walking, bicycling, jogging, pool swimming, playground use, softball, baseball, football, soccer, basketball, tennis, golf, horseback riding, off-road vehicle riding, and open space activities.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Figure 4.3
Projected 1995 Per Capita Outdoor Recreation
Participation Occasions by Region Residents



Source: Table 4.3

Source: Table 4.4

The regional variation of per capita participation summed for fifteen urban-type activities is illustrated in figure 4.3. Socio-economic factors probably play the largest role in the regional per capita variation. Many of the regions with high per capita urban participation have high percentages of low-income residents. These people may forego opportunities which require travel in favor of less costly urban opportunities. Some regions with low per capita participation in urban activities have high proportions of senior citizens, while many of those with high rates have greater proportions of children.

Table 4.4 shows participation by region residents in resource-based activities. Those regions which show the highest per capita participation in resource-based activities (figure 4.3) generally have resource attractions located near population centers. Of the top six most active regions, four are coastal regions and one is region 14 which has

both national forests and major reservoirs. The regions which generate the lowest rates of resource-based participation include some of the driest (region 8, 19, 2, and 1). Though region 19 boasts Falcon Reservoir, the lake has a limited number of parks and is located away from major population centers. Three of these regions border on the state of New Mexico which has resource-based opportunities closer than comparable Texas ones. Participation at out-of-state destinations was not collected.

In thousands of annual user occasions in resource-based activities (table 4.4), the regions which generate the greatest amounts of participation include the highly populated Houston-Galveston, Dallas-Fort Worth, San Antonio, and Austin regions. Often, the regions with large metropolitan areas are also the ones with high percentages of resource-based participation leaving for destinations outside the region.

Even with small percentages leaving the region, the high quantity of participation generated by highly populated regions can create significant impacts on destination regions. Other regions with high percentages of participation leaving are those with few freshwater-oriented opportunities.

Participation at Destination Regions

Table 4.5 shows participation in resource-based activities projected to occur at destinations within each of the regions. It also indicates what percentage of each region's resource-based participation comes from Texans living outside the region.

Population plays a weaker role in predicting the magnitude of annual user occasions at resource destinations. Regions with many resource attractions but relatively low populations may support disproportionate amounts of resource-based participation. Regions

with the highest percentages of participation coming from outside the region tend to receive participation from the large metropolitan regions. Popular destination regions also boast major resource attractions - national forests, the mid-gulf coast, hill country rivers and hunting, and reservoirs located within a two-hour drive of metropolitan areas.

Table 4.6 shows the total annual user occasions projected to occur within each region for all twenty-six activities combined. Figure 4.4 illustrates the rankings of the regions. For all three projection years, the regions with the greatest magnitude of participation closely parallel those with the greatest population. For example, the top six regions in 1995 annual participation occasions (figure 4.4) include five of the top six most populated regions (16, 4, 18, 12, and 21).

Figure 4.4
Projected 1995 Participation Occasions in Twenty-six Outdoor Recreation Activities at Destination State Planning Regions

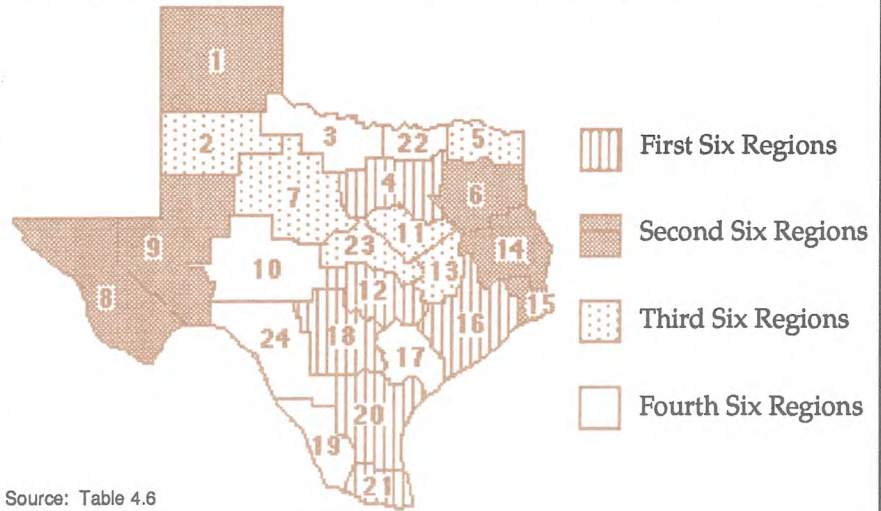


Table 4.4
Projected 1995 Outdoor Recreation Participation Summed for Eleven Resource-based Activities* by Region Residents in Texas

| Region | Annual User Occasions Per Capita | Annual User Occasions (In Thousands) | Percent of Resident Participation Leaving the Region |
|--------------------|----------------------------------|--------------------------------------|--|
| 1 | 11.6 | 5,026 | 15 |
| 2 | 11.1 | 4,413 | 47 |
| 3 | 12.1 | 2,980 | 25 |
| 4 | 11.7 | 49,223 | 46 |
| 5 | 12.1 | 3,306 | 16 |
| 6 | 13.2 | 10,247 | 23 |
| 7 | 13.5 | 5,061 | 24 |
| 8 | 6.5 | 4,320 | 20 |
| 9 | 11.8 | 5,747 | 73 |
| 10 | 14.8 | 2,483 | 26 |
| 11 | 13.2 | 4,035 | 23 |
| 12 | 14.4 | 13,890 | 31 |
| 13 | 13.5 | 3,879 | 37 |
| 14 | 16.6 | 5,930 | 13 |
| 15 | 16.7 | 6,946 | 59 |
| 16 | 15.1 | 70,597 | 36 |
| 17 | 16.6 | 3,190 | 28 |
| 18 | 13.4 | 20,923 | 38 |
| 19 | 10.5 | 2,241 | 33 |
| 20 | 15.5 | 9,400 | 19 |
| 21 | 13.0 | 9,708 | 18 |
| 22 | 12.1 | 1,868 | 17 |
| 23 | 14.4 | 4,776 | 34 |
| 24 | 12.5 | 2,082 | 21 |
| State Total | 13.3 | 252,272 | - |

* Participation was summed by origin for the eleven resource-based activities for which origin-destination participation was collected: camping, picnicking, hiking, nature study, hunting, freshwater and saltwater swimming, fishing and boating.

Table 4.5
Projected 1995 Outdoor Recreation Participation Summed for Eleven Resource-based Activities* at Destination Regions by Region Residents and Texans from Outside the Regions

| Region | Annual User Occasions (In Thousands) | Percent of Participation Coming from Texans Outside the Region |
|--------------------|--------------------------------------|--|
| 1 | 4,946 | 14 |
| 2 | 2,570 | 9 |
| 3 | 3,655 | 38 |
| 4 | 28,053 | 6 |
| 5 | 4,622 | 40 |
| 6 | 14,055 | 44 |
| 7 | 7,138 | 46 |
| 8 | 6,757 | 49 |
| 9 | 1,911 | 19 |
| 10 | 4,782 | 61 |
| 11 | 7,813 | 60 |
| 12 | 17,394 | 45 |
| 13 | 5,876 | 59 |
| 14 | 16,382 | 69 |
| 15 | 3,649 | 22 |
| 16 | 51,316 | 12 |
| 17 | 4,726 | 51 |
| 18 | 18,225 | 29 |
| 19 | 2,832 | 47 |
| 20 | 18,292 | 58 |
| 21 | 10,677 | 26 |
| 22 | 5,292 | 71 |
| 23 | 4,378 | 27 |
| 24 | 6,935 | 76 |
| State Total | 252,272 | - |

* Participation was summed by destination for the eleven resource-based activities for which origin-destination participation was collected: camping, picnicking, hiking, nature study, hunting, freshwater and saltwater swimming, fishing and boating.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and figure and an explanation of research methods. See Appendix D for an explanation of terms.

TRENDS IN PARTICIPATION



Open space activities such as frisbee, volleyball, and kite flying appear to be gaining in popularity.

Demographic Influences

Demographic changes will have significant impact on recreation trends in the future. The activities of baby boomers will continue to influence the recreation picture. In 1995, members of this group will range from their mid-thirties to late forties. Some demographers predict there will be a baby boomlet as the baby boomers have families.¹ The younger generation boomers can affect the need for youth facilities and programs.

The original baby boomers have grown up with outdoor recreation in their lives. If this group follows the patterns of prior generations, however, its participation will drop off with age. Some suspect that this generation may continue to be active, either in their same activities or substitute activities.²

The retired generation is increasing in numbers as people live longer and retire earlier. This group has been showing greater interest in travelling for leisure.³ Their participation may create greater needs for RV campgrounds, walking trails, and golf courses.

The income factor also drives participation. The middle-income group seems to be shrinking. There is a trend for the upper-income group to prefer private recreation opportunities. At the same time, a growing low-income group will need affordable recreation opportunities.⁴

Leisure Lifestyles

A variety of lifestyle changes affect the availability of leisure time. Society is experiencing a growth in single par-

¹ President's Commission on Americans Outdoors, Report and Recommendations to the President of the United States. (Washington, D.C.: U.S. Government Printing Office, 1986), p. 29.

² Barbara Everitt Bryant, "Built for Excitement," in *American Demographics*, March, 1987, p. 42.

³ President's Commission, p. 24.

⁴ *Ibid*, p. 33.

Table 4.6
Total Projected Outdoor Recreation Participation Summed for Twenty-six Activities at Destination Regions by Region Residents and Texans from Outside the Regions, 1990, 1995, 2000

| Region | Annual User Occasions (In Thousands) | | |
|--------------------|---|------------------|------------------|
| | 1990 | 1995 | 2000 |
| 1 | 27,437 | 28,450 | 29,476 |
| 2 | 24,062 | 24,378 | 24,691 |
| 3 | 16,439 | 16,785 | 17,138 |
| 4 | 246,755 | 263,723 | 280,714 |
| 5 | 17,435 | 18,019 | 18,610 |
| 6 | 47,603 | 51,210 | 54,833 |
| 7 | 25,446 | 26,751 | 28,067 |
| 8 | 44,376 | 47,743 | 51,111 |
| 9 | 24,951 | 27,464 | 29,984 |
| 10 | 12,729 | 13,576 | 14,431 |
| 11 | 22,530 | 23,399 | 24,270 |
| 12 | 69,681 | 75,576 | 81,483 |
| 13 | 20,758 | 23,013 | 25,280 |
| 14 | 31,193 | 33,100 | 35,014 |
| 15 | 27,514 | 27,866 | 28,218 |
| 16 | 306,314 | 333,861 | 361,418 |
| 17 | 14,212 | 14,789 | 15,368 |
| 18 | 102,078 | 108,484 | 114,899 |
| 19 | 13,983 | 15,739 | 17,495 |
| 20 | 50,784 | 54,037 | 57,292 |
| 21 | 50,150 | 55,143 | 60,136 |
| 22 | 12,586 | 12,838 | 13,091 |
| 23 | 22,055 | 23,145 | 24,240 |
| 24 | 15,894 | 17,025 | 18,162 |
| State Total | 1,246,967 | 1,336,114 | 1,425,420 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Participation was summed by destinations for all twenty-six outdoor recreation activities included in the survey. See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

ent families, working mothers, and longer working hours. All of these reduce leisure time available to people. Because people have fewer leisure hours, they value their leisure time even more, and look for stress-relieving activities which can fit into limited leisure time.⁵

With less leisure time, citizens seem to desire high-quality experiences closer to home, lighted facilities to make them available more hours, and to take shorter but more frequent trips, especially day outings or trips of less than six hours.⁶

Technology

Technology impacts recreation through improvements in equipment and products. Aerospace technology shows up as lighter weight materials in bicycles and camping gear. Sailboards, ABS plastic and inflatable watercraft, and a variety of off-road vehicles are examples of expanding technologies applied to recreation. The recreation shoe industry is continually improving shoe designs and creating new types for specific activities.⁷

Sometimes technology creates new varieties of recreation opportunities. The development of mountain bicycles is a good example of a new twist to an old product. The growth in popularity of these machines has created a new need for trails and has caused recreation managers to reevaluate their trail plans and management practices. In other situations, recreation activities may create demand for technological innovations. In both cases, new technology encourages expenditures on the latest recreation equipment. New technology has the potential to bring down the price per item.

Technology in the home entertainment field creates competition for outdoor activities. High quality sound and video systems, video recorders and electronic games keep some potential recreationists at home.⁸

Reported Activity Trends in Texas

Recreation professionals have recognized some current activity trends which they suspect will continue into the future. The emphasis on fitness creates interest in "lifelong" activities

such as walking, swimming, bicycling, tennis, and golf. Physical education classes are means by which some public schools are increasing efforts to encourage students to participate in lifelong activities.

Across Texas many people report increases in demand for open spaces, for unstructured activities, and for non-consumptive wildlife opportunities. Demand for close-to-home opportunities makes trail activities popular and urban fishing programs increase.

Sports activities have experienced changes in recent years. Increased participation by women and girls has accelerated the growth in league softball, basketball, soccer, and volleyball. Adult sand lot volleyball is a new trend. League flag football is replacing tackle football because the former is safer and less expensive. Some suspect that children's team softball may overtake interest in league baseball. As younger children play soccer, reduced team sizes can cause the need for more small fields. Some recreation professionals think the U.S. hosting the World Cup in 1994 will spur greater interest in soccer.

NON-PARTICIPATION

Reversing figure 4.1 (the statewide percentage of population participating in each of twenty-six activities) reflects the percentage of those who do not participate annually in each recreational activity (figure 4.5). The percentage of Texans that do not participate in various outdoor recreation activities ranges from 93 percent for saltwater boating and soccer to 41 percent for walking for pleasure. Indeed, slightly over 10 percent of the respondents to the 1986 Origin-Destination Participation Survey indicated that they did not participate in any of the twenty-six outdoor recreation activities included in the survey in the previous year.

⁵ Ibid, pp. 29-30, 33.

⁶ Ibid, p. 23-28.

⁷ Ibid, p. 32.

⁸ Ibid, p. 32.

An underlying assumption of public outdoor recreation planning is that participation in outdoor recreation activities is good for society. In passing the Land and Water Conservation Act of 1965 (Public Law 88-578), an Act which provides federal funding assistance to acquire and develop public parks and facilities, Congress states that outdoor recreation resources "are necessary and desirable for individual active participation in such recreation and to strengthen the health and vitality of the citizens of the United States". The Texas statewide outdoor recreation planning process was a direct result of the Land and Water Conservation Act for the state of Texas to be eligible for this federal funding assistance. One may conclude that understanding why Texans do not participate in outdoor recreation activities is just as important as why Texans do participate.

To date, non-participation has received little attention in statewide

comprehensive outdoor recreation plans. These plans most often compare current or projected demand with existing recreation facility supplies to estimate future outdoor recreation facility needs. Because of the difficulty of estimating latent demand, expressed demand is often used synonymously with and substituted for real demand when estimating facility needs. Non-participants are assumed to remain non-participants, and strategies to stimulate their participation are ignored.

Analysis of the 1986 Origin-Destination Participation Survey indicates aging as a key factor that limits participation in outdoor recreation activities. This research shows that the percent of non-participation increased steadily from age thirty to where 40 percent of Texans over sixty-nine years old did not participate in any of the twenty-six outdoor recreation activities during the previous year. Ethnicity also appears as a factor limiting participation in many

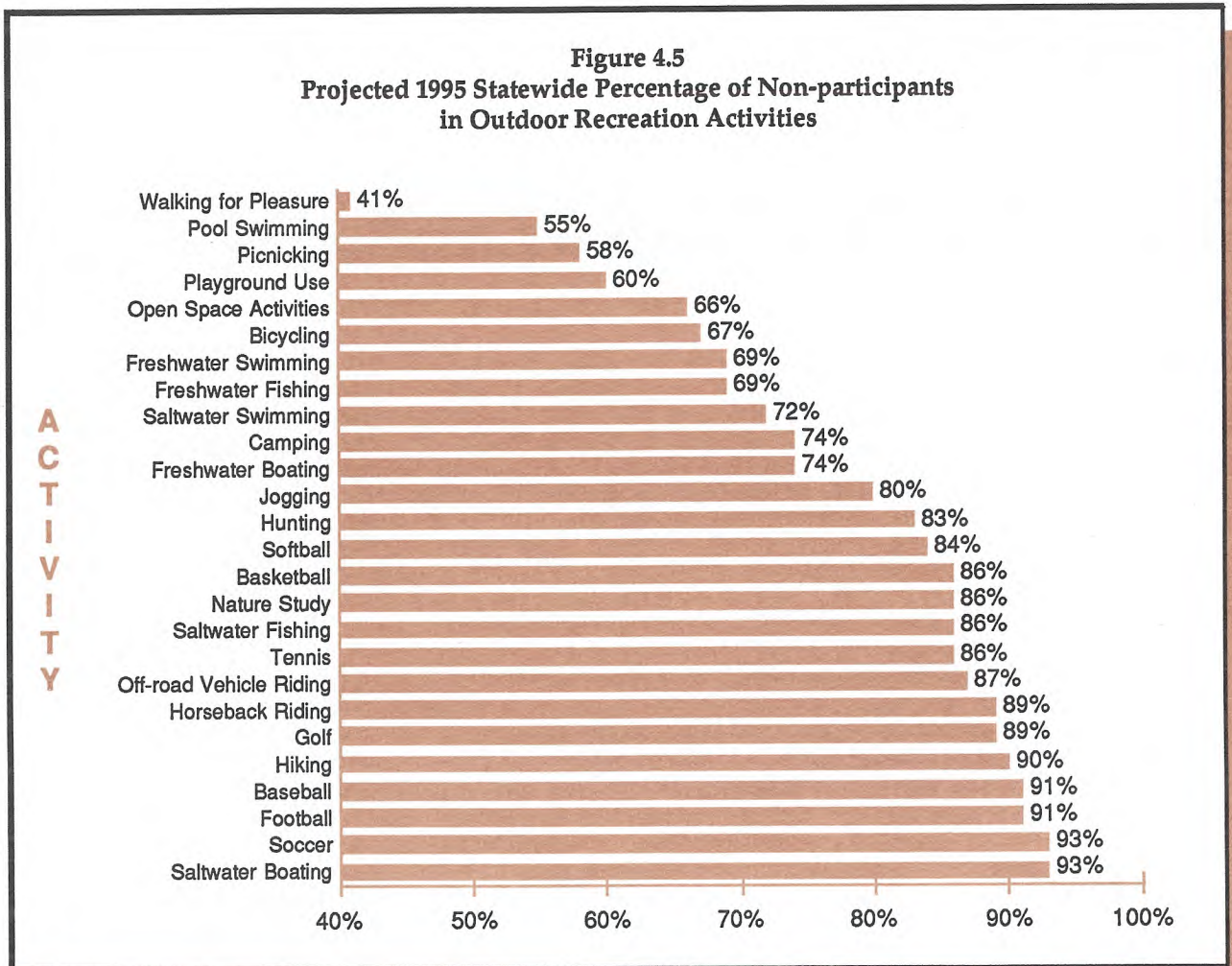
of the activities and could be examined further.

Behavioral research to uncover the social and psychological factors that influence an individual's choice of whether or not to engage in a particular outdoor recreation activity, if any at all, is in its infancy compared to research of other aspects of recreation. Social research has focused upon the influence that family and friends, and family life cycle may have on an individual's participation. Psychological aspects of the individual that may effect participation have dealt with internal motivations and needs, and how participation in outdoor recreation may help to satisfy these internal needs.

The availability and spatial distribution of existing outdoor recreation opportunities were examined to determine their effect on participation. Other research projects have looked to see if outdoor recreation non-participants are merely substituting other forms of leisure pursuits (hobbies, TV, etc.) to satisfy their leisure needs. Specific cultural, racial, and ethnic barriers to participation have also been considered. While much of this research has had promising results, uncovering or predicting why and how individuals will behave is a difficult research task. Operationalizing the results of this research into outdoor recreation planning has also proved to be difficult.

Planning efforts should also focus on non-participants. A question in the 1986 Origin/Destination Participation Survey asked Texans to indicate reasons why they did not participate in outdoor recreation more. People cited "no time" (47.4 percent) and "recreation opportunities too far" (31.1 percent) most often, while over 25.8 percent of the respondents cited a "lack of information about existing opportunities." These responses may suggest practical solutions that management could provide, such as locating future parks closer to population centers and distributing more information on available recreational opportunities.

Figure 4.5
Projected 1995 Statewide Percentage of Non-participants
in Outdoor Recreation Activities



Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.



CHAPTER 5

OUTDOOR RECREATION RESOURCE AND FACILITY NEEDS

After two decades of growth in tennis participation, the need for additional tennis courts remains high.

INTRODUCTION

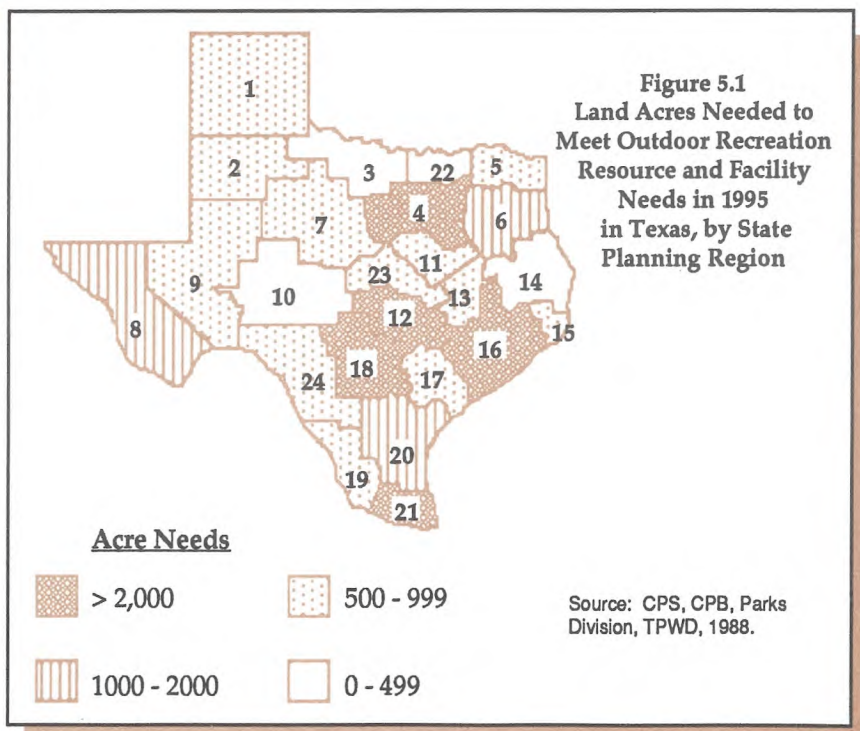
The growing demand for recreation continues to place a heavy burden on the state's existing recreation resources, many of which are inadequate to meet the recreation needs of the public. More resources in the form of recreation land, water, and facilities will be required to satisfy the broad variety of public preferences and interests. Land resources include developed and undeveloped lands, encompassing the different geographic areas of the state, such as forests, plains, hill country, and mountains. Recreational water might be lakes, rivers, ponds, bays, marshes, or the Gulf. Facilities can vary from a primitive campsite in a remote area to a highly developed recreation complex in a heavily urbanized area.

LAND

Developed Land

Developed land acre needs are those required for the facilities plus buffer space (table 5.1). The acre needs do not, however, include allowances for large open spaces surrounding facilities. A need for over thirty-eight thousand acres is shown for 1990. This need will increase 16 percent to nearly forty-five thousand acres in 1995, and to over fifty-one thousand acres by the year 2000. Developed land acre needs may be provided on existing undeveloped recreation land or through acquisition.

Regions with the largest projected land acre needs are those with large urban populations and large numbers of facility needs (figure 5.1). Region 16 leads all other regions by far with nearly sixteen thousand acres needed by 1995. The next largest needs are in



region 4, about fifty-five hundred acres, only about a third of the region 16 needs. Other regions with large (over a thousand acres) developed land needs by 1995 are 18, 21, 12, 8, 20, and 6, respectively.

Other Land

Other land needs not specified here include recreational open space, natural areas, and hunting land. These needs are less quantifiable given current methodologies available, but just as important as developed land needs. Open spaces are areas where there is little or no development and people can recre-

ate in natural surroundings. Open space land can also be for protecting unique resources or wildlife habitat. Natural areas are areas that contain examples of rare, threatened, or endangered plants, animals, natural communities, or special sites or habitats (see Appendix D, Glossary). Hunting lands include both public and private acres available to the public, either free or for a fee. Hunting lands could also include wildlife management areas or areas set aside for non-consumptive wildlife recreation, such as bird-watching and wildlife photography.

WATER

Surface Acres

Table 5.1 shows a need for only about six hundred surface acres suitable for boating, fishing, and water-skiing for each of the three projection years. These needs are based on current recreation participation patterns at existing lakes. The needs do not consider "latent" demand or participation that would occur given increased supplies of recreational water, good distribution, and easy access.

Several key factors in determining and meeting recreational surface acre needs are distribution, feasibility, and access. Water in Texas is unevenly distributed. The western half of the state has less rainfall and fewer streams and lakes than the eastern half (see chapter 3, "Outdoor Recreation Resources"). The feasibility of building a reservoir depends on the availability of water, physical characteristics of the land, financing, environmental considerations, and public support of the project. Access means whether the lake is open to the public, and if so, how easy is it to reach. Privately developed reservoirs may not allow public access. Access to public reservoirs may be limited by private lands or few roads, parks, or boat ramps.

Other Water Needs

Streams, saltwater bays, wetlands, and beaches are resources unlike reservoirs because they cannot be created. They are important resources, but their recreational use is sometimes limited by inadequate public access. River access is generally confined to public parks, boat ramps, bridges, or road crossings. Saltwater access is limited to areas of the coast served by public roads or public recreation areas. The key to meeting the recreational needs for streams and salt water is ensuring adequate public access.

Table 5.1
Additional Outdoor Recreation Facilities/Resources
Needed Statewide, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|---|----------------------------|--|--------------|--------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 1868 | 429 | 547 | 662 |
| Basketball Goals | 2307 | 1174 | 1413 | 1653 |
| Boat Ramp Lanes, FW | 2113 | 734 | 846 | 1004 |
| Boat Ramp Lanes, SW | 294 | 271 | 314 | 359 |
| Campsites | 85856 | 7998 | 10809 | 13928 |
| Fishing Structures, FW Lin.Yd. | 55522 | 18872 | 22392 | 26031 |
| Fishing Structures, SW Lin.Yd. | 160418 | 8870 | 10925 | 14233 |
| Golf Holes | 3944 | 369 | 509 | 698 |
| Hiking Trail Miles | 640 | 404 | 457 | 512 |
| Horseback Riding Trail Miles | 324 | 318 | 345 | 371 |
| Lake Acres (BFS Suitable), FW | 1185395 | 567 | 613 | 658 |
| Off-road Vehicle Riding Acres | 11281 | 1871 | 2047 | 2225 |
| Picnic Tables | 42665 | * | 40 | 143 |
| Playground Areas, Equipped | 3988 | 4256 | 4760 | 5258 |
| Soccer/Football Fields | 1457 | 974 | 1104 | 1232 |
| Softball Fields | 1608 | 779 | 899 | 1022 |
| Swimming, FW Sq.Yd. (000) | 6182 | 5721 | 6202 | 6687 |
| Swimming, SW Sq.Yd. (000) | 3942 | 8420 | 9231 | 10042 |
| Swimming, Pool Sq.Yd. (000) | 507 | 271 | 313 | 355 |
| Tennis Courts | 3125 | 3073 | 3496 | 3925 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 614 | 1160 | 1297 | 1437 |
| Developed Land Acres | | 38480 | 44618 | 51389 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities. See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

FACILITIES

Statewide recreation facility needs are in addition to the existing supply (table 5.1). Ratios of needs to supply show how needs compare to supply, and are thus one measure of priority. Facilities with large 1995 ratios (ratios of one or more, i.e., at least as many new facilities are needed as exist now) are:

- saltwater boat ramp lanes,
- horseback riding trail miles,
- equipped playground areas,
- square yards of freshwater swimming,
- square yards of saltwater swimming,
- tennis courts, and
- multi-use trail miles.

The next largest needs (i.e., ratios between 0.5 and 1.0) include:

- basketball goals,
- hiking trail miles,
- soccer/football fields,
- softball fields, and
- square yards of pool swimming.

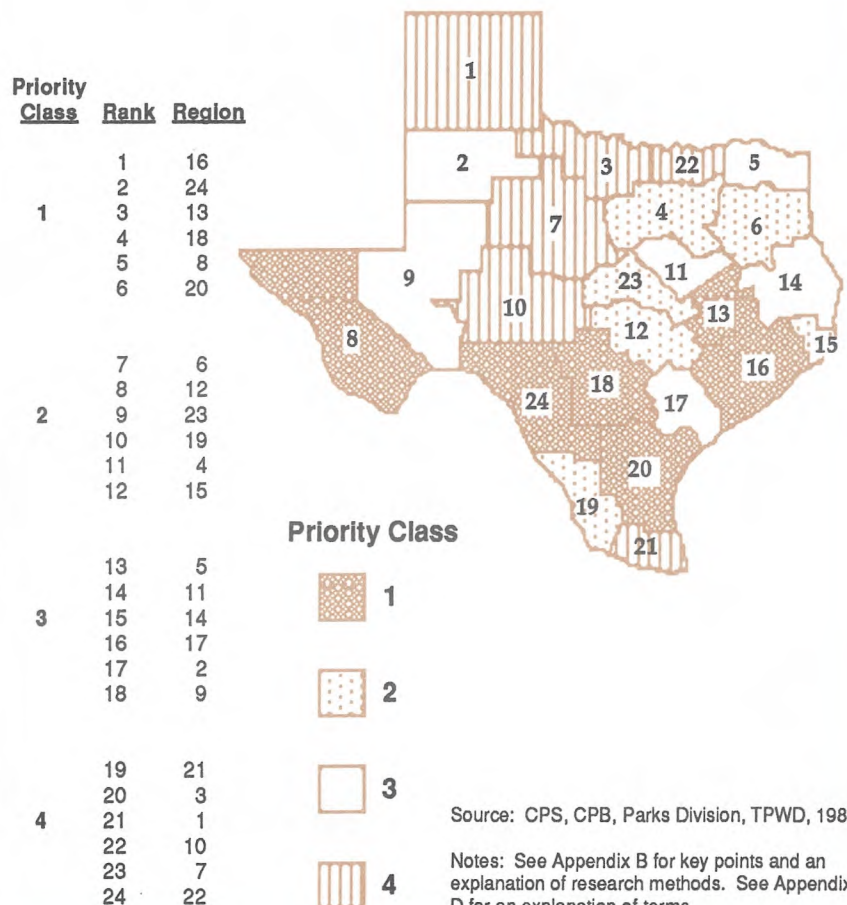
Statewide facility needs are the sum of needs in the twenty-four regions. Inadequate distribution of existing facilities may cause the total statewide needs to be higher. For example, an individual community may need picnic tables, but the region may show no picnicking needs. If the inadequate distribution of supply is taken into account, the statewide needs may be higher for some facilities.

PRIORITIES

Figure 5.2 ranks the 1995 regional needs by planning regions and groups these rankings into four priority classes. The four priority classes indicate general needs for more facilities and resources. Class I regions are the six planning regions where the combined deficits for all outdoor recreation deficits are the greatest. Classes II, III, and IV regions have increasingly lower needs when looking at combined deficits for facilities and resources. Note that Class IV regions do require more facilities and resources, only less so in terms of overall deficits than Classes I, II, and III. Priority classes were determined using the following steps:

1. For each region, multiply the 1986 facility supply times the conversion factor (see Appendix B, "Planning and Research Methods") for each of the facilities shown in table 5.1 to obtain facility capacity in user occasions for each type of facility. Sum these facility capacities within each region to estimate the regional total capacity for all facilities.
2. For each region, sum 1995 projected participation (region of destination basis, tables 3 and 4, Regional Summaries) in user occasions for all facilities to obtain combined total participation.

Figure 5.2
Priority Classes for Projected 1995 Outdoor Recreation Needs in Texas, by State Planning Region



3. Compare each region's total capacity with its total projected participation. Subtract projected participation from capacity. If capacity is larger, a surplus exists. If projected participation exceeds capacity, there is a deficit.

4. Divide the surplus or deficit by the projected 1995 regional population to obtain surplus or deficit user occasions per capita.

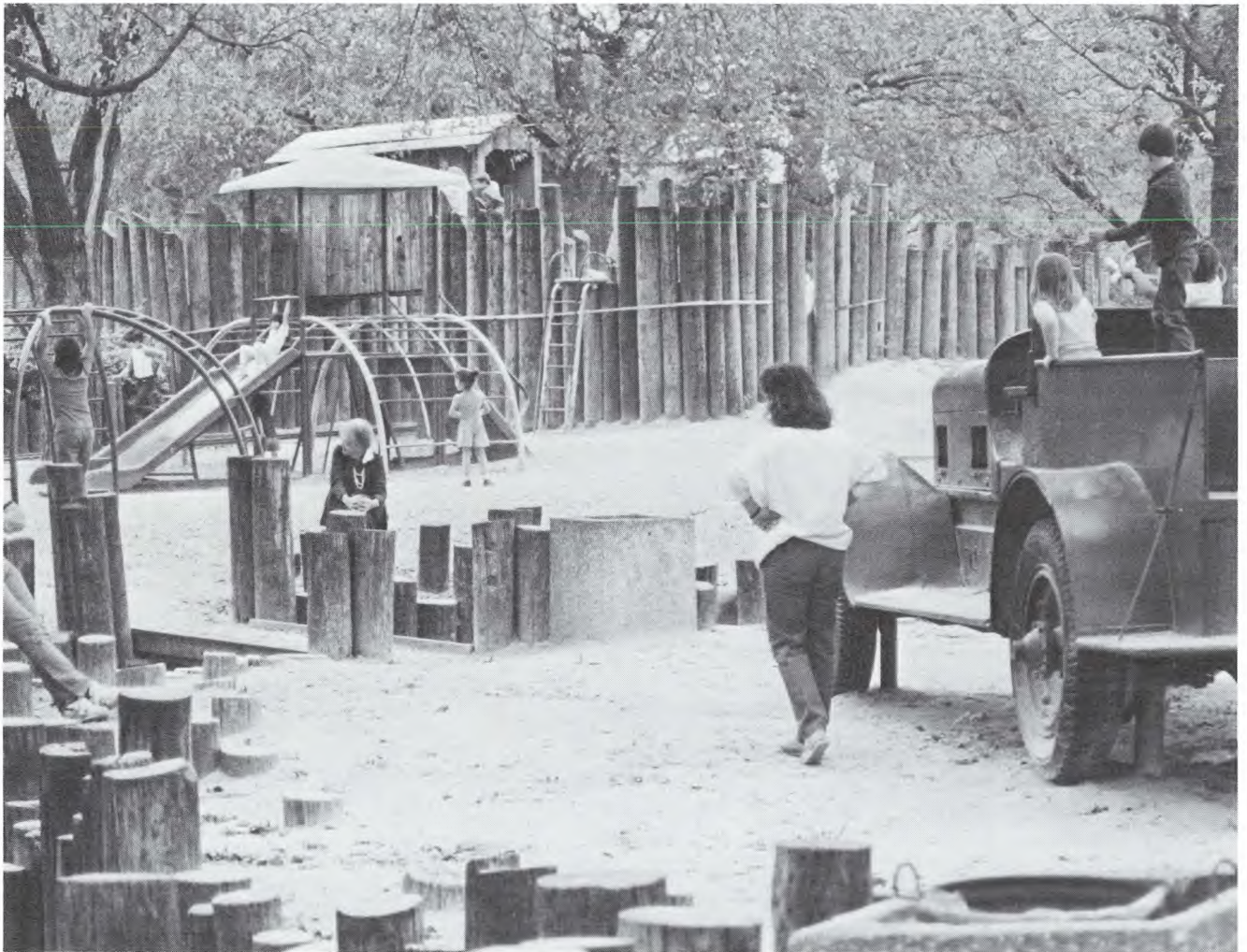
5. Rank regions in order of priority with the greatest per capita deficit ranked first, and so on; then group all twenty-four planning regions into four priority classes, with six regions in each of the priority classes.

Regions 16, 18, 20, 8 in priority Class I, and regions 6, 12, and 4 in class II are seven of the eight most populous regions in Texas. These are also popular destinations because of the many attractions and recreation resources they offer, such as woodlands, lakes, salt water, or mountains. Other regions, such as 24 and 13 in class one and 23, 19, and 15 in class two, while less populous than other class one regions, are popular destination regions which attract large numbers of recreationists.

Although overall facility needs for regions with surplus occasions per capita are being met, there could be needs in local communities within these regions due to the inadequate geographic distribution of supply within the region. Remember that these four

priority classes give general guidance only; the reader is referred to the appropriate Regional Summary for specific information.

The reader should also note that Figure 5.2 shows the priority rankings of overall needs in terms of surplus or deficit user-occasions per capita, whereas figure 5.1 shows categories of total land acre needs. The two do not necessarily correlate. For example, some facilities, such as campsites, require fewer land acres per facility unit than others, such as baseball fields (0.25 acres per campsite compared to 3.0 acres per baseball field; see Appendix B, table B3). Thus, it is possible for a region to rank high in land acre needs and low in overall priority, or vice versa, depending on the particular facilities needed.



Playgrounds often play an integral role in childhood motor skill development.



CHAPTER 6

THE ECONOMIC IMPACT AND VALUE OF OUTDOOR RECREATION IN TEXAS

Expenditures by boaters for equipment, supplies, and gas were estimated to be nearly \$370 million in 1987.

INTRODUCTION

Parks and recreation resources have many intrinsic benefits to society that have historically justified providing these opportunities with public funds. Parks can have watershed, air quality, wildlife, historical, cultural, open space, and other environmental values to society. Citizens who choose to pursue the recreational opportunities that these sites offer may receive both physical and psychological benefits which also have value to society. Most people agree that parks and recreation resources have these and other social benefits. The difficulty in measuring the extent of these benefits, or placing a value upon them, makes it harder for recreation providers to compete with other public services for limited public funds.

Outdoor recreation has a multi-billion dollar impact on the Texas economy. Two studies completed by the Texas Parks and Wildlife Department, **1981 Outdoor Sporting Goods Expenditures in Texas** and **1983 Outdoor Recreation Trips Expenditures in Texas**, showed that Texans spend some \$10 billion annually for outdoor recreation, including equipment, clothing, travel, and related services, such as food, lodging, and fees. Two more recent studies conducted in 1987 confirm that recreation spending remains strong despite the recent economic slowdown.

OUTDOOR CLOTHING AND EQUIPMENT EXPENDITURES IN TEXAS

An update of some of the 1981 sporting goods expenditure data in 1987 showed that Texans spent over a billion dollars on recreation equipment and clothing (table 6.1). Boating expenditures ranked first with nearly \$370 million, or 35 percent of the total. Water-skiing, an activity closely associated with boating, accounted for over \$8 million in spending.

The next largest category was ath-

letic clothing with nearly \$254 million. With the \$70 million spent on walking, hiking, and jogging shoes, the combined total for clothing was over \$323 million. Bicycling expenditures totalled nearly \$60 million.

Traditional outdoor activities like camping, hunting, and fishing are popular in Texas and generally rank high in spending. The combined expenditure for these three activities amounts to about \$124 million, 12 percent of the total. Texans enjoy skiing in nearby states and spent almost \$23 million in their home state on skiwear and skis. Golf, tennis, basketball, baseball, softball, football, and soccer accounted for \$138 million, 13 percent of all equipment spending in Texas.

THE ECONOMIC IMPACT OF VISITOR TRAVEL TO PARKS AND RECREATION AREAS

While the costs of acquiring and developing a park or recreation facility are often readily available, the economic benefits accrued because of a park's existence generally are not. Administrators often view revenue generated by park user fees (entrance and camping fees) as a measure of a site's economic performance or value. Park

Table 6.1
Estimated 1987 Recreation Equipment Expenditures
in Texas

| <u>Activity/Item</u> | <u>Expenditures (\$000)</u> | <u>Percent of Total</u> |
|------------------------------|-----------------------------|-------------------------|
| Boating | \$ 369,970 | 35.4 |
| Athletic and Sport Clothing | 253,717 | 24.3 |
| Walking, Hiking, and Jogging | 69,733 | 6.7 |
| Bicycling | 59,660 | 5.7 |
| Golf | 51,673 | 4.9 |
| Camping | 46,905 | 4.5 |
| Hunting | 45,475 | 4.3 |
| Tennis | 43,508 | 4.2 |
| Fishing | 31,290 | 3.0 |
| Skiing | 22,588 | 2.2 |
| Basketball | 14,542 | 1.4 |
| Baseball and Softball | 13,291 | 1.3 |
| Football | 8,582 | 0.8 |
| Water-Skiing | 8,225 | 0.8 |
| Soccer | 6,794 | 0.6 |
| Total | \$1,045,953 | 100.1 |

Sources: National Marine Manufacturers Association; National Sporting Goods Association, *The Sporting Goods Market in 1988*; U.S. Department of Commerce Bureau of the Census; and CPS, CPB, Parks Division, TPWD, 1989.

user fees, however, are traditionally not based upon the standard free market principles of supply and demand. Instead, they are set artificially low to be non-discriminating and encourage visitation by all citizens. Thus, evaluating a site based simply on the revenues generated by user fees grossly underestimates the economic impact of the site to the state's economy.

Local economies near park sites benefit from the local purchases made by visitors to the site. Likewise, travel-related enterprises located along travel routes to parks receive revenues that can be attributed to the existence of the park. Estimates of visitor expenditures are necessary to more fully understand the effect of park sites on state and local economies.

Research conducted by the Texas Parks and Wildlife Department examined the economic impacts of Texas state park visitors to the economy of Texas and collected visitor profile information. Data were collected at ninety-two Texas state park sites by park staff via 44,117 random on-site interviews of park visitors throughout the entire 1987 calendar year. The following findings represent only the ninety-two sites included in this assessment and are in

1987 dollars. Fifteen additional state park sites were open to the public when this assessment was conducted but were not included in the project. Con-

servative methodology was utilized in estimating visitor expenditures to err on the low side if at all.

Direct Visitor Expenditures

The combined direct economic impact to the state of Texas of visitors to ninety-two state park sites included in the study during 1987 was conservatively estimated to be \$140,926,577. Of that total, \$76,232,409 was spent by state park visitors inside and adjacent to the park sites, and \$64,694,168 more was spent traveling within Texas to and from these parks.

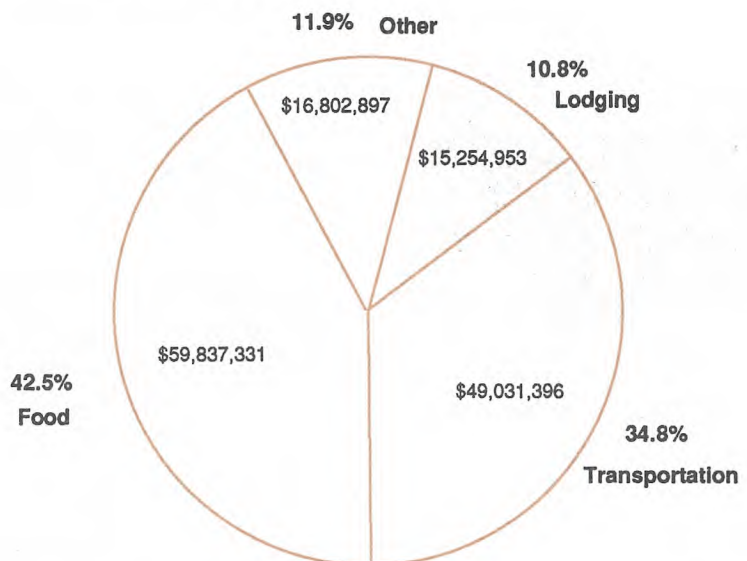
On the average, a day visitor purchased \$6.96 of goods and services per day trip to a state park site; an overnight visitor spent an average of \$8.00 per night camped.

Figure 6.1 shows the statewide visitor expenditures that occurred in the four economic sectors that were included in the survey.

Total Economic Impact

The annual direct economic impact of \$140,926,577 is an important figure in understanding the economic impact that the Texas State Park system has upon the state, but it is only a part of the whole picture. In the fiscal year 1987, the Parks Division of the Texas Parks and Wildlife Department expended \$34,499,890 to maintain, ad-

Figure 6.1
1987 Statewide Economic Impact of Visitors
to Ninety-two Texas State Park Sites



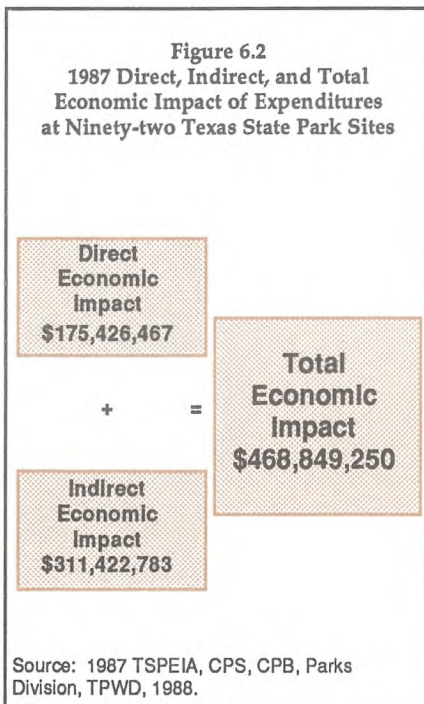
Source: 1987 TSPEIA, CPS, CPB, Parks Division, TPWD, 1988.

minister and improve the Texas State Park System. These funds are, like the visitor expenditures, direct economic expenditures made in the Texas economy. This figure added to the visitor expenditures creates a total direct economic impact of \$175,426,467.

Some of these direct economic impacts, or actual dollars spent, are recirculated by the receiver(s) of the direct economic impacts. Recirculation of money, and subsequent secondary economic impacts, that result because of direct economic impacts are referred to as indirect economic impacts.

The Texas Input-Output Model, 1979 developed by the Texas Department of Water Resources (now the Texas Water Development Board), calculates a multiplier for each sector of the state's economy that estimates the degree of recirculation of purchases. Utilizing these multipliers, expenditures made at or enroute to these ninety-two state parks in Texas had a total economic impact of \$486,849,250. This figure does not include equipment or supplies previously purchased by visitors in their home community. The total economic impact equals the direct economic impacts plus their resulting indirect economic impacts (figure 6.2). (For more detailed information, a technical report titled *The 1987 Annual Economic Impact of State Park Visitors on Gross Business Receipts in Texas* is available upon request from CPB, Parks Division, TPWD.)

Figure 6.2
1987 Direct, Indirect, and Total Economic Impact of Expenditures at Ninety-two Texas State Park Sites



ECONOMIC VALUE AND ECONOMIC IMPACT, AN IMPORTANT DISTINCTION

Beneficial economic impacts of parks and outdoor recreation resources have long been recognized by businesses and communities near these attractions. The analysis of sporting goods expenditures and state park visitor trip expenditures are two of the more tangible examples of the economic impacts of outdoor recreation on the Texas economy. Estimates of economic impacts are important in tracking the flow of recreation generated dollars and jobs from one locale to another. But economic impact estimates should not be misconstrued to represent a measure of a park or recreation resource site's total value. The total economic value, or benefit, of these sites to society is not a concept easily understood, and few studies attempt to measure the total economic benefit of park resources.

A park has values other than expenditures made by visitors to the site. Urban neighborhood parks are a good example. They generally do not have

entrance or user fees, and if within walking distance, cost little to use. Thus, urban park visitors generate little or no direct economic impact, yet these parks have other values. These values park users receive, called "consumer surplus," are essentially free to the user, but have a value to society. Parks and outdoor recreation resources also have value to non-users of the site and are called off-site values.

The three primary types of off-site values found in resource valuation literature are option value, existence value, and bequest value (figure 6.3). Option value refers to the public's willingness to pay to retain the future option of using the site and keep the park resource as a park rather than shift the land use to some other irreversible use. Existence value is the benefit that the non-park user receives from the knowledge that the park and its recreation opportunities exist. Bequest value is the economic value received by provid-

Figure 6.3
Components of Total Economic Value of a Public Recreation Resource



Source: John B. Loomis and George L. Peterson, "Economic Information in River Recreation Management" in *1984 National River Recreation Symposium Proceedings* (Louisiana State University, 1984), p. 263.

ing or maintaining park resources for future generations.

The Contingent Value Method (or Bidding Method) has been used to measure these values for various resources. To estimate economic value with this method, randomly selected individuals in the community are asked, usually via questionnaire or interview, to place values on a specific park or group of parks in the community to ascertain how much they would be willing to pay to retain these sites as parkland.

The Travel Cost Method is another method that has been used to estimate the total economic value of a park site to visitors of the park. This method uses the distance traveled to the park site as a proxy for the "price" of a visit to the park and the number of trips annually made to the site as a substitute for the "quantity" of the opportunity demanded. A site demand curve can be estimated by comparing the various quantities demanded (park visits) at various prices (distance traveled to the site). The area under the demand curve

provides an estimation of the site's value and standard economic principles can be applied.

Both the Contingent Value Method and the Travel Cost Method are approved by the federal Office of Management and Budget (OMB) for use when estimating the value or benefit of a resource site for inclusion in a benefit-cost analysis. In the future, the real economic value of public park resources will be more apparent as these methods are applied by recreation providers.



High quality swimming pools can often generate revenue through entrance fees.



CHAPTER 7

PRESIDENT'S COMMISSION ON AMERICANS OUTDOORS

Outdoor recreation benefits society as well as individuals, and contributes significantly to the nation's economy.

◆ INTRODUCTION

The President's Commission on Americans Outdoors (PCAO) grew out of a broad-based concern over the future direction of outdoor recreation. At the urging of a number of individuals and organizations, Laurance S. Rockefeller, chairman of the 1958 Outdoor Recreation Resources Review Commission under the Eisenhower administration, convened seven leaders in recreation policy as the Outdoor Recreation Policy Review Group in 1983, with Rockefeller himself serving *ex officio*.

The Policy Group concluded

- that outdoor recreation is more important than ever in American life — as a fundamental expression of our national character, for its benefits to individuals and society, and its significant contribution to the nation's economy;
- that even in the face of increased demand for outdoor recreation, governments at all levels have been retrenching and providing less recreation opportunity; and
- that the private sector is doing more and could do even more with government cooperation.

"What was needed, the policy review group concluded, was a review and revitalization of government policy and an assessment of the increased outdoor recreation role of the private sector. It recommended the creation of a new outdoor recreation resources review commission to conduct a comprehensive assessment of outdoor recreation in America."¹

In 1985, President Reagan, responding to the policy review group's recommendations, created the PCAO and charged the members to "look ahead for a generation and see what needs to be done for Americans to have appropriate places to do what they want to do outdoors." The PCAO undertook the formidable task of assessing the entire national recreation picture. In a little over a year, members reported their findings to the president.

¹ December 1986. *Report and Recommendations to the President of the United States*. President's Commission on Americans Outdoors. U.S. Government Printing Office, Washington, D.C., pp. 7-8.

WHAT THE PCAO FOUND

Here are the major findings of the PCAO.

- "Americans place a high value on the outdoors; it is central to the quality of our lives and the quality of our communities.
- "Outdoor recreation provides significant social, economic, and environmental benefits. Because these benefits are difficult to assess in dollars, recreation and resources protection suffer in competition with other programs for public and private dollars.
- "High quality resources — land, water and air — are essential to fishing and boating, camping and hiking, skiing and bicycling, hunting and horseback riding, and every other outdoors activity.
- "Quality of the outdoor estate remains precarious. People continue to misuse and abuse resources and

facilities. We are becoming aware of more pervasive long-term threats such as toxic chemicals, water pollution from non-point sources, groundwater contamination, and acid precipitation.

- "We're losing available open space on the fringe of fast-growing urban areas and near water.
- "Wetlands and wildlife are disappearing.
- "Wild and free-flowing rivers are being dammed, while residential and commercial development is cutting off public access to rivers in urban areas.
- "With more people doing many different things outdoors, competition for available lands and waters is increasing; to accommodate these pressures we will have to better manage what we have.
- "The quality of recreation services

delivery is inadequate. Though some services are improving, much remains to be done.

- "Inadequate funding for staff, development of facilities, and maintenance limits recreation use of some public lands.
- "People in central cities have a harder time experiencing the outdoors.
- "Barriers to investment prevent the private sector from reaching its potential as a recreation provider.
- "Resources management and recreation programs offered by public and private providers are not coordinated as well as they should be.
- "The liability crisis is limiting our opportunities to enjoy the outdoors.
- "We don't have a good overall picture of what we have; we lack systematic monitoring of resource conditions and public needs."²

WHAT THE PCAO RECOMMENDS

The commission recommends a variety of actions to meet outdoor recreation needs. One major focus is the need for local action. Investments need to occur primarily "close-to-home." Efforts must originate in communities. A "prairie fire of local action" must sweep the nation. The commission envisions a network of greenways, created by local action, accessing the natural world, linking private and public recreation areas in linear corridors of land and waters.

The need for leadership should be met by a new nonprofit outdoors institution. The institution, appointed by the president, would promote public and private innovation, excellence, and investment in outdoor recreation through grants and information exchange. Decision-makers at all levels need better, coordinated information on supply and demand, on the eco-

nomic, social, health, and environmental values of outdoor recreation and on the condition of the natural resources base. The commission identified and made recommendations for other actions: developing an outdoor ethic, training recreation professionals, creating a role for willing private landowners, limiting liability, keeping up facilities, and providing open space.

How to pay for needed outdoor recreation improvements is often the bottom line. The challenge will be met through "partnerships" among the public and private sectors — organizations, business, industry, governments, and volunteers. The commission feels the first effort must come from the public's willingness to pay for desired services. Secondly, the creative private sector must be encouraged to come up with innovative ways to meet needs. Next, state and local governments

should move outdoor recreation up in their funding priorities. Lastly, the federal role must be to leverage private, local, and state investments through a dependable "seed money" fund.

The commission recommends the Land and Water Conservation Fund be succeeded by a dedicated trust, which would provide a minimum of \$1 billion per year for acquisition, facility development, and rehabilitation. They suggest Congress consider an endowed trust which could generate the \$1 billion from interest off investments of the principal. The fund's designers envision a variety of sources outside of general revenues, beginning with the continued use of proceeds from depletion of non-renewable resources (e.g., offshore oil receipts).

² Ibid, p. 9

WHO PARTICIPATED

The fifteen-member commission represented various recreation actors and decision-makers: federal, state, and local elected officials; a state and a city parks director (Mr. Charles Jordan, former Director of Parks and Recreation, Austin, Texas); conservation, recreation, and educational organizations;

and recreation businesses. They drew upon input from thousands of Americans ranging from randomly surveyed citizens to experts in the recreation field. Eighteen public hearings and additional strategy planning sessions were held throughout the country, including Austin, Texas. Information

came from 300 technical experts serving on study teams, 100 researchers, 700 citizen concept papers, all the states' outdoor recreation plans, special conferences and workshops, and a nationwide telephone survey of 2000 Americans covering their activities, preferences, and opinions.

COMPARISON OF OUTDOOR RECREATION ISSUES IN THE U.S. WITH TEXAS

A comparison of the outdoor recreation issues identified by the PCAO with the top statewide issues in Texas shows interesting similarities. Note that these issues were identified using two entirely independent processes.

National Outdoor Recreation Issues

- Protection of natural resources and open space
- Conflicting uses of recreational lands and waters
- Roles of providers
- Liability
- Physical access to open space
- Funding operations, maintenance, capital improvements
- Alternative funding sources
- Benefits of recreation
- Acquisition of open space
- Land use planning
- Social access to open space
- Partnerships
- Data base needs³

State Outdoor Recreation Issues

- Conservation of natural resources for recreational use
- More open space needed for recreation
- River recreation
- Managing visitors and recreational use

- Liability issues in outdoor recreation
- Tourism issues in outdoor recreation
- Maintenance and renovation
- Financing parks and recreation facilities/services
- Increasing the effectiveness of outdoor recreation implementation programs



³ Ibid, p. 36

Volunteer efforts are essential in meeting the nation's outdoor recreation needs.

PCAO REPORTS

Findings and recommendations are compiled in four volumes (the report and three appendixes):

PCAO: Report and Recommendations to the President of the United States, December, 1986. The report discusses existing conditions and recommendations covering what Americans want, the resources, and how the challenge can be accomplished.

Report of the PCAO: A Literature Review. Researchers surveyed academic journals, popular writings, government documents, and other

written materials on eleven major subjects such as trends, values, resource management, motivation, special populations, tourism, and financing. Reviewers make recommendations, identify problems and research gaps, summarize the findings, and cite references.

Report of the PCAO: Working Papers. Document includes staff study papers on supply and demand, summaries of conferences and workshops, reports from states, and results of the nationwide random survey.

Report of the PCAO: Case Studies. This volume includes twenty-four site-specific examples which serve as models for implementing some of the report's recommendations.

Copies of these documents are for sale by the:

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

Copies of these documents may also be available at libraries which serve as federal depositories.

REGIONAL
SUMMARIES



REGION 1

PANHANDLE

Idle pumps reflect the economic slowdown that has led to decreased funding for park programs.

ISSUES AND RECOMMENDATIONS

Issue: Limited Funding for Parks

Funding for parks and recreation programs, often tight during prosperous times, has become even more limited because of the statewide economic slump. Local park providers say that tax revenues have fallen off, necessitating cuts in programs, staff, services, and new development. Elected officials are reluctant to raise taxes during a recession, and in some cases, voters have turned down bond issues. Most communities and park providers are concentrating on maintaining current facilities and finishing out existing parks rather than acquiring and developing new ones. (Also see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

When feasible, emphasize development of multiple-use facilities and facilities that achieve multiple objectives such as recreation, access, preservation, etc.

Note: Effective September, 1989, Childress County left the Nortex Regional Planning Commission (region 3) to join the Panhandle Regional Planning Commission (region 1). Time constraints prevented the revision of all the TORP data to include this change. Therefore, tables 1 through 7 and figures 2 through 4 in regions 1 and 3 do not reflect this shift, i.e., the data on Childress County are contained in the region 3 tables and figures.

Make maximum use of federal, state, local government, and private grants and assistance programs.

Seek and investigate alternative funding sources, such as donations, fee systems, and foundations. Examine leases or easements as alternatives to fee simple purchases.

Support federal legislation to establish a trust, or similar mechanism, to provide funding for outdoor recreation.

Share ideas, solutions, facilities, and funds as much as possible with agencies, civic organizations, activity groups, institutions, and the private sector to maximize recreational opportunities at the lowest cost.

Design facilities to minimize maintenance and upkeep. Contract maintenance work when it is cost beneficial to do so.

Encourage volunteer help and use it to the fullest.

For the Texas Parks and Wildlife Department:

Continue to serve as a clearinghouse for information on federal, state, and private grants and assistance programs.

Issue: Recreational Water Supply and Quality

When water is low, there are fewer surface acres available for recreation and the lakes are more crowded as a result. Reservoir managers report that facilities like boat ramps and fishing piers may be unusable. Water quality may also suffer as dissolved material becomes more concentrated. Some Panhandle lakes are plagued by salinity, and the potential for pollution exists due to the numerous oil and gas wells in the region. Future water supplies could also be affected by the current controversy with New Mexico over Canadian River water rights. (Also see State Summary, "Conserving Natural Resources for Recreational Use" under "Issues and Recommendations.")

Recommendations:

For recreation and reservoir managers:

During periods of low water, take measures to prevent public health hazards and increased recreation congestion. Stress safety even more during low water periods.



For recreation providers:

Increase water quality monitoring to prevent threats to public health and recreation from salinity and other forms of pollution.

When possible, build facilities so they can be used during periods of low water.

Ensure adequate access to existing recreational water.

Issue: Economic Benefits of Recreation and Tourism

Regional and local officials voice much interest in recreation and tourism in region 1 because of the economic benefits they provide. The recreation and tourism industries help diversify the economy, create jobs, and moderate recessions. Many Panhandle cities and groups are promoting recreation and tourism by stressing the region's numerous attractions, activities, and events. Money spent by visitors brings dollars to local economies and helps strengthen them. (Also see State Summary, "Tourism and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For park and recreation providers, tourism development agencies, and chambers of commerce:

Continue to cooperate to promote regional and local attractions and events to foster the recreation and tourism industries. Study the possibilities of developing new activities, attractions, and events to draw more visitors.

Issue: Vandalism

Local park managers and other recreation providers cite vandalism as a continuing, frustrating problem. Vandalism is costly and wasteful because the money could be spent to provide new facilities. Moreover, vandalized facilities are unattractive and often unusable. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Stress vandalism prevention by educating the public on the problem and encouraging attitudes that foster appreciation and respect for public and private property and natural resources.

Encourage and foster a cooperative community effort to prevent vandalism and apprehend offenders. Work closely with law enforcement agencies. Establish "park watch" programs for neighborhood parks.

Try various approaches or combinations of approaches to the problem of vandalism, including fee systems, curfews, increased surveillance, alcohol bans, vandal-resistant fixtures, and immediate repair of damaged facilities.

Issue: Water Safety

Reservoir managers report that accidents and fatalities occur on Panhandle lakes and streams because of congestion, carelessness, alcohol abuse, weather, and other factors. Sudden weather changes and high winds are a particular concern on large impoundments. Activities like swimming and skiing are not compatible in confined areas, such as lakes during low water. Poor judgement by recreationists, failure to recognize hazards, and failure to use personal flotation devices are common causes of accidents and deaths. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Issues and Recommendations.")

Recommendations:

For recreation providers and law enforcement agencies:

Continue, and strengthen if necessary, enforcement of Texas water safety laws, local ordinances, and other regulations governing water safety and safe boating. Encourage public cooperation in reporting violations and unsafe practices.

Strictly enforce laws prohibiting operation of a motorized watercraft while intoxicated.

Promote awareness and public education in water safety and boating laws.

Encourage boat operators to complete a boating and water safety class.

Investigate ways to eliminate or mitigate the dangers from conflicting, overlapping activities, such as water-skiing, fishing, and swimming.

Issue: Liability

Ever-increasing injury claims, litigation, and damage awards have become problems in recent years, according to many park and recreation providers. In many cases, injury claims are justified, but sometimes they appear unreasonable. Increasing insurance costs as a result of increasing claims cause insurance to be too expensive or impossible to obtain. Facilities that might cause injuries are closed or removed. Private landowners, also in fear of lawsuits, are reluctant to allow the use of their land for recreation. The liability issue has become so prominent that insurance and tort laws need a comprehensive reassessment. (Also, see State Summary, "Liability and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Institute comprehensive risk management plans and place one person in charge of safety programs with authority to correct problems.

Train staff to identify and remedy hazards.

Require user groups such as leagues and teams to carry their own accident insurance or to participate in self-insurance pools.

Educate park staff on current liability statutes and case law.

For the Texas Legislature:

Enact further insurance and tort law reforms to limit the liability of public and private recreation providers and volunteers.

RESOURCES

Population Trends

The population of region 1 is projected to reach 432 thousand by 1995, for an increase of 12 percent over the 1986 population of 386 thousand persons (figure 1 and table A1). Amarillo, the largest city in region 1, accounts for 44 percent of the regional population (table A2) and has a significant impact on area parks and recreation facilities. Other cities in the region and rural areas make up the remaining 54 percent of the population.

Future population growth in the region will likely affect the major, more popular resources such as Lake Meredith, Palo Duro Canyon, and the larger parks.

Recreational water will undoubtedly be the most sought-after attraction.

Resource Attractions

Lake Meredith National Recreation Area is one of the region's more popular attractions because of its size and accessibility, excellent facilities, and the variety of activities available (figure 1). Lake Meredith offers camping, picnicking, water-related activities, hiking, hunting, sightseeing, and off-road vehicle riding. An added attraction at Meredith is Alibates Flint Quarries National Monument, which provides archeological tours and study.

Other premier attractions in region 1 include Palo Duro Canyon State Park and Caprock Canyons State Park, which rank among Texas's larger state parks. These two provide opportunities for a wide variety of activities, and Palo Duro Canyon State Park annually stages the musical production *Texas* during the summer.

The smaller lakes such as Greenbelt, Mackenzie, and Rita Blanca are also popular recreation sites. Other favorite recreation areas include the national grasslands, several wildlife refuges, the Canadian River, forks of the Red River, and several smaller streams.

Figure 1
Region 1 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|---------------------|
| Counties | = | 26 |
| Land area | = | 25,712 square miles |
| Elevation | = | 1,789' - 4,693' |
| Annual rainfall | = | 17.4 - 23.7 inches |
| January minimum temperature | = | 18 - 26°F |
| July maximum temperature | = | 92 - 99°F |
| Growing season | = | 178 - 214 days |

POPULATION 1986

| | | | |
|--------------|----------------|---------------|-------|
| Total | 392,684 | | |
| Counties | | | |
| Potter | 103,085 | Dallam | 6,184 |
| Randall | 94,835 | Hansford | 6,130 |
| Hutchinson | 26,882 | Hemphill | 4,626 |
| Gray | 26,090 | Hall | 4,515 |
| Deaf Smith | 19,969 | Donley | 3,835 |
| Moore | 17,179 | Collingsworth | 3,701 |
| Parmer | 10,202 | Hartley | 3,660 |
| Ochiltree | 10,092 | Lipscomb | 3,407 |
| Castro | 9,744 | Sherman | 3,117 |
| Swisher | 8,753 | Oldham | 2,553 |
| Wheeler | 6,648 | Briscoe | 1,990 |
| Carson | 6,400 | Armstrong | 1,880 |
| Childress | 6,200 | Roberts | 1,008 |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 432,054 |
| People per square mile | 17.3 |
| Ethnic composition | |
| White | 77% |
| Black | 4% |
| Hispanic | 20% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|---------------|
| Recreation land | = | 145,646 acres |
| Developed recreation land | = | 9,864 acres |

Alibates Flint Quarries National Monument
 Black Kettle National Grassland
 Buffalo Lake National Wildlife Refuge
 Caprock Canyons State Park
 Gene Howe Wildlife Management Area
 Lake McClellan National Grassland
 Lake Meredith National Recreation Area
 Palo Duro Canyon State Park
 Rita Blanca Conservation Area
 Rita Blanca National Grassland

Lakes

| | |
|---------------|--------|
| Surface acres | 23,360 |
|---------------|--------|

Surface Acres

| | |
|------------------------|--------|
| Baylor Creek Reservoir | 600 |
| Buffalo Lake | 1,900 |
| Fryer Lake | 86 |
| Greenbelt Lake | 1,990 |
| Lake Childress | 175 |
| Lake Meredith | 16,505 |
| Rita Blanca Lake | 524 |

Streams

| | |
|----------------------------------|----------------------|
| Canadian River | Red River, Salt Fork |
| Coldwater Creek | Rita Blanca Creek |
| Palo Duro Creek | Tierra Blanca Creek |
| Red River, North Fork | Tule Creek |
| Red River, Prairie Dog Town Fork | Wolf Creek |

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

Recreation Supply

Region 1 has abundant recreation land with nearly 146 thousand acres (table 1). This puts the region in fifth place among the twenty-four regions with 350 acres of recreation land per thousand population in 1990, well above the statewide average of 209 acres per thousand (table A3). The largest supplier of land is the federal government with 62 percent of the total. Fifty-five percent of this total is provided by one agency, the U.S. Forest Service in the national grasslands. The Texas Parks and Wildlife Department is the next largest provider with 25 percent, followed by local gov-

ernments, almost 9 percent, and the commercial sector, 5 percent. While the federal and state governments furnish most of the acreage, local governments and the private sector provide the largest number of parks and most of the facilities.

Potential and Proposed Resources

The National Park Service plans to upgrade the facilities at Alibates with a visitor center and more trails and interpretive exhibits. These improvements should significantly enhance the potential of this site and increase visitation.

The playa lakes scattered throughout the Panhandle are resources with great

recreation potential, as Amarillo and other cities have discovered. These numerous lakes can provide fish and wildlife habitat and serve as resources around which to focus parks.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 1, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG | LOCAL | | | COMMERCIAL | TOTAL |
|--|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|-------------|------------|--------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | |
| Number of Parks/Rec. Areas | 11 | 1 | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 4 | 211 | 15 | 58 | 306 |
| Total Parkland Areas | 3042 | 7185 | 79438 | 0 | 30243 | 5821 | 0 | 0 | 0 | 1945 | 6806 | 3723 | 7443 | 145646 |
| Developed Land Acres | 73 | 200 | 508 | 0 | 460 | 0 | 0 | 0 | 0 | 513 | 3213 | 1937 | 2959 | 9864 |
| Developable Land Acres Preserved or Unsuitable for Development (Acres) | 2917 | 0 | 999 | 0 | 1270 | 0 | 0 | 0 | 0 | 307 | 869 | 816 | 734 | 7912 |
| | 52 | 6985 | 77931 | 0 | 28513 | 5821 | 0 | 0 | 0 | 1125 | 2723 | 970 | 3750 | 127870 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 45 | 10 | 10 | 67 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 | 2 | 4 | 89 |
| Boat Ramp Lanes, FW | 18 | 6 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 8 | 7 | 48 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 85 | 30 | 67 | 0 | 169 | 0 | 0 | 0 | 0 | 100 | 119 | 35 | 1205 | 1810 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 0 | 850 | 0 | 0 | 0 | 0 | 0 | 5858 | 4000 | 0 | 10708 |
| Fishing Structures,FW Lin. Yd. | 120 | 0 | 50 | 0 | 67 | 0 | 0 | 0 | 0 | 70 | 0 | 0 | 730 | 1037 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 189 | 306 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| Lake Acres (BFS Suitable),FW | | | | | | | | | | | | | | 18065 |
| Off-road Vehicle Riding Acres | 1775 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1775 |
| Picnic Tables | 90 | 28 | 39 | 0 | 129 | 0 | 0 | 0 | 0 | 63 | 912 | 65 | 45 | 1371 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 154 | 2 | 15 | 179 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 81 | 3 | 0 | 83 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 3 | 0 | 45 |
| Swimming, FW Sq.Yd. | 6000 | 0 | 0 | 0 | 135000 | 0 | 0 | 0 | 0 | 6000 | 0 | 19110 | 1250 | 167360 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 250 | 12511 | 0 | 6162 | 18923 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 101 | 12 | 7 | 122 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 1 | 0 | 13 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

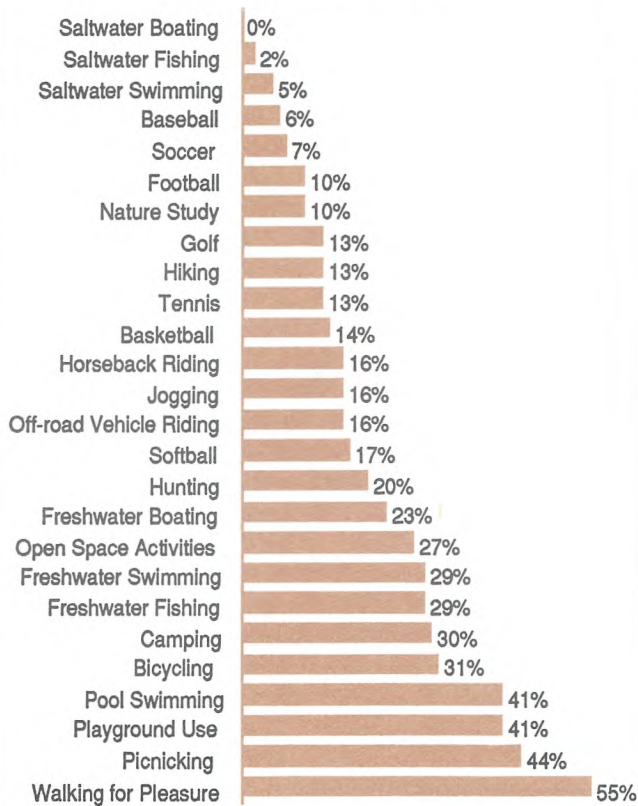
OUTDOOR RECREATION PARTICIPATION

Popular Activities

By 1995, the five most popular activities, as measured by the percentage of the population participating, will be walking, picnicking, playground use, pool swimming, and bicycling, respectively (figure 2). Statewide, the most popular activities by 1995 are expected to be walking, pool swimming, picnicking, playground use, and open space activities (figure 4.1).

The people of region 1 are avid fans of the outdoors. The activities that are projected to exceed the statewide per capita participation rate by 1995 are camping, hiking, hunting, picnicking, golf, horseback riding, off-road vehicle riding, playground use, and softball (table 2).

Figure 2
Region 1 Projected 1995 Percentage
of Population Participating



Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this figure and table and an explanation of research methods. See Appendix D for an explanation of terms.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 1 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 1 | | |
| | Region 1 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 1.0 | 1.2 | 1.3 |
| Boat Ramp Lanes, SW | | * | 0.3 |
| Boating (Pleasure), FW | 0.5 | 0.6 | 0.6 |
| Boating (Pleasure), SW | | * | 0.1 |
| Camping | 1.6 | 2.0 | 1.7 |
| Fishing, FW | 1.6 | 2.2 | 2.4 |
| Fishing from Banks | 0.5 | 0.7 | 0.8 |
| Fishing from Boats | 0.7 | 1.0 | 1.1 |
| Fishing from Structures | 0.4 | 0.5 | 0.5 |
| Fishing, SW | | * | 0.7 |
| Fishing from Boats | | * | 0.3 |
| Fishing from Shore | | * | 0.1 |
| Fishing from Structures | | * | 0.3 |
| Hiking | 0.5 | 0.5 | 0.4 |
| Hunting | 1.4 | 1.6 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.1 | 1.4 | 1.5 |
| Nature Study | 0.6 | 0.6 | 0.9 |
| Picnicking | 1.9 | 2.0 | 1.9 |
| Swimming, FW | 1.8 | 1.9 | 2.1 |
| Swimming, SW | | 0.2 | 1.2 |
| Baseball | 1.1 | | 1.5 |
| Basketball | 1.5 | | 1.6 |
| Bicycling | 10.4 | | 10.7 |
| Bicycling on Trails | 0.6 | | 0.7 |
| Football | 0.8 | | 0.8 |
| Golf | 1.6 | | 1.3 |
| Horseback Riding | 1.1 | | 0.7 |
| Horseback Riding on Trails | 0.3 | | 0.2 |
| Jogging/Running | 4.4 | | 5.4 |
| Jogging/Running on Trails | 1.4 | | 1.7 |
| Off-road Vehicle Riding | 1.7 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.3 | | 0.3 |
| Open Space Activities | 2.6 | | 3.2 |
| Playground Use | 5.0 | | 4.8 |
| Soccer | 1.2 | | 1.2 |
| Softball | 1.9 | | 1.8 |
| Swimming, Pool | 6.0 | | 6.4 |
| Tennis | 1.2 | | 1.3 |
| Walking (Pleasure/Exercise) | 13.9 | | 14.8 |
| Walking on Trails | 3.3 | | 3.5 |

Notes: Asterisks indicate value is less than .1 occasion per capita.

Recreation Travel Patterns

Destination regions for participation in resource-based activities by region 1 residents are shown in figure 3. By 1995, region 1 is expected to be the top destination region for residents. Eighty-five percent of the participation will occur there, followed by, in order, regions 3, 7, 10, 20, 4, and all others combined.

Figure 4 shows the origins of people who travel to region 1 to recreate. Of the total resource-based recreation expected to occur in region 1 in 1995, 86 percent will be by region 1 residents. The remainder will come from visitors from regions 2, 4, 18, 16, and all others combined, respectively.

Projected Participation

The activities with the highest total participation occurring in region 1 in 1995 are expected to be walking, bicycling, pool swimming, playground use, and jogging/running, respectively (tables 3 and 4). The popularity of these activities demonstrates the importance region 1 residents place on activities that

promote physical fitness. Table 3 also shows that the overwhelming amount of recreation occurring in region 1 will be from residents, with very little contributed by visitors from other regions in Texas.

Water safety is a growing concern in the Panhandle region due to the increased recreational use of lakes, congestion, and incompatible activities.

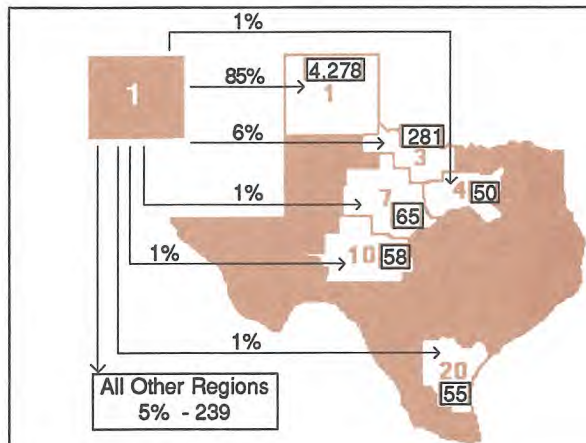


Figure 3
Destinations of Region 1 Residents
for Resource-based Activities

5,026 Annual User Occasions (000's)
Generated by Region 1 Residents, 1995

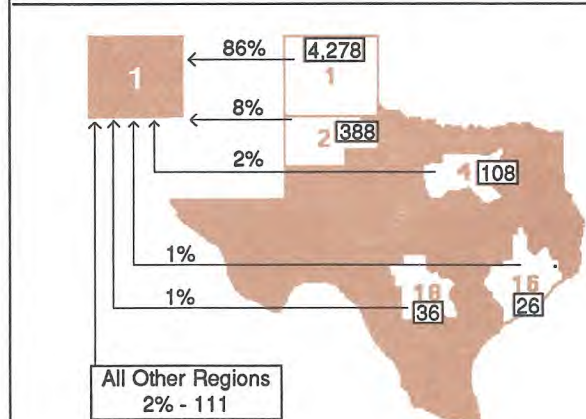


Figure 4
Origins of Participants Who Recreated
in Region 1 for Resource-based Activities

4,946 Annual User Occasions (000's)
Occurring in Region 1, 1995

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting. See Appendix B for key points to interpret these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 1 by Region 1 Residents,
Texans from Outside Region 1, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 1 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|---|------|------|------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | | | |
| | Residents of Region 1 | | | Texans from Outside Region 1 | | | Regional Totals | | |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 406 | 419 | 433 | 54 | 55 | 56 | 460 | 474 | 488 |
| Boating (Pleasure), FW | 226 | 233 | 240 | 33 | 33 | 33 | 259 | 266 | 274 |
| Camping | 670 | 695 | 722 | 141 | 147 | 153 | 810 | 842 | 874 |
| Fishing, FW | 674 | 697 | 720 | 83 | 85 | 87 | 757 | 782 | 807 |
| Fishing from Banks | 220 | 227 | 235 | 27 | 28 | 28 | 247 | 255 | 263 |
| Fishing from Boats | 302 | 312 | 322 | 37 | 38 | 39 | 339 | 350 | 361 |
| Fishing from Structures | 152 | 158 | 163 | 19 | 19 | 20 | 171 | 177 | 182 |
| Hiking | 188 | 195 | 202 | 68 | 72 | 76 | 257 | 267 | 278 |
| Hunting | 606 | 622 | 639 | 121 | 127 | 133 | 727 | 749 | 772 |
| Lake Use (BFS Suitable), FW | 463 | 478 | 494 | 61 | 62 | 64 | 525 | 541 | 557 |
| Nature Study | 247 | 258 | 268 | 33 | 35 | 37 | 280 | 293 | 306 |
| Picnicking | 789 | 815 | 841 | 112 | 115 | 118 | 901 | 930 | 959 |
| Swimming, FW | 740 | 762 | 784 | 54 | 54 | 54 | 794 | 816 | 838 |



Low lake levels reduce opportunities for water-based recreation.

Table 4
Projected Outdoor Recreation Participation
in Region 1 by Residents of Region 1, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (in 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 443 | 464 | 486 |
| Basketball | 639 | 665 | 691 |
| Bicycling | 4327 | 4509 | 4693 |
| Bicycling on Trails | 267 | 278 | 289 |
| Football | 338 | 353 | 368 |
| Golf | 658 | 685 | 713 |
| Horseback Riding | 447 | 464 | 481 |
| Horseback Riding on Trails | 115 | 119 | 124 |
| Jogging/Running | 1849 | 1906 | 1964 |
| Jogging/Running on Trails | 570 | 587 | 605 |
| Off-road Vehicle Riding | 722 | 742 | 763 |
| ORV Riding on Trails | 141 | 145 | 149 |
| Open Space Activities | 1075 | 1104 | 1133 |
| Playground Use | 2093 | 2164 | 2236 |
| Soccer | 481 | 497 | 513 |
| Softball | 800 | 823 | 846 |
| Swimming, Pool | 2494 | 2583 | 2672 |
| Tennis | 524 | 540 | 555 |
| Walking (Pleasure/Exercise) | 5760 | 6005 | 6254 |
| Walking on Trails | 1348 | 1406 | 1464 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

The highest priority needs in region 1 in 1995 are multi-use trails, hiking trails, softball fields, boat ramp lanes, playground areas, and freshwater swimming. Facility needs next in priority include tennis courts, fishing structures, and soccer/football fields (tables 5 and 6).

In 1995 projected needs per thousand population, region 1 will exceed the statewide average only for hiking trail miles (table A4).

Providers' Responsibilities

Federal and state agencies should generally be the primary suppliers of facilities that serve statewide and regional needs and secondary suppliers of facilities that meet local needs. The National Park Service should be the primary supplier of fishing structure and freshwater swimming needs (table 7). Federal and state agencies should also help supply the needs for boat lanes, hiking trails, playground areas, and multi-use trails.

City and county governments should have the major responsibility for

meeting the needs for local facilities, such as boat lanes, playground areas, soccer/football fields, softball fields, tennis courts, and multi-use trails. Local governments should also help supply needs for fishing structures, hiking trails, and freshwater swimming.

The commercial sector should supply facilities which are potentially profitable or which support other profit-making facilities. In region 1, commercial enterprises should help meet the needs for boat lanes, hiking trails, playground areas, and tennis courts.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 1, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 67 | * | * | * |
| Basketball Goals | 89 | * | * | * |
| Boat Ramp Lanes, FW | 48 | 14 | 16 | 18 |
| Campsites | 1810 | * | * | * |
| Fishing Structures, FW Lin.Yd. | 1037 | 143 | 182 | 221 |
| Golf Holes | 306 | * | * | * |
| Hiking Trail Miles | 9 | 26 | 28 | 29 |
| Horseback Riding Trail Miles | 19 | * | * | * |
| Lake Acres (BFS Suitable), FW | 18065 | * | * | * |
| Off-road Vehicle Riding Acres | 1775 | * | * | * |
| Picnic Tables | 1371 | * | * | * |
| Playground Areas, Equipped | 179 | 20 | 27 | 34 |
| Soccer/Football Fields | 83 | * | 1 | 2 |
| Softball Fields | 45 | 12 | 14 | 15 |
| Swimming, FW Sq.Yd. (000) | 167 | 43 | 48 | 54 |
| Swimming, Pool Sq.Yd. (000) | 19 | * | * | * |
| Tennis Courts | 122 | 15 | 19 | 23 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 13 | 25 | 26 | 28 |
| Developed Land Acres | | 478 | 517 | 554 |

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Source: CPS, CPB, Parks Division, TPWD, 1988.

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs in
Region 1 Through 1995

| Need Rank | Facility/Resource |
|-----------|---|
| 1 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 2 | Hiking Trail Miles |
| 3 | Softball Fields |
| 4 | Boat Ramp Lanes, FW |
| 5 | Playground Areas, Equipped |
| 6 | Swimming, FW Sq.Yd. |
| 7 | Tennis Courts |
| 8 | Fishing Struct., FW Lin.Yd. |
| 9 | Soccer/Football Fields |
| 10 | Golf Holes |
| 11 | Campsites |
| 12 | Basketball Goals |
| 13 | Horseback Riding Trail Miles |
| 14 | Swimming, Pool Sq. Yd. |
| 15 | Baseball Fields |
| 16 | Picnic Tables |
| 17 | Lake Acres (BFS Suitable) |
| 18 | Off-Road Vehicle Riding Acres |

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.



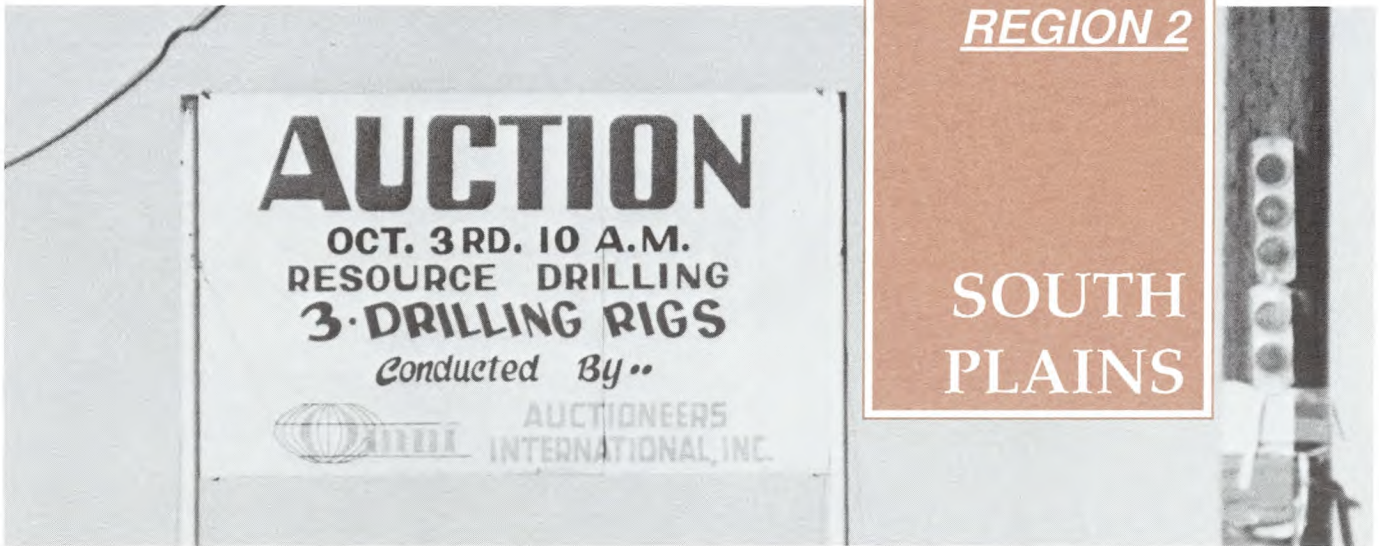
Public education and cooperative community efforts can deter park vandalism.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 1, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Boat Ramp Lanes, FW | 16 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 6 |
| Campsites | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fishing Structures, FW Lin.Yd. | 182 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 82 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 28 | 5 | 5 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 | 5 | 0 | 3 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 27 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 17 | 0 | 3 |
| Soccer/Football Fields | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Softball Fields | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 48 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 1 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tennis Courts | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 4 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 26 | 6 | 6 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 8 | 0 | 0 |
| Developed Land Acres | 517 | 104 | 88 | 0 | 0 | 1 | 56 | 0 | 0 | 5 | 76 | 158 | 0 | 29 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



The statewide economic slowdown has severely impacted funding for parks and recreation programs in region 2.

ISSUES AND RECOMMENDATIONS

Issue: Lack of Funds

The statewide economic recession is the major issue in region 2 because it has had severe impacts on funding for recreation and parks. Local park providers state that declining revenues have forced cutbacks in park department budgets, resulting in staff reductions, facility closings, and cancellation or postponement of new construction. In some cases, even maintenance has been reduced, but neglected maintenance can be far more expensive over the long run. In good economic times, parks are sometimes a low priority, but in bad times, additional cuts may be harmful. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Use federal, state, local government and private grants and assistance programs as much as possible. Such programs offer a variety of assistance ranging from financial help to technical advice.

Examine possible alternative funding sources, such as donations, fee systems, and new fund-raising ideas.

Consider private foundations as a way to support entire park systems or raise money for specific projects.

Support federal legislation establishing a trust or similar mechanism to provide funds for outdoor recreation.

Design facilities to minimize maintenance and upkeep. Contract maintenance work when it is cost beneficial to do so.

Encourage volunteer help and use it to the fullest.

When possible, develop facilities with multiple uses and objectives, such as recreation, access, preservation, etc.

Share ideas, solutions, facilities, and funds as much as possible with other agencies, civic groups, recreation associations, institutions, and the private sector to maximize recreation use at the least cost.

For the Texas Parks and Wildlife Department:

Continue to serve as a clearinghouse for information on federal, state, and private grants and assistance programs.

Issue: Vandalism

Park and recreation providers cite vandalism as a widespread, persistent, and costly problem in region 2. It takes money that could otherwise be used for maintenance or new facilities. Vandalized facilities are unattractive and often unusable, thus depriving people of recreation opportunities. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Emphasize and promote education about the problem of vandalism as a means of deterring it. Make people aware of its anti-social nature and its costs in tax dollars and lost recreation opportunities.

Encourage and foster a cooperative community effort to prevent vandalism and apprehend offenders.



Liability is a growing concern for parks and recreation providers because of an increasing number of injury claims and damage awards.



Work closely with law enforcement agencies. Establish "park watch" and "adopt-a-park" programs for neighborhood parks.

Experiment with various approaches or combinations of approaches to the problem of vandalism, including fee systems, on-site volunteers, increased surveillance, facility design, and immediate repair of damaged facilities.

For local, state, and federal governments:

Increase emphasis on enforcing existing laws against vandalism.

Issue: Liability

Ever-increasing injury claims, litigation, and damage awards have become problems in recent years, according to many park and recreation providers. In many cases, injury claims are justified, but sometimes, they seem unreasonable. Increasing insurance costs as a result of increasing claims cause insurance to be too expensive or impossible to obtain. Facilities that might cause injuries are closed or removed. Fearing lawsuits, private landowners are reluctant to

allow the use of their land for recreation. The liability issue has become so prominent that insurance and tort laws need a comprehensive reassessment. (Also, see State Summary, "Liability and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Institute comprehensive risk management plans and place one person in charge of safety programs with authority to correct problems.

Train staff to identify and remedy negligent hazards.

Require user groups such as leagues and teams to carry their own accident insurance or to participate in self-insurance pools.

Educate park staff on current liability statutes and case law.

For the Texas Legislature:

Enact further insurance and tort law reforms to limit the liability of public and private recreation providers and volunteers.

Issue: Scarce Recreational Water

Most recreationists are aware that water is a scarce recreational resource in region 2. Residents must either recreate at White River Lake or other smaller lakes or travel to nearby regions. Water is important not only for water-based activities, but it can also enhance activities such as picnicking, camping, and walking.

Reclaimed water resources, such as Lubbock's Yellowhouse Canyon lakes, can open up vast new opportunities for recreation. Panhandle cities, such as Brownfield and Lubbock, are using playa lakes for a variety of outdoor pursuits, including fishing, wildlife habitat, and parks.

Recommendations:

For recreation providers:

Use existing water to the fullest to increase recreational opportunities and act as resources around which to focus parks.

Ensure adequate access to existing recreational water.

RESOURCES

Population Trends

Projections show that the region 2 population should increase to nearly 398 thousand by 1995, for an increase of 7 percent over the estimated 1986 population of 373 thousand (figure 1 and table A1). Lubbock makes up slightly over half of the region 2 population, while smaller cities and rural areas account for the remainder (table A2).

Lubbock's population should continue to significantly impact recreation resources in region 2, while the city's projected growth will likely ensure the growth of demand for outdoor recreation.

Resource Attractions

Region 2 has nearly twenty-seven hundred surface acres of lakes, most of which are in White River Lake, the major water resource in the region (figure 1). Because it is the major water attraction, White River Lake draws recreationists from throughout region 2 as well as nearby regions. Several other lakes make up the remainder of the surface acres, and, although small, they are important, popular recreation resources.

Mackenzie State Park, operated by the city of Lubbock, and the Yellowhouse Canyon lakes are some of Lubbock's major attractions. Other major sites and features of region 2 are the Muleshoe National Wildlife Refuge, which provides abundant opportunities for viewing waterfowl and wildlife; the Caprock Escarpment; and the Brazos, White, and Yellow House rivers.

Recreation Supply

There are nearly twenty-one thousand acres of recreation land in region 2 in 211 parks (table 1). At fifty-three acres of recreation land per thousand population, the region ranks well below the statewide average of 209 acres per thousand (table A3).

Local governments are the largest suppliers of recreation land with 60 percent of the total recreation land (table 1). The U.S. Fish and Wildlife Service provides 28 percent, followed by the commercial sector, 10 percent; and the state, 1 percent. Local governments also furnish the greatest number of parks at 186, or 88 percent of the regional total, and supply most of the facilities, except for golf holes.

**Figure 1
Region 2 Characteristics**

GEOGRAPHY

| | | |
|-----------------------------|---|---------------------|
| Counties | = | 15 |
| Land area | = | 13,567 square miles |
| Elevation | = | 1,739' - 4,060' |
| Annual rainfall | = | 15.0 - 21.6 inches |
| January minimum temperature | = | 20 - 28°F |
| July maximum temperature | = | 92 - 99°F |
| Growing season | = | 181 - 219 days |

POPULATION 1986

| | | | |
|--------------|----------------|---------|-------|
| Total | 372,564 | | |
| Counties | | | |
| Lubbock | 227,230 | Crosby | 7,899 |
| Hale | 35,756 | Lynn | 6,955 |
| Hockley | 24,138 | Garza | 5,460 |
| Lamb | 16,031 | Cochran | 4,302 |
| Terry | 14,759 | Dickens | 2,743 |
| Yoakum | 9,110 | Motley | 1,650 |
| Floyd | 8,069 | King | 409 |
| Bailey | 8,053 | | |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 397,806 |
| People per square mile | 29.3 |
| Ethnic composition | |
| White | 59% |
| Black | 5% |
| Hispanic | 35% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 20,749 acres |
| Developed recreation land | = | 5,803 acres |

Lubbock Lake Landmark State Historical Park
Mackenzie State Park (Lubbock)
Muleshoe National Wildlife Refuge

Lakes

| | |
|---------------|-------|
| Surface acres | 2,673 |
|---------------|-------|

Surface Acres

| | |
|-------------------------|-------|
| Buffalo Springs Lake | 225 |
| Double Lakes | 13 |
| Lake Ransom Canyon | 100 |
| White River Lake | 2,020 |
| Yellowhouse Canyon Lake | 244 |

Streams

Brazos River, Double Mountain Fork
Brazos River, North Fork
White River
Yellow House River

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 2, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|-------------|-------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | COMMERCIAL |
| Number of Parks/Rec. Areas | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 22 | 157 | 7 | 23 | 211 |
| Total Parkland Acres | 0 | 5809 | 0 | 0 | 309 | 0 | 0 | 0 | 0 | 480 | 4762 | 7262 | 2128 | 20749 |
| Developed Land Acres | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 424 | 3179 | 293 | 1904 | 5803 |
| Developable Land Acres | 0 | 5805 | 0 | 0 | 309 | 0 | 0 | 0 | 0 | 56 | 1458 | 3728 | 224 | 11579 |
| Preserved or Unsuitable for Development (Acres) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 125 | 3242 | 0 | 3367 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 67 | 7 | 0 | 91 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 | 0 | 0 | 62 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 21 | 0 | 28 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 124 | 146 | 125 | 432 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 150 | 0 | 0 | 150 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4500 | 1199 | 12 | 5711 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 90 | 0 | 162 | 261 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 1814 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Picnic Tables | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 105 | 584 | 142 | 0 | 840 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 94 | 4 | 2 | 112 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 43 | 0 | 0 | 45 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 32 | 1 | 0 | 38 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6000 | 2070 | 0 | 8070 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1922 | 11160 | 0 | 4624 | 17706 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 96 | 6 | 18 | 132 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 06 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Potential and Proposed Resources

When open, the Lubbock Lake Landmark State Historical Park will be an excellent educational, recreational, and tourist attraction for region 2. This park will provide exhibits and interpret the area's long archeological history.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

ure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.



Vandalized facilities are unusable, unattractive, and deprive the public of recreation opportunities.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 2 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 2 | | |
| | Occurring In | | |
| | Region 2 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 0.6 | 1.4 | 1.3 |
| Boat Ramp Lanes, SW | * | * | 0.3 |
| Boating (Pleasure), FW | 0.4 | 0.8 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 0.8 | 1.8 | 1.7 |
| Fishing, FW | 0.9 | 2.3 | 2.4 |
| Fishing from Banks | 0.3 | 0.8 | 0.8 |
| Fishing from Boats | 0.4 | 1.0 | 1.1 |
| Fishing from Structures | 0.2 | 0.5 | 0.5 |
| Fishing, SW | * | 0.1 | 0.7 |
| Fishing from Boats | * | * | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | * | 0.3 |
| Hiking | 0.2 | 0.4 | 0.4 |
| Hunting | 1.0 | 1.4 | 1.3 |
| Lake Use (BFS Suitable), FW | 0.7 | 1.6 | 1.5 |
| Nature Study | 0.5 | 0.6 | 0.9 |
| Picnicking | 1.3 | 1.7 | 1.9 |
| Swimming, FW | 0.8 | 1.7 | 2.1 |
| Swimming, SW | * | 0.2 | 1.2 |
| Baseball | 1.7 | | 1.5 |
| Basketball | 2.0 | | 1.6 |
| Bicycling | 10.1 | | 10.7 |
| Bicycling on Trails | 0.6 | | 0.7 |
| Football | 0.9 | | 0.8 |
| Golf | 1.4 | | 1.3 |
| Horseback Riding | 0.6 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 4.8 | | 5.4 |
| Jogging/Running on Trails | 1.5 | | 1.7 |
| Off-road Vehicle Riding | 1.4 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.3 | | 0.3 |
| Open Space Activities | 2.9 | | 3.2 |
| Playground Use | 5.0 | | 4.8 |
| Soccer | 0.9 | | 1.2 |
| Softball | 1.8 | | 1.8 |
| Swimming, Pool | 5.4 | | 6.4 |
| Tennis | 1.1 | | 1.3 |
| Walking (Pleasure/Exercise) | 14.7 | | 14.8 |
| Walking on Trails | 3.4 | | 3.5 |

Notes: Asterisks indicate value is less than .1 occasion per capita.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and figure and an explanation of research methods. See Appendix D for an explanation of terms.

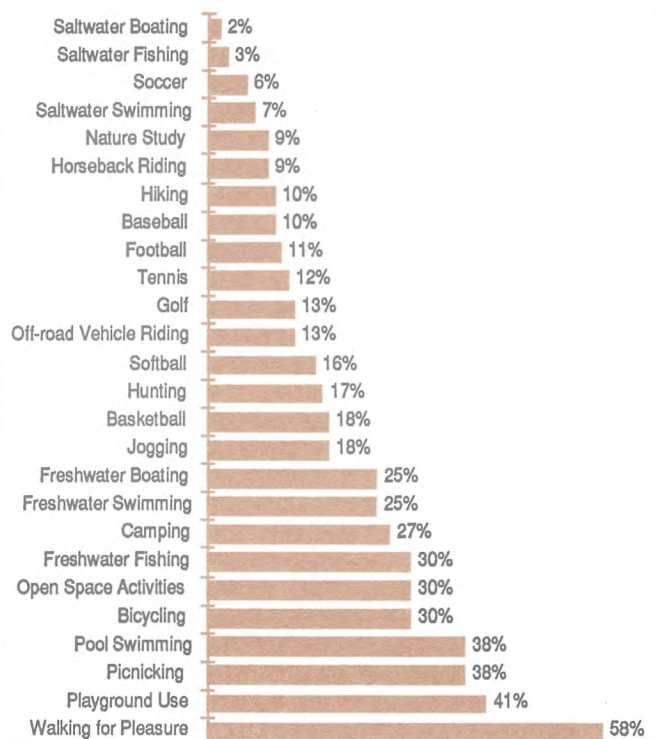
OUTDOOR RECREATION PARTICIPATION

Popular Activities

The most popular activities in 1995 in terms of percentage of the region 2 population participating are projected to be walking for pleasure, 58 percent; playground use, 41 percent; picnicking, 38 percent; pool swimming, 38 percent; and bicycling, open space activities, and freshwater fishing at 30 percent each (figure 2). This compares to the most popular activities statewide of walking for pleasure, 59 percent; pool swimming, 45 percent; picnicking, 42 percent; playground use, 40 percent; open space activities, 34 percent; bicycling 33 percent, and freshwater swimming, 31 percent (figure 4.1).

Region 2 residents, who enjoy a variety of outdoor recreational pursuits, are projected to exceed the statewide per capita participation rate in 1995 for ten activities (table 2). These include freshwater boat lane use, freshwater boating,

Figure 2
Region 2 Projected 1995 Percentage
of Population Participating



camping, hunting, lake use, baseball, basketball, football, golf, and playground use.

Recreational Travel Patterns

Figure 3 shows destination regions for participation in resource-based activities by region 2 residents. In 1995, the top destination region is projected to be region 2 with 53 percent of the participation. The next most popular destinations are expected to be, in order, regions 1, 7, 4, 24, 3, and all other regions combined.

Of all resource-based recreation participation projected to occur in region 2 in 1995 from all over the state, the greatest amount by far, 91 percent, will be by region 2 residents (figure 4). The remainder will originate from regions 9, 1, 18, 12, 7, and all other regions combined.

Projected Participation

Region 2 residents seek family-oriented activities as well as those that promote physical fitness. In 1995, the activities occurring in region 2 with the

highest total participation are projected to be walking, bicycling, pool swimming, playground use, and jogging/running (tables 3 and 4). Table 3 shows that, by far, most of the participation occurring in region 2 will be by residents, with very little contributed by visitors.

Recreational water is a scarce, but highly sought-after resource for a variety of activities.

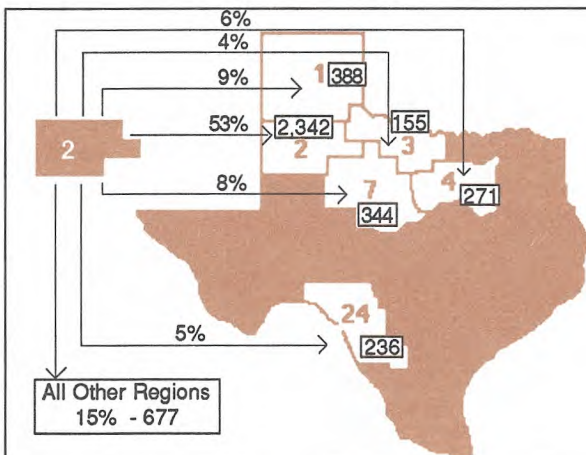


Figure 3
Destinations of Region 2 Residents
for Resource-based Activities

4,413 Annual User Occasions (000's)
Generated by Region 2 Residents, 1995

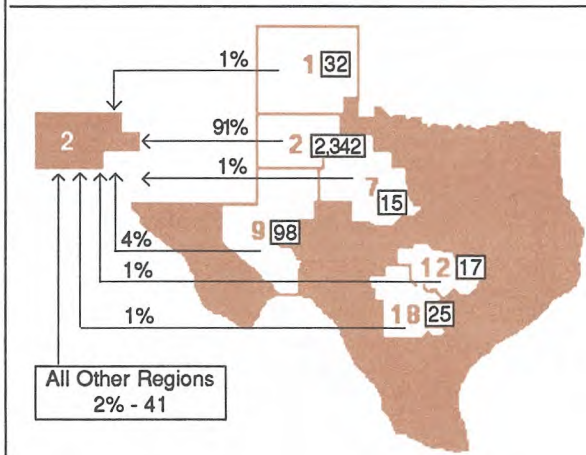


Figure 4
Origins of Participants Who Recreated
in Region 2 for Resource-based Activities

2,570 Annual User Occasions (000's)
Occurring in Region 2, 1995

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting. See Appendix B for key points to interpret these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 2 by Region 2 Residents,
Texans from Outside Region 2, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 2 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|---|------|------|---------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | Regional Totals | | |
| | Residents of Region 2 | | | Texans from Outside Region 2 | | | 1990 | 1995 | 2000 |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 236 | 238 | 241 | 2 | 2 | 2 | 238 | 240 | 243 |
| Boating (Pleasure), FW | 141 | 142 | 143 | 0 | 0 | 0 | 141 | 143 | 144 |
| Camping | 294 | 299 | 305 | 22 | 24 | 26 | 316 | 323 | 330 |
| Fishing, FW | 370 | 375 | 379 | 5 | 6 | 6 | 375 | 380 | 386 |
| Fishing from Banks | 121 | 122 | 124 | 2 | 2 | 2 | 122 | 124 | 126 |
| Fishing from Boats | 166 | 168 | 170 | 2 | 3 | 3 | 168 | 170 | 173 |
| Fishing from Structures | 84 | 85 | 86 | 1 | 1 | 1 | 85 | 86 | 87 |
| Hiking | 74 | 76 | 78 | 10 | 11 | 12 | 84 | 87 | 89 |
| Hunting | 401 | 403 | 404 | 47 | 50 | 52 | 448 | 452 | 457 |
| Lake Use (BFS Suitable), FW | 269 | 272 | 275 | 2 | 3 | 3 | 271 | 274 | 277 |
| Nature Study | 176 | 182 | 187 | 85 | 93 | 101 | 261 | 274 | 288 |
| Picnicking | 529 | 532 | 534 | 42 | 45 | 47 | 571 | 576 | 581 |
| Swimming, FW | 333 | 334 | 334 | 0 | 0 | 0 | 333 | 334 | 335 |

Table 4
Projected Outdoor Recreation Participation
in Region 2 by Residents of Region 2, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (In 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 666 | 676 | 685 |
| Basketball | 775 | 780 | 784 |
| Bicycling | 3966 | 4031 | 4095 |
| Bicycling on Trails | 244 | 248 | 252 |
| Football | 363 | 368 | 373 |
| Golf | 564 | 569 | 574 |
| Horseback Riding | 242 | 244 | 245 |
| Horseback Riding on Trails | 62 | 63 | 63 |
| Jogging/Running | 1910 | 1915 | 1920 |
| Jogging/Running on Trails | 588 | 590 | 591 |
| Off-road Vehicle Riding | 570 | 576 | 582 |
| ORV Riding on Trails | 112 | 113 | 114 |
| Open Space Activities | 1135 | 1138 | 1139 |
| Playground Use | 1963 | 1980 | 1997 |
| Soccer | 356 | 360 | 364 |
| Softball | 722 | 722 | 721 |
| Swimming, Pool | 2123 | 2143 | 2163 |
| Tennis | 447 | 448 | 448 |
| Walking (Pleasure/Exercise) | 5729 | 5859 | 5990 |
| Walking on Trails | 1341 | 1372 | 1402 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.



Local governments should be the primary suppliers of the 1995 needs for softball fields in region 2.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Table 5 shows needs for eleven of eighteen facility types in region 2 by 1995. Highest priority needs include soccer/football fields, multi-use trail miles, freshwater swimming, playground areas, horseback riding trails, and basketball goals. Needs next in priority include off-road vehicle riding acres, campsites, softball fields, hiking trails, and boat ramp lanes (table 6).

Table A4 shows that region 2 is projected to exceed the 1995 statewide average needs per thousand population for six facilities: basketball goals, horseback riding trails, off-road vehicle riding acres, soccer/football fields, and multi-use trail miles.

Due to inadequate distribution or other reasons, needs for some facilities may not appear on a regional level, but there may well be needs for a given facility within some specific area, locality, or community.

Providers' Responsibilities

Generally, federal and state agencies should be the primary suppliers of facilities that serve statewide and regional needs and secondary suppliers of facilities that meet local needs. The U.S. Fish and Wildlife Service should be a secondary supplier of 1995 regional needs for campsites, hiking trails, and multi-use trails (table 7).

Local governments (county, city, and other local) should be primary suppliers of the needs for basketball goals, freshwater boat lanes, campsites, hiking trails, playgrounds, soccer/football fields, softball fields, freshwater swimming, and multi-use trails, and secondary suppliers of horseback riding trails and off-road vehicle riding acres.

Commercial establishments should provide facilities from which they can reasonably expect to make a profit, such as campsites, horseback riding trails, and off-road vehicle riding acres. In addition, the commercial sector should be a secondary supplier of basketball goals.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 2, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 91 | * | * | * |
| Basketball Goals | 62 | 32 | 32 | 33 |
| Boat Ramp Lanes, FW | 28 | 4 | 4 | 5 |
| Campsites | 432 | 157 | 170 | 183 |
| Fishing Structures, FW Lin.Yd. | 5711 | * | * | * |
| Golf Holes | 261 | * | * | * |
| Hiking Trail Miles | 8 | 4 | 4 | 5 |
| Horseback Riding Trail Miles | 0 | 9 | 9 | 9 |
| Lake Acres (BFS Suitable), FW | 1814 | * | * | * |
| Off-road Vehicle Riding Acres | 20 | 76 | 77 | 78 |
| Picnic Tables | 840 | * | * | * |
| Playground Areas, Equipped | 112 | 75 | 77 | 78 |
| Soccer/Football Fields | 45 | 27 | 27 | 27 |
| Softball Fields | 38 | 14 | 14 | 14 |
| Swimming, FW Sq.Yd. (000) | 8 | 80 | 80 | 80 |
| Swimming, Pool Sq.Yd. (000) | 18 | * | * | * |
| Tennis Courts | 132 | * | * | * |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 6 | 32 | 33 | 33 |
| Developed Land Acres | | 674 | 687 | 700 |

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs in
Region 2 Through 1995

| Need Rank | Facility/Resource |
|-----------|---|
| 1 | Soccer/Football Fields |
| 2 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 3 | Swimming, FW Sq.Yd. |
| 4 | Playground Areas, Equipped |
| 5 | Horseback Riding Trail Miles |
| 6 | Basketball Goals |
| 7 | Off-Road Vehicle Riding Acres |
| 8 | Campsites |
| 9 | Softball Fields |
| 10 | Hiking Trail Miles |
| 11 | Boat Ramp Lanes, FW |
| 12 | Tennis Courts |
| 13 | Baseball Fields |
| 14 | Lake Acres (BFS Suitable) |
| 15 | Swimming, Pool Sq. Yd. |
| 16 | Picnic Tables |
| 17 | Golf Holes |
| 18 | Fishing Struc., FW Lin.Yd. |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Note: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 2, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basketball Goals | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 10 |
| Boat Ramp Lanes, FW | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Campsites | 170 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 40 | 0 | 60 |
| Fishing Structures, FW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 5 |
| Off-road Vehicle Riding Acres | 77 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 10 | 0 | 52 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 77 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 62 | 0 | 0 |
| Soccer/Football Fields | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 23 | 0 | 0 |
| Softball Fields | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 10 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 58 | 0 |
| Swimming, Pool Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 33 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 12 | 0 | 0 |
| Developed Land Acres | 687 | 0 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 264 | 248 | 24 | 108 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



Many cities in the region are looking to attract the RV tourist dollar.

ISSUES AND RECOMMENDATIONS

Issue: Tourism Encouragement

Various entities in region 3 hope tourism will give new life to the depressed economy. State and local governments are coming to appreciate the role of parks as tourist attractions.

In Wichita Falls, citizens support park beautification to improve the city's image. For example, the city re-created a waterfall on the Wichita River in Lucy Park, and the voters approved a Tax Increment Financial District in the downtown area to develop a riverwalk. River and stream corridor trails are planned to serve both locals and clientele from adjacent hotels. An outdoor theater and softball complex are desired to attract visitors to town for cultural and sporting events.

Other cities in the region have observed an increase in RV travellers and seek to attract tourist dollars with RV campgrounds. Those located along the well travelled Highway 287 especially want to capitalize on this opportunity.

Note: Effective September, 1989, Childress County left the Nortex Regional Planning Commission (region 3) to join the Panhandle Regional Planning Commission (region 1). Time constraints prevented the revision of all the TORP data to include this change. Therefore, tables 1 through 7 and figures 2 through 4 in regions 1 and 3 do not reflect this shift, i.e., the data on Childress County are contained in the region 3 tables and figures.

For example, the city of Iowa Park is considering hook-up campsites in city parks.

Nocona desires to develop its existing resources in cooperation with the private sector. The area is known for horse raising.

Decision-makers think tours of working ranches and horse farms would attract out-of-state visitors. Camping at the ranches would enhance the outdoor recreation experience. State parks in the region have the potential to achieve greater year-round utilization. (Also, see State Summary, "Tourism and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers, tourist development agencies, and chambers of commerce:

Improve coordination and continue to promote regional and local attractions and events to foster the recreation and tourism industries. Continually seek to improve the marketing and packaging of events, sites, and attractions.

Examine the possibilities of developing new activities, attractions, and events to draw more visitors, encourage existing clientele to stay longer, and expand the tourist season. Con-

sider offering regional sports tournaments, bicycle tours in the spring, fall, and winter, and interpretive tours at Copper Breaks State Park and Fort Richardson State Historical Park.

Seek the assistance of the Texas Department of Commerce on tourism development planning.

For the Texas Legislature:

Clarify the use of the local hotel/motel tax relative to outdoor recreation resources that serve as tourist attractions.

Issue: More Natural Parkland

Citizens in the region perceive a lack of opportunity to visit natural areas. Many feel there are few places to go for a wilderness experience, for hiking, horseback riding, nature study, public hunting, or simply viewing scenic areas.

The region is not especially deficient in parkland. In acres per thousand population, region 3 ranks tenth



out of twenty-four. Many of the large public areas, however, lie in the western portion of the region, away from the more populated areas. Recreationists seeking undeveloped public acreage near Wichita Falls will find it most often in the buffer areas around Lake Arrowhead and Lake Buffalo. Few trails exist to provide access to the undeveloped tracts throughout the region.

Some of the most desirable natural areas are river and creek corridors. Providers and recreationists alike express desire for more trail linkages connecting parks along stream corridors. In this eleven-county region, there are only seventeen parks accessing rivers or creeks. An opportunity exists where the city of Wichita Falls purchased land to construct Lake Ringold on the Little Wichita River. Because of decreased population pressures, it is not likely the reservoir will be built for as much as twenty years. In the interim, conservation groups whose members desire more natural public land could offer to manage the property for public non-consumptive uses. (Also, see State Summary, "Meeting Recreational Open Space Needs" and "Conserving Natural Resources for Recreational Use" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Cooperate with private landowners to create more recreation opportunities in the region's scenic and natural areas.

Develop various incentive programs to encourage private landowners to manage their land for public non-consumptive recreation; consider voluntary landowner agreements, conservation and recreation easements, and ways to limit landowners' liability exposure.

Emphasize to the public and decision-makers the role that recreational open spaces play in adding to community quality of life, community attractiveness, and the value of these to economic development.

Inform recreation users of existing recreation opportunities in the region.

For cities and counties:

Exercise existing authorities to preserve prime natural areas in an undeveloped condition.

For private landowners and the Texas Parks and Wildlife Department:

Accelerate efforts to include more lands in the region for Type II wildlife management areas; promote their values for non-consumptive wildlife activities as well as hunting.

Issue: Upgrading Existing Parks

Many cities in the region report having old parks that need to be rehabilitated. Facilities put in parks fifty years ago may be so deteriorated they require replacement. Old swimming pools especially need rehabilitating. Managers cite the fear of liability suits as one reason to replace outdated playground equipment. Seesaws and merry-go-rounds are often removed for safety reasons.

Citizens seem to demand higher quality in both development and maintenance. Many park visitors prefer flower gardens, landscaping, and ponds to pure turf areas. Demographic changes, such as an increase in the senior citizen population, can create the need to redesign parks for different clientele. Decision-makers are beginning to appreciate the quality of life benefits afforded by attractive parks. The presence of restrooms and covered facilities adds to the usability of parks. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Assess and follow the desires of users in managing recreation resources, compatible with good resource management.

Develop long-range capital improvements programs to fund replacement and upgrading of old facilities. Schedule regular maintenance to prevent early deterioration of facilities.

Include developing and upgrading quality parks in an overall economic development plan to attract business and tourism.

Consider demographic changes in a park's service area when redesigning existing parks.

Issue: Funding Concerns

Region 3 did not have a booming economy even before the state's economic downturn. Since the mid-1980s, city and state park managers report they have suffered from funding problems. Less consumer spending means lower sales tax revenue for local and state governments. The oil recession has affected the federal and state dollars available for assistance.

Local budget pressures usually hit parks and recreation programs harder than services like fire and police protection. Newcastle abandoned a park until volunteers took it over. Other innovative cities like Iowa Park and Nocona have found ways to keep providing parks and recreation services through cooperative programs, in-house construction, and contracting maintenance.

Some entities in the region have had difficulty taking advantage of the state administered park grant program, primarily because they have had trouble coming up with the 50 percent local match. Some city staff feel the valuation of in-kind donations discriminates against the smaller cities which often resort to staff and volunteer in-kind labor and equipment for their match. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Analyze the values and benefits that parks and recreation opportunities provide; educate constituencies about these values.

Consider revenue-generating facilities.

Seek donations of land, money, and labor, and continue successful contracting programs.

Develop successful joint use programs between educational institutions and cities or counties.

Support federal legislation to establish a dedicated trust, or similar mechanism, to provide funding for outdoor recreation.

RESOURCES

Population Trends

From 1980 to 1986, region 3 grew 3.5 percent. The Wichita Falls Metropolitan Statistical Area and Archer, Wilbarger, and Montague counties experienced the greatest population increases in the region. Growth in these counties offsets losses in population found in the other eight counties.

Between 1986 and 1995, the population of region 3 is projected to increase 7.6 percent (figure 1). Compared to the statewide growth rate of 13.8 percent during the same period, this region will lag behind. The regional proportion of adults over sixty-five will be 15.6 percent compared to the state's 9.8 percent. This high percentage of senior citizens contributes to slow population growth.

Resource Attractions

Lakes are abundant throughout region 3. Figure 1 shows fifteen major reservoirs. The largest lakes - Arrowhead, Kemp, and Possum Kingdom - attract the most recreationists. Of these three, only Lake Arrowhead has a good supply of parks. Surface acres suitable for boating, fishing, and skiing are more than twice the state average in acres per thousand population (table A3).

Four state-owned sites help meet recreation needs of region residents and visitors from outside the area. Copper Breaks State Park, Fort Richardson State Historical Park, and Lake Arrowhead State Park offer typical state park facilities for camping, picnicking, and trail activities. Lake Arrowhead State Park is

popular for the activities it provides near Wichita Falls. Matador Wildlife Management Area offers hunting opportunities and year-round access for Type II permit holders.

Recreation Supply

Table 1 shows the supply of recreation land, water, and facilities managed by the various providers. The total recreation land, 170 acres per thousand population, falls only slightly below the statewide average of 209 acres per thousand (table A3). Sixty-nine percent of the recreation land is found in one site, Matador Wildlife Management Area. Located in the remote western part of the region, it is far from population centers and provides no recreation facilities.

Figure 1
Region 3 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|--------------------|
| Counties | = | 11 |
| Land area | = | 9,460 square miles |
| Elevation | = | 766' - 2,149' |
| Annual rainfall | = | 20.7 - 31.4 inches |
| January minimum temperature | = | 26 - 32°F |
| July maximum temperature | = | 96 - 99°F |
| Growing season | = | 214 - 232 days |

POPULATION 1986

Total **222,748**

| | | | |
|-----------------|---------|----------|-------|
| Counties | | | |
| Wichita | 129,013 | Jack | 7,330 |
| Young | 18,588 | Hardeman | 6,086 |
| Montague | 18,215 | Baylor | 4,728 |
| Wilbarger | 16,823 | Cottle | 2,503 |
| Clay | 9,557 | Foard | 1,861 |
| Archer | 8,044 | | |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 246,444 |
| People per square mile | 24.2 |
| Ethnic composition: | |
| White | 85% |
| Black | 7% |
| Hispanic | 8% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 40,808 acres |
| Developed recreation land | = | 2,839 acres |

Copper Breaks State Park
Fort Richardson State Historical Park
Lake Arrowhead State Park
Matador Wildlife Management Area

Lakes

| | |
|---------------|--------|
| Surface acres | 57,092 |
|---------------|--------|

Surface Acres

| | |
|------------------------------------|------------|
| Bridgeport Reservoir | 600 (Part) |
| Cooper Lake | 312 |
| Graham Lake | 3,000 |
| Lake Amon G. Carter | 1,848 |
| Lake Arrowhead | 16,200 |
| Lake Diversion | 3,419 |
| Lake Iowa Park | 350 |
| Lake Kemp | 16,540 |
| Lake Kickapoo | 6,200 |
| Lake Nocona | 1,470 |
| Lake Pauline | 600 |
| Lake Wichita | 2,200 |
| Miller's Creek Reservoir | 950 (Part) |
| North Fork Buffalo Creek Reservoir | 1,392 |
| Possum Kingdom Lake | 990 (Part) |

Streams

| | |
|--------------------------|--------------------------|
| Brazos River | Pease River |
| Brazos River, Clear Fork | Red River |
| North Pease River | Trinity River, West Fork |
| North Wichita River | Wichita River |

Sources: 1986-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

Without Matador, the supply of recreation land would fall to 52 acres per thousand population, ranking the region twenty-first out of twenty-four regions.

Of the nineteen facilities/resources found on table 1, the supply in region 3 exceeds the statewide average in facilities per thousand for fourteen of them (table A3). Only campsites, soccer/football fields, hiking and horseback riding trails, and off-road vehicle riding acres fall below the statewide supply average. Unlike total park acres which tend to occur around natural and water resources, distribution of developed recreation land generally follows the population distribution. Wichita County

has 43 percent of the developed land and 56 percent of the population. The counties which host the three state parks have somewhat higher proportions of developed recreation land than their populations would warrant.

Potential and Proposed Resources

The city of Wichita Falls plans to develop trails along several water courses and a railroad right-of-way to create a greenbelt loop. The corridors along the Wichita River and Holliday Creek could connect existing and potential parks to make an estimated 26 miles of trail for various users. Three miles have been completed.

The city of Wichita Falls bought land for the proposed Lake Ringold. If population pressures remain slow, the reservoir will not be built for years to come. In the interim, the property has potential to provide recreation access to the Little Wichita River.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 3, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | COMMERCIAL | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|------------|-------|-------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | | | Other Local |
| Number of Parks/Rec. Areas | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 3 | 151 | 10 | 26 | 194 |
| Total Parkland Acres | 0 | 0 | 0 | 0 | 2743 | 28184 | 0 | 0 | 0 | 39 | 7441 | 134 | 2267 | 40808 |
| Developed Land Acres | 0 | 0 | 0 | 0 | 377 | 84 | 0 | 0 | 0 | 35 | 1576 | 64 | 704 | 2839 |
| Developable Land Acres | 0 | 0 | 0 | 0 | 905 | 0 | 0 | 0 | 0 | 5 | 4214 | 70 | 1364 | 6556 |
| Preserved or Unsuitable for Development (Acres) | 0 | 0 | 0 | 0 | 1462 | 28100 | 0 | 0 | 0 | 0 | 1652 | 0 | 200 | 31413 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 60 | 2 | 0 | 64 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 43 | 5 | 2 | 51 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 20 | 2 | 19 | 46 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 0 | 126 | 0 | 0 | 0 | 0 | 1 | 284 | 6 | 352 | 769 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 0 | 200 | 0 | 0 | 0 | 0 | 0 | 23800 | 0 | 0 | 24000 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 70 | 0 | 0 | 0 | 0 | 100 | 236 | 1240 | 403 | 2049 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | 0 | 45 | 108 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37776 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Picnic Tables | 0 | 0 | 0 | 0 | 104 | 0 | 0 | 0 | 0 | 58 | 588 | 40 | 12 | 802 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 79 | 3 | 2 | 90 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 17 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 2 | 0 | 52 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 0 | 10600 | 0 | 0 | 0 | 0 | 0 | 316350 | 9820 | 28000 | 364770 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 600 | 10431 | 1175 | 1820 | 14026 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 59 | 1 | 4 | 65 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 8 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 3 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 3 Occurring In | | |
| | Region 3 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 1.4 | 1.6 | 1.3 |
| Boat Ramp Lanes, SW | * | * | 0.3 |
| Boating (Pleasure), FW | 0.6 | 0.7 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 0.9 | 1.7 | 1.7 |
| Fishing, FW | 2.6 | 2.9 | 2.4 |
| Fishing from Banks | 0.8 | 1.0 | 0.8 |
| Fishing from Boats | 1.2 | 1.3 | 1.1 |
| Fishing from Structures | 0.6 | 0.7 | 0.5 |
| Fishing, SW | * | 0.1 | 0.7 |
| Fishing from Boats | * | * | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | * | 0.3 |
| Hiking | * | 0.4 | 0.4 |
| Hunting | 1.2 | 1.4 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.6 | 1.8 | 1.5 |
| Nature Study | 0.5 | 0.6 | 0.9 |
| Picnicking | 1.2 | 1.5 | 1.9 |
| Swimming, FW | 1.9 | 2.4 | 2.1 |
| Swimming, SW | * | 0.3 | 1.2 |
| Baseball | 1.4 | | 1.5 |
| Basketball | 1.6 | | 1.6 |
| Bicycling | 10.2 | | 10.7 |
| Bicycling on Trails | 0.6 | | 0.7 |
| Football | 0.7 | | 0.8 |
| Golf | 1.5 | | 1.3 |
| Horseback Riding | 0.8 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 5.0 | | 5.4 |
| Jogging/Running on Trails | 1.5 | | 1.7 |
| Off-road Vehicle Riding | 1.2 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.2 | | 0.3 |
| Open Space Activities | 2.5 | | 3.2 |
| Playground Use | 4.3 | | 4.8 |
| Soccer | 1.1 | | 1.2 |
| Softball | 1.8 | | 1.8 |
| Swimming, Pool | 6.0 | | 6.4 |
| Tennis | 1.0 | | 1.3 |
| Walking (Pleasure/Exercise) | 14.0 | | 14.8 |
| Walking on Trails | 3.3 | | 3.5 |

Notes: Asterisks indicate value is less than .1 occasion per capita.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and figure and an explanation of research methods. See Appendix D for an explanation of terms.

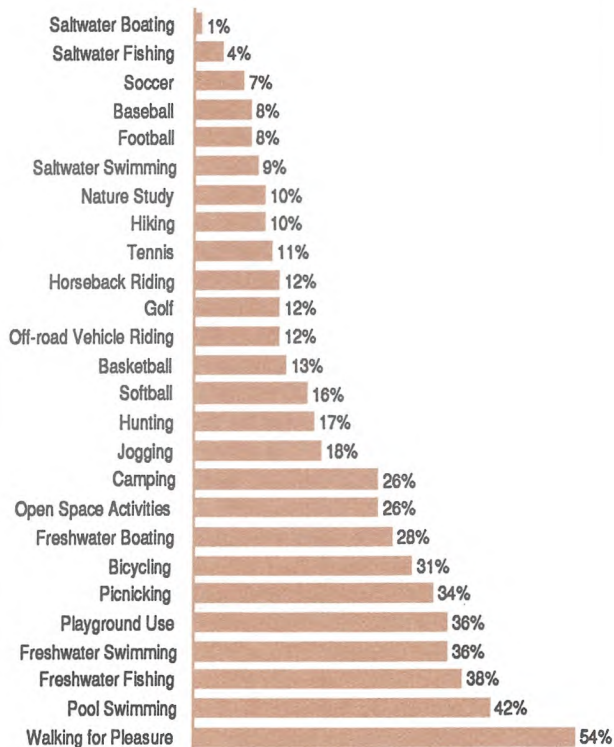
OUTDOOR RECREATION PARTICIPATION

Popular Activities

Figure 2 shows the percent of the population participating in each of twenty-six outdoor activities. Residents of region 3 are more likely to participate in freshwater swimming, fishing, and boating than state residents as a whole (figure 4.1). Besides the freshwater activities, only golf and horseback riding attract percentages larger than the statewide average. For all others, region 3 residents are less likely to participate.

In projected per capita participation (table 2), region 3 residents are again found to participate at rates below the state as a whole. In twenty of twenty-six activities, region 3 rates are below the statewide average. Activities with above average occasions per capita include the freshwater activities, hunting, golf, and horseback riding.

Figure 2
Region 3 Projected 1995 Percentage
of Population Participating



Recreation Travel Patterns

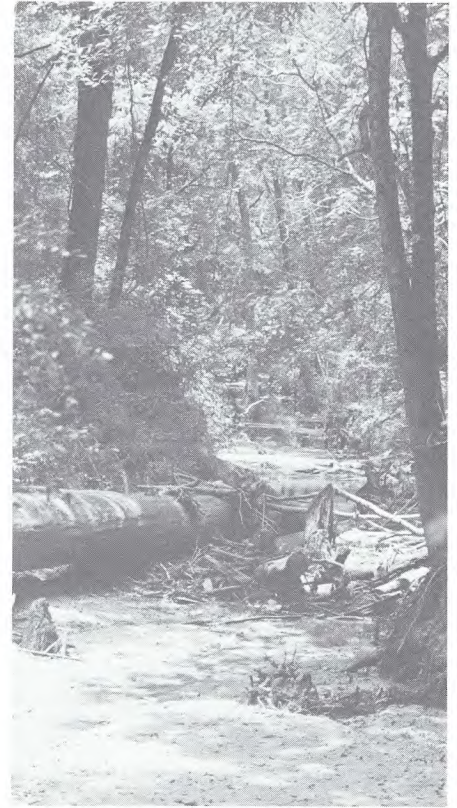
Region 3 will receive more resource-based participation than it loses from residents leaving the region to recreate (figures 3 and 4). In 1995, the region will have a net gain of 675,000 user occasions. Incoming participants will come most often from the Dallas-Fort Worth area (22 percent). Other visitors are expected to come to region 3 mostly from the adjacent regions (figure 4).

Seventy-five percent of resource based participation generated by region 3 residents will take place within the region. When region 3 residents travel to other parts of Texas, they are most likely to go to the regions adjoining on the south, to the West Texas mountains, and to the Gulf Coast near Corpus Christi and Port Aransas. Participation going to and coming from Oklahoma and other states has not been included in these figures.

Projected Participation

Tables 3 and 4 show the participation projected to occur in region 3 in 1990, 1995, and 2000. Participation will increase slightly for every projection year. Only the typically urban activities of walking, bicycling, jogging, pool swimming, and playground use will exceed a million user occasions.

Participation from Texans outside the region will influence all the resource based activities to some degree. By 1995, non-resident participation for hunting and camping will exceed resident participation for hunting and camping. Neighboring Oklahomans can be expected to add some participation pressure above the amounts shown in the table.



Some of the most desirable natural areas are river and creek corridors.

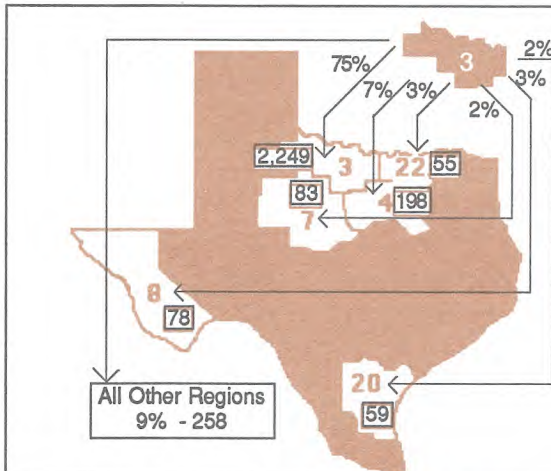


Figure 3
Destinations of Region 3 Residents
for Resource-based Activities

2,980 Annual User Occasions (000's)
Generated by Region 3 Residents, 1995

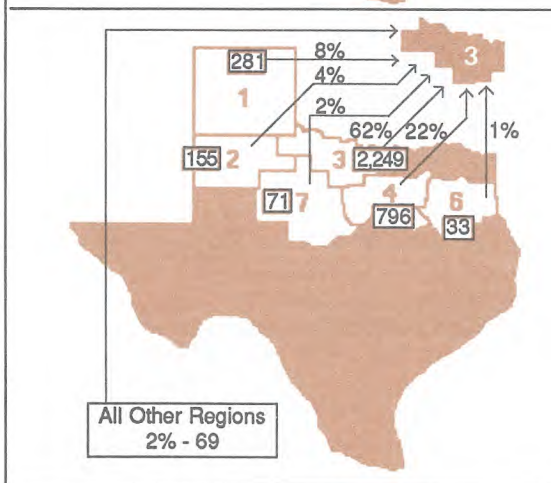


Figure 4
Origins of Participants Who Recreated
in Region 3 for Resource-based Activities

3,655 Annual User Occasions (000's)
Occurring in Region 3, 1995

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting. See Appendix B for key points to interpret these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 3 by Region 3 Residents,
Texans from Outside Region 3, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 3 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|---|------|------|---------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | | | |
| | Residents of Region 3 | | | Texans from Outside Region 3 | | | Regional Totals | | |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 336 | 343 | 350 | 161 | 168 | 175 | 497 | 511 | 525 |
| Boating (Pleasure), FW | 157 | 160 | 163 | 86 | 90 | 93 | 243 | 250 | 256 |
| Camping | 221 | 225 | 230 | 219 | 232 | 245 | 439 | 457 | 475 |
| Fishing, FW | 627 | 641 | 654 | 275 | 287 | 299 | 903 | 928 | 953 |
| Fishing from Banks | 205 | 209 | 213 | 90 | 94 | 97 | 294 | 303 | 311 |
| Fishing from Boats | 281 | 287 | 293 | 123 | 128 | 134 | 404 | 415 | 427 |
| Fishing from Structures | 142 | 145 | 148 | 62 | 65 | 67 | 204 | 210 | 215 |
| Hiking | 23 | 23 | 24 | 17 | 19 | 20 | 40 | 42 | 43 |
| Hunting | 297 | 303 | 310 | 467 | 496 | 525 | 763 | 799 | 834 |
| Lake Use (BFS Suitable), FW | 384 | 392 | 400 | 184 | 192 | 199 | 568 | 583 | 599 |
| Nature Study | 119 | 123 | 126 | 12 | 13 | 14 | 131 | 136 | 140 |
| Picnicking | 300 | 306 | 311 | 138 | 145 | 153 | 438 | 451 | 464 |
| Swimming, FW | 463 | 469 | 475 | 122 | 125 | 129 | 585 | 594 | 604 |



When adding new facilities, providers must consider the needs of all citizens including seniors and people with disabilities.

Table 4
Projected Outdoor Recreation Participation
in Region 3 by Residents of Region 3, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (In 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 348 | 352 | 357 |
| Basketball | 382 | 386 | 391 |
| Bicycling | 2485 | 2524 | 2563 |
| Bicycling on Trails | 153 | 155 | 158 |
| Football | 167 | 169 | 170 |
| Golf | 356 | 368 | 379 |
| Horseback Riding | 192 | 197 | 201 |
| Horseback Riding on Trails | 49 | 50 | 52 |
| Jogging/Running | 1209 | 1225 | 1243 |
| Jogging/Running on Trails | 372 | 377 | 383 |
| Off-road Vehicle Riding | 296 | 300 | 305 |
| ORV Riding on Trails | 58 | 59 | 60 |
| Open Space Activities | 602 | 609 | 617 |
| Playground Use | 1055 | 1068 | 1082 |
| Soccer | 268 | 272 | 277 |
| Softball | 451 | 454 | 458 |
| Swimming, Pool | 1470 | 1490 | 1511 |
| Tennis | 255 | 258 | 262 |
| Walking (Pleasure/Exercise) | 3362 | 3457 | 3553 |
| Walking on Trails | 787 | 809 | 832 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Table 5 shows the region having needs for nine of the eighteen facilities/resources. With no designated off-road vehicle riding areas and only one mile of horseback riding trail, these two trail activities rank as the number two and three needs (table 6). Increases of more than 100 percent over existing supply are needed for multi-use trails, the number one need, and football/soccer fields, the number four need.

Table 6 shows the regional facility needs ranked from most to least needed within the region. Rankings are based on a combination of two measures of need: the needed quantity relative to existing supply and the amount of projected user occasions that would go unserved if the needed facilities were not added.

Even when no regional needs are shown, inadequate distribution or local

preferences may create local needs. In some cases, providers feel there are needs for things not covered in table 5. For example, Wichita Falls and Iowa Park reported interest in indoor recreation centers. In Wichita Falls, citizens have requested passive recreation areas with landscaping, trees, benches, ponds, and gardens. As mentioned under the issues section, many entities in the region identified rehabilitation and replacement of facilities as priorities. Some destination sites would make better attractions if a package of facilities were offered where now there may be only one or two things for visitors to do. If some of the needed campsites were developed as group facilities, RV clubs would find increased opportunities.

Providers' Responsibilities

Table 7 shows the administrations recommended to provide the needed

facilities shown in table 6. River authorities which currently provide no recreation land or facilities in the region are suggested to take on a recreation role. River authorities in other regions are typical providers of campsites, boat ramps, and trail miles, the facilities recommended for authorities in region 3.

Matador Wildlife Management Area could provide more recreation opportunities if campsites were added. The commercial sector is suggested to provide off-road vehicle riding acres and campsites. Counties should provide more boat ramps, horseback riding trails, multi-use trails, and off-road vehicle riding acres. Cities pick up the remaining responsibilities for the typically urban facilities: soccer/football fields, tennis courts, playgrounds, multi-use trails, and a share of the off-road vehicle riding acres. The desire of some cities to provide camping is reflected in the table.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 3, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 64 | * | * | * |
| Basketball Goals | 51 | * | * | * |
| Boat Ramp Lanes, FW | 46 | 21 | 23 | 25 |
| Campsites | 769 | 49 | 82 | 115 |
| Fishing Structures, FW Lin.Yd. | 2049 | * | * | * |
| Golf Holes | 108 | * | * | * |
| Hiking Trail Miles | 2 | 3 | 4 | 4 |
| Horseback Riding Trail Miles | 1 | 7 | 7 | 7 |
| Lake Acres (BFS Suitable), FW | 37776 | * | * | * |
| Off-road Vehicle Riding Acres | 0 | 50 | 51 | 51 |
| Picnic Tables | 802 | * | * | * |
| Playground Areas, Equipped | 90 | 10 | 12 | 13 |
| Soccer/Football Fields | 17 | 11 | 11 | 11 |
| Softball Fields | 52 | * | * | * |
| Swimming, FW Sq.Yd. (000) | 365 | * | * | * |
| Swimming, Pool Sq.Yd. (000) | 14 | * | * | * |
| Tennis Courts | 65 | 2 | 3 | 4 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 8 | 14 | 15 | 15 |
| Developed Land Acres | | 311 | 338 | 348 |

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Source: CPS, CPB, Parks Division, TPWD, 1988.

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs in
Region 3 Through 1995

| Need Rank | Facility/Resource |
|-----------|---|
| 1 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 2 | Horseback Riding Trail Miles |
| 3 | Off-Road Vehicle Riding Acres |
| 4 | Soccer/Football Fields |
| 5 | Boat Ramp Lanes, FW |
| 6 | Hiking Trail Miles |
| 7 | Playground Areas, Equipped |
| 8 | Campsites |
| 9 | Tennis Courts |
| 10 | Basketball Goals |
| 11 | Fishing Struc., FW Lin.Yd. |
| 12 | Softball Fields |
| 13 | Swimming, Pool Sq. Yd. |
| 14 | Golf Holes |
| 15 | Baseball Fields |
| 16 | Picnic Tables |
| 17 | Swimming, FW Sq.Yd. |
| 18 | Lake Acres (BFS Suitable) |

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 3, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Chiles | Other Local | COMMERCIAL |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Boat Ramp Lanes, FW | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 7 | 0 | 0 | 0 |
| Campsites | 82 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 30 | 0 | 15 | 0 | 17 |
| Fishing Structures, FW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 2 | 0 | 0 |
| Off-road Vehicle Riding Acres | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 0 | 31 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 |
| Soccer/Football Fields | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, FW Sq. Yd. (000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq. Yd. (000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tennis Courts | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12 | 0 | 0 |
| Developed Land Acres | 338 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 65 | 62 | 171 | 0 | 35 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



The existing supply of picnic tables is expected to meet the regional needs through 1990.



REGION 4

**NORTH
CENTRAL
TEXAS**

Youngsters who grow up appreciating natural resources are less likely to vandalize parks.

ISSUES AND RECOMMENDATIONS

Issue: Open Space

Region 4 has experienced years of rapid population growth. Many cities in the metroplex that were once small towns have found themselves part of an urbanizing metropolitan area as citizens from Dallas and Fort Worth moved to the suburbs. Urban dwellers must now search harder to find open green spaces. With 336.6 people per square mile, the density of region 4 is surpassed only by the Houston region. Region 4 ranks twenty-first out of twenty-four regions in recreation land per thousand population (table A3).

Public recreation providers in the region have repeatedly expressed a need for more parks and passive open space. In recent years, parkland and open space have become increasingly scarce while available land has been reduced. Rapid development has turned many natural areas into buildings and pavement.

Many park providers have taken steps to acquire public open space land close to home. Dallas and Collin counties both have bond-funded open space acquisition programs. Other metroplex cities cite parkland acquisition as their highest priority. Few, however, have adopted mandatory dedication ordinances. The recent slump in the Texas economy has temporarily suppressed rising land costs. Public entities recognize that the time to buy is now. Local governments recom-

mend changes in the state grant program that would give higher priorities to open space acquisition.

Large resource-based parks are needed within a two hour drive of the cities, and many local providers suggest that the Texas Parks and Wildlife Department consider continued acquisitions. Nearby hunting opportunities are few and costly. (Also, see State Summary, "Meeting Recreational Open Space Needs" and "Conserving Natural Resources for Recreational Use" under "Issues and Recommendations.")

Recommendations:

For urban counties:

Identify and prioritize natural and open space areas desired for acquisition.

For cities:

Incorporate open space designations into city development plans.

Consider implementing a mandatory parkland dedication ordinance if one does not already exist.

For recreation providers:

Place a priority on acquiring public open spaces.

Acquire land before costs re-escalate; quickly make them accessible to the public. Consider innovative ways to secure tracts of land for future acquisition at lower prices, such as buy-and-lease-back arrangements and contracts or options from owners of farms and ranches to acquire their land in the future.

Develop various incentive programs to encourage private landowners to manage their land for public non-consumptive recreation; consider voluntary landowner agreements, conservation and recreation easements, and ways to limit landowners' liability exposure.

Inform the public about available open space opportunities.

For the Texas Legislature:

Increase grant funding for additional local government land acquisition of open/green space areas.



For appropriate applied research entities:

Develop criteria for cities and counties to use in evaluating the quality, types, and quantity of open space needed.

Develop estimates of the total economic value of open space including recreation use, option, existence, and bequest values.

Issue: Rivers, Creeks, and Greenbelts

Citizens and decision-makers show a growing concern for protecting river and stream corridors from environmental threats. Increased run-off from rapidly urbanizing watersheds causes erosion, siltation, and flooding, and thus threatens natural corridors with channelizing. Both point and non-point source pollution affect water quality of streams and ultimately of lakes. Sewage leaks and discharges have caused fish kills.

Local governments and recreation providers are taking action to protect some of the waterways in the region. Nine cities and three counties are participating with the North Central Texas Council of Governments in the Trinity River Corridor project. The U.S. Army Corps of Engineers modeled flood conditions under various development scenarios. In an effort to avoid total channelization of one of the region's primary resources, participating governments are trying to develop a regional permit system. The same entities plan to cooperate on a greenway corridor of parks and trails. Many financial resources must be rallied to make this vision a reality.

Six cities on the east side of the metroplex are cooperating on a similar watershed management plan for Rowlett Creek. Some of them have begun to acquire land for a linear park. In this region, often the most scenic, wooded areas are found in stream corridors.

In conjunction with protection of stream corridors, recreation providers and public input have expressed concerns over in-stream flows and the quality of the water for contact recreation. Some feel the Texas Water Commission standards for designating stream segments as fishable and swimmable could be tightened to give citizens higher quality water resources.



Citizens of the region clamor for more public park land, especially passive open space areas close to cities.

Minimum in-stream flows are needed to preserve fish and wildlife habitat, and historical and recreational resources. A proposed reservoir on the Paluxy River threatens the dinosaur tracks at Dinosaur Valley State Park unless an adequate downstream release program can be agreed upon. Irregular releases from Possum Kingdom dam can cause unsafe conditions for floaters on the popular segment of the Brazos River. (Also, see State Summary, "Rivers and Outdoor Recreation" and "Meeting Recreational Open Space Needs" under "Issues and Recommendations.")

Recommendations:

For all public entities:

Continue to place priorities on acquiring greenbelts along the region's rivers and creeks.

Create, review, or amend local floodplain ordinances to maintain natural buffers along stream corridors.

Preserve bottomland hardwoods and riparian wetlands when developing parks.

Control point source and non-point source pollution, and stress water conservation.

For the council of governments:

Strengthen efforts to coordinate existing land and water managing entities in the region into an effective multi-jurisdictional watershed management

program. Continue to pursue a regional development permitting system.

Issue: Appreciation of Park Benefits

Some park resource managers feel that citizens and decision-makers alike do not fully appreciate the benefits of parks, public land, and natural resources. Children not educated about natural resource values grow up to be adults that don't use parks or appreciate resources. Youngsters that aren't offered legitimate recreation outlets in parks may vandalize them for entertainment. Senior citizens or any other segment of the population unserved by a leisure services program will not likely be supportive at budget time or in bond elections.

Some decision-makers are coming to realize the value parks have on a city's quality of life. Recently, when J. C. Penney Co. chose to move its headquarters to Plano, local leaders felt that Plano's extensive park system helped to influence the decision. Economic development planners also see the value parks have to attract tourist dollars. Cities that offer regional or state sports tournaments can fill motels with the hundreds of players that come to town.

Park and recreation managers often find it difficult to translate the social and economical benefits of parks and recreation service. When local budgets are threatened, park professionals have

trouble justifying park funding to decision-makers in lieu of other public services.

Recommendations:

For recreation providers:

Analyze the value and benefits that parks and recreation opportunities provide; educate decision-makers and constituencies about these values.

Increase public education programs, including interpretative displays, activities, printed materials, and outdoor education for children.

Cooperate with academic institutions to research the impacts of quality parks and recreation services on economic development and crime prevention.

Cultivate program support by including all segments of the population in a public input process to develop recreation plans.

Issue: Privatization, Fees, and Equity

Budget crunches and changes in philosophies of government services have both contributed to trends in recreation management. Recreation providers are more conscious of bringing in revenue through fees. Other management options include turning over traditional government responsibilities to profit and non-profit organizations.

The charging of fees brings up several questions. When recreation providers are managing for income, are they meeting all recreation needs? Providing only the activities for which fees are typically charged may not be offering the ones people want. Some argue that people will pay for what is important to them; however, less affluent segments of the population may be excluded by their inability to pay. The goal to be self-supporting may often neglect to take into account the societal benefits.

On the positive side, entrance fees, or at least controlled entrances at resource parks, often discourage visitors who engage in inappropriate behavior. Rowdy, partying day users can cause more maintenance needs than overnight visitors. Research has indicated that visitors usually do not mind paying fees that are put back into improvements at

the site.

Recreation managers argue over the values of privatizing recreation management. Some save money and staff time when sports organizations run the leagues or when they contract maintenance. Others report negative experiences. The quality of park appearance may suffer when profit-making contractors are less sensitive to public desires. Sports organizations are not always skilled at managing conflicts among user groups.

Recommendations:

For recreation managers:

Prepare cost-benefit studies of proposed fee structures and management contracts; include social and economic benefits as well as revenue.

Obtain public input to learn what neighborhoods want, and consider serving different parts of town with different opportunities based on citizen preferences.

Consider supporting federal legislation allowing collection of fees from day users of the U.S. Army Corps of Engineers parks.

Issue: Funding Problems

Cities in region 4 have had a reputation for abundance and generous spending on high quality parks. Local decision-makers and recreation providers report, however, that the affluent days are ending. When bond monies are spent, park providers do not expect new bonds to pass easily. Some cities are experiencing hiring freezes. Others see parks and recreation receiving a decreasing portion of the budget. Many of the cities outside the metroplex continue in their historic struggle for park funding.

At the same time budgets are decreasing, citizens are demanding higher quality facilities, better maintenance, and more aesthetic landscaping in parks. As parklands have been acquired, maintenance staffing has not always kept pace. In some cities, parks are overused and overdeveloped because local recreation providers do not have funds for new parks and facilities.

The decreasing amounts of grant funds available from state and federal sources contribute to local funding problems. Individuals in the region suggested new sources of funding for park

acquisition, possibly from taxes on recreation products and real estate activity. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Accelerate the use of donated money, land, and labor from citizens and corporations; be creative in finding alternatives to funding.

Develop or continue successful joint use programs between educational institutions and cities or counties.

Develop long-range capital improvements programs to fund replacement and upgrading of old facilities; consider creating a maintenance trust fund.

Support federal legislation to establish a dedicated trust, or similar mechanism, to provide funding for outdoor recreation.

For the Texas Parks and Wildlife Department:

Continue to serve as a clearinghouse for information on federal, state, and private grants and assistance.

Issue: Visitor Management

Overcrowding at some area parks is a problem, especially at lakeside recreation areas in the metroplex. Day use areas and boat ramps receive much of the congestion. Too many visitors require managers to develop vehicle and pedestrian controls. Incompatible users often compete for available public land. For example, day and overnight users usually behave differently, and managers find they cut down on conflicts by making separate areas. Park security becomes more of a concern in crowded parks as users are less able to put distance between themselves and adjacent groups.

Waiting time at boat ramps can cause recreationists frustration, but crowding on the lakes creates unsafe conditions. Congestion causes conflicts between pleasure boaters, fishermen, and swimmers. Boating accidents and drownings are often alcohol-related.

In cities, parks are no longer the good neighbors they used to be. With

reputations for attracting drug and alcohol users, parks are sometimes opposed by adjacent homeowners. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Issues and Recommendations.")

Recommendations:

For managers of crowded, controlled access parks:

Determine the capacity of the site and regulate or control use when visitation reaches critical limits. Ex-

plain the purpose of visitor restrictions to secure public support and cooperation.

Consider incentives such as variable user fees to redistribute visitors to off-peak times and less used sites.

For recreation providers:

Inform the public on available outdoor recreation opportunities; market underutilized areas to divert visitors from heavily used areas.

For park managers and law enforcement personnel:

Cooperate more fully in providing frequent and visible park patrols.

For providers of lakeside parks:

Promote awareness and public education in water safety and boating laws.

RESOURCES

Population Trends

The large number of people living in the region will continue to stress area resources in the future. By 1995, region 4 is expected to be home to 22 percent of the state's population. The population in 1986 (figure 1) represents a 26 percent growth since 1980. Even with a slower rate of growth, only 6 percent from 1986 to 1995, the more than four million residents in 1995 can be expected to heavily use parks in region 4 and throughout the state.

Resource Attractions

Reservoirs found throughout the region provide many opportunities for water-based recreation. Figure 1 shows the most popular lakes. Six reservoirs each exceed twenty thousand surface acres, including Lake Tawakoni and Lake Ray Roberts, which fall partly into adjacent regions. The Corps of Engineers provides parks on six reservoirs, and four state parks offer lake access. Residents in the metroplex need not drive far to find recreational waters because many of the major reservoirs are located in the metropolitan area.

City dwellers often prefer to leave the urban areas for recreation. Four state parks are outside the metroplex but still within a one-to-two-hour drive. The dinosaur tracks at Dinosaur Valley State Park bring visitors not only from other parts of Texas and out-of-state but also from foreign countries. Lake Mineral Wells and Possum Kingdom state parks offer get-aways for residents from the Fort Worth side of the metroplex. Located south of the urbanized area, Cle-

burne State Park serves visitors from both Dallas and Tarrant counties. LBJ National Grasslands, managed by the U.S. Forest Service, provides a rustic recreation experience.

The Brazos River attracts recreationists primarily for swimming, fishing, and river float trips. With so many reservoirs in the region, the value of the free-flowing sections of the Brazos, Trinity and Paluxy rivers increases as they become rarer.

Recreation Supply

Table 1 shows the supply of recreation land, water, and facilities managed by the various providers. The administrative category with the highest proportion of park land acres (39 percent) is the aggregate of municipalities, indicating the excellent job that cities are doing to provide close-to-home opportunities. The Corps of Engineers follows closely with 38 percent of the regional total. Much of the 48,737 acres of recreation land operated by the Corps of Engineers can also be found in close proximity to the urban areas.

A total of 232,581 surface acres (figure 1) gives the region more lake acres than all regions except Deep East Texas. Even with this quantity, the large number of region residents makes the suitable surface acres per thousand population fall below the state average (table A3).

Region 4 residents are generally worse off than the state as a whole in facility supply (table A3). Of nineteen facilities or designated resources, only six are above the statewide average in

facilities per thousand population (soccer/football and softball fields, tennis courts, off-road vehicle riding areas, fishing structures and bank fishing access). The remaining facilities have a below average supply. The supply of baseball fields, swimming pools, and campsites is among the lowest in the state in facilities per thousand population.

Potential and Proposed Resources

In keeping with the region's priority to protect stream corridors and acquire greenbelts, many cities have identified linear resources desirable for recreation. Two of the most active projects include the Trinity River Corridor and Rowlett Creek where multiple jurisdictions are cooperating to create greenways. The Corps has proposed a greenbelt between Lake Lewisville and Lake Ray Roberts. The U.S. Forest Service plans to increase camping and hiking opportunities at LBJ National Grasslands. The site is already able to meet existing demand for dispersed recreation and Type II hunting.

The Texas Parks and Wildlife Department is actively working to increase state park opportunities in the region. The new Cedar Hill State Park on Joe Pool Reservoir is slated to open in 1990. Sites on Lake Tawakoni and Eagle Mountain Lake are in the planning stage. The department will manage park sites on Lake Ray Roberts that will be developed by the Corps of Engineers and neighboring cities. The 68th Legislature authorized the acquisition of the Trinity River State Park, a greenbelt along the river in south Dallas County. Initial

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 4, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | | LOCAL | | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|-------------|--------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | COMMERCIAL |
| Number of Parks/Rec. Areas | 0 | 0 | 1 | 58 | 10 | 2 | 0 | 3 | 7 | 11 | 1218 | 24 | 120 | 1454 |
| Total Parkland Acres | 0 | 0 | 15 | 48737 | 12192 | 6570 | 0 | 190 | 394 | 560 | 50160 | 667 | 8081 | 127567 |
| Developed Land Acres | 0 | 0 | 4 | 8588 | 1944 | 0 | 0 | 190 | 331 | 61 | 21302 | 413 | 4370 | 37203 |
| Developable Land Acres | 0 | 0 | 11 | 6818 | 6335 | 0 | 0 | 0 | 63 | 374 | 19862 | 211 | 3352 | 37026 |
| Preserved or Unsuitable for Development (Acres) | 0 | 0 | 0 | 33331 | 3913 | 6570 | 0 | 0 | 0 | 125 | 8996 | 44 | 359 | 53338 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 305 | 4 | 1 | 310 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 438 | 21 | 8 | 469 |
| Boat Ramp Lanes, FW | 0 | 0 | 1 | 195 | 9 | 0 | 0 | 7 | 13 | 3 | 92 | 0 | 103 | 423 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 1011 | 405 | 0 | 0 | 0 | 299 | 62 | 313 | 0 | 3303 | 5393 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 60850 | 7040 | 0 | 0 | 0 | 18000 | 0 | 11162 | 0 | 30310 | 127362 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 550 | 212 | 0 | 0 | 0 | 650 | 0 | 2703 | 0 | 4052 | 8167 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 486 | 0 | 162 | 666 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 23 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 15 | 9 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 31 |
| Lake Acres (BFS Suitable),FW | | | | | | | | | | | | | | 165749 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 94 | 0 | 2805 | 2899 |
| Picnic Tables | 0 | 0 | 8 | 730 | 248 | 0 | 0 | 0 | 23 | 18 | 5877 | 0 | 2044 | 8947 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 2 | 0 | 863 | 11 | 28 | 915 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 553 | 12 | 0 | 564 |
| Softball Fields | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 469 | 6 | 2 | 478 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 142400 | 3900 | 0 | 0 | 0 | 150 | 3000 | 39500 | 0 | 200698 | 389648 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78361 | 0 | 11775 | 90136 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 826 | 40 | 10 | 877 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 116 | 0 | 0 | 118 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

OUTDOOR RECREATION PARTICIPATION

Popular Activities

The percentage of the region's population participating in each of the twenty-six activities (figure 2) closely matches the statewide figures (figure 4.1). The exceptions are the saltwater activities in which region 4 residents are less likely to participate than Texans as a whole.

Table 2 shows the activities garnering the most participation per capita.

The top five activities which people do most frequently are walking, bicycling, pool swimming, playground use, and jogging. The state averages show the same top activities. Compared to the state rates per capita for twenty-six activities, region 4 residents participate at the same rate for five activities, at lower rates for fourteen activities, and at higher rates for only seven. Soccer and tennis participation is higher than almost all other regions. None of the

resource-based activities show per capita participation above the statewide rate.

Recreation Travel Patterns

The effects of region 4 residents' participation can be felt all over the state (figure 3). Few regions show as high as 47 percent resource-based participation leaving the home region. People from the region will go most often to three adjacent regions and to the Galveston

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 4 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|---|----------------|---------------------------|
| | Residents of Region 4 Occurring In | | |
| | Region 4 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 0.8 | 1.3 | 1.3 |
| Boat Ramp Lanes, SW | * | * | 0.3 |
| Boating (Pleasure), FW | 0.4 | 0.6 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 0.4 | 1.7 | 1.7 |
| Fishing, FW | 1.6 | 2.4 | 2.4 |
| Fishing from Banks | 0.5 | 0.8 | 0.8 |
| Fishing from Boats | 0.7 | 1.1 | 1.1 |
| Fishing from Structures | 0.4 | 0.5 | 0.5 |
| Fishing, SW | * | 0.2 | 0.7 |
| Fishing from Boats | * | * | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | * | 0.3 |
| Hiking | 0.2 | 0.3 | 0.4 |
| Hunting | 0.4 | 1.1 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.0 | 1.4 | 1.5 |
| Nature Study | 0.6 | 0.9 | 0.9 |
| Picnicking | 1.4 | 1.8 | 1.9 |
| Swimming, FW | 1.3 | 2.1 | 2.1 |
| Swimming, SW | * | 0.5 | 1.2 |
| Baseball | 1.2 | | 1.5 |
| Basketball | 1.4 | | 1.6 |
| Bicycling | 10.5 | | 10.7 |
| Bicycling on Trails | 0.6 | | 0.7 |
| Football | 0.7 | | 0.8 |
| Golf | 1.4 | | 1.3 |
| Horseback Riding | 0.8 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 4.8 | | 5.4 |
| Jogging/Running on Trails | 1.5 | | 1.7 |
| Off-road Vehicle Riding | 1.4 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.3 | | 0.3 |
| Open Space Activities | 3.4 | | 3.2 |
| Playground Use | 4.9 | | 4.8 |
| Soccer | 1.4 | | 1.2 |
| Softball | 1.6 | | 1.8 |
| Swimming, Pool | 6.3 | | 6.4 |
| Tennis | 1.5 | | 1.3 |
| Walking (Pleasure/Exercise) | 15.1 | | 14.8 |
| Walking on Trails | 3.5 | | 3.5 |

Notes: Asterisks indicate value is less than .1 occasion per capita.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and figure and an explanation of research methods. See Appendix D for an explanation of terms.

and Corpus Christi areas for saltwater activities.

Figure 4 shows how seldom region 4 will attract out-of-area visitors for resource based recreation. Most will come from the relatively drier regions to the west. The amount of region 4 residents' participation leaving the region will be almost fourteen times as much as the non-resident participation coming into the region.

Projected Participation

Tables 3 and 4 show the participation projected to occur in region 4 in 1990, 1995, and 2000. Participation will increase for every projection year. Freshwater fishing, swimming, and picnicking will attract the most participation in the region for resource-based activities (table 3). Texans from outside the region will have little impact on the region's resources. Participation in urban-oriented activities in 1995 will be over eight times as high as the participation in resource-based activities in the region. This ratio is one of the highest in the state.

Figure 2
Region 4 Projected 1995 Percentage of Population Participating

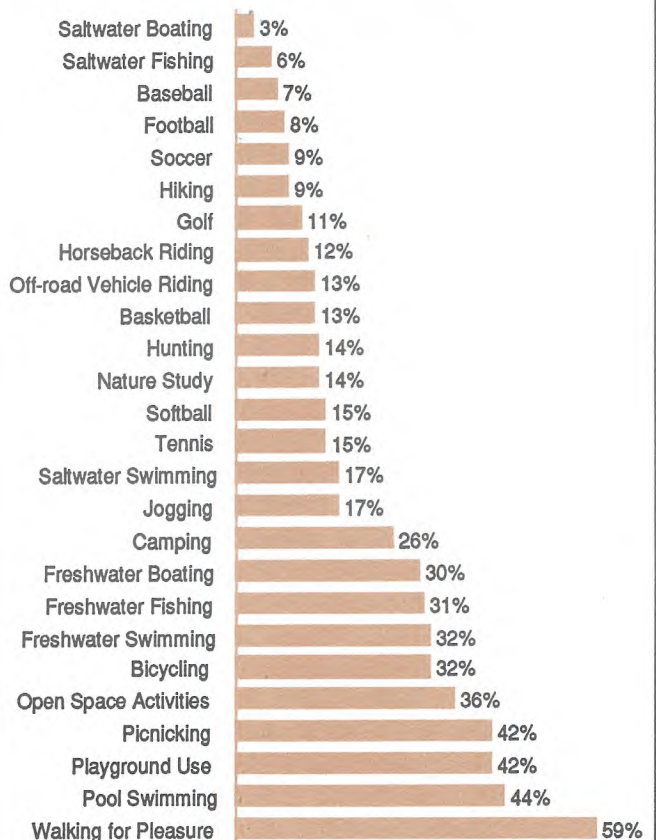


Table 3
Projected Outdoor Recreation Participation in Region 4 by Region 4 Residents,
Texans from Outside Region 4, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 4 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|---|------|------|------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | Regional Totals | | |
| | Residents of Region 4 | | | Texans from Outside Region 4 | | | 1990 | 1995 | 2000 |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 3318 | 3560 | 3803 | 186 | 195 | 204 | 3504 | 3755 | 4007 |
| Boating (Pleasure), FW | 1530 | 1628 | 1726 | 105 | 109 | 113 | 1634 | 1737 | 1839 |
| Camping | 1500 | 1610 | 1720 | 376 | 395 | 415 | 1876 | 2005 | 2135 |
| Fishing, FW | 6224 | 6708 | 7194 | 308 | 324 | 340 | 6531 | 7032 | 7534 |
| Fishing from Banks | 2030 | 2188 | 2347 | 100 | 106 | 111 | 2131 | 2294 | 2458 |
| Fishing from Boats | 2787 | 3004 | 3221 | 138 | 145 | 152 | 2925 | 3149 | 3374 |
| Fishing from Structures | 1407 | 1516 | 1626 | 70 | 73 | 77 | 1476 | 1589 | 1703 |
| Hiking | 600 | 646 | 693 | 35 | 37 | 38 | 635 | 683 | 731 |
| Hunting | 1586 | 1693 | 1800 | 135 | 143 | 152 | 1720 | 1836 | 1952 |
| Lake Use (BFS Suitable), FW | 3786 | 4062 | 4339 | 212 | 223 | 233 | 3998 | 4285 | 4572 |
| Nature Study | 2360 | 2585 | 2810 | 81 | 86 | 90 | 2441 | 2671 | 2901 |
| Picnicking | 5671 | 6026 | 6381 | 187 | 195 | 203 | 5858 | 6221 | 6584 |
| Swimming, FW | 5233 | 5497 | 5762 | 357 | 370 | 383 | 5590 | 5868 | 6145 |

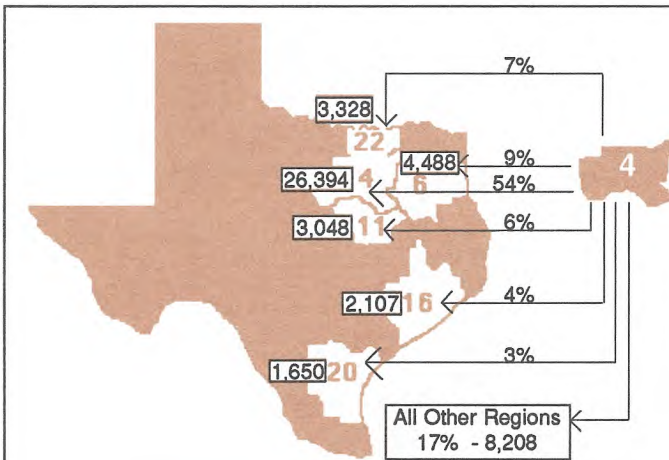


Figure 3
Destinations of Region 4 Residents
for Resource-based Activities

49,223 Annual User Occasions (000's)
 Generated by Region 4 Residents, 1995

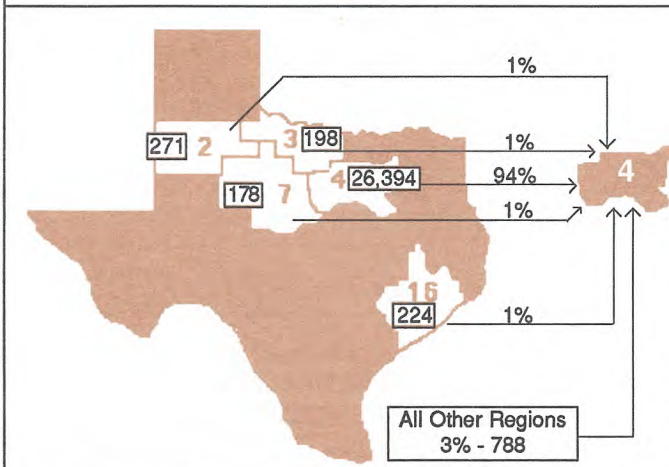


Figure 4
Origins of Participants Who Recreated
in Region 4 for Resource-based Activities

28,053 Annual User Occasions (000's)
 Occurring in Region 4, 1995

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 4
Projected Outdoor Recreation Participation
in Region 4 by Residents of Region 4, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (In 000's Annual User Occasions) | | |
|-----------------------------|---|-------|-------|
| | 1990 | 1995 | 2000 |
| Baseball | 4582 | 4882 | 5183 |
| Basketball | 5662 | 6020 | 6379 |
| Bicycling | 41405 | 44140 | 46880 |
| Bicycling on Trails | 2551 | 2719 | 2888 |
| Football | 2673 | 2870 | 3068 |
| Golf | 5268 | 5781 | 6295 |
| Horseback Riding | 3054 | 3255 | 3456 |
| Horseback Riding on Trails | 784 | 835 | 887 |
| Jogging/Running | 19073 | 20055 | 21039 |
| Jogging/Running on Trails | 5875 | 6177 | 6480 |
| Off-road Vehicle Riding | 5374 | 5723 | 6074 |
| ORV Riding on Trails | 1053 | 1121 | 1190 |
| Open Space Activities | 13358 | 14076 | 14794 |
| Playground Use | 19374 | 20435 | 21497 |
| Soccer | 5748 | 6073 | 6398 |
| Softball | 6607 | 6911 | 7217 |
| Swimming, Pool | 24685 | 26216 | 27749 |
| Tennis | 5732 | 6132 | 6533 |
| Walking (Pleasure/Exercise) | 57876 | 63100 | 68390 |
| Walking on Trails | 13549 | 14772 | 15996 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 4 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|-------------|-------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 310 | 24 | 46 | 68 |
| Basketball Goals | 469 | 214 | 258 | 301 |
| Boat Ramp Lanes, FW | 423 | * | * | 19 |
| Campsites | 5393 | * | * | * |
| Fishing Structures, FW Lin.Yd. | 8167 | 316 | 967 | 1619 |
| Golf Holes | 666 | * | 28 | 89 |
| Hiking Trail Miles | 23 | 63 | 69 | 76 |
| Horseback Riding Trail Miles | 31 | 81 | 89 | 96 |
| Lake Acres (BFS Suitable), FW | 165749 | * | * | * |
| Off-road Vehicle Riding Acres | 2899 | * | * | * |
| Picnic Tables | 8947 | * | * | * |
| Playground Areas, Equipped | 915 | 930 | 1031 | 1133 |
| Soccer/Football Fields | 564 | 103 | 118 | 134 |
| Softball Fields | 478 | * | 16 | 37 |
| Swimming, FW Sq.Yd. (000) | 390 | 1029 | 1100 | 1170 |
| Swimming, Pool Sq.Yd. (000) | 90 | 67 | 77 | 87 |
| Tennis Courts | 877 | 621 | 726 | 830 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 118 | 263 | 292 | 322 |
| Developed Land Acres | | 4572 | 5457 | 6709 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Table 5 shows the regional needs for thirteen of the eighteen facilities/resources by 1995. Increases of more than 100 percent over existing supply are needed for five facilities (hiking, horseback, and multi-use trails, playgrounds, and freshwater swimming areas). Table 6 shows the needs ranked from most to least needed within the region. Multi-use trails are the highest need followed by freshwater swimming and playgrounds.

Needed land acres shown at the bottom of table 5 represent only the acres required to develop the needed facilities. Most park providers have identified undeveloped land as their highest priority need (parkland, open space, and greenbelt acquisition). The next most vocalized need is for upgrading and renovating existing facilities.

Table 6
Ranking of Outdoor Recreation Facility/Resource
Needs in
Region 4 Through 1995

| Need Rank | Facility/Resource |
|-----------|---|
| 1 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 2 | Swimming, FW Sq.Yd. |
| 3 | Playground Areas, Equipped |
| 4 | Hiking Trail Miles |
| 5 | Horseback Riding Trail Miles |
| 6 | Soccer/Football Fields |
| 7 | Swimming, Pool Sq. Yd. |
| 8 | Tennis Courts |
| 9 | Basketball Goals |
| 10 | Baseball Fields |
| 11 | Golf Holes |
| 12 | Fishing Struc., FW Lin.Yd. |
| 13 | Softball Fields |
| 14 | Boat Ramp Lanes, FW |
| 15 | Campsites |
| 16 | Picnic Tables |
| 17 | Off-Road Vehicle Riding Acres |
| 18 | Lake Acres (BFS Suitable) |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Providers' Responsibilities

Table 7 shows the administrations recommended to provide the needed facilities shown in table 5. The greatest share of developed land acres is recommended for cities because most of the needed facilities are typically urban.

Counties, however, should help with some of those kinds of facilities. Corps parks in urban areas, especially through cost sharing programs, could offer playgrounds, multi-use courts, and playfields for informal soccer, football, and softball. Responsibilities for resource-based facilities are allocated among river

authorities, counties, the Corps of Engineers, the Texas Parks and Wildlife Department, the U.S. Forest Service, and the commercial sector.

A new role for state wildlife management areas includes providing hiking and multi-use trails at Richland Creek Wildlife Management Area.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 4, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|--------------------------------|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 0 | 0 | |
| Basketball Goals | 258 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 226 | 0 | 0 | |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Campsites | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Fishing Structures, FW Lin.Yd. | 967 | 0 | 0 | 0 | 0 | 250 | 0 | 0 | 0 | 197 | 160 | 120 | 0 | 240 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| Horseback Riding Trail Miles | 69 | 0 | 0 | 10 | 0 | 25 | 14 | 0 | 0 | 10 | 6 | 4 | 0 | 0 |
| Off-road Vehicle Riding Acres | 89 | 0 | 0 | 10 | 15 | 22 | 0 | 0 | 0 | 0 | 16 | 10 | 0 | 16 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soccer/Football Fields | 1031 | 0 | 0 | 3 | 25 | 10 | 0 | 0 | 0 | 10 | 80 | 868 | 15 | 20 |
| Softball Fields | 118 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 118 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 |
| Swimming, Pool Sq.Yd.(000) | 1100 | 0 | 0 | 100 | 300 | 400 | 0 | 0 | 0 | 100 | 100 | 100 | 0 | 0 |
| Tennis Courts | 77 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 41 | 4 | 17 |
| Trail Miles, Multi-use | 726 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 | 504 | 100 | 58 |
| (Walk, Bike, Jog) | 292 | 0 | 0 | 0 | 15 | 20 | 10 | 0 | 0 | 0 | 80 | 151 | 0 | 16 |
| Developed Land Acres | 5457 | 0 | 0 | 203 | 371 | 707 | 192 | 0 | 0 | 124 | 910 | 2348 | 28 | 574 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



REGION 5

**NORTH-
EAST
TEXAS**

Sports leagues in Northeast Texas are often organized by quasi-public recreation providers.

ISSUES AND RECOMMENDATIONS

Issue: Quasi-public Recreation Providers

Strong community cohesion, centering around church and civic group affiliations, helps satisfy much of the organized recreation demand of residents in the Northeast Texas region. The people of this region tend to provide many outdoor recreation opportunities for themselves and do not rely on governmental assistance. More often than not, when a group is interested in organizing a sports league (soccer, softball, etc.) they have sufficient resources to accomplish the task themselves. One of the members may own a vacant field, or at least know of one that they can use, another has a tractor to mow and maintain it, and someone will volunteer to be the umpire or referee.

Region residents appear to be more than happy to volunteer their time and resources. This tends to not only reinforce family and local cohesion but also provides volunteers with a sense of worth. With many involved, these quasi-public sports leagues provide leisure satisfaction for the whole family, not just the participants.

The local parks and recreation department, rather than initiating programs, often acts as a facilitator, putting interested parties in touch with other interested parties. Often the city will

provide the facility at no or low cost to cover maintenance. Facilities owned by the school districts are usually open to the public during non-school hours. Facility sharing is usually beneficial to both parties involved and results in facilities that are well utilized. Exchange of funds between these two entities is rare, the city might use a school's tennis courts and the school will use the city's ballfield, for example. Written agreements are often not necessary, as oral agreements and handshakes suffice. In some cases facilities are built jointly by the school district and city to provide recreation opportunities.

Recommendations:

For local recreation providers:

Conduct periodic recreation needs assessments to assure all publics have ample opportunity to participate in recreation endeavors.

Continue to act as a facilitator to bring quasi-public organizations, facilities and interested residents together.

Maintain low facility rental fees to encourage this relatively inexpensive form of recreation programming.

Encourage joint city and educational institution park and recreation facility development when practical.

Issue: Funding

The diverse, relatively stable, economy of this region was not affected as severely as other portions of the state by the statewide economic downturn that occurred in the mid 1980s. However, cities in the Northeast Texas region are still feeling the financial strains of rebuilding an aged infrastructure. Funding road, water and sewage system expansion and renovation are the top capital improvement funding priorities. Park and recreation budgets have been kept at a minimum. While this situation has meant little or no funding for current park expansion, these infrastructure improvements will ultimately provide better access and cleaner waterways for future utilization.

At Pat Mayse Lake, budgetary constraints forced the U.S. Army Corps of Engineers to close the least utilized sites on the lake. Since neither state nor local government entities would take over these sites, public recreation opportuni-



ties in the area were reduced.

Because the population of region 5 is generally rural, many areas have a low tax base and thus a limited funding base. Even with available grant assistance, small communities are hard-pressed to come up with the funds to finance park and recreation projects. Land donations, volunteer labor, and force account work are often the only means to provide these resources. Long-range park planning usually does not exist and maintenance problems that arise are often unanticipated. In these areas county governments need to take a more active role in providing and managing basic outdoor recreation facilities.

Maintenance of existing facilities has kept pace with use. Work crews are accustomed to doing more with less and have become very efficient. There does not appear to be any more room for budget cuts in this area without it harming facilities and services. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Utilize volunteers when practical.

Develop long-range outdoor recreation plans and periodically assess the needs of constituents to assure that public needs are met.

Seek donations from local constituents and industries.

Encourage civic, church, and private groups to assist with fundraising.

Support federal legislation establishing a dedicated trust or similar mechanism to provide funding for outdoor recreation.

Continue to seek innovative funding methods to satisfy the outdoor recreation needs of constituents in the most effective manner possible.

Issue: Urban Open Space

Recreation providers in the larger cities in the region, most notably Paris and Texarkana, indicated that they are in need of accessible open space to provide close-to-home passive recreation opportunities and to preserve the areas' rural character. The Northeast Texas region has experienced constant popula-

tion growth that has turned towns into small cities. With population growth projected to continue into the foreseeable future, available land will become increasingly difficult to acquire and new recreation demands will be created.

The region as a whole is heavily wooded with an abundance of water-based opportunities. This gives the appearance of sufficient open space currently existing. However, much of this land is in private ownership and that which is open to the public is a considerable drive out of town.

High acquisition and projected maintenance costs have prohibited many open space tracts from becoming publicly owned. Acquisition costs will only become more prohibitive as cities develop and density increases.

Currently the cities of Paris and Texarkana own land around Lakes Crook and Bringle, respectively. Both are considering developing recreation opportunities at these resources which could satisfy a significant portion of open space needs. (Also, see State Summary, "Meeting Recreational Open Space Needs" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Develop local urban open space plans with citizen input to identify local open space needs and guide future action.

Explore alternatives to fee simple acquisition of parkland, such as transfer of development rights and mandatory parkland dedication ordinances.

Inventory current publicly owned lands and examine which tracts have open space potential. Dedicate these lands for this purpose in perpetuity.

If possible, sell or trade underutilized city-owned tracts and use the proceeds to acquire open space suitable to meet recreation needs.

Inform the public of existing available recreation opportunities.

Issue: Organic Nuisances

Aquatic vegetation, most notably hydrilla and water hyacinth, is becoming a nuisance in many of the lakes and reservoirs in Region 5. Boating, fishing, and swimming activities are hampered in



Strong community pride encourages volunteerism.

portions of lakes clogged by aquatic vegetation. If the problem becomes severe, recreation-related enterprises in the area suffer economic losses when recreation use shifts to other lakes. During the summer months, when growth is most prolific, areas infested by hydrilla can double each month if left unchecked.

Recreation providers in the region mentioned that during a few weeks every summer, an insect called the buffalo gnat impacts the recreation experience along sections of the Sulphur River. These insects swarm around humans, have painful little bites and are a general nuisance during this time. Recreationists that have experienced these creatures will tend to avoid affected areas when they are swarming. Overall recreation use of these resources declines greatly during these times.

Currently the Texas A&M Agricultural Experiment Station and others are studying the buffalo gnat problem. Specific recommendations await the findings of this research.

Recommendations:

For lake managers:

Regularly monitor and document nuisance submerged aquatic vegetation growth once it becomes established and contact the Aquatic Habitat Enhancement group, Fisheries Division, Texas Parks and Wildlife Department for advice and assistance.

Increase efforts to inform the boating public as to precautions they can take to avoid accidentally introducing these plants to lakes not yet affected.

RESOURCES

Population Trends

Stable, with modest continuous growth of about 1 percent annually describes the projected population of the Northeast Texas region through 1995 (figure 1). Much of this growth will occur in the incorporated areas of the region. Sulphur Springs, Mount Pleasant, and Atlanta have realized population growth at almost double the rate of the region as a whole. This trend should continue in these cities and increased population will create a greater demand for recreation facilities and parkland. Texarkana and Paris will experience the greatest population growth in absolute numbers.

Resource Attractions

Lakes and streams within this wooded region provide many settings conducive to outdoor recreation. Wright Patman Lake, Pat Mayse Lake and Lake Bob Sandlin are located such that most residents of the region have less than an hour's drive to reach one of these freshwater and camping opportunities (figure 1 and map).

The Red and Sulphur rivers within the region are floatable year-round and several sections are suitable for canoeing, kayaking and rafting. There are six other creeks, and rivers that are seasonally floatable. Public access to these waterways is meager, making these resource opportunities underutilized.

Recreation Supply

Lake Bob Sandlin State Park was opened to the public in 1987 and quickly became a popular recreation site. Boat launching, camping, picnicking, fishing and hiking facilities at the state site greatly enhanced the opportunities on, and the access to, Lake Bob Sandlin. This new site complements Daingerfield and Atlanta state parks, both of which are popular camping destinations. The camping facilities at Lake Bob Sandlin have helped to relieve peak time camping pressure at existing sites.

The overall rural character of this region makes resource-based facilities the dominant recreation opportunities currently existing. The Corps of Engi-

**Figure 1
Region 5 Characteristics**

GEOGRAPHY

| | | | |
|-----------------------------|---|--------------------|---|
| Counties | | | 9 |
| Land Area | = | 5,830 square miles | |
| Elevation | = | 219' - 649' | |
| Annual rainfall | = | 43.7 - 47.6 inches | |
| January minimum temperature | = | 30 - 35°F | |
| July maximum temperature | = | 92 - 95°F | |
| Growing season | = | 233 - 238 days | |

POPULATION 1986

| | | | |
|--------------|----------------|-----------|--------|
| Total | 247,156 | | |
| Counties | | | |
| Bowie | 79,029 | Red River | 15,173 |
| Lamar | 44,855 | Morris | 13,933 |
| Cass | 30,207 | Franklin | 7,106 |
| Hopkins | 29,281 | Delta | 4,717 |
| Titus | 22,855 | | |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 273,091 |
| People per square mile | 46.8 |
| Ethnic composition: | |
| White | 82% |
| Black | 4% |
| Hispanic | 3% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 70,825 acres |
| Developed recreation land | = | 2,107 acres |

Atlanta State Park
Daingerfield State Park
Pat Mayse Lake Corps Park
Pat Mayse Wildlife Management Area
Sam Bell Maxey House State Historical Park
Wright Patman Lake Corps Park

Lakes

| | |
|---------------|--------|
| Surface acres | 43,741 |
|---------------|--------|

| | <u>Surface Acres</u> |
|-------------------------|----------------------|
| Ellison Creek Reservoir | 1,516 |
| Lake Bob Sandlin | 4,730 (Part) |
| Lake Crook | 1,226 |
| Lake Cypress Springs | 3,450 |
| Langsford Creek Lake | 162 |
| Monticello Reservoir | 2,000 |
| Pat Mayse Lake | 5,993 |
| Sulphur Springs Lake | 1,340 |
| Welsh Reservoir | 1,365 |
| Wright Patman Lake | 20,300 |

Streams

| | |
|---------------------|---------------------|
| Black Cypress Creek | Sanders Creek |
| North Sulphur River | South Sulphur River |
| Red River | Sulphur River |

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

neers operates numerous sites around Wright Patman and Pat Mayse lakes providing ample access to these bodies of water. In fact, the Corps parks around these two reservoirs account for 74.7 percent of the region's total parkland acreage and 48.8 percent of the campsites (table 1).

Potential and Proposed Resources

As of the printing of this document, the Corps of Engineers is building a dam on the South Sulphur River on the Delta and Hopkins county line. The construction is planned to be completed in the summer of 1991 with the filling of the reservoir dependent on the rainfall. Once filled, Cooper Reservoir will be

about nineteen thousand acres in size. The Corps will develop two recreation sites, one on the north and one on the south side of the reservoir. The Texas Parks and Wildlife Department will manage these sites as state parks. These facilities are planned to be open to the public by the end of this document's planning cycle.

Both the cities of Texarkana and Paris own tracts of land with small lakes that, although used by the public, have not been developed to their potential. Lake Crook and Bringle Lake, with cleanup and minor development, could become good open space areas.

While access to freshwater lakes is good, there is little access to rivers and

creeks within the region. Lake areas may currently satisfy much of the demand for water-based recreation; however, any opportunity to acquire public access points along waterways should be considered.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 5, by Administration

| Facility/Resource | FEDERAL | | | STATE | | | | | REG. | | LOCAL | | COMMERCIAL | TOTAL |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|-------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | |
| Number of Parks/Rec. Areas | 0 | 0 | 0 | 31 | 4 | 1 | 1 | 0 | 0 | 3 | 52 | 8 | 24 | 124 |
| Total Parkland Acres | 0 | 0 | 0 | 53808 | 2587 | 7368 | 2 | 0 | 0 | 313 | 4982 | 193 | 1572 | 70825 |
| Developed Land Acres | 0 | 0 | 0 | 418 | 370 | 0 | 2 | 0 | 0 | 240 | 552 | 98 | 427 | 2107 |
| Developable Land Acres | 0 | 0 | 0 | 2968 | 923 | 0 | 0 | 0 | 0 | 73 | 4074 | 95 | 1145 | 9278 |
| Preserved or Unsuitable for Development (Acres) | 0 | 0 | 0 | 50422 | 1294 | 7368 | 0 | 0 | 0 | 0 | 356 | 0 | 0 | 59440 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 5 | 1 | 39 |
| Basketball Goals | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 14 | 0 | 4 | 22 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 44 | 6 | 0 | 0 | 0 | 0 | 7 | 17 | 7 | 9 | 90 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 758 | 198 | 0 | 0 | 0 | 0 | 55 | 0 | 42 | 501 | 1554 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 8960 | 0 | 0 | 0 | 0 | 0 | 1300 | 1400 | 1000 | 20 | 12680 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 345 | 0 | 0 | 0 | 0 | 10 | 569 | 0 | 995 | 1919 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 27 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27215 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Picnic Tables | 0 | 0 | 0 | 216 | 125 | 0 | 0 | 0 | 0 | 38 | 332 | 42 | 12 | 765 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 31 | 0 | 7 | 43 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 5 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 1 | 0 | 21 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 16050 | 7860 | 0 | 0 | 0 | 0 | 6500 | 42720 | 3000 | 19260 | 95390 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6800 | 0 | 2190 | 8990 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 2 | 0 | 33 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

OUTDOOR RECREATION PARTICIPATION

Popular Activities

In region 5, walking for pleasure, picnicking and pool swimming are the activities that have the highest percent of the population participating in them, as is true for the state as a whole (figure 2). With the abundance of freshwater lakes in the region, it is not surprising that the percent participating in freshwater activities (boating, swimming and fishing) is higher in this region compared to most others. The region also has the third highest annual per capita rate of hunting participation of the twenty-four planning regions at 1.9 occasions, and the highest per capita rate of horseback riding, 1.1 occasions (table 2). Off-road vehicle riding is also a popular activity in the region, as compared with other regions in the state.

Figure 2
Region 5 Projected 1995 Percentage of Population Participating

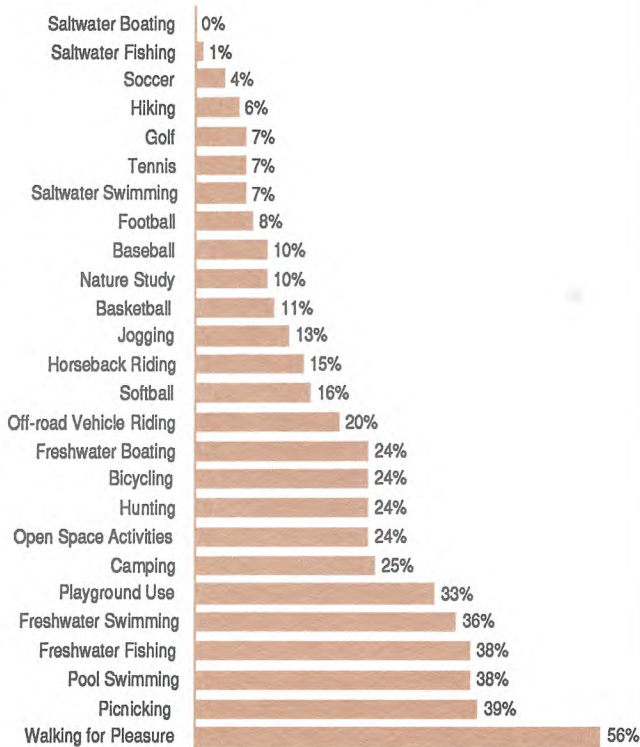


Table 2
Projected 1995 Per Capita Outdoor Recreation Participation Generated by Residents of Region 5 and Texans (in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|---|----------------|---------------------------|
| | Residents of Region 5 Occurring In | | |
| | Region 5 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 1.0 | 1.2 | 1.3 |
| Boat Ramp Lanes, SW | * | * | 0.3 |
| Boating (Pleasure), FW | 0.3 | 0.3 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 1.3 | 1.7 | 1.7 |
| Fishing, FW | 2.4 | 2.9 | 2.4 |
| Fishing from Banks | 0.8 | 1.0 | 0.8 |
| Fishing from Boats | 1.1 | 1.3 | 1.1 |
| Fishing from Structures | 0.5 | 0.7 | 0.5 |
| Fishing, SW | * | * | 0.7 |
| Fishing from Boats | * | * | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | * | 0.3 |
| Hiking | 0.2 | 0.2 | 0.4 |
| Hunting | 1.8 | 1.9 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.2 | 1.4 | 1.5 |
| Nature Study | 0.6 | 0.7 | 0.9 |
| Picnicking | 1.4 | 1.7 | 1.9 |
| Swimming, FW | 2.1 | 2.4 | 2.1 |
| Swimming, SW | * | 0.2 | 1.2 |
| Baseball | 1.6 | | 1.5 |
| Basketball | 1.3 | | 1.6 |
| Bicycling | 8.7 | | 10.7 |
| Bicycling on Trails | 0.5 | | 0.7 |
| Football | 0.7 | | 0.8 |
| Golf | 0.8 | | 1.3 |
| Horseback Riding | 1.1 | | 0.7 |
| Horseback Riding on Trails | 0.3 | | 0.2 |
| Jogging/Running | 3.6 | | 5.4 |
| Jogging/Running on Trails | 1.1 | | 1.7 |
| Off-road Vehicle Riding | 2.1 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.4 | | 0.3 |
| Open Space Activities | 2.3 | | 3.2 |
| Playground Use | 4.0 | | 4.8 |
| Soccer | 0.7 | | 1.2 |
| Softball | 1.7 | | 1.8 |
| Swimming, Pool | 5.4 | | 6.4 |
| Tennis | 0.7 | | 1.3 |
| Walking (Pleasure/Exercise) | 14.4 | | 14.8 |
| Walking on Trails | 3.4 | | 3.5 |

Notes: Asterisks indicate value is less than .1 occasion per capita.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this figure and table and an explanation of research methods. See Appendix D for an explanation of terms.

With the regional emphasis on rural recreation, the Northeast Texas region has some of the lower rates of urban recreation participation. Jogging, football, basketball, golf, soccer, softball, pool swimming, tennis and playground activity participation rates in the region are all below the statewide average. With the exception of pool swimming, the existing supply of facilities for these activities is also below the statewide average. The region has the third fewest number of golf holes (0.10 holes per 1,000 population) relative to the population, compared to other planning regions (table A3).

Bicycling is interesting in that the percent of the region's residents who ride a bicycle is high (33 percent) but the per capita rate of participation is low (8.7) as compared to other regions in the state (table 2). There are many rural roads to ride a bike on, but there are few designated bike routes and only six miles of multi-use trails existing in the region. This suggests that bicycling participation could increase if better opportunities were developed.

With the abundance of freshwater

recreation opportunities in the region, and in the surrounding area, it comes as no surprise that participation in saltwater activities (swimming, boating and fishing) is relatively low. The travel distance from Texarkana to Galveston is 335 miles, limiting weekend trips. There are also other quality resource-based recreation alternatives close to home.

Recreation Travel Patterns

As figure 3 implies, residents within the Northeast Texas region have ample resource-based recreation opportunities to satisfy their demands for these activities. Eighty-four percent of resource-based activity participation occurs within the region. Another 10 percent occurs in two adjacent regions and 3 percent in coastal regions for saltwater opportunities that obviously cannot be found in Northeast Texas. These figures imply that most resource-based recreation can be found relatively close to home with little need for distant travel.

These resources that satisfy residents of the region also attract many visitors from elsewhere (figure 4). Residents of Houston and the Dallas-Fort

Worth metroplex, with their desires to "get out of the city" have an impact on the region's resources. Currently more camping occasions that occur in this region are generated from outside rather than within the region. If these large urban areas grow at projected rates, the impact of Texans from outside the region will become even more of a factor. It appears that the potential to attract greater outdoor recreation related tourism exists.

Projected Participation

Participation in rural resource-based activities will remain the major outdoor recreation focus within the Northeast Texas region (tables 3 and 4). Resources will continue to stimulate participation in freshwater and nature oriented, passive activities for residents and continue to attract visitors from outside the region. Cooper Lake, once completed, will be fairly accessible to Dallas residents and will increase travel from there.

The demand for, and subsequent participation in, urban-based outdoor recreation activities will increase as these areas grow.

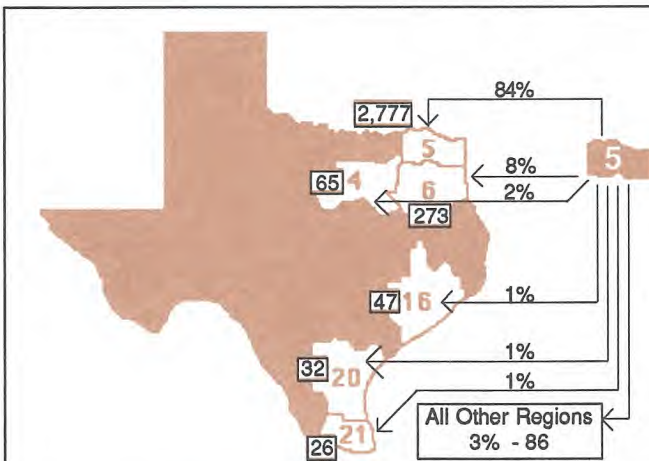


Figure 3
Destinations of Region 5 Residents
for Resource-based Activities

3,306 Annual User Occasions (000's)
Generated by Region 5 Residents, 1995

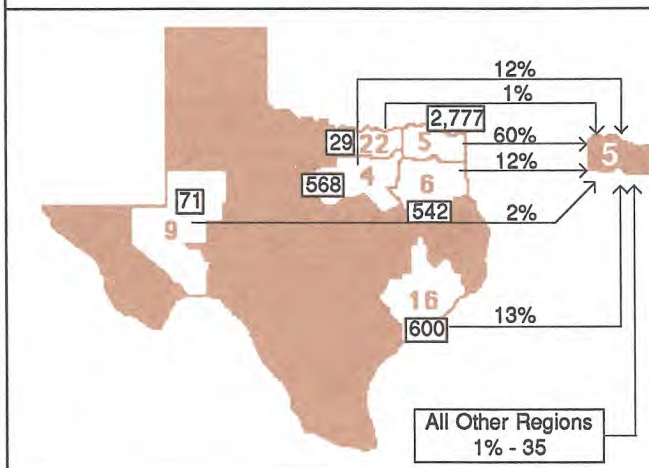


Figure 4
Origins of Participants Who Recreated
in Region 5 for Resource-based Activities

4,622 Annual User Occasions (000's)
Occurring in Region 5, 1995

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting. See Appendix B for key points to interpret these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 5 by Region 5 Residents,
Texans from Outside Region 5, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 5 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|---|------|------|---------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | Regional Totals | | |
| | Residents of Region 5 | | | Texans from Outside Region 5 | | | 1990 | 1995 | 2000 |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 273 | 282 | 291 | 217 | 235 | 253 | 491 | 517 | 544 |
| Boating (Pleasure), FW | 68 | 70 | 72 | 41 | 44 | 48 | 109 | 114 | 119 |
| Camping | 350 | 363 | 375 | 467 | 502 | 538 | 817 | 865 | 913 |
| Fishing, FW | 642 | 664 | 685 | 539 | 584 | 630 | 1181 | 1248 | 1316 |
| Fishing from Banks | 210 | 217 | 224 | 176 | 191 | 206 | 385 | 407 | 429 |
| Fishing from Boats | 288 | 297 | 307 | 241 | 262 | 282 | 529 | 559 | 589 |
| Fishing from Structures | 145 | 150 | 155 | 122 | 132 | 142 | 267 | 282 | 297 |
| Hiking | 41 | 43 | 44 | 31 | 33 | 36 | 72 | 76 | 80 |
| Hunting | 473 | 485 | 498 | 141 | 151 | 162 | 614 | 636 | 659 |
| Lake Use (BFS Suitable), FW | 312 | 322 | 332 | 248 | 269 | 289 | 560 | 590 | 621 |
| Nature Study | 164 | 171 | 178 | 38 | 42 | 45 | 202 | 213 | 224 |
| Picnicking | 386 | 396 | 405 | 143 | 154 | 164 | 529 | 549 | 569 |
| Swimming, FW | 573 | 586 | 599 | 314 | 333 | 353 | 887 | 919 | 952 |

Table 4
Projected Outdoor Recreation Participation
in Region 5 by Residents of Region 5, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (In 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 429 | 441 | 453 |
| Basketball | 337 | 347 | 357 |
| Bicycling | 2317 | 2382 | 2448 |
| Bicycling on Trails | 143 | 147 | 151 |
| Football | 184 | 190 | 196 |
| Golf | 216 | 225 | 234 |
| Horseback Riding | 293 | 302 | 311 |
| Horseback Riding on Trails | 75 | 77 | 80 |
| Jogging/Running | 958 | 979 | 1000 |
| Jogging/Running on Trails | 295 | 302 | 308 |
| Off-road Vehicle Riding | 551 | 565 | 580 |
| ORV Riding on Trails | 108 | 111 | 114 |
| Open Space Activities | 616 | 630 | 644 |
| Playground Use | 1063 | 1087 | 1111 |
| Soccer | 180 | 183 | 187 |
| Softball | 466 | 476 | 485 |
| Swimming, Pool | 1430 | 1469 | 1508 |
| Tennis | 182 | 187 | 191 |
| Walking (Pleasure/Exercise) | 3801 | 3936 | 4071 |
| Walking on Trails | 890 | 921 | 953 |



Fast growing aquatic vegetation is a nuisance in many reservoirs.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Supply and demand analysis of outdoor recreation shows higher needs for most urban recreation facilities (table 5). There is surely a need for these facilities, but the severity of needs are hard to determine given the current situation of how these opportunities are provided. Sports leagues and facilities are often provided by local church and civic organizations in this region. These services are generally open to the public and surely satisfy much of the urban recreation demand. Unfortunately, some of the facilities where these activities take place escaped this plan's analysis of supply. The current supply (table 1) contains facilities owned and managed by "standard" recreation providing entities that are open to the public. It does not include facilities on school grounds or some of the other "tempo-

rary" facilities currently being utilized. These facilities are hard to inventory as their availability to the public changes year to year. However, this situation probably does tend to inflate the need for these facilities. Localized needs assessments would be helpful to accurately analyze the urban outdoor recreation situation.

Currently soccer/football fields are the top ranked need for the region as a whole, followed by urban multi-use trails (table 6). Although not analyzed quantitatively, urban open space is considered a high regional need and is addressed previously as an issue.

As the urban population is projected to increase at greater rates than the rural population, urban recreation needs will be more dynamic in the years to come. Current demands will increase and new demands will be created. Church and civic groups will find it difficult to satisfy

the recreational demands of an increased population and local park and recreation departments may find themselves with greater responsibility.

Needs analysis shows an adequate supply of most rural recreation facilities into the foreseeable future with two exceptions, horseback riding areas and off-road-vehicle riding areas. Currently there are no public horseback or off-road-vehicle riding opportunities in the region. The Corps is willing to work with interested user groups in developing these opportunities at Wright Patman Lake. Freshwater swimming areas closer to the population centers are needed. Current opportunities are located at Pat Mayse and Wright Patman reservoirs.

Providers' Responsibilities

The responsibility to provide needed facilities in the Northeast Texas

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 5, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 39 | * | * | * |
| Basketball Goals | 22 | 19 | 20 | 22 |
| Boat Ramp Lanes, FW | 90 | * | * | * |
| Campsites | 1554 | * | 57 | 146 |
| Fishing Structures, FW Lin.Yd. | 1919 | * | * | * |
| Golf Holes | 27 | * | * | 1 |
| Hiking Trail Miles | 9 | 1 | 2 | 2 |
| Horseback Riding Trail Miles | 0 | 11 | 11 | 11 |
| Lake Acres (BFS Suitable), FW | 27215 | * | * | * |
| Off-road Vehicle Riding Acres | 13 | 80 | 82 | 85 |
| Picnic Tables | 765 | * | * | * |
| Playground Areas, Equipped | 43 | 58 | 61 | 63 |
| Soccer/Football Fields | 5 | 19 | 20 | 21 |
| Softball Fields | 21 | 12 | 13 | 13 |
| Swimming, FW Sq.Yd. (000) | 95 | 130 | 138 | 146 |
| Swimming, Pool Sq.Yd. (000) | 9 | * | * | * |
| Tennis Courts | 33 | 15 | 16 | 17 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 6 | 17 | 18 | 19 |
| Developed Land Acres | | 491 | 535 | 587 |

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs in
Region 5 Through 1995

| Need Rank | Facility/Resource |
|-----------|---|
| 1 | Soccer/Football Fields |
| 2 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 3 | Swimming, FW Sq.Yd. |
| 4 | Playground Areas, Equipped |
| 5 | Horseback Riding Trail Miles |
| 6 | Off-Road Vehicle Riding Acres |
| 7 | Basketball Goals |
| 8 | Softball Fields |
| 9 | Golf Holes |
| 10 | Tennis Courts |
| 11 | Swimming, Pool Sq. Yd. |
| 12 | Hiking Trail Miles |
| 13 | Campsites |
| 14 | Baseball Fields |
| 15 | Fishing Struc., FW Lin.Yd. |
| 16 | Boat Ramp Lanes, FW |
| 17 | Picnic Tables |
| 18 | Lake Acres (BFS Suitable) |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

region generally follows traditional recreation patterns (table 7). What are viewed as urban facilities should be provided by urban park and recreation departments or the commercial sector. Rural opportunities should be provided by county, state, or federal agencies. Commercial providers will have a greater impact in the years to come.

Current emphasis should be placed on upgrading and utilizing existing facilities. Many rural recreation facilities are aged and in need of renovation. Some were originally designed poorly, which has hastened their demise. An effort should be made to renovate and redesign existing facilities before additional acquisitions are made.



Public open spaces are needed in growing communities in the region.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs in Region 5, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basketball Goals | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 27 |
| Fishing Structures, FW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 11 | 0 | 0 | 0 | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Off-road Vehicle Riding Acres | 82 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 5 | 0 | 67 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 61 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 20 | 30 | 0 | 0 |
| Soccer/Football Fields | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16 | 0 | 0 |
| Softball Fields | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 9 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 138 | 0 | 0 | 0 | 48 | 36 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 24 |
| Swimming, Pool Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tennis Courts | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 18 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 |
| Developed Land Acres | 535 | 0 | 0 | 0 | 78 | 15 | 40 | 0 | 0 | 0 | 49 | 253 | 0 | 100 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



REGION 6

EAST TEXAS



Rapid population growth can lead to crowded facilities during popular weekends.

ISSUES AND RECOMMENDATIONS

Issue: Population Increase

The East Texas region with its natural beauty, good climate, and economic opportunities has experienced rapid population growth in the past twenty years. This population trend is expected to continue into the foreseeable future with a projected 24 percent increase between 1985 and 1995, or 2.4 percent annually. The incorporated cities in the region are expected to receive much of this increase in population. This will allow the region to retain its rural character.

Population growth will place a great burden on local park and recreation departments. Currently local park and recreation agencies are having trouble providing sufficient outdoor recreation facilities in developing growth areas. Future population increases will make the situation worse, challenging cities to find creative ways to provide these necessary services.

Population growth and resulting higher density urban areas will strain rural recreation facilities. Increased numbers of residents will seek peaceful places to spend their weekends and leisure time.

The lakes in region 6 are also very popular with residents of the Dallas-Fort Worth metroplex and will continue to be so. The influx of recreation pressure

from outside the region when combined with regional use places a burden on resources. Existing lakefront facilities are currently filled to capacity during summer weekends and some visitors are turned away on holiday weekends. Long waits to launch a boat are not uncommon.

Retirement and second home development around lake resources has increased. While this has the positive effect of increased tax bases for rural areas, it severely limits the potential for future public access and park development. Local governments must plan for the future. If not considered, population growth will overwhelm existing park and recreation services.

Recommendations:

For recreation providers:

Develop park master plans that anticipate population growth and integrate these with other planning efforts.

Assure the provision of public access along freshwater resources before they are developed and lost forever.

Encourage commercial recreation development at rural resources to satisfy demand and capture tourism dollars.

For local governments:

Consider establishing mandatory parkland dedication ordinances to provide parks and recreation facilities in developing urban areas.

Issue: Funding

The severe decline in the oil and gas market compounded existing economic problems caused by past declines in other industries, notably agriculture and steel. Economic downturns often mean trouble for local park and recreation budgets as these services are usually one of the first to be cut to avoid deficits. Many cities in the region saw park budget cuts and staff reductions during this period from 1984 to 1988.

The effects of this economic downturn are many and will be felt for years to come. New park development and facility construction fell behind demand, especially in developing sections of expanding cities.

Emphasis has been placed on maintenance of existing facilities and often had to be accomplished with reduced staffing. Residents who



now had less disposable income tended to travel less and thus put more demands on local parks.

Now that the worst seems to be behind in the overall state economic picture, there will be a resurgence in the park and recreation field. Many park and recreation agencies have become more efficient than in the past. Public appreciation of quality local parks and facilities is high. New funding alternatives have been examined with emphasis on park and recreation services being more self-sufficient than in the past. Volunteers have been utilized effectively in Tyler and Longview accomplishing some maintenance tasks and building local pride. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Support federal legislation establishing a dedicated trust fund or similar mechanism to provide funding for outdoor recreation.

Utilize volunteers when practical.

Seek donations from local constituents and industries.

Seek innovative funding methods to satisfy the outdoor recreation needs of constituents in the most effective manner possible.

Consider entering into joint use, cost-sharing partnerships with other public or private recreation providers to acquire and develop outdoor recreation opportunities.

Issue: Tourism

The beauty of the East Texas region with its heavily wooded landscapes and abundance of freshwater lakes attracts many visitors from outside the region. Fishing tournaments are popular in the region and Lake Fork has produced the state record largemouth bass. At peak times this causes parks to be overcrowded but also produces the potential to capture recreation-related tourism dollars. The U.S. Army Corps of Engineers estimates that about 25 percent of the use at Lake O'the Pines comes from out of state.

The region has many other outdoor recreation attractions than just the lakes



Over four thousand campsites in region 6 supply residents with a variety of camping opportunities and attract campers from the Dallas-Fort Worth area.

and the East Texas Council of Governments in recent years has done a fine job promoting these sites. There are five state historical parks within the region (see map). The Texas State Railroad State Historical Park has become nationally known for its historic and scenic significance; it attracts about seventy-five thousand riders annually. The Tyler Rose Garden is another site popular with tourists and brings visitors to the region who otherwise might go somewhere else. Elderly citizens are particularly fond of these attractions and as the average age of our society increases so should visitation at these sites.

Bus tour groups, recreational vehicle owners, and Winter Texans appear to be three distinct types of tourists that the region has the potential to attract. The city of Palestine is considering developing campgrounds to provide lodging alternatives and retain tourists for longer periods. Winter Texans could be encouraged to stop in East Texas before they travel to the Rio Grande Valley. Local recreation providers indicated that more full hook-up campsites demanded by RV travelers need to be provided by the commercial sector to attract these folks. (Also, see State Summary, "Tourism and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers and local governments:

Encourage and support the East Texas Council of Governments in promoting outdoor recreation-related tourism.

Develop estimates of the recreation demand generated by tourists.

Encourage commercial development of needed campgrounds, marinas, fishing structures and other recreation facilities sought by tourists.

Educate and provide recreation information to related industries such as hotels/motels and restaurants.

Coordinate with the Texas State Department of Highways and Public Transportation, and other transportation officials, to increase highway signs for recreation attractions.

Issue: Liability

Recreation providers in the region have indicated that park visitors are increasingly apt to sue recreation providers for injuries incurred on public parkland. These actions are reinforced by the publicity over damage awards.

In many cases, injury claims are justified, but sometimes, they are not. Increasing insurance costs as a result of increasing claims cause insurance to be too expensive or impossible to obtain. Facilities that might cause injuries are closed or removed. Recreation providers may become less innovative and more reluctant to offer non-traditional opportunities. Private landowners, also in fear of lawsuits, are reluctant to allow the use of their land for recreation. The liability issue has become so prominent that the laws bear reexamination. (Also, see State Summary, "Liability and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For Congress and the Texas Legislature:

Enact further insurance and tort law reforms to limit liability of public and private recreation providers and volunteers.

For recreation providers:

Institute a risk management plan for parks and facilities that includes, but is not limited to, regular documented inspection and maintenance, and signs to warn of potential hazards.

Consider requiring user groups such as leagues and teams using public facilities to carry their own insurance.

Educate park staff of the current liability statutes and case law.

RESOURCES

Population Trends

Previously discussed as one of the region's primary issues, population growth has been dramatic in East Texas. This trend is expected to continue into the next century at about 2 to 3 percent per year (figure 1). The population is

also older than the statewide average with 13.7 percent over 64 years of age compared to only 9.8 percent statewide. This is partially due to the popularity of the lake areas as retirement locations. Much of the population growth will occur in the urbanized areas paralleling nationwide trends.

Resource Attractions

Freshwater lakes are the dominant resource attraction in the East Texas region. Twenty-two different water bodies in the region account for 170,989 surface acres and provide a multitude of freshwater boating, fishing and swim-

Figure 1
Region 6 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|--------------------|
| Counties | = | 14 |
| Land area | = | 9,836 square miles |
| Elevation | = | 52' - 763' |
| Annual rainfall | = | 40.4 - 48.1 inches |
| January minimum temperature | = | 35 - 38°F |
| July maximum temperature | = | 94 - 96°F |
| Growing season | = | 236 - 264 days |

POPULATION 1986

| | |
|--------------|----------------|
| Total | 640,156 |
| Counties | |
| Smith | 149,538 |
| Gregg | 110,995 |
| Harrison | 57,039 |
| Henderson | 52,151 |
| Anderson | 44,908 |
| Rusk | 42,702 |
| Cherokee | 39,816 |
| Van Zandt | 39,000 |
| Upshur | 30,256 |
| Wood | 27,911 |
| Panola | 20,929 |
| Camp | 9,946 |
| Marion | 9,387 |
| Rains | 5,578 |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 778,425 |
| People per square mile | 79.1 |
| Ethnic composition: | |
| White | 81% |
| Black | 15% |
| Hispanic | 5% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 73,196 acres |
| Developed recreation land | = | 5,499 acres |

Caddoan Mounds State Historical Park
Caddo Lake State Park
Governor Hogg Shrine State Historical Park
Gus Engeling Wildlife Management Area
I. D. Fairchild State Forest
Jim Hogg State Historical Park
Lake O' the Pines Corps Parks
Martin Creek Lake State Park
Purtis Creek State Park
Rusk/Palestine State Park
Starr Mansion State Historical Park
Texas State Railroad State Historical Park
Tyler State Park

Lakes

| | |
|---------------|---------|
| Surface acres | 170,989 |
|---------------|---------|

Surface Acres

| | |
|------------------------------|---------------|
| Caddo Lake | 25,400 |
| Cedar Creek Reservoir | 23,800 (Part) |
| Holbrook Lake | 1,050 |
| Lake Athens | 1,500 |
| Lake Fork | 27,700 |
| Lake Gladewater | 800 |
| Lake Hawkins | 800 |
| Lake Jacksonville | 1,352 |
| Lake O' the Pines | 18,700 |
| Lake Palestine | 25,500 |
| Lake Quitman | 814 |
| Lake Bob Sandlin | 4,730 (Part) |
| Lake Striker | 2,400 |
| Lake Tawakoni | 14,700 (Part) |
| Lake Tyler | 2,450 |
| Lake Tyler East | 2,530 |
| Martin Lake | 5,000 |
| Murvaul Lake | 3,800 |
| Pirkey Power Plant Reservoir | 1,250 |
| Toledo Bend Reservoir | 3,300 (Part) |
| Winnsboro City Lake | 1,100 |

Streams

Angelina River
Big Cypress Creek
Neches River
Sabine River
Trinity River

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

ming opportunities (figure 1 and state map). Caddo Lake on the Louisiana border is the only large natural freshwater lake in Texas, and Lake Fork has produced many of the top ten big largemouth bass caught in Texas.

Portions of the Angelina, Neches, Sabine and Trinity rivers along with Big Cypress Creek are permanently floatable waterways within the region. Public access is limited to these resources and may be due to the emphasis on lake freshwater access.

Trail resources include the Caddo Forest Trail in Caddo Lake State Park, the New Birmingham Trail developed by

Southern Paper Mills, and Cargill Long Park hike and bike trail in Longview. Long distance trail opportunities are located nearby in the national forests of region 14, only a few hours drive away.

Recreation Supply

Rural recreation facilities dominate the outdoor recreation picture in region 6. As of 1988 there were 4,145 campsites and 236 boat ramps in the region with over half of each provided by the commercial sector, and most of them on lake shores (table 1). These facilities are fairly well distributed throughout the region and close to most urban areas.

Two state parks have been developed and opened to the public in recent years. Martin Creek Lake, which had previously been open for public use, was developed and now has camping, picnicking, boat ramp, and support facilities. Purtil Creek, located northwest of Athens, is a new state park developed with similar facilities. These now complement the existing outdoor recreation-oriented state sites, Caddo Lake, Rusk/Palestine, and Tyler state parks which have been popular for many years. The Corps of Engineers offers a variety of quality recreation opportunities at Lake O' the Pines. County-maintained boat

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 6, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | COMMERCIAL | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|------------|--------|-------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | | | Other Local |
| Number of Parks/Rec. Areas | 0 | 0 | 0 | 18 | 10 | 4 | 0 | 0 | 3 | 27 | 158 | 8 | 115 | 343 |
| Total Parkland Acres | 0 | 0 | 0 | 8122 | 4161 | 51171 | 0 | 0 | 465 | 562 | 4678 | 118 | 3918 | 73196 |
| Developed Land Acres | 0 | 0 | 0 | 394 | 868 | 0 | 0 | 0 | 32 | 128 | 1817 | 118 | 2141 | 5499 |
| Developable Land Acres | 0 | 0 | 0 | 312 | 2186 | 0 | 0 | 0 | 433 | 435 | 2657 | 0 | 1562 | 7585 |
| Preserved or Unsuitable for Development (Acres) | 0 | 0 | 0 | 7416 | 1106 | 51171 | 0 | 0 | 0 | 0 | 204 | 0 | 215 | 60112 |
| Baseball Fields | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 93 | 5 | 0 | 99 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | 0 | 4 | 55 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 37 | 8 | 0 | 0 | 0 | 7 | 33 | 21 | 5 | 126 | 237 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 368 | 416 | 8 | 0 | 0 | 11 | 126 | 230 | 25 | 2961 | 4145 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 7960 | 4913 | 0 | 0 | 0 | 0 | 0 | 6527 | 0 | 12800 | 32200 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 260 | 0 | 0 | 0 | 0 | 402 | 553 | 0 | 1885 | 3100 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 90 | 117 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 4 | 24 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 122859 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 121 | 72 |
| Picnic Tables | 0 | 0 | 0 | 151 | 304 | 0 | 0 | 0 | 16 | 152 | 737 | 28 | 121 | 1509 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 1 | 111 | 1 | 16 | 138 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 44 | 0 | 0 | 45 |
| Softball Fields | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 50 | 2 | 0 | 53 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 7100 | 12350 | 0 | 0 | 0 | 1800 | 33850 | 70300 | 18273 | 127012 | 270685 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11309 | 670 | 3340 | 15319 |
| Tennis Courts | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 103 | 0 | 3 | 109 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 1 | 6 | 2 | 0 | 0 | 0 | 0 | 15 | 0 | 1 | 25 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

ramps and eight concession areas are also located at this reservoir.

Current supplies of most urban outdoor recreation facilities are relatively close to the statewide average with two notable exceptions (table A3). The East Texas region has the fewest number of basketball goals (0.076 goals per 1000 population) relative to any region in the state and the second lowest number of swimming pools (21.26 square yards per 1000 population). Many existing swimming pools were built over thirty years ago and are in need of major renovation.

In addition to the heavily used city and county facilities, many church, civic, and youth organizations utilize school district facilities or have their own. While these facilities are not included in the regional supply figures, they do help

to satisfy many outdoor recreation demands.

Potential and Proposed Resources

There is a potential to develop urban multi-use trails along creeks within and near cities in the region. Many of these floodplain areas have been avoided by developers as they have little development value. These areas cannot support much development but are often prime, scenic, nonpaved trail corridors. These watercourses could even link some of the cities and towns in the region where practical.

Rivers and streams in the region have been underutilized. Greater access to these resources could be provided to encourage participation in fishing, nature viewing, and other pas-

sive recreation activities.

The city of Palestine owns open space near its airport that contains small lakes and Wolf Creek. Two of the lakes have been renovated and provide fishing, swimming, picnicking, and other passive outdoor recreation opportunities as an open space park.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

OUTDOOR RECREATION PARTICIPATION

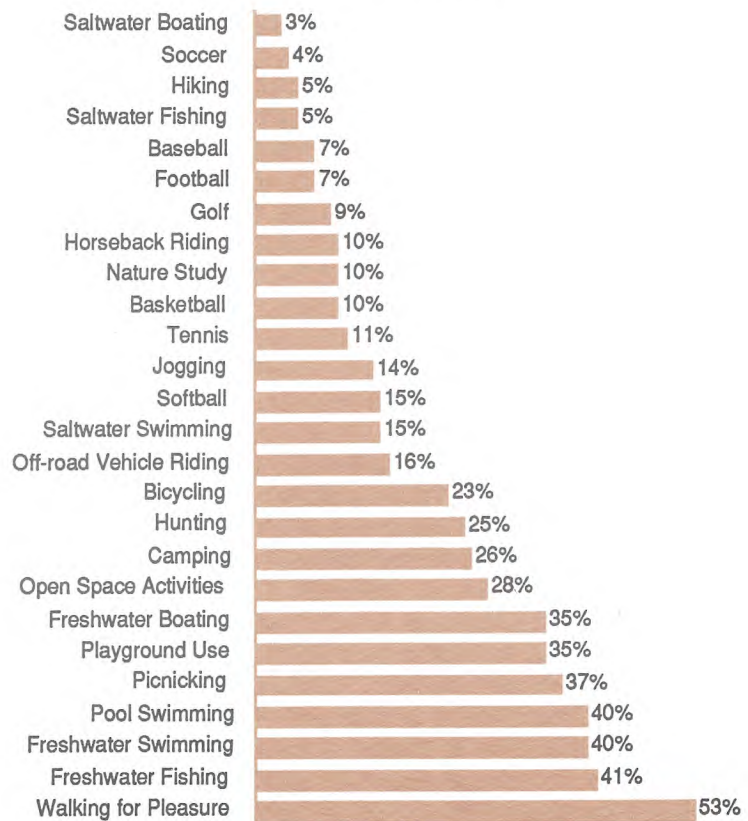
Popular Activities

With the abundance of freshwater lake opportunities in the region, it comes as no surprise that participation in freshwater activities is high. The percent of the population participating in freshwater boating, fishing, and swimming are all about 10 percent higher in the East Texas region than the statewide average (figure 2). The region has the third highest annual per capita rate of freshwater fishing in the state at 3.2 occasions per year (table 2).

Conversely, the percent participating in trail activities such as jogging, bicycling, walking, and hiking are all substantially lower than the statewide average. Again, this might be related to supply as there are few urban multi-use trails of the length needed to participate in these activities. The rural character of the region makes hunting another popular activity with an average of 1.9 hunting occasions per person per year.

Most urban recreation activities have participation rates and percent of population participating figures fairly close to the statewide averages. However, the regional participation rates of bicycling and basketball are the lowest of any in the state. As mentioned earlier, the region also has the fewest basketball goals per population in the state. By merely looking at numbers, it is hard to determine whether the supply is the cause or the effect of low participation.

Figure 2
Region 6 Projected 1995 Percentage
of Population Participating



Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this figure and an explanation of research methods. See Appendix D for an explanation of terms.

In other words, is there low participation because there are few facilities or are there few facilities because there is low participation and low demand? A more specific, localized needs analysis would be necessary to address this question.

Recreation Travel Patterns

Residents of the East Texas region have a variety of quality resource-based recreation opportunities within the region to choose from once the desire arises. Seventy-seven percent of resource-based outdoor recreation activity demand generated by residents of region 6 is currently satisfied within the region (figure 3). Another 10 percent occurs in the adjacent regions of 5, 11, and 14. Saltwater recreation opportunities attract region 6 residents to the coast, primarily the Galveston and Corpus Christi areas.

The same freshwater lake resources in East Texas that keep residents close to home attract many visitors from other areas of the state. In fact, 36.1 percent more resource based recreation occasions occur within the region than are generated by region residents. Fifty-six percent of this use is from residents within the region while another 31 percent comes from region 4, the Dallas-Fort Worth metroplex (figure 4).

As region 6 borders the state of Louisiana and is close to both Arkansas and Oklahoma, interstate recreation travel, though not quantitatively analyzed, must be considered. As mentioned, the Corps of Engineers estimates that about 25 percent of use at Lake O' the Pines comes from out of state. State parks in the region experience similar visitation and even higher percentages when the Winter Texans are coming and going. Conversely, significant recreation travel goes from the region to Louisiana and the mountains and streams in Arkansas.

Projected Participation

The region's population is projected to continue growing at a high rate (about 2.4 percent annually). Likewise, future outdoor recreation participation is also projected to increase at an equally rapid rate (tables 3 and 4). Because the average age of residents will increase, recreation activities enjoyed by senior citizens will grow at a faster rate than others. Participation in walking, bicycling, pool swimming and golf will be desired. Failure to provide for these activities will limit participation.

Lake resources will continue to draw heavy visitation and spark participation in waterbased activities. Camping pressure on summer weekends will continue to be high as East Texas lakeshores are preferred camping destinations for many Texans.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 6 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 6 | | |
| | Occurring In | | |
| | Region 6 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 1.3 | 1.5 | 1.3 |
| Boat Ramp Lanes, SW | * | 0.1 | 0.3 |
| Boating (Pleasure), FW | 0.5 | 0.5 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 0.9 | 1.7 | 1.7 |
| Fishing, FW | 2.7 | 3.2 | 2.4 |
| Fishing from Banks | 0.9 | 1.0 | 0.8 |
| Fishing from Boats | 1.2 | 1.4 | 1.1 |
| Fishing from Structures | 0.6 | 0.7 | 0.5 |
| Fishing, SW | * | 0.2 | 0.7 |
| Fishing from Boats | * | * | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | * | 0.3 |
| Hiking | 0.2 | 0.2 | 0.4 |
| Hunting | 1.5 | 1.9 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.5 | 1.7 | 1.5 |
| Nature Study | 0.5 | 0.6 | 0.9 |
| Picnicking | 1.3 | 1.6 | 1.9 |
| Swimming, FW | 2.4 | 2.6 | 2.1 |
| Swimming, SW | * | 0.5 | 1.2 |
| Baseball | 1.1 | | 1.5 |
| Basketball | 1.1 | | 1.6 |
| Bicycling | 8.0 | | 10.7 |
| Bicycling on Trails | 0.5 | | 0.7 |
| Football | 0.7 | | 0.8 |
| Golf | 1.1 | | 1.3 |
| Horseback Riding | 0.7 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 3.9 | | 5.4 |
| Jogging/Running on Trails | 1.2 | | 1.7 |
| Off-road Vehicle Riding | 1.6 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.3 | | 0.3 |
| Open Space Activities | 2.7 | | 3.2 |
| Playground Use | 4.1 | | 4.8 |
| Soccer | 0.7 | | 1.2 |
| Softball | 1.7 | | 1.8 |
| Swimming, Pool | 5.7 | | 6.4 |
| Tennis | 1.1 | | 1.3 |
| Walking (Pleasure/Exercise) | 13.7 | | 14.8 |
| Walking on Trails | 3.2 | | 3.5 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Asterisks indicate value is less than .1 occasion per capita. See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 6 by Region 6 Residents,
Texans from Outside Region 6, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 6 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|---|------|------|------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | | | |
| | Residents of Region 6 | | | Texans from Outside Region 6 | | | Regional Totals | | |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 956 | 1035 | 1114 | 772 | 829 | 885 | 1728 | 1863 | 1999 |
| Boating (Pleasure), FW | 371 | 400 | 428 | 280 | 298 | 316 | 651 | 698 | 745 |
| Camping | 659 | 712 | 764 | 1472 | 1574 | 1677 | 2131 | 2286 | 2441 |
| Fishing, FW | 1948 | 2113 | 2280 | 1619 | 1741 | 1864 | 3566 | 3855 | 4144 |
| Fishing from Banks | 635 | 689 | 744 | 528 | 568 | 608 | 1163 | 1257 | 1352 |
| Fishing from Boats | 872 | 946 | 1021 | 725 | 780 | 835 | 1597 | 1726 | 1856 |
| Fishing from Structures | 440 | 478 | 515 | 366 | 394 | 421 | 806 | 871 | 937 |
| Hiking | 123 | 133 | 143 | 76 | 82 | 88 | 200 | 215 | 231 |
| Hunting | 1075 | 1163 | 1251 | 768 | 823 | 878 | 1843 | 1986 | 2129 |
| Lake Use (BFS Suitable), FW | 1090 | 1180 | 1271 | 881 | 945 | 1010 | 1972 | 2126 | 2281 |
| Nature Study | 374 | 406 | 438 | 246 | 269 | 291 | 620 | 675 | 730 |
| Picnicking | 961 | 1031 | 1101 | 284 | 299 | 314 | 1245 | 1330 | 1415 |
| Swimming, FW | 1777 | 1902 | 2028 | 1053 | 1108 | 1163 | 2830 | 3010 | 3191 |

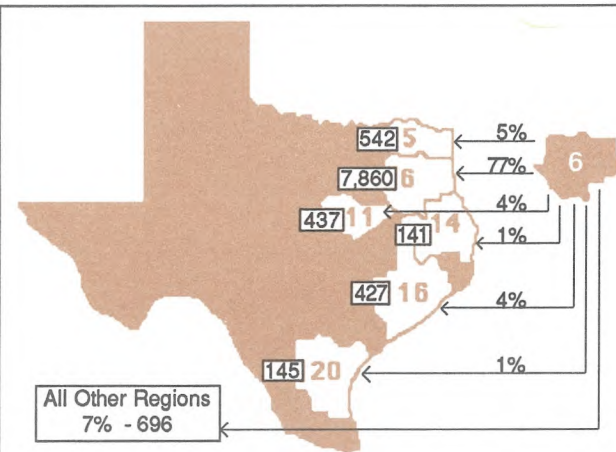


Figure 3
Destinations of Region 6 Residents
for Resource-based Activities

10,247 Annual User Occasions (000's)
 Generated by Region 6 Residents, 1995

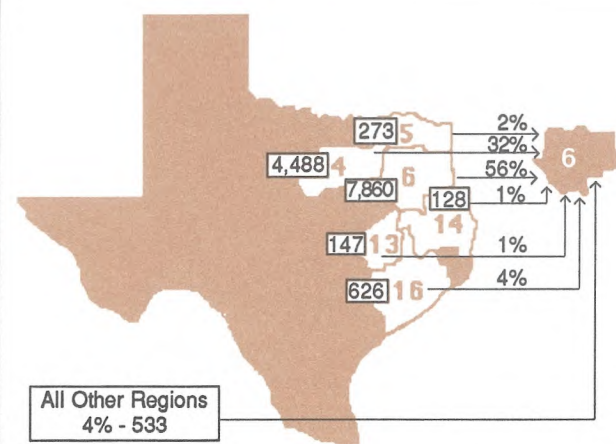


Figure 4
Origins of Participants Who Recreated
in Region 6 for Resource-based Activities

14,055 Annual User Occasions (000's)
 Occurring in Region 6, 1995

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and these figures and an explanation of research methods. See Appendix D for an explanation of terms.

RESOURCE AND FACILITY NEEDS

Table 4
Projected Outdoor Recreation Participation
in Region 6 by Residents of Region 6, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (in 000's Annual User Occasions) | | |
|-----------------------------|---|-------|-------|
| | 1990 | 1995 | 2000 |
| Baseball | 829 | 892 | 956 |
| Basketball | 780 | 838 | 896 |
| Bicycling | 5766 | 6196 | 6628 |
| Bicycling on Trails | 355 | 382 | 408 |
| Football | 484 | 521 | 559 |
| Golf | 757 | 826 | 895 |
| Horseback Riding | 485 | 523 | 562 |
| Horseback Riding on Trails | 125 | 134 | 144 |
| Jogging/Running | 2798 | 3007 | 3216 |
| Jogging/Running on Trails | 862 | 926 | 991 |
| Off-road Vehicle Riding | 1194 | 1284 | 1375 |
| ORV Riding on Trails | 234 | 252 | 269 |
| Open Space Activities | 1937 | 2075 | 2214 |
| Playground Use | 3015 | 3216 | 3417 |
| Soccer | 522 | 556 | 590 |
| Softball | 1213 | 1299 | 1385 |
| Swimming, Pool | 4168 | 4465 | 4763 |
| Tennis | 773 | 828 | 884 |
| Walking (Pleasure/Exercise) | 9797 | 10630 | 11466 |
| Walking on Trails | 2293 | 2488 | 2684 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 6, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|-------------|-------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 99 | * | * | * |
| Basketball Goals | 55 | 39 | 46 | 54 |
| Boat Ramp Lanes, FW | 237 | * | * | * |
| Campsites | 4145 | * | 111 | 400 |
| Fishing Structures, FW Lin.Yd. | 3100 | 1532 | 1907 | 2282 |
| Golf Holes | 117 | * | * | * |
| Hiking Trail Miles | 24 | 3 | 5 | 8 |
| Horseback Riding Trail Miles | 0 | 18 | 19 | 21 |
| Lake Acres (BFS Suitable), FW | 122859 | * | * | * |
| Off-road Vehicle Riding Acres | 72 | 129 | 144 | 160 |
| Picnic Tables | 1509 | * | * | * |
| Playground Areas, Equipped | 138 | 149 | 168 | 187 |
| Soccer/Football Fields | 45 | 30 | 33 | 36 |
| Softball Fields | 53 | 33 | 39 | 46 |
| Swimming, FW Sq.Yd. (000) | 271 | 448 | 493 | 539 |
| Swimming, Pool Sq.Yd. (000) | 15 | 11 | 13 | 15 |
| Tennis Courts | 109 | 93 | 107 | 122 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 25 | 36 | 41 | 46 |
| Developed Land Acres | | 1056 | 1222 | 1453 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Needed Facilities and Resources

Urban outdoor recreation facilities currently in relatively high need are multi-use walk, bike, jog trails, soccer/football fields, playgrounds, and swimming pools (tables 5 and 6). These facilities will be in greater demand in the future as much of the projected population growth will occur in the urban areas. Many of the existing swimming pools in the region are aged and in need of costly renovation. Swimming facilities are especially needed to provide youth learn-to-swim classes and for senior citizen leisure enjoyment. The many freshwater lakes in the region cannot be fully enjoyed by non-swimmers fearful of the water. Currently region 6 has the second lowest supply per population of swimming pools of the twenty-four planning regions (table A3). Softball fields, tennis courts, and basketball goals are also needed.

Table 6
Ranking of Outdoor Recreation Facility/Resource
Needs in Region 6 Through 1995

| Need Rank | Facility/Resource |
|-----------|--|
| 1 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 2 | Soccer/Football Fields |
| 3 | Swimming, FW Sq.Yd. |
| 4 | Playground Areas, Equipped |
| 5 | Swimming, Pool Sq. Yd. |
| 6 | Horseback Riding Trail Miles |
| 7 | Off-Road Vehicle Riding Acres |
| 8 | Tennis Courts |
| 9 | Softball Fields |
| 10 | Basketball Goals |
| 11 | Fishing Struc., FW Lin.Yd. |
| 12 | Hiking Trail Miles |
| 13 | Campsites |
| 14 | Boat Ramp Lanes, FW |
| 15 | Golf Holes |
| 16 | Baseball Fields |
| 17 | Picnic Tables |
| 18 | Lake Acres (BFS Suitable) |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Note: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

There are currently no public horseback riding areas or trails within region 6 (table 1). However, 1 out of 10 region residents indicated that they participate in this activity (figure 2). Not only are public horseback riding opportunities needed at present but they could also help to attract horsepeople from other areas as tourists.

Lakefront recreation facilities are overused at peak times and this situation will continue into the future. A relatively high number of these facilities already exist but more are needed. Access to freshwater resources usually caters to the boating public and thus those without boats have limited fishing opportunities. Most of the lakes in the region do not offer quality bank fishing and fishing piers are in short supply.

Off-road vehicle riding is also a popular activity in the region and more opportunities are needed. Private lands and vacant fields currently satisfy much

of the demand for this activity.

Because of the noise, erosion, and safety issues that accompany this activity, controlled areas are desirable. These areas can be managed in such a way to maximize the ORV experience and minimize the environmental problems. There are some financially successful off-road-vehicle areas managed by the commercial sector in other parts of the state that could be duplicated in East Texas.

Maintenance and renovation of existing facilities should be the top priority for recreation providers. Many recreation sites in the region are aged and showing signs of wear. Before additional investments are made, previous investments should be protected.

Providers' Responsibilities

Many of these needed facilities are typically located near population cen-

ters and cities should be the primary provider.

However, county governments need to become involved in providing these facilities when they serve a more regional area (table 7).

Federal, state and commercial recreation providers should consider creating horseback riding trails and areas where practical and feasible.

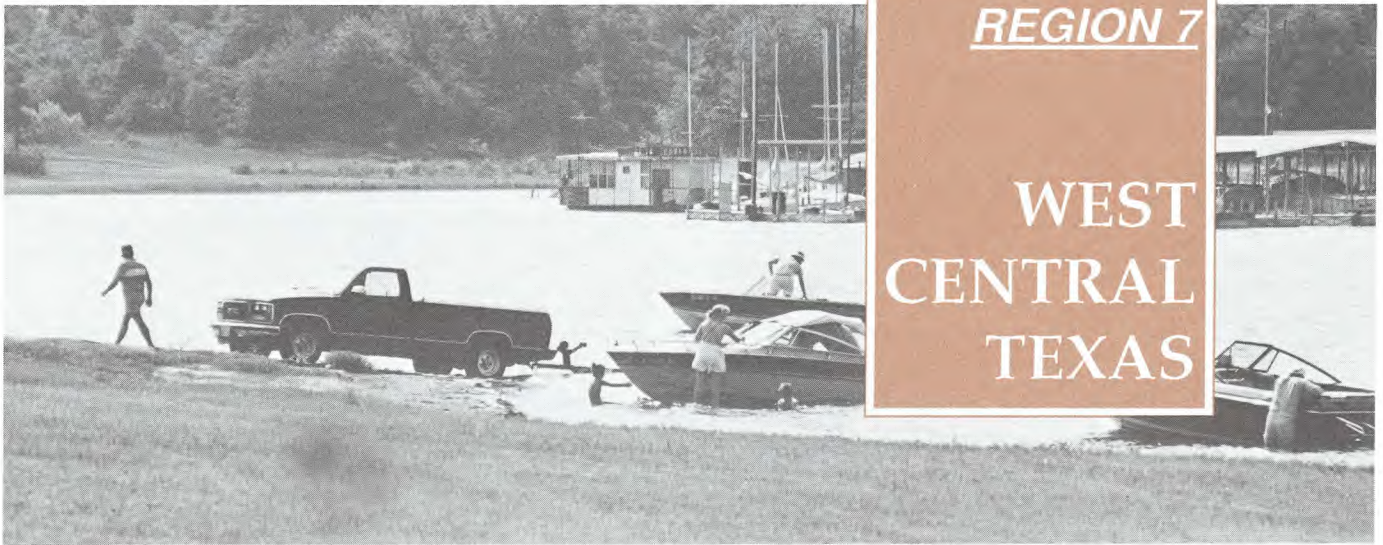
Providers that manage waterfront sites should consider furnishing fishing piers. Existing state and federal sites have the potential to develop freshwater fishing structures and swimming areas in the future. Where profitable, the commercial sector should consider providing lakefront recreation facilities. Private concessionaires at public sites can also be considered to increase recreation opportunities and services available to the public.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs in Region 6, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basketball Goals | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 36 | 0 | 0 | 0 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 111 | 0 | 0 | 0 | 0 | 111 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fishing Structures, FW Lin.Yd. | 1907 | 0 | 0 | 0 | 530 | 400 | 0 | 0 | 0 | 100 | 200 | 77 | 0 | 600 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 5 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 19 | 0 | 0 | 0 | 9 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Off-road Vehicle Riding Acres | 144 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 0 | 100 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 168 | 0 | 0 | 0 | 8 | 5 | 0 | 0 | 0 | 3 | 14 | 138 | 0 | 0 |
| Soccer/Football Fields | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 27 | 0 | 0 |
| Softball Fields | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 29 | 0 | 4 |
| Swimming, FW Sq.Yd.(000) | 493 | 0 | 0 | 0 | 97 | 75 | 0 | 0 | 0 | 48 | 50 | 100 | 50 | 73 |
| Swimming, Pool Sq.Yd.(000) | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 0 | 2 |
| Tennis Courts | 107 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 83 | 0 | 10 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 41 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 5 | 30 | 0 | 0 |
| Developed Land Acres | 1222 | 0 | 0 | 0 | 171 | 117 | 64 | 0 | 0 | 21 | 123 | 540 | 21 | 164 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



REGION 7

**WEST
CENTRAL
TEXAS**

Boating is popular in region 7, with over fifty-seven thousand surface acres of lakes.

ISSUES AND RECOMMENDATIONS

Issue: Decline in Recreation Funding

The state economic downturn appears to be the major recreation issue overshadowing all others. Because much of the regional economy is based on oil, the drop in prices has had serious effects. Local governmental revenues have declined, but local officials find little support for raising taxes during a recession. Budget reductions naturally follow, and park department directors say that their budgets are usually among the first to be cut. Plans for facility development and renovation have had to be postponed or cancelled as voters turned down bond issues. Park maintenance sometimes has had to suffer as local governments struggle to keep up what they have. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations".)

Recommendations:

For recreation providers:

Make maximum use of federal, state, local government, and private grants and assistance programs.

Where possible, use alternative funding sources, such as private donations, fee systems, and new fundraising ideas.

Support legislation to establish a trust, or similar mechanism, to provide funding for outdoor recreation.

Where feasible, emphasize development of multiple-use facilities, and facilities that achieve multiple objectives, such as recreation, access, preservation, etc.

Design facilities to minimize maintenance and upkeep. Contract maintenance when it is cost beneficial to do so.

Encourage volunteer help and use it to the fullest.

For recreation providers, civic organizations, activity groups, institutions, school districts, and the private sector:

Share ideas, solutions, facilities, and funds as much as possible to maximize recreation opportunities.

For the Texas Parks and Wildlife Department:

Continue to serve as a clearinghouse for information on federal, state, and private grants and assistance programs.

Issue: Vandalism

Park vandalism is a persistent problem for which there is no easy solution. Federal, state, local, and commercial park administrators all report being affected by it. Vandalized facilities are unattractive and sometimes unusable. Moreover, money spent to repair damaged facilities could be used for new parks or facilities. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Issues and Recommendations".)

Recommendations:

For recreation providers:

Stress prevention by educating the public on the problem of vandalism and encouraging attitudes that foster appreciation and respect for public and private property and natural resources.

Encourage and foster a cooperative community effort to prevent vandalism, apprehend offenders, and punish





High, as well as low, lake levels can make facilities unusable.

them. Establish "park watch" programs for neighborhood parks.

Look at various approaches or combinations of approaches to the problem of vandalism, including fee systems, increased law enforcement and surveillance, facility design, lighting, vandal-resistant fixtures, and immediate repair of damaged facilities.

Issue: Water Safety

According to park managers in region 7, accidents and fatalities occur on lakes and streams due to congestion, low lake levels, carelessness, alcohol abuse, weather, and other factors. Region 7 lakes are popular and heavily used, but some activities, such as skiing and swimming, are not compatible in confined areas. Alcohol and boat driving is a dangerous combination. Poor judgement, failure to recognize hazards, and

failure to use personal flotation devices are also common causes of deaths and accidents. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Issues and Recommendations".)

Recommendations:

For recreation providers and law enforcement agencies:

Continue, and strengthen if necessary, enforcement of Texas water safety laws, local ordinances, and other regulations governing water safety and safe boating. Encourage public cooperation in reporting violations and unsafe practices. Strictly enforce laws prohibiting operation of a motorized watercraft while intoxicated.

Promote awareness and public education in water safety and boating laws.

Encourage boat operators to complete a boating and water safety class.

Issue: Recreation for Senior Citizens

Region 7 residents include a relatively large percentage of retirees. Nineteen percent of the residents are 60 years of age or older compared to 13 percent statewide and this age group is expected to increase in future years. Senior citizens are active outdoor people and local park directors find that they have special recreational needs and wants.

Recommendations:

For recreation providers:

Seek the input of senior citizens in designing parks and recreation programs.

Provide facilities to meet the needs of senior citizens, e.g., walking trails, picnic tables, community centers, shelters, etc., and ensure that facilities are adequately distributed and have easy access.

Issue: Fluctuating Lake Levels

Park officials in region 7 report that low lake levels in dry years result in fewer surface acres available for recreation and increased crowding on lakes. Water quality may decline as dissolved material becomes more concentrated, which can pose health hazards. Facilities like fishing piers and boat ramps become unusable, while fish habitat and populations may be adversely affected. At other times, flooding and high water can damage facilities or make them unusable.

Recommendations:

For reservoir managers:

During periods of low water, increase emphasis on safety because of possible public health hazards and increased congestion. Increase vigilance during periods of high water to ensure the safety of lives and property.

For recreation providers:

When possible, build facilities so they can be used during periods of low water.

Ensure there is adequate access to existing recreational water.

RESOURCES

Population Trends

The population of region 7 is projected to increase to nearly 375 thousand by 1995 over the estimated 323 thousand persons in 1986 for an increase of 16 percent (figure 1 and table A1). The largest city in the region, Abilene, accounts for about 34 percent of the regional population (table A2). Smaller

cities and rural areas make up the remaining 66 percent.

Future population growth in region 7 should not impact recreation resources greatly. Lakes, parks, and cities are fairly well distributed throughout the region, and, except for Abilene, there are no large population centers that would create undue impacts.

Resource Attractions

Region 7 has over fifty-seven thousand surface acres of lakes (figure 1). Because of the even distribution of these lakes and their associated parks, most cities have good access to recreational facilities.

Significant streams in the region include the various forks of the Brazos

Figure 1
Region 7 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|---------------------|
| Counties | = | 19 |
| Land area | = | 17,764 square miles |
| Elevation | = | 1,056' - 2,830' |
| Annual rainfall | = | 19.3 - 28.5 inches |
| January minimum temperature | = | 28 - 34°F |
| July maximum temperature | = | 94 - 99°F |
| Growing season | = | 214 - 242 days |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 20,743 acres |
| Developed recreation land | = | 7,565 acres |

Abilene State Park
Fort Griffin State Historical Park
Hords Creek Lake Corps Parks
Lake Brownwood State Park
Lake Colorado City State Park
Proctor Lake Corps Parks

POPULATION 1986

| | |
|--------------|----------------|
| Total | 323,327 |
| Counties | |
| Taylor | 122,144 |
| Brown | 34,462 |
| Eastland | 20,382 |
| Scurry | 19,139 |
| Jones | 16,944 |
| Nolan | 16,875 |
| Comanche | 12,796 |
| Runnels | 12,184 |
| Callahan | 11,977 |
| Stephens | 10,471 |
| Coleman | 10,210 |
| Mitchell | 9,026 |
| Haskell | 6,721 |
| Knox | 5,337 |
| Fisher | 5,283 |
| Shackelford | 3,746 |
| Stonewall | 2,286 |
| Throckmorton | 2,098 |
| Kent | 1,196 |

Lakes

| | |
|-----------------------------|--------------|
| Surface acres | 57,041 |
| <u>Surface Acres</u> | |
| Abilene Lake | 640 |
| Champion Creek Reservoir | 1,560 |
| Coleman Lake | 2,000 |
| Eastland Lake | 100 |
| Elm Creek Lake | 55 |
| Fort Phantom Hill Reservoir | 4,246 |
| Hamlin Lake | 100 |
| Hords Creek Lake | 510 |
| Hubbard Creek Lake | 15,250 |
| Kirby Lake | 740 |
| Lake Ballinger | 650 |
| Lake Brownwood | 7,300 |
| Lake Cisco | 445 |
| Lake Clyde | 500 |
| Lake Colorado City | 1,618 |
| Lake Daniel | 950 |
| Lake J. B. Thomas | 3,128 (Part) |
| Lake Stamford | 5,200 |
| Leon Reservoir | 1,590 |
| McCarty Lake | 188 |
| Miller's Creek Reservoir | 950 (Part) |
| New Winters Lake | 250 |
| Poosum Kingdom Lake | 800 (Part) |
| Proctor Lake | 4,610 |
| Sweetwater Lake | 630 |
| Trammell Lake | 110 |
| Valley Creek Reservoir | 187 |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 374,756 |
| People per square mile | 21.1 |
| Ethnic composition | |
| White | 78% |
| Black | 5% |
| Hispanic | 17% |

Streams

| | |
|------------------------------------|---------------|
| Brazos River, Clear Fork | |
| Brazos River, Double Mountain Fork | Leon River |
| Brazos River, Salt Fork | Pecan Bayou |
| Colorado River | Wichita River |

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

River, Pecan Bayou, and the Colorado, Leon, and Wichita rivers.

The U.S. Army Corps of Engineers facilities at Hords Creek Lake and Proctor Lake are very popular with region 7 residents and visitors. Three state parks and a historical park are major attractions that draw recreationists from all over the state, particularly the West Texas and Dallas-Fort Worth areas.

Recreation Supply

There are nearly twenty-one thousand acres of recreation land in region 7 distributed among 217 parks (table 1). With about fifty-eight acres of recreation

land per thousand population, the region ranks well below the statewide average of 209 acres per thousand in 1986 (table A3). Local governments supply the largest proportion of the total recreation land with 37 percent. The next largest supplier is the Corps of Engineers, at 31 percent, followed by the commercial sector, 21 percent, and the Texas Parks and Wildlife Department, 10 percent. Local governments also furnish the largest number of parks at 133.

Potential and Proposed Resources

Stacy Reservoir is now under construction at the confluence of the Concho

and Colorado rivers near Ballinger. When completed about 1990, this lake will have several sizable public recreation areas and will become an excellent recreation resource for West Texas.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 7, by Administration

| Facility/Resource | FEDERAL | | | STATE | | | | | REG. | LOCAL | | COMMERCIAL | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|---------|------------|--------|-------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwy. & Public Trans. | Other State | River Authorities | Counties | Cities | | | Other Local |
| Number of Parks/Rec. Areas | 0 | 0 | 0 | 9 | 4 | 0 | 0 | 1 | 2 | 8 | 116 | 9 | 68 | 217 |
| Total Parkland Acres | 0 | 0 | 0 | 6415 | 2165 | 0 | 0 | 100 | 90 | 417 | 7208 | 50 | 4299 | 20743 |
| Developed Land Acres | 0 | 0 | 0 | 985 | 610 | 0 | 0 | 100 | 90 | 311 | 3693 | 47 | 1729 | 7565 |
| Developable Land Acres | 0 | 0 | 0 | 1440 | 1240 | 0 | 0 | 0 | 0 | 43 | 1377 | 3 | 860 | 4964 |
| Preserved or Unsuitable for Development (Acres) | 0 | 0 | 0 | 3990 | 314 | 0 | 0 | 0 | 0 | 63 | 2138 | 0 | 1709 | 8214 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 63 | 3 | 1 | 74 |
| Basketball Goals | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 0 | 37 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 25 | 7 | 0 | 0 | 0 | 2 | 1 | 19 | 9 | 50 | 113 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 392 | 395 | 0 | 0 | 0 | 49 | 42 | 208 | 10 | 859 | 1955 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 6500 | 0 | 0 | 0 | 0 | 700 | 0 | 7450 | 1400 | 0 | 16050 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 347 | 0 | 0 | 0 | 0 | 0 | 955 | 22 | 889 | 2213 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 63 | 0 | 90 | 171 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44560 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Picnic Tables | 0 | 0 | 0 | 49 | 159 | 0 | 0 | 0 | 4 | 67 | 581 | 10 | 201 | 1070 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 8 | 76 | 0 | 13 | 104 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 |
| Softball Fields | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 23 | 0 | 2 | 30 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 16100 | 21445 | 0 | 0 | 0 | 0 | 800 | 1631550 | 42000 | 154560 | 1866455 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 489 | 0 | 0 | 0 | 0 | 800 | 15397 | 0 | 990 | 17676 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 54 | 0 | 15 | 76 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 8 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 7 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 7 Occurring In | | |
| | Region 7 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 1.2 | 1.5 | 1.3 |
| Boat Ramp Lanes, SW | * | * | 0.3 |
| Boating (Pleasure), FW | 0.5 | 0.6 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 1.0 | 2.0 | 1.7 |
| Fishing, FW | 2.6 | 3.0 | 2.4 |
| Fishing from Banks | 0.8 | 1.0 | 0.8 |
| Fishing from Boats | 1.2 | 1.4 | 1.1 |
| Fishing from Structures | 0.6 | 0.7 | 0.5 |
| Fishing, SW | * | 0.2 | 0.7 |
| Fishing from Boats | * | * | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | * | 0.3 |
| Hiking | 0.3 | 0.4 | 0.4 |
| Hunting | 1.6 | 1.7 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.4 | 1.7 | 1.5 |
| Nature Study | 0.6 | 0.8 | 0.9 |
| Picnicking | 1.6 | 2.0 | 1.9 |
| Swimming, FW | 2.0 | 2.5 | 2.1 |
| Swimming, SW | * | 0.3 | 1.2 |
| Baseball | 1.8 | | 1.5 |
| Basketball | 1.5 | | 1.6 |
| Bicycling | 8.9 | | 10.7 |
| Bicycling on Trails | 0.5 | | 0.7 |
| Football | 0.6 | | 0.8 |
| Golf | 1.3 | | 1.3 |
| Horseback Riding | 0.7 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 4.0 | | 5.4 |
| Jogging/Running on Trails | 1.2 | | 1.7 |
| Off-road Vehicle Riding | 1.6 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.3 | | 0.3 |
| Open Space Activities | 3.0 | | 3.2 |
| Playground Use | 4.8 | | 4.8 |
| Soccer | 1.0 | | 1.2 |
| Softball | 1.7 | | 1.8 |
| Swimming, Pool | 6.1 | | 6.4 |
| Tennis | 1.2 | | 1.3 |
| Walking (Pleasure/Exercise) | 14.1 | | 14.8 |
| Walking on Trails | 3.3 | | 3.5 |

Note: Asterisks indicate value is less than .1 occasion per capita.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and figure and an explanation of research methods. See Appendix D for an explanation of terms.

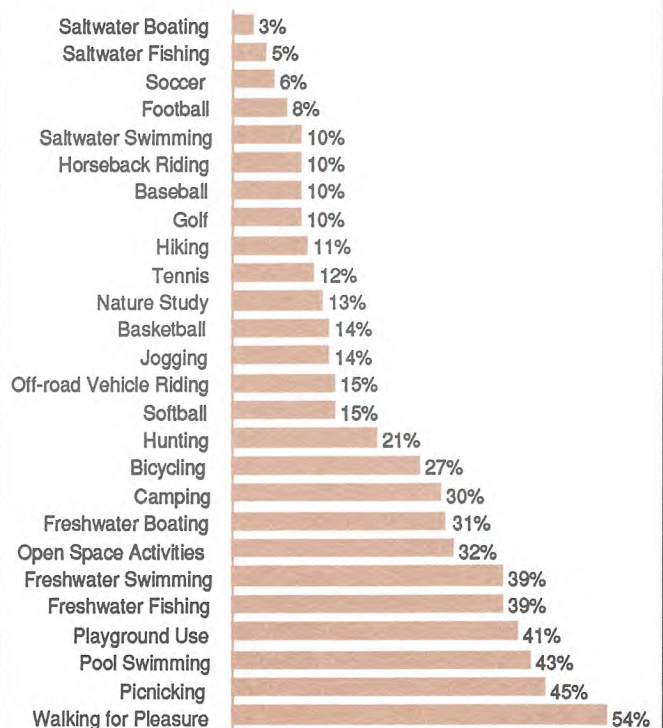
OUTDOOR RECREATION PARTICIPATION

Popular Activities

In 1995 the most popular activities in terms of percentage of the population participating will be walking for pleasure, picnicking, pool swimming, playground use, freshwater fishing, and freshwater swimming, respectively (figure 2). Statewide, this compares to walking for pleasure, pool swimming, picnicking, playground use, open space activities, and bicycling (figure 4.1).

Region 7 residents are active outdoors and enjoy a variety of recreational activities. Activities projected to exceed the statewide rate in user occasions per capita in 1995 are freshwater boat lane use, camping, all types of freshwater fishing, hunting, lake use, picnicking, freshwater swimming, baseball, and off-road vehicle use (table 2).

Figure 2
Region 7 Projected 1995 Percentage
of Population Participating



Recreation Travel Patterns

Region 7 is projected to be the most popular destination region by residents in 1995 in resource-based activities (figure 3). Seventy-six percent of the participation by region 7 residents will occur in their home region. This will be followed by destination regions 10, 4, 16, 12, 20, and all other regions combined, respectively.

Of the total resource-based recreation participation projected to occur in region 7 in 1995, 54 percent will be by region 7 residents (figure 4). The remainder of the participation will come from regions 9, 4, 16, 2, 10, and all others combined, respectively.

Projected Participation

The activities projected to have the highest total participation occurring in region 7 in 1995 will be walking for pleasure, bicycling, pool swimming, playground use, and freshwater fishing, respectively (tables 3 and 4). The popularity of these activities shows the importance of trail activities, water-based recreation, and family-oriented activities to region 7 residents.

Table 3 shows that a large amount of the participation projected to occur in region 7 will be from other regions. Every activity but hiking shows significant participation by visitors, and for four activities, boating, camping, hunting, and nature study, visitor participation will exceed that of residents.

Money spent to repair vandalized recreational facilities costs scarce taxpayer dollars that could be better used.

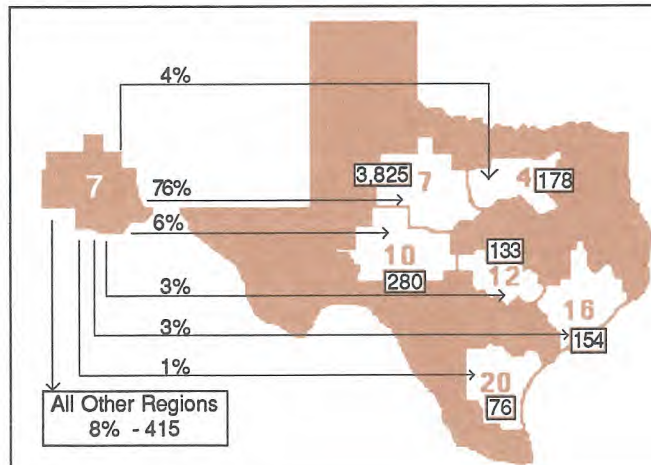


Figure 3
Destinations of Region 7 Residents for Resource-based Activities

5,061 Annual User Occasions (000's) Generated by Region 7 Residents, 1995

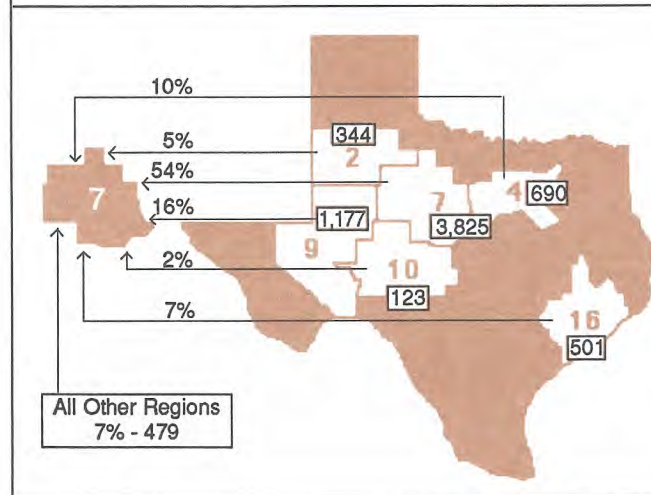


Figure 4
Origins of Participants Who Recreated in Region 7 for Resource-based Activities

7,138 Annual User Occasions (000's) Occurring in Region 7, 1995

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

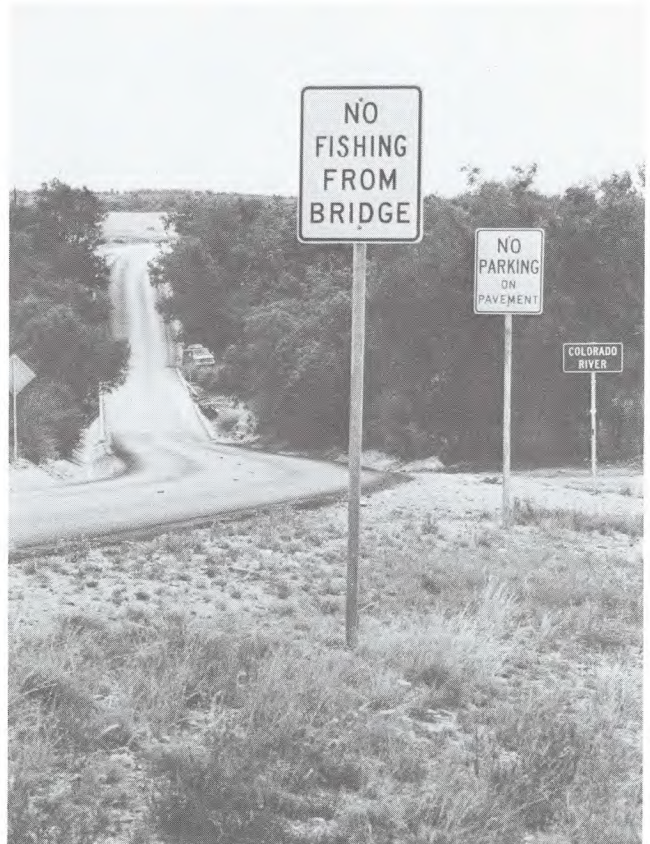
Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting. See Appendix B for key points to interpret these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 7 by Region 7 Residents,
Texans from Outside Region 7, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 7 (in 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|---|------|------|---------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | Regional Totals | | |
| | Residents of Region 7 | | | Texans from Outside Region 7 | | | 1990 | 1995 | 2000 |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 441 | 463 | 485 | 376 | 404 | 433 | 817 | 867 | 917 |
| Boating (Pleasure), FW | 163 | 170 | 178 | 176 | 189 | 202 | 338 | 359 | 380 |
| Camping | 361 | 379 | 398 | 584 | 628 | 671 | 946 | 1007 | 1069 |
| Fishing, FW | 917 | 964 | 1011 | 701 | 753 | 806 | 1618 | 1717 | 1817 |
| Fishing from Banks | 299 | 314 | 330 | 229 | 246 | 263 | 528 | 560 | 593 |
| Fishing from Boats | 411 | 432 | 453 | 314 | 337 | 361 | 725 | 769 | 814 |
| Fishing from Structures | 207 | 218 | 228 | 158 | 170 | 182 | 366 | 388 | 411 |
| Hiking | 109 | 115 | 120 | 16 | 18 | 19 | 126 | 132 | 139 |
| Hunting | 556 | 583 | 611 | 616 | 656 | 696 | 1172 | 1239 | 1307 |
| Lake Use (BFS Suitable), FW | 503 | 528 | 553 | 429 | 461 | 493 | 932 | 989 | 1047 |
| Nature Study | 231 | 242 | 254 | 275 | 302 | 329 | 505 | 544 | 583 |
| Picnicking | 590 | 618 | 645 | 246 | 262 | 279 | 836 | 880 | 925 |
| Swimming, FW | 722 | 754 | 785 | 475 | 505 | 535 | 1198 | 1259 | 1320 |

Table 4
Projected Outdoor Recreation Participation
in Region 7 by Residents of Region 7, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (In 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 630 | 661 | 692 |
| Basketball | 553 | 580 | 606 |
| Bicycling | 3188 | 3345 | 3504 |
| Bicycling on Trails | 196 | 206 | 216 |
| Football | 229 | 239 | 249 |
| Golf | 447 | 471 | 495 |
| Horseback Riding | 241 | 252 | 263 |
| Horseback Riding on Trails | 62 | 65 | 68 |
| Jogging/Running | 1433 | 1504 | 1575 |
| Jogging/Running on Trails | 441 | 463 | 485 |
| Off-road Vehicle Riding | 576 | 600 | 624 |
| ORV Riding on Trails | 113 | 118 | 122 |
| Open Space Activities | 1084 | 1130 | 1176 |
| Playground Use | 1707 | 1785 | 1863 |
| Soccer | 365 | 383 | 402 |
| Softball | 617 | 642 | 668 |
| Swimming, Pool | 2187 | 2291 | 2396 |
| Tennis | 428 | 447 | 465 |
| Walking (Pleasure/Exercise) | 5022 | 5284 | 5549 |
| Walking on Trails | 1176 | 1237 | 1299 |



Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Adequate access to water increases recreational opportunities.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Facilities needed in region 7 by 1995 are, in order of priority, multi-use trails, soccer/football fields, hiking trails, playground areas, basketball goals, and horseback riding trails (tables 5 and 6). Other priorities include off-road vehicle riding acres, softball fields, tennis courts, fishing structures, and boat ramp lanes.

In 1995 facility needs per thousand population, region 7 is expected to exceed the statewide average for basketball goals, freshwater fishing structures, hiking trails, horseback riding trails, and off-road vehicle riding areas (table A4).

Providers' Responsibilities

Federal and state agencies should be the primary suppliers of facilities that serve statewide and regional needs and secondary suppliers of facilities that meet local needs. By 1995, the Corps of Engineers should be a primary supplier of fishing structures and a secondary supplier of needs for hiking trails, off-road vehicle riding acres, playgrounds, and multi-use trail miles (table 7). The Texas Parks and Wildlife Department should be a secondary supplier of hiking trails needs. City and county governments should have the major responsi-

bility in meeting the needs for local facilities such as basketball goals, boat lanes, hiking trails, playgrounds, soccer/football fields, softball fields, tennis courts, and multi-use trails. In addition, local governments should help meet the needs for fishing structures.

The commercial sector should furnish facilities from which it can reasonably expect to make a profit, including fishing structures, horseback riding trails, off-road vehicle riding acres, and tennis courts.

Table 5
Additional Outdoor Recreation Facilities/Resources Needed in Region 7, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------|-------------------------------------|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 74 | * | * | * |
| Basketball Goals | 37 | 30 | 33 | 36 |
| Boat Ramp Lanes, FW | 113 | * | 4 | 11 |
| Campsites | 1955 | * | * | 35 |
| Fishing Structures, FW Lin.Yd. | 2213 | 309 | 463 | 619 |
| Golf Holes | 171 | * | * | * |
| Hiking Trail Miles | 0 | 17 | 18 | 19 |
| Horseback Riding Trail Miles | 0 | 9 | 9 | 10 |
| Lake Acres (BFS Suitable), FW | 44560 | * | * | * |
| Off-road Vehicle Riding Acres | 0 | 97 | 101 | 105 |
| Picnic Tables | 1070 | * | * | * |
| Playground Areas, Equipped | 104 | 59 | 66 | 73 |
| Soccer/Football Fields | 19 | 18 | 20 | 22 |
| Softball Fields | 30 | 14 | 16 | 17 |
| Swimming, FW Sq.Yd. (000) | 1866 | * | * | * |
| Swimming, Pool Sq.Yd. (000) | 18 | * | * | * |
| Tennis Courts | 76 | 36 | 41 | 46 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 8 | 24 | 25 | 27 |
| Developed Land Acres | | 630 | 669 | 732 |

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs in Region 7 Through 1995

| Need Rank | Facility/Resource |
|-----------|--|
| 1 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 2 | Soccer/Football Fields |
| 3 | Hiking Trail Miles |
| 4 | Playground Areas, Equipped |
| 5 | Basketball Goals |
| 6 | Horseback Riding Trail Miles |
| 7 | Off-Road Vehicle Riding Acres |
| 8 | Softball Fields |
| 9 | Tennis Courts |
| 10 | Fishing Struc., FW Lin.Yd. |
| 11 | Boat Ramp Lanes, FW |
| 12 | Campsites |
| 13 | Swimming, Pool Sq. Yd. |
| 14 | Baseball Fields |
| 15 | Picnic Tables |
| 16 | Golf Holes |
| 17 | Swimming, FW Sq.Yd. |
| 18 | Lake Acres (BFS Suitable) |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 7, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | | LOCAL | | |
|--|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwy. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basketball Goals | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 |
| Boat Ramp Lanes, FW Campsites | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fishing Structures, FW Lin.Yd. | 463 | 0 | 0 | 0 | 200 | 0 | 0 | 0 | 0 | 75 | 75 | 0 | 0 | 113 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 18 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 3 | 9 | 0 | 0 |
| Horseback Riding Trail Miles | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Off-road Vehicle Riding Acres | 101 | 0 | 0 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 66 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 12 | 45 | 0 | 0 |
| Soccer/Football Fields | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16 | 0 | 0 |
| Softball Fields | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tennis Courts | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 21 | 0 | 14 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 25 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 5 | 14 | 0 | 0 |
| Developed Land Acres | 669 | 0 | 0 | 0 | 109 | 24 | 0 | 0 | 0 | 0 | 85 | 309 | 0 | 141 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



REGION 8

UPPER RIO GRANDE

Pollution from agricultural, municipal, and industrial runoff adversely impacts people, wildlife, and recreation.

ISSUES AND RECOMMENDATIONS

Issue: Lack of Funds for Parks and Recreation

Recreation providers state that the statewide economic recession has had a severe impact on park and recreation programs in region 8. Falling tax revenues have necessitated cuts in staff, services, and new development. Many local park departments, whose budgets are often lean in prosperous times, have found themselves financially strapped, yet elected officials may be reluctant to raise taxes during a recession. Some communities have even been forced to cut back on maintenance, but this can be far more expensive over the long run.

A related development is declining revenues for park grant programs. Appropriations to the federal Land and Water Conservation Fund have been very limited in recent years, so the state's Local Parks, Recreation, and Open Space Fund has borne much of the burden. However, because of falling cigarette tax revenues and steadily growing numbers of grant applications, funding from this program is becoming tighter and more difficult to obtain. Even with these programs, smaller communities still can't afford the money for the match. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Make maximum use of federal, state, local government, and private grants and assistance programs.

Seek and investigate alternative funding sources, such as donations, fee systems, and other fundraising ideas. Consider private foundations as a way of supporting specific projects or even entire park systems. Examine leases or easements as alternatives to outright purchases.

Support federal legislation to establish a trust, or similar mechanism, to provide funding for outdoor recreation.

Share ideas, solutions, and facilities as much as possible with other agencies, school districts, civic organizations, activity groups, institutions, and the private sector to maximize recreational opportunities at the lowest cost.

Concentrate on operating and maintaining existing areas. Open newly acquired areas to the public as soon as possible. Keep local officials and citizens up-to-date on plans in progress.

When feasible, emphasize development of multiple-use facilities and facilities that achieve multiple objectives, such as recreation, access, preservation, etc.

Design parks and facilities to minimize operation and maintenance costs. Contract maintenance work when it is cost beneficial to do so.

Encourage volunteer help and use it to the fullest.

For federal, state, and local governments:

Consider establishing management teams composed of representatives of the different agencies or levels of government that face common problems managing common areas, such as the Big Bend region. Develop a team work approach to recreation and resource management by means of cooperative agreements, memorandums of understanding, mutual aid agreements, etc.



For the Texas Parks and Wildlife Department:

Consider input and suggestions on the open project selection process (Land and Water Conservation Fund and Local Parks, Recreation, and Open Space Fund) from all sources.

Continue to serve as a clearinghouse for information on federal, state, and private grants and assistance programs.

Issue: Vandalism

Although vandalism seems to be more prevalent in local parks, federal, state, and commercial park operators and managers also complain of this persistent, frustrating problem. Vandalism occurs not only in region 8, but everywhere in Texas. Large, remote parks like Big Bend and Hueco Tanks are difficult to monitor and protect. Local parks like Ascarate in El Paso are much smaller, but the heavy visitation makes them difficult to supervise. Vandalism is costly in tax dollars and lost recreation opportunities. Money used to repair damaged facilities could be spent to provide new ones, and vandalized facilities are unattractive and often unusable.

The motives for vandalism can vary greatly. Frequently, it is simply mischievous behavior or due to alcohol abuse. Or, it may be an expression of dissatisfaction with existing facilities. Vandalized facilities that aren't repaired invite more vandalism. Facilities neglected due to lack of maintenance are also targets of vandals. Knowing the reasons for vandalism can sometimes provide insights into solving the problem.

Landowners report vandalism to private property, trespassing, and poaching. Unfortunately, the recreation-seeking public is too often the culprit. Recreationists who damage private property cause great expense for landowners and create a negative image of all recreationists, including those who respect private property and the environment. This results in ill will between landowners and the recreating public and establishes barriers to resolving the problems. (Also see State Summary, "Managing Visitors and Recreational Use" under "Issues and Recommendations.")

Recommendations:

For educators and recreation providers:

Stress education as a means of deterring vandalism. Teach, as part of the curriculum in public education, attitudes that foster appreciation and respect for private property and natural resources. Educate the public on the anti-social nature of vandalism and its cost in tax dollars and lost recreation opportunities.

For recreation providers:

Encourage and foster cooperative, community-wide efforts to create awareness of vandalism, prevent it, and apprehend offenders. Work closely with law enforcement agencies and private security firms. Establish community "parkwatch" and "adopt-a-park" programs.

Attempt to discover the causes or motives for vandalism in specific areas or instances as a means of stopping or preventing it.

Initiate or try various approaches or combinations of approaches to deal with or discourage vandalism, including fee systems, increased surveillance, requiring offenders to repair or clean up the damage, on-site volunteers, murals, vandal-resistant fixtures, and immediate repair of vandalized facilities.

Issue: Protection and Management of Fragile Backcountry Areas and Resources

This huge, spectacular region contains vast acreages of public parks, natural areas, and wildlife management areas. According to parkland recreation managers, human impacts are the major problem here, but controlling recreational use of these areas is difficult because of their size and inaccessibility. Heavy recreational use and limited water for vegetation recovery result in damage to fragile resources. Other human impact problems include improper camping practices, litter, illegal fires, destruction of vegetation, volunteer trails, and damage by off-road vehicles. River corridor impacts on the Rio Grande could become significant as more people use the river. Increased park visitation

and limited staff have aggravated these problems. (Also, see State Summary, "Managing Visitors and Recreational Use" and "Conserving Natural Resources for Recreational Use" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Determine and establish carrying capacities for backcountry areas and fragile resources, and set limits of acceptable use. Regulate or control use when visitation reaches critical limits. Explain the purpose of visitor restrictions and why they are necessary to secure public cooperation and support. If possible, rotate facilities to new areas to allow impacted areas to recover.

Develop education programs to instruct visitors in the proper use of backcountry and fragile areas. Encourage an ethic that fosters respect for natural resources.

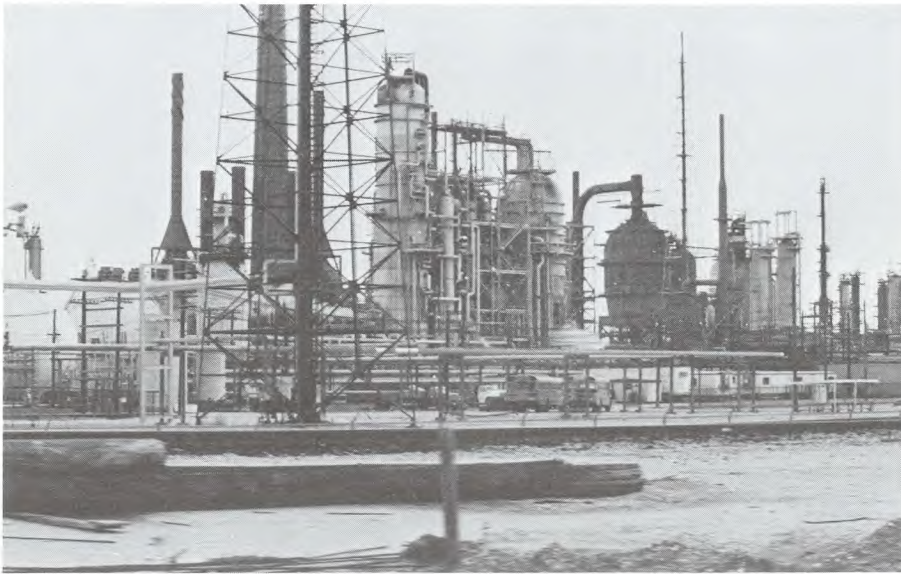
Consider permit systems for areas not now regulated to control backcountry use and limit impacts, especially for fragile resources.

For the federal government:

Encourage further discussions with Mexico on protecting the Mexican side of the Rio Grande Wild and Scenic River.

Issue: Changing Land Uses

Changing land uses throughout the Upper Rio Grande region are affecting area parks and resources according to regional park managers. Large commercial and subdivision developments in the Big Bend area require roads, water, utilities, and sewage disposal systems. These significantly increase human impacts, require scarce water resources, and may have adverse environmental effects over the long term. The National Park Service reports that the introduction of exotic species on area ranches for commercial hunting purposes has affected native species. Because exotics compete with native wildlife for food and may carry diseases and parasites, the park service is considering fencing some federal areas. Harmful, non-native plants, such as tamarisk, or salt cedar, have invaded Big Bend and begun to



Air pollution in region 8 can originate from hundreds of miles away.

appear in areas in the Guadalupe Mountains National Park. Plans for development and commercialization in Mexico across from Big Bend could significantly increase traffic through the park and have adverse impacts on it. There are also plans to preserve certain areas. One such proposal by Mexico is the establishment of the Madera del Carmens National Park, a 1.25 million-acre protected area adjacent to Big Bend National Park in the state of Coahuila. (Also see State Summary, "Conserving Natural Resources for Recreational Use" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Plan future development carefully and assess all possible impacts to ensure that the natural resources and attractions that draw visitors are protected from damage by overuse or human impacts. Closely monitor existing developments over the long term to be sure no environmental damage is now occurring.

For the Texas Parks and Wildlife Department and state universities:

Continue to research and monitor the introduction of exotics to assess the impacts. Where possible, take action to prevent environmental damage or harm to native species. Discourage and prevent the introduction of harmful, non-native species.

For the federal and state governments:

Continue and encourage further dialogue with Mexico on development issues in the Big Bend area. Assess all possible impacts that might occur from different types and intensities of development. Keep communications open and negotiate if necessary. Consider establishing joint management teams—the U.S., Mexico, Texas, and Coahuila—to manage common protected areas and resources.

Issue: Water Pollution

Polluted water may be unsafe for some recreational activities like swimming. At the least, it can detract from the recreation experience. Resource managers have found that DDT, for example, is still widely used in Mexico and enters the Rio Grande from the Rio Conchos. Use of this pesticide has led to the near extinction of the peregrine falcon and caused serious harm to other wildlife along the Rio Grande. Other pesticides and agricultural chemicals from upstream also pollute the river from runoff. The potential hazards from some of these substances are not even known. The greatest threat, however, may be to the people living along the river who use the water unaware of the potential dangers. (Also see State Summary, "Conserving Natural Resources for Recreational Use" and "Rivers and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For international, federal, state, and local water quality protection agencies:

Coordinate and monitor water pollution more closely to determine the origins and types of substances entering streams. Take appropriate legal action against U.S. violators.

For the federal government:

Enter broad-based dialogue and negotiations with Mexico on pollution and attempt to resolve the problem.

For federal, state, and local governments:

Increase emphasis on water quality research, monitoring, and enforcement. Address non-point source pollution. Continually review water quality standards and adopt additional or more stringent standards where appropriate.

Issue: Air Pollution

Air pollution affects visibility and the quality of the recreation experience, and may be harmful to water supplies, plants, and wildlife. Region 8 park administrators say that much air pollution in the region originates in the El Paso-Juarez area, but other large urban industrial areas in Texas (some as far away as Houston), adjacent states, and Mexico also contribute. (Also, see State Summary, "Conserving Natural Resources for Recreational Use" under "Issues and Recommendations.")

Recommendations:

For federal, state, and local air quality protection agencies:

Continue to monitor air pollution and conduct research to determine its impacts on water sources, vegetation, and wildlife.

Initiate legal action against polluters in the U.S. to stop further pollution. Continue to require urban areas to develop plans and meet deadlines for cleaning the air.

For the federal government:

Enter discussions with Mexico on air pollution issues.

Issue: Crime in Parks

Local park providers and law enforcement agencies report that heavily used urban parks frequently suffer from crime, such as assault, vandalism, theft, or worse. Because of crime, people may become intimidated and afraid to visit parks. When this happens, parks lose the reasons for their existence and fail to serve their purpose. Large federal and state parks are also targets of criminal activity because of their size and inaccessibility. The smuggling of drugs, firearms, and illegal aliens is common along the Rio Grande. Plant and wildlife poaching frequently occur in the national parks. Rare or endangered plants and animals, such as cactus, candelilla, and snakes, are harvested for their commercial value. Such illegal activities can decimate or entirely eliminate plant and animal populations. Theft and destruction of artifacts and antiquities is also a great concern. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Focus on increased surveillance of parks to combat crime.

For recreation providers, park staffs, visitors, and citizens:

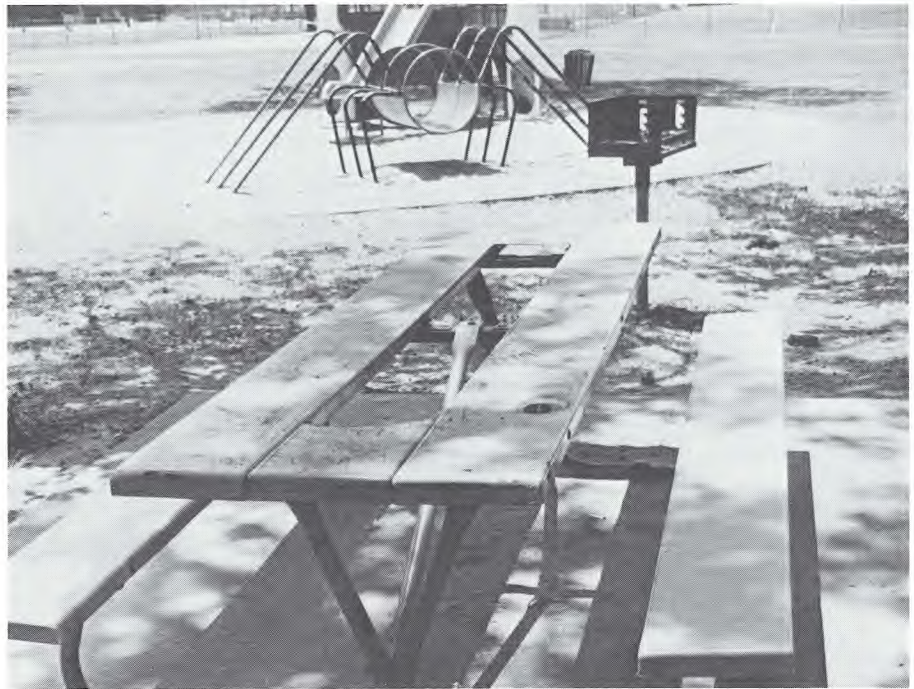
Help combat crime by being vigilant and reporting violations, or suspicious activities. Establish "park watch" programs to prevent crime and vandalism.

For federal, state, and local law enforcement agencies and the courts:

Communicate frequently and cooperate closely to present a united front and strengthen crime-fighting efforts. Vigorously prosecute perpetrators of vandalism, poaching, and other criminal acts and mete out appropriate punishments.

For the Texas Legislature:

Consider strengthening poaching laws to include asset seizure and forfeiture to better protect fish, wildlife and plant species, especially rare and endangered plants and animals and entire habitats.



Vandalism is costly and results in lost recreation opportunities.

Increase funding for enforcement and surveillance to prevent the theft and destruction of artifacts and antiquities.

For parks and law enforcement officials:

Organize a regional conference of federal, state, and local park administrators, elected officials, law enforcement officers, and representatives from Mexico to discuss the problem of crime in parks and develop solutions.

Issue: Economic Benefits of Recreation and Tourism

The Upper Rio Grande region is already a major state and national tourist attraction because of its vast number of unique natural attractions, its historic sites, the types of activities it offers, and the acres of public land it contains. The attractions continue to increase, however, and there is potential for many more. Accordingly, regional and local officials voice much interest in recreation and tourism in region 8 because of the economic benefits they provide. The recreation and tourism industries create jobs and encourage a more diversified economy, and thus help moderate recessions.

Money spent by visitors strengthens local and area economies. (Also see State Summary, "Tourism and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For park and recreation providers, tourism development agencies, and chambers of commerce:

Improve coordination and continue to promote regional and local attractions and events to foster the recreation and tourism industries.

Continually seek to improve the marketing and packaging of events, sites, and attractions. Examine the possibilities of developing new activities, attractions, and events to draw additional visitors.

Study the feasibility of establishing a regionwide agency to promote and coordinate recreation and tourism throughout the Upper Rio Grande region.

Work closely with Mexico to promote regional tourism.

Increase emphasis on trails, interpretation, and historical and archeological sites as additional facets of tourism that can attract new and different markets.

RESOURCES

Population Trends

Region 8's population is projected to reach 662 thousand by 1995, an increase of 13 percent over the 1986 population of 587 thousand people (figure 1 and table A1). Most of the population of this geographically large region is in El Paso, which accounts for 85 percent of the regional population (table A2). Consequently, El Pasoans have a significant impact on the region's parks and recreation facilities, as well as nearby recreation areas in New Mexico. Other cities in the region and rural areas make up the remaining 15 percent of the population.

The El Paso MSA is projected to show steady, consistent growth up to the year 2000 (table A1). This future growth should ensure a continuing demand for outdoor recreation in region 8 and nearby regions.

Resource Attractions

Region 8 is blessed with an abundance of unique, scenic parks and recreation areas that draw people from across the state and nation (figure 1). Federally administered parks include Big Bend National Park, Guadalupe Mountains National Park, Fort Davis National Historic Site, and Chamizal National Memorial. Major state parks are the Davis Mountains State Park, Fort Leaton State Historical Park, Franklin Mountains State Park, Hueco Tanks State Historical Park, the Magoffin Home State Historical Park, and the newly acquired Big Bend Ranch State Natural Area. In addition, the state owns four wildlife management areas in the region.

Although small, Ascarate Lake provides abundant recreation opportunities for citizens of El Paso and El Paso County. Another major water resource,

the Rio Grande, borders the entire region on the south. A portion of this great river makes up the federally administered Rio Grande Wild and Scenic River.

Recreation Supply

There are nearly 1.5 million acres of recreation land in region 8 in 176 parks (table 1). The region easily ranks first among the twenty-four regions in acres of recreation land per thousand population with 2,432 acres per thousand (table A3). It also ranks well above the state-wide average of 209 acres per thousand population.

The federal government is the largest supplier of recreation land with over 800 thousand acres, 54 percent of the total (table 1). The state is the next largest with 29 percent. This is followed by the private sector with 16 percent. Of

Figure 1
Region 8 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|---------------------|
| Counties | = | 6 |
| Land Area | = | 21,049 square miles |
| Elevation | = | 1,355' - 8,749' |
| Annual rainfall | = | 7.8 - 18.7 inches |
| January minimum temperature | = | 27 - 33°F |
| July maximum temperature | = | 82 - 100°F |
| Growing season | = | 209 - 248 days |

POPULATION 1986

Total **587,195**

| | |
|------------|---------|
| Counties | |
| El Paso | 567,036 |
| Brewster | 7,957 |
| Presidio | 5,107 |
| Culberson | 3,119 |
| Hudspeth | 2,237 |
| Jeff Davis | 1,739 |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 662,122 |
| People per square mile | 31.5 |
| Ethnic composition: | |
| White | 28% |
| Black | 4% |
| Hispanic | 69% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|-----------------|
| Recreation land | = | 1,491,489 acres |
| Developed recreation land | = | 5,255 acres |

Big Bend National Park
Big Bend Ranch State Natural Area
Black Gap Wildlife Management Area
Chamizal National Memorial
Davis Mountains State Park
Elephant Mountain State Park
Elephant Mountain Wildlife Management Area
Fort Davis National Historical Site
Fort Leaton State Historical Park
Franklin Mountains State Park
Guadalupe Mountains National Park
Hueco Tanks State Historical Park
Magoffin Home State Historical Park
Ocotillo Wildlife Management Area
Rio Grande National Wild and Scenic River
Sierra Diablo Wildlife Management Area

Lakes

| | |
|---------------|----------------------------|
| Surface acres | 55 |
| Ascarate Lake | <u>Surface Acres</u> 50 |

Streams

Rio Grande

Sources: 1986-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

the 238 thousand acres that are private, about 200 thousand are in one ranch-resort. Local governments supply less than 1 percent of the land, but furnish the greatest number of parks at 128. They also provide most of the facilities, except for campsites, and hiking, horse-back riding, and multi-use trails.

Potential and Proposed Resources

When open at some future date, the Big Bend Ranch State Natural Area will be an outstanding educational, recreational, and tourist attraction for region 8. The park, which will increase the region's park acreage by over two

hundred thousand acres, will offer a number of unique scenic, geologic, natural, and archeological features and take in some fifteen miles of Rio Grande frontage, including Colorado Canyon.

The National Park Service reports that a potential resource with a high priority for acquisition is the dunes area just west of Guadalupe Mountains National Park. This proposed acquisition consists of 10,123 acres and would become part of the national park. Recognized as a Texas natural landmark, the dunes contain archeological sites and rare, endangered plants and animals.

The addition of the Harte Ranch

(Northern Rosillos Mountain Preserve) to Big Bend National Park in 1988 increased that park's size by 67,125 acres and is an outstanding acquisition.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 8, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | | LOCAL | | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|-----------|--------|-------------|--------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Countries | Cities | Other Local | | COMMERCIAL |
| Number of Parks/Rec. Areas | 4 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 | 19 | 103 | 6 | 32 | 176 |
| Total Parkland Acres | 812224 | 0 | 0 | 0 | 234833 | 200335 | 0 | 0 | 0 | 3665 | 1609 | 1027 | 237797 | 1491489 |
| Developed Land Acres | 520 | 0 | 0 | 0 | 241 | 17 | 0 | 0 | 0 | 1967 | 977 | 300 | 1234 | 5255 |
| Developable Land Acres | 2216 | 0 | 0 | 0 | 22808 | 0 | 0 | 0 | 0 | 1697 | 543 | 727 | 217414 | 245406 |
| Preserved or Unsuitable for Development (Acres) | 809488 | 0 | 0 | 0 | 211784 | 200318 | 0 | 0 | 0 | 0 | 88 | 0 | 19150 | 1240828 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 35 | 3 | 3 | 50 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 100 | 2 | 2 | 114 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 610 | 0 | 0 | 0 | 108 | 25 | 0 | 0 | 0 | 78 | 0 | 32 | 1159 | 2012 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6700 | 4400 | 11100 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 | 0 | 0 | 0 | 67 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 9 | 9 | 9 | 54 |
| Hiking Trail Miles | 218 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 223 |
| Horseback Riding Trail Miles | 133 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 140 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1541 | 0 | 0 | 290 | 25 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 288 | 213 | 38 | 101 | 1831 |
| Picnic Tables | 50 | 0 | 0 | 0 | 89 | 0 | 0 | 0 | 0 | 18 | 98 | 3 | 10 | 779 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 132 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 33 | 0 | 3 | 43 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 11 | 1 | 3 | 25 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2400 | 0 | 0 | 0 | 2400 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1132 | 10738 | 1205 | 1456 | 14531 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 49 | 2 | 18 | 70 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 9 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 12 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 8 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 8 Occurring In | | |
| | Region 8 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 0.2 | 0.3 | 1.3 |
| Boat Ramp Lanes, SW | * | * | 0.3 |
| Boating (Pleasure), FW | * | * | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 0.8 | 1.1 | 1.7 |
| Fishing, FW | 0.6 | 0.8 | 2.4 |
| Fishing from Banks | 0.2 | 0.3 | 0.8 |
| Fishing from Boats | 0.3 | 0.4 | 1.1 |
| Fishing from Structures | 0.1 | 0.2 | 0.5 |
| Fishing, SW | * | * | 0.7 |
| Fishing from Boats | * | * | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | * | 0.3 |
| Hiking | 0.5 | 0.5 | 0.4 |
| Hunting | 0.6 | 0.6 | 1.3 |
| Lake Use (BFS Suitable), FW | 0.3 | 0.3 | 1.5 |
| Nature Study | 0.6 | 0.6 | 0.9 |
| Picnicking | 1.9 | 1.9 | 1.9 |
| Swimming, FW | 0.3 | 0.6 | 2.1 |
| Swimming, SW | * | 0.2 | 1.2 |
| Baseball | 1.9 | | 1.5 |
| Basketball | 2.0 | | 1.6 |
| Bicycling | 11.9 | | 10.7 |
| Bicycling on Trails | 0.7 | | 0.7 |
| Football | 1.0 | | 0.8 |
| Golf | 0.9 | | 1.3 |
| Horseback Riding | 0.7 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 7.2 | | 5.4 |
| Jogging/Running on Trails | 2.2 | | 1.7 |
| Off-road Vehicle Riding | 0.3 | | 1.4 |
| Off-road Vehicle Riding on Trails | 3.0 | | 0.3 |
| Open Space Activities | 5.4 | | 3.2 |
| Playground Use | 1.7 | | 4.8 |
| Soccer | 1.8 | | 1.2 |
| Softball | 6.5 | | 1.8 |
| Swimming, Pool | 1.1 | | 6.4 |
| Tennis | 15.2 | | 1.3 |
| Walking (Pleasure/Exercise) | 3.6 | | 14.8 |
| Walking on Trails | | | 3.5 |

Notes: Asterisks indicate value is less than .1 occasion per capita.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and figure and an explanation of research methods. See Appendix D for an explanation of terms.

OUTDOOR RECREATION PARTICIPATION

Popular Activities

The five most popular activities in 1995, as measured by the percentage of the population participating, will be walking, pool swimming, picnicking, playground use, and bicycling (figure 2). Statewide, the top five activities are projected to be walking, pool swimming, picnicking, playground use, and open space activities (figure 4.1).

The most popular activities in region 8 are games and sports, family-oriented activities, and those that promote physical fitness. Activities that are projected to exceed the statewide rate in 1995 in per capita participation are hiking, baseball, basketball, bicycling, football, jogging-running, off-road vehicle riding, playground use, soccer, pool swimming, and walking (table 2).

Figure 2
Region 8 Projected 1995 Percentage
of Population Participating

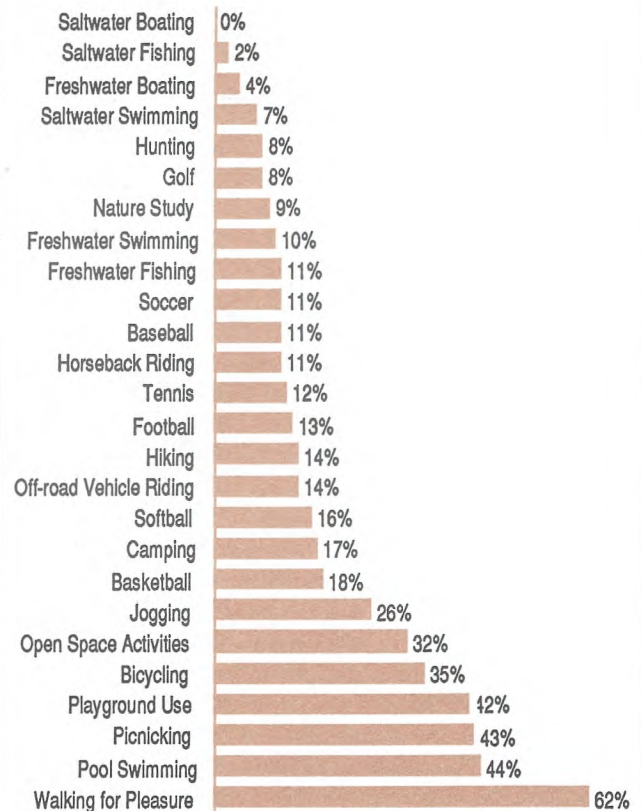
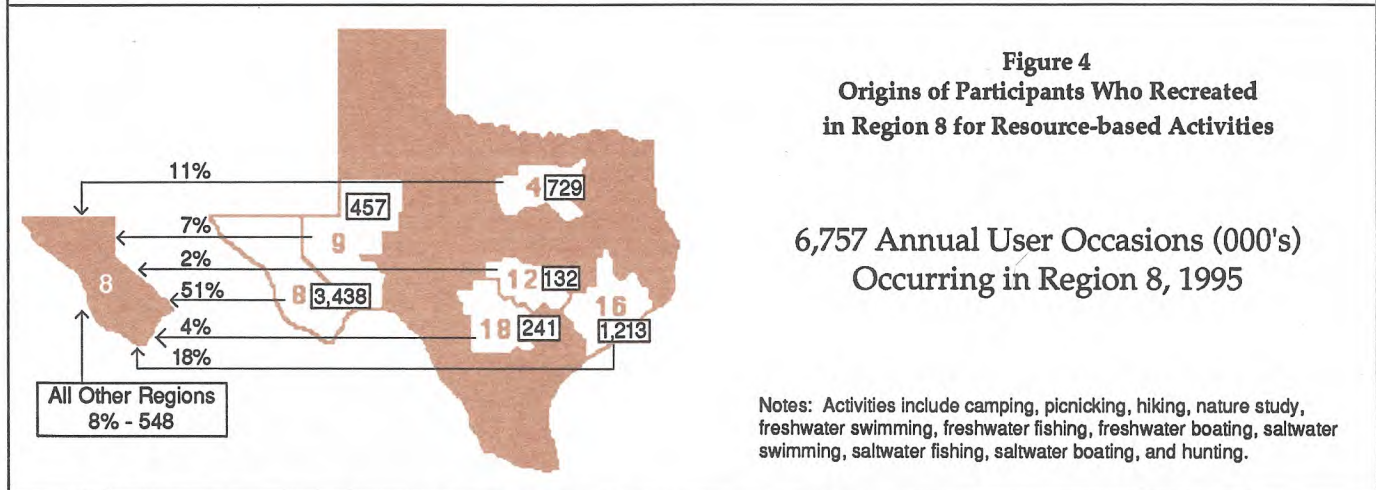
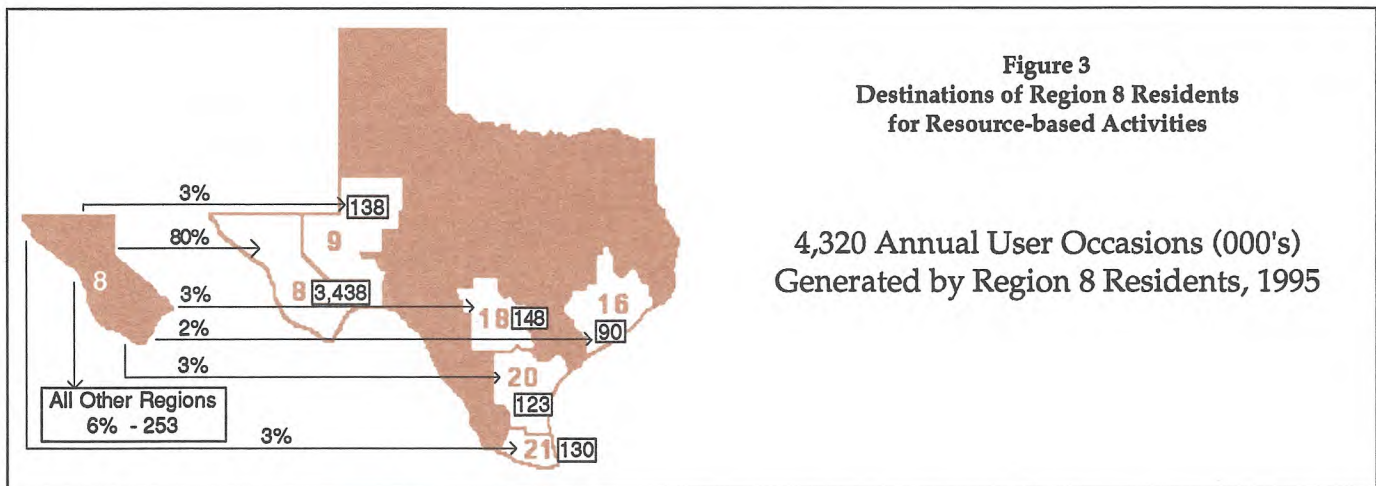


Table 3
Projected Outdoor Recreation Participation in Region 8 by Region 8 Residents,
Texans from Outside Region 8, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 8 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|---|------|------|------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | Regional Totals | | |
| | Residents of Region 8 | | | Texans from Outside Region 8 | | | 1990 | 1995 | 2000 |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 139 | 150 | 160 | 49 | 53 | 57 | 188 | 203 | 217 |
| Boating (Pleasure), FW | 5 | 5 | 5 | 36 | 39 | 42 | 41 | 44 | 48 |
| Camping | 465 | 507 | 549 | 1567 | 1694 | 1822 | 2033 | 2202 | 2371 |
| Fishing, FW | 394 | 424 | 454 | 62 | 67 | 71 | 456 | 491 | 525 |
| Fishing from Banks | 129 | 138 | 148 | 20 | 22 | 23 | 149 | 160 | 171 |
| Fishing from Boats | 176 | 190 | 203 | 28 | 30 | 32 | 204 | 220 | 235 |
| Fishing from Structures | 89 | 96 | 103 | 14 | 15 | 16 | 103 | 111 | 119 |
| Hiking | 294 | 318 | 342 | 814 | 879 | 944 | 1107 | 1197 | 1286 |
| Hunting | 340 | 364 | 388 | 42 | 45 | 48 | 382 | 409 | 437 |
| Lake Use (BFS Suitable), FW | 159 | 171 | 183 | 56 | 61 | 65 | 215 | 232 | 248 |
| Nature Study | 340 | 371 | 402 | 296 | 322 | 348 | 636 | 693 | 750 |
| Picnicking | 1165 | 1248 | 1331 | 103 | 111 | 119 | 1267 | 1359 | 1450 |
| Swimming, FW | 187 | 200 | 213 | 152 | 162 | 172 | 339 | 362 | 386 |



Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Recreation Travel Patterns

Figure 3 shows destination regions for participation in resource-based activities by region 8 residents. The top destination region for residents in 1995 is projected to be region 8, their home region, with 80 percent of the participation. The next most popular regions are expected to be 18, 9, 21, and 20, each with 3 percent; region 16, 2 percent; and all other regions combined, 6 percent.

Origin regions for all resource-based participation projected to occur in region 8 in 1995 from all over the state are shown in figure 4. Fifty-one percent of the participation will be by region 8 residents, followed by regions 16, 18 percent; 4, 11 percent; 9, 7 percent; 18, 4 percent; 12, 2 percent; and all others combined, 8 percent. The relatively large percentages from distant regions with large urban populations, such as 16, 18, 12, and 4, demonstrates the attractiveness region 8 has for much of the state.

Projected Participation

The five activities that are projected to have the highest total participation occurring in region 8 by 1995 include walking, bicycling, jogging-running, pool swimming, and playground use (tables 3 and 4). Table 3 shows that participation by visitors will exceed that of residents for boating, camping, and hiking. This reflects the large visitation from other parts of the state to region 8's national and state parks, where such activities typically occur.

Table 4
Projected Outdoor Recreation Participation
in Region 8 by Residents of Region 8, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (In 000's Annual User Occasions) | | |
|-----------------------------|---|-------|-------|
| | 1990 | 1995 | 2000 |
| Baseball | 1149 | 1236 | 1322 |
| Basketball | 1263 | 1350 | 1436 |
| Bicycling | 7317 | 7871 | 8424 |
| Bicycling on Trails | 451 | 485 | 519 |
| Football | 636 | 681 | 727 |
| Golf | 550 | 603 | 656 |
| Horseback Riding | 450 | 482 | 514 |
| Horseback Riding on Trails | 115 | 124 | 132 |
| Jogging/Running | 4453 | 4753 | 5053 |
| Jogging/Running on Trails | 1372 | 1464 | 1556 |
| Off-road Vehicle Riding | 931 | 996 | 1060 |
| ORV Riding on Trails | 182 | 195 | 208 |
| Open Space Activities | 1859 | 1984 | 2110 |
| Playground Use | 3315 | 3554 | 3793 |
| Soccer | 1034 | 1109 | 1184 |
| Softball | 1143 | 1221 | 1300 |
| Swimming, Pool | 4014 | 4305 | 4597 |
| Tennis | 700 | 749 | 798 |
| Walking (Pleasure/Exercise) | 9301 | 10093 | 10885 |
| Walking on Trails | 2177 | 2363 | 2548 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



Activities like softball are very popular with region 8 residents.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Facilities that will be needed in 1995 are, in order of priority, multi-use trail miles, soccer/football fields, playground areas, freshwater swimming, softball fields, and campsites (tables 5 and 6). These are followed by swimming pools, lake acres, tennis courts, boat ramp lanes, baseball fields, fishing structures, basketball goals, golf holes, and picnic tables.

A comparison of resource/facility needs per thousand population shows that region 8 is expected to exceed the statewide average for 1995 for twelve of the eighteen facilities (table A4). These are: baseball fields, campsites, freshwater fishing structures, golf holes, lake acres, picnic tables, playground areas,

soccer/football fields, softball fields, swimming pools, tennis courts, and multi-use trails.

Needs for some facilities may not appear on a regional basis because of inadequate distribution or other reasons. However, this does not preclude there being needs for a given facility within some specific area, locality, or community.

Providers' Responsibilities

The National Park Service and Texas Parks and Wildlife Department should help supply the 1995 needs for campsites, fishing structures, picnic tables, playground areas, and multi-use trail miles (table 7).

In general, city and county governments should have the major responsibil-

ity for meeting the needs for local facilities including baseball fields, basketball goals, boat ramp lanes, playground areas, soccer/football fields, softball fields, freshwater swimming, pool swimming, tennis courts, and multi-use trails. Local governments should also help supply the needs for fishing structures, picnic tables, and campsites.

The private sector should provide facilities which are potentially profitable or which support other profit-making facilities. In region 8, the commercial sector should be the primary supplier of campsites, fishing structures, and golf holes, and should be a secondary provider of baseball fields, playground areas, soccer/football fields, softball fields, freshwater swimming, and tennis courts.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 8, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|-------------|-------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 50 | 34 | 40 | 46 |
| Basketball Goals | 114 | 39 | 49 | 59 |
| Boat Ramp Lanes, FW | 1 | 24 | 26 | 28 |
| Campsites | 2012 | 1773 | 2088 | 2402 |
| Fishing Structures, FW Lin.Yd. | 67 | 785 | 850 | 914 |
| Golf Holes | 54 | 12 | 18 | 25 |
| Hiking Trail Miles | 223 | * | * | * |
| Horseback Riding Trail Miles | 140 | * | * | * |
| Lake Acres (BFS Suitable), FW | 25 | 567 | 613 | 658 |
| Off-road Vehicle Riding Acres | 1831 | * | * | * |
| Picnic Tables | 779 | * | 37 | 92 |
| Playground Areas, Equipped | 132 | 184 | 206 | 229 |
| Soccer/Football Fields | 43 | 61 | 69 | 76 |
| Softball Fields | 25 | 57 | 62 | 68 |
| Swimming, FW Sq.Yd. (000) | 2 | 84 | 90 | 96 |
| Swimming, Pool Sq.Yd. (000) | 15 | 11 | 13 | 15 |
| Tennis Courts | 70 | 113 | 126 | 139 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 12 | 57 | 62 | 68 |
| Developed Land Acres | | 1653 | 1913 | 2192 |

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Table 6
Ranking of Outdoor Recreation Facility/Resource
Needs in Region 8 Through 1995

| Need Rank | Facility/Resource |
|-----------|---|
| 1 | Trail Miles, Multi-Use(Walk, Bike, Jog) |
| 2 | Soccer/Football Fields |
| 3 | Playground Areas, Equipped |
| 4 | Swimming, FW Sq.Yd. |
| 5 | Softball Fields |
| 6 | Campsites |
| 7 | Swimming, Pool Sq. Yd. |
| 8 | Lake Acres (BFS Suitable) |
| 9 | Tennis Courts |
| 10 | Boat Ramp Lanes, FW |
| 11 | Baseball Fields |
| 12 | Fishing Struc., FW Lin.Yd. |
| 13 | Basketball Goals |
| 14 | Golf Holes |
| 15 | Picnic Tables |
| 16 | Hiking Trail Miles |
| 17 | Horseback Riding Trail Miles |
| 18 | Off-Road Vehicle Riding Acres |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 8, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|-------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Cops of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 26 | 0 | 8 |
| Basketball Goals | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 35 | 0 | 0 |
| Boat Ramp Lanes, FW | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 |
| Campsites | 2088 | 200 | 0 | 0 | 0 | 200 | 170 | 0 | 0 | 0 | 180 | 0 | 60 | 1278 |
| Fishing Structures, FW Lin.Yd. | 850 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 300 | 0 | 0 | 350 |
| Golf Holes | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Picnic Tables | 37 | 10 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 5 | 12 | 0 | 0 |
| Playground Areas, Equipped | 206 | 4 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 15 | 174 | 0 | 10 |
| Soccer/Football Fields | 69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 36 | 10 | 6 |
| Softball Fields | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 35 | 5 | 10 |
| Swimming, FW Sq.Yd.(000) | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 19 | 22 |
| Swimming, Pool Sq.Yd.(000) | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 4 | 0 |
| Tennis Courts | 126 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 94 | 0 | 8 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 62 | 10 | 0 | 0 | 0 | 8 | 8 | 0 | 0 | 0 | 14 | 22 | 0 | 0 |
| Developed Land Acres | 1913 | 132 | 0 | 0 | 0 | 116 | 107 | 0 | 0 | 0 | 322 | 566 | 81 | 590 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

**PERMIAN
BASIN**

Idle equipment reflects the recessionary impacts on park funding.

ISSUES AND RECOMMENDATIONS

Issue: Recessionary Impacts on Park Funding

The statewide economic downturn appears to be the number one issue affecting recreation in region 9. Because much of the regional economy is heavily dependent on oil, the drop in oil prices has had serious repercussions, especially in the Midland-Odessa area. Local tax revenues are down because of property devaluations and sales tax collections have declined. Park directors say this has resulted in budget cuts, staff reductions, facility closings, and postponement or cancellation of new development. Many departments have had difficulty operating and maintaining their existing facilities. Even in good economic times, parks are often a low priority, and further reductions during hard times can have serious long-term effects. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Utilize federal, state, local government, and private grants and assistance programs to take advantage of a variety of assistance ranging from financial help to technical advice.

Concentrate on operating and maintaining existing areas and opening newly acquired areas to the public as soon as possible.

Examine alternative ways of generating revenues and raising funds, such as donations, fee systems, and other fund-raising ideas. Consider private foundations as a way of raising money for specific projects or supporting entire park systems. Consider leases or easements as alternatives to purchasing property.

Emphasize, where possible, development of multiple-use facilities that accomplish multiple objectives, such as recreation, access, preservation, etc.

Design facilities to minimize operation and maintenance costs. Contract maintenance when it is cost beneficial to do so.

Encourage volunteer help and use it to the utmost.

For recreation providers, civic groups, recreation associations, insititutions, and the private sector:

Share ideas, solutions, facilities, and funds as much as possible to maximize recreation opportunities at the least cost.

For the Texas Parks and Wildlife Department:

Continue to serve as a clearinghouse for information on federal, state, and private grants and assistance programs.

Issue: Vandalism, Litter, and Trespass

Park managers, visitors, and private property owners all have found that vandalism and litter are widespread, persistent, and costly problems in region 9. They cost money that could otherwise be used for maintenance or new facilities and deprive people of recreation opportunities. Vandalized, littered facilities are unattractive and often unusable. These problems are frustrating because there seem to be no workable solutions.

Landowners and ranchers report that litter, vandalism, poaching, and livestock harassment frequently accompany trespassing on private property, and the recreation-seeking public is too



often the culprit. Recreationists who damage private property cause great expense for landowners and create a negative image of all recreationists, including those who respect private property and the environment. This results in ill will between landowners and the recreating public and establishes barriers to resolving the problems. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Issues and Recommendations.")

Recommendations:

For educators and recreation providers:

Stress prevention by educating the public on the problem of vandalism. Teach, as part of the curriculum in public education, an environmental ethic that fosters appreciation and respect for public and private property and natural resources. Make people aware of the anti-social nature of vandalism and its costs in tax dollars and lost recreation opportunities.

For government, landowners, recreationists, and conservationists:

Cooperate and work together to resolve the conflicts and problems resulting from the increasing recreational use of public waterways.

For recreation providers:

Experiment with various approaches or combinations of approaches to prevent or discourage vandalism, including fee systems, increased surveillance, vandal-resistant fixtures, facility design, and immediate repair of damaged facilities.

Educate river users on the rights and responsibilities of both landowners and recreationists.

For local, state, and federal governments:

Encourage cooperative efforts to combat vandalism. Promote the establishment of "park watch" and "adopt-a-park" programs in communities. Work closely with law enforcement agencies and, where possible, with private security firms.

Increase emphasis on enforcement of existing laws against vandalism, litter, and trespass.

Consider describing and clearly

marking public parks and river access points to navigable streams to define the limits of public ownership.

Provide public access points or parks on navigable recreational rivers where access is limited to discourage trespass.

For the Texas Legislature:

Clarify, and strengthen or revise as necessary, laws relating to riparian private property rights, and laws regarding public use of state waterways (rivers, lakes, wetlands, bays, and beaches).

Issue: Water Pollution

The water quality of some of the region 9 rivers has been affected by pollution. Residents report that the Pecos River, in particular, has been polluted by brine, oil, chemicals, and pesticides, including DDT. Illegal dumping of chemicals and toxic substances in rivers has been reported. This pollution could be hazardous to humans, wildlife, and livestock, and renders the rivers unusable for recreation. The Pecos has also suffered from large fish kills in recent years, possibly due to outbreaks of toxic algae. This has resulted in lost recreation opportunities and economic benefits for landowners. (Also see State Summary, "Conserving Natural Resources for Recreational Use" and "Rivers and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For federal, state, and local agencies directly or indirectly responsible for water quality:

Encourage and establish "river watch" programs to monitor, detect, and react to pollution and fish kills promptly.

For federal, state, and local governments:

Increase emphasis on water quality research, monitoring, and enforcement. Address non-point source pollution. Provide funds for more research on the causes of fish kills. Continually review water quality standards and adopt additional or more stringent standards where appropriate.



The proper disposal of polluted water can help restore quality to region 9 rivers.

Take quick, forceful action against polluters to clean up affected streams and lakes. Broadly publicize actions to discourage further pollution.

For the Texas Legislature:

Fund additional studies and encourage agencies and universities to conduct research on water quality problems.

Issue: Scarce Recreational Water and Low Lake Levels

Water is a scarce and highly prized recreational resource in region 9. Because there are few lakes and streams in the region, residents often recreate in nearby regions or take advantage of temporary lakes formed from runoff. Water is important not only for water-based activities, but activities such as picnicking, camping, and walking are enhanced and can be more enjoyable around water. A related issue is low lake levels. During dry years, recreationists have fewer surface acres available for recreation and crowding results. Water quality may decline as dissolved material becomes more concentrated, and this might pose health hazards. Facilities can become unusable, and fish and their habitats could be adversely affected.

Recommendations:

For recreation providers:

Make maximum use of existing water, such as reclaimed or recycled water to create new opportunities for recreation. Consider using small ponds as resources to provide a variety of outdoor pursuits, or as resources around which to focus parks.

Try to maintain the water quality of existing recreational water.

Ensure there is adequate access to public lakes and waterways to discourage trespass.

When possible, build facilities so they can be used during low water periods.

For reservoir managers:

During periods of low water, emphasize safety because of possible public health hazards and increased congestion.

RESOURCES

Population Trends

The region 9 population is projected to reach 488 thousand by 1995, an increase of 23 percent over the 1986 population of nearly 397 thousand (figure 1 and table A1). The Midland-Odessa area accounts for over half of the regional population, while the smaller cities and rural areas make up the remainder (table A2).

Future population growth in region 9 will impact recreation resources within the region as well as lakes and parks in adjacent regions. Because of its scarcity, recreational water will likely be one of the most sought-after attractions.

Resource Attractions

There are slightly less than nine-

teen thousand surface acres of lakes in region 9, the largest two being Red Bluff Reservoir and Lake J. B. Thomas (figure 1). Other lakes, including Imperial, Moss Creek, and Balmorhea are small, but important, popular resources.

Other major attractions in region 9 are three state parks: Balmorhea, Big Spring, and Monahans Sandhills. Big Spring and Monahans provide opportunities for a variety of outdoor activities, while Balmorhea offers much-desired recreational water in San Solomon Springs and facilities for camping and picnicking.

Significant streams include the Colorado and Pecos rivers. The Rio Grande in region 9 forms the final segment of the Rio Grande Wild and Scenic River.

Figure 1
Region 9 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|---------------------|
| Counties | = | 17 |
| Land area | = | 23,459 square miles |
| Elevation | = | 1,247' - 4,797' |
| Annual rainfall | = | 10.3 - 18.2 inches |
| January minimum temperature | = | 22 - 33°F |
| July maximum temperature | = | 93 - 96°F |
| Growing season | = | 210 - 237 days |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 488,448 |
| People per square mile | 20.8 |
| Ethnic composition: | |
| White | 61% |
| Black | 4% |
| Hispanic | 35% |

POPULATION 1986

| | |
|--------------|----------------|
| Total | 396,515 |
| Counties | |
| Ector | 131,525 |
| Midland | 110,009 |
| Howard | 35,047 |
| Andrews | 16,403 |
| Dawson | 16,130 |
| Pecos | 15,771 |
| Reeves | 15,006 |
| Ward | 14,504 |
| Gaines | 13,933 |
| Winkler | 9,634 |
| Upton | 5,108 |
| Martin | 5,008 |
| Crane | 4,904 |
| Terrell | 1,591 |
| Glasscock | 1,063 |
| Borden | 818 |
| Loving | 61 |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 10,515 acres |
| Developed recreation land | = | 3,807 acres |

Balmorhea State Park
Big Spring State Park
Monahans Sandhills State Park

Lakes

| | |
|---------------|--------|
| Surface acres | 18,763 |
|---------------|--------|

Surface Acres

| | |
|----------------------|--------------|
| Imperial Reservoir | 1,530 |
| Lake Balmorhea | 573 |
| Lake J. B. Thomas | 4,692 (Part) |
| Moss Creek Reservoir | 250 (Part) |
| Red Bluff Reservoir | 11,700 |

Streams

Colorado River
Pecos River
Rio Grande

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

Recreation Supply

Region 9 has nearly eleven thousand acres of recreation land in 209 parks (table 1). With only twenty-four acres of recreation land per thousand population, the region is well below the statewide average of 209 acres per thousand and ranks twenty-third among the twenty-four regions (table A3).

The Texas Parks and Wildlife Department supplies 40 percent of the total recreation land (table 1). Local governments provide 33 percent, and the commercial sector, 26 percent. River authori-

ties and water districts furnish less than 1 percent. Local governments provide the greatest number of parks with 181 and supply most of the facilities, except for boat ramp lanes, campsites, fishing access, and freshwater swimming, the majority of which are furnished by the private sector.

Potential and Proposed Resources

Moss Creek Reservoir has potential for additional recreational development, and proposed parks in Odessa will increase that city's recreation opportunities. Stacy Reservoir, although in a dif-

ferent region, will offer recreation for region 9 residents and is owned by the Colorado River Municipal Water District, headquartered in Big Spring.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 9, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|--------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Coops of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | COMMERCIAL |
| Number of Parks/Rec. Areas | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 84 | 90 | 7 | 23 | 209 |
| Total Parkland Acres | 0 | 0 | 0 | 0 | 4254 | 0 | 0 | 0 | 50 | 1337 | 1685 | 468 | 2721 | 10515 |
| Developed Land Acres | 0 | 0 | 0 | 0 | 112 | 0 | 0 | 0 | 50 | 1209 | 1198 | 68 | 1169 | 3807 |
| Developable Land Acres | 0 | 0 | 0 | 0 | 2089 | 0 | 0 | 0 | 0 | 128 | 476 | 400 | 1552 | 4645 |
| Preserved or Unsuitable for Development (Acres) | 0 | 0 | 0 | 0 | 2053 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 2063 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 43 | 1 | 0 | 84 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 16 | 0 | 2 | 40 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 2 | 7 | 13 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 0 | 62 | 0 | 0 | 0 | 0 | 62 | 59 | 4 | 764 | 951 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 550 | 0 | 880 | 1430 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 10 | 60 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 104 | 54 | 0 | 81 | 239 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13911 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Picnic Tables | 0 | 0 | 0 | 0 | 77 | 0 | 0 | 0 | 12 | 604 | 401 | 0 | 80 | 1174 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 54 | 75 | 0 | 11 | 142 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 22 | 0 | 0 | 30 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 33 | 0 | 0 | 64 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10000 | 0 | 5000 | 0 | 844800 | 859800 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 8470 | 0 | 0 | 0 | 0 | 12363 | 8293 | 0 | 1000 | 30126 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | 31 | 30 | 1 | 113 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 1 | 7 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 9 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 9 | | |
| | Occurring In | | |
| | Region 9 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 0.3 | 1.6 | 1.3 |
| Boat Ramp Lanes, SW | * | * | 0.3 |
| Boating (Pleasure), FW | 0.2 | 0.8 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 0.3 | 2.1 | 1.7 |
| Fishing, FW | 0.4 | 2.8 | 2.4 |
| Fishing from Banks | 0.1 | 0.9 | 0.8 |
| Fishing from Boats | 0.2 | 1.3 | 1.1 |
| Fishing from Structures | * | 0.6 | 0.5 |
| Fishing, SW | * | 0.1 | 0.7 |
| Fishing from Boats | * | * | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | * | 0.3 |
| Hiking | 0.2 | 0.4 | 0.4 |
| Hunting | 0.5 | 1.1 | 1.3 |
| Lake Use (BFS Suitable), FW | 0.3 | 1.8 | 1.5 |
| Nature Study | * | 0.5 | 0.9 |
| Picnicking | 1.1 | 1.6 | 1.9 |
| Swimming, FW | 0.5 | 2.1 | 2.1 |
| Swimming, SW | * | 0.3 | 1.2 |
| Baseball | 1.6 | | 1.5 |
| Basketball | 1.4 | | 1.6 |
| Bicycling | 9.9 | | 10.7 |
| Bicycling on Trails | 0.6 | | 0.7 |
| Football | 0.8 | | 0.8 |
| Golf | 1.4 | | 1.3 |
| Horseback Riding | 0.9 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 4.6 | | 5.4 |
| Jogging/Running on Trails | 1.4 | | 1.7 |
| Off-road Vehicle Riding | 1.5 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.3 | | 0.3 |
| Open Space Activities | 2.7 | | 3.2 |
| Playground Use | 4.8 | | 4.8 |
| Soccer | 1.2 | | 1.2 |
| Softball | 1.6 | | 1.8 |
| Swimming, Pool | 5.9 | | 6.4 |
| Tennis | 1.0 | | 1.3 |
| Walking (Pleasure/Exercise) | 13.0 | | 14.8 |
| Walking on Trails | 3.0 | | 3.5 |

Notes: Asterisks indicate value is less than .1 occasion per capita.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and figure and an explanation of research methods. See Appendix D for an explanation of terms.

OUTDOOR RECREATION PARTICIPATION

Popular Activities

In 1995, the five most popular activities in terms of percentage of the population participating are projected to be walking, pool swimming, playground use, freshwater fishing, and picnicking (figure 2). This compares to the top five activities statewide by 1995 of walking, pool swimming, picnicking, playground use, and open space activities, respectively (figure 4.1).

Region 9 residents are enthusiastic outdoor people, and enjoy a variety of recreational activities. Those activities in which participation by region 9 residents is expected to exceed the statewide rate in user-occasions per capita by 1995 are boat lane use, freshwater boating, camping, all types of freshwater fishing, lake use, baseball, golf, horseback riding, and off-road vehicle riding (table 2).

Figure 2
Region 9 Projected 1995 Percentage
of Population Participating

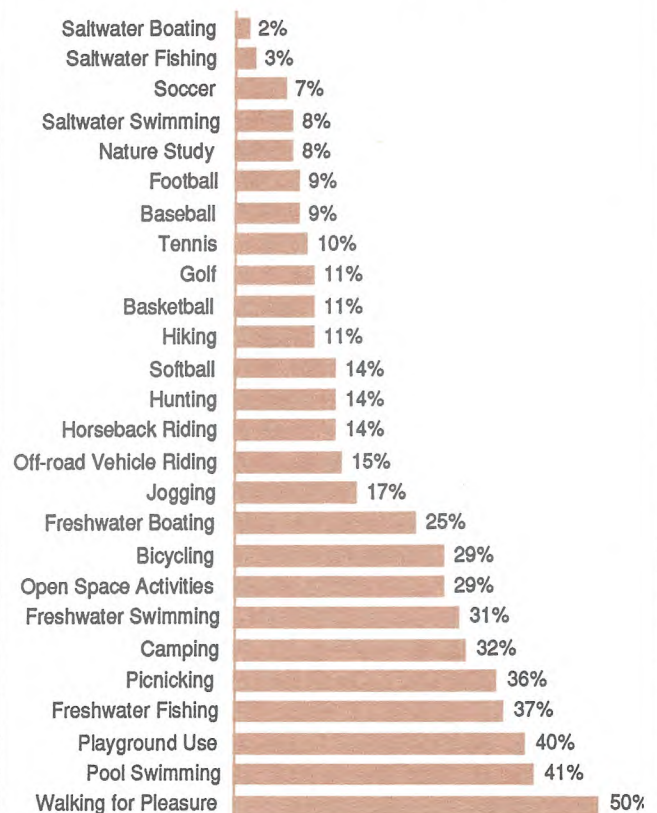


Table 3
Projected Outdoor Recreation Participation in Region 9 by Region 9 Residents,
Texans from Outside Region 9, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 9 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|---|------|------|------------------------------|------|------|-----------------|------|------|
| | Residents of Region 9 | | | Texans from Outside Region 9 | | | Regional Totals | | |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 121 | 133 | 144 | 21 | 22 | 23 | 142 | 155 | 167 |
| Boating (Pleasure), FW | 70 | 77 | 84 | 4 | 4 | 5 | 75 | 82 | 88 |
| Camping | 118 | 130 | 142 | 75 | 80 | 85 | 193 | 210 | 227 |
| Fishing, FW | 194 | 213 | 232 | 53 | 55 | 57 | 247 | 268 | 289 |
| Fishing from Banks | 63 | 70 | 76 | 17 | 18 | 18 | 81 | 87 | 94 |
| Fishing from Boats | 87 | 96 | 104 | 24 | 24 | 25 | 111 | 120 | 129 |
| Fishing from Structures | 44 | 48 | 52 | 12 | 12 | 13 | 56 | 61 | 65 |
| Hiking | 83 | 92 | 101 | 9 | 10 | 11 | 93 | 102 | 111 |
| Hunting | 227 | 247 | 267 | 115 | 123 | 132 | 342 | 370 | 399 |
| Lake Use (BFS Suitable), FW | 138 | 151 | 165 | 24 | 25 | 26 | 163 | 177 | 191 |
| Nature Study | 19 | 21 | 23 | 13 | 14 | 15 | 32 | 35 | 38 |
| Picnicking | 495 | 543 | 591 | 20 | 21 | 22 | 515 | 564 | 613 |
| Swimming, FW | 202 | 220 | 238 | 57 | 61 | 65 | 259 | 281 | 303 |

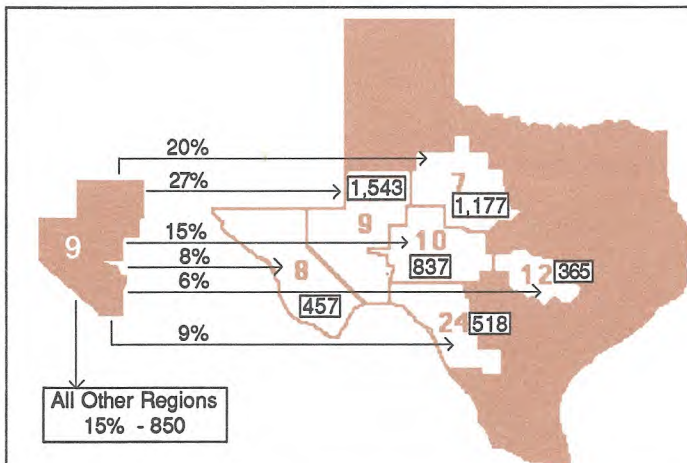


Figure 3
Destinations of Region 9 Residents
for Resource-based Activities

5,747 Annual User Occasions (000's)
 Generated by Region 9 Residents, 1995

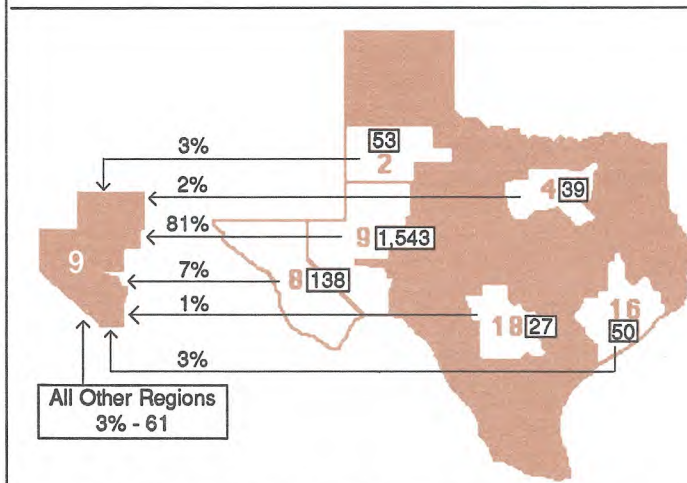


Figure 4
Origins of Participants Who Recreated
in Region 9 for Resource-based Activities

1,911 Annual User Occasions (000's)
 Occurring in Region 9, 1995

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Recreation Travel Patterns

Figure 3 depicts destination regions for participation in resource-based activities by region 9 residents. In 1995, the top destination region is projected to be region 9 with 27 percent of the participation. The next most popular destination regions are expected to be 7, with 20 percent of the total; 10, 15 percent; 24, 9 percent; 8, 8 percent; 12, 6 percent; and all other regions combined, 15 percent. The comparatively low percentage of participation occurring in region 9 and the percentage going to other regions underscore the fact that region 9 residents frequently travel large distances to other regions for recreation.

Resource-based participation projected to occur in region 9 in 1995 from all over the state is shown in figure 4. The greatest amount, 81 percent, will be from region 9 residents, followed by visitors from regions 8, 2, 16, 4, 18, and all other regions combined, respectively. Although the participation from other regions such as 16, 4, and 18, is not substantial, it is noteworthy that people travel lengthy distances to recreate in region 9.

Projected Participation

The top activities in 1995 by region 9 residents reflect a preference for family-oriented activities and those that promote physical fitness. The five activities with the highest total participation in region 9 are walking, bicycling, pool swimming, playground use, and jogging/running (tables 3 and 4).

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Table 5 indicates needs for ten of eighteen facility types in the region by 1995. Highest priority needs include multi-use trails, soccer/football fields, fishing structures, hiking trails, horseback riding trails, and off-road vehicle riding acres (table 6).

Region 9 should exceed the 1995 statewide average needs per thousand population for six facility types: basketball goals, hiking trails, horseback riding trails, off-road vehicle riding acres, soccer/football fields, and multi-use trails (table A4).

Table 4
Projected Outdoor Recreation Participation
in Region 9 by Residents of Region 9, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (In 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 701 | 777 | 853 |
| Basketball | 612 | 677 | 742 |
| Bicycling | 4382 | 4846 | 5311 |
| Bicycling on Trails | 270 | 299 | 327 |
| Football | 349 | 389 | 429 |
| Golf | 609 | 671 | 733 |
| Horseback Riding | 419 | 458 | 497 |
| Horseback Riding on Trails | 107 | 117 | 128 |
| Jogging/Running | 2063 | 2259 | 2456 |
| Jogging/Running on Trails | 635 | 696 | 756 |
| Off-road Vehicle Riding | 668 | 728 | 788 |
| ORV Riding on Trails | 131 | 143 | 154 |
| Open Space Activities | 1200 | 1310 | 1420 |
| Playground Use | 2156 | 2365 | 2575 |
| Soccer | 520 | 571 | 621 |
| Softball | 695 | 758 | 821 |
| Swimming, Pool | 2629 | 2885 | 3142 |
| Tennis | 456 | 500 | 544 |
| Walking (Pleasure/Exercise) | 5738 | 6359 | 6983 |
| Walking on Trails | 1343 | 1489 | 1635 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 9, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 84 | * | * | 8 |
| Basketball Goals | 40 | 34 | 42 | 50 |
| Boat Ramp Lanes, FW | 13 | 6 | 8 | 10 |
| Campsites | 951 | * | * | * |
| Fishing Structures, FW Lin.Yd. | 60 | 325 | 358 | 390 |
| Golf Holes | 239 | * | * | * |
| Hiking Trail Miles | 0 | 13 | 14 | 15 |
| Horseback Riding Trail Miles | 0 | 15 | 17 | 18 |
| Lake Acres (BFS Suitable), FW | 13911 | * | * | * |
| Off-road Vehicle Riding Acres | 0 | 113 | 123 | 133 |
| Picnic Tables | 1174 | * | * | * |
| Playground Areas, Equipped | 142 | 63 | 83 | 103 |
| Soccer/Football Fields | 30 | 25 | 31 | 36 |
| Softball Fields | 64 | * | * | * |
| Swimming, FW Sq.Yd. (000) | 860 | * | * | * |
| Swimming, Pool Sq.Yd. (000) | 30 | * | * | * |
| Tennis Courts | 113 | 6 | 18 | 29 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 7 | 32 | 36 | 40 |
| Developed Land Acres | | 709 | 807 | 892 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Due to inadequate distribution or other reasons, needs for some facilities may not appear on a regional level, but there may well be needs for a given facility within some specific, area, locality, or community.

Providers' Responsibilities

Statewide and regional needs should, in general, be primarily supplied by federal and state agencies. To meet 1995 needs, river authorities and water districts should be the primary suppliers of boat ramp lanes and fishing structures and secondary suppliers of multi-use trail miles along with the Texas Parks and Wildlife Department (table 7).

City and county governments should have the major responsibility for meeting the needs for local facilities, such as basketball goals, boat ramp lanes, hiking trails, playground areas, soccer/football fields, tennis courts, and multi-use trails. Local governments should help supply the needs for fishing

structures, and off-road vehicle riding areas.

The private sector should provide facilities which are potentially profitable or which complement other profit-making

facilities. In region 9, the commercial sector should help meet the needs for fishing structures and be a major supplier of horseback riding trail miles and off-road vehicle riding acres.

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs in Region 9 Through 1995

| Need Rank | Facility/Resource | Need Rank | Facility/Resource |
|-----------|--|-----------|---------------------------|
| 1 | Trail Miles, Multi-Use (Walk, Bike, Jog) | 10 | Tennis Courts |
| 2 | Soccer/Football Fields | 11 | Softball Fields |
| 3 | Fishing Struc., FW Lin.Yd. | 12 | Baseball Fields |
| 4 | Hiking Trail Miles | 13 | Campsites |
| 5 | Horseback Riding Trail Miles | 14 | Swimming, Pool Sq. Yd. |
| 6 | Off-Road Vehicle Riding Acres | 15 | Picnic Tables |
| 7 | Basketball Goals | 16 | Golf Holes |
| 8 | Playground Areas, Equipped | 17 | Swimming, FW Sq.Yd. |
| 9 | Boat Ramp Lanes, FW | 18 | Lake Acres (BFS Suitable) |

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs in Region 9, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|--|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basketball Goals | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 34 | 0 | 0 |
| Boat Ramp Lanes, FW | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fishing Structures, FW Lin.Yd. | 358 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 162 | 0 | 70 | 0 | 126 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 0 | 0 |
| Horseback Riding Trail Miles | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Off-road Vehicle Riding Acres | 123 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 13 | 0 | 90 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 83 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 66 | 0 | 0 |
| Soccer/Football Fields | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 19 | 0 | 0 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tennis Courts | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 36 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 4 | 8 | 17 | 0 | 0 |
| Developed Land Acres | 807 | 0 | 0 | 0 | 0 | 56 | 0 | 0 | 0 | 35 | 192 | 298 | 0 | 226 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.



REGION 10

CONCHO VALLEY



San Angelo parks are a major recreation attraction in region 10.

ISSUES AND RECOMMENDATIONS

Issue: Budget Cuts and Lack of Funds

According to park managers in region 10, the statewide economic recession has reduced local tax revenues because of declining property values and a slowdown in sales tax collections. In turn, local park department budgets have been slashed, staffs reduced, and plans for new development cancelled. Many local governments say they have been hard-pressed to perform upkeep and maintenance on existing parks, but fear that neglected maintenance can be far more expensive over the long run. Even in relatively prosperous times, parks are often a low budget priority. In hard times, the effects of further budget cuts can be drastic. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations".)

Recommendations:

For recreation providers:

Make maximum use of federal, state, local government, and private grants and assistance programs.

Seek alternative funding sources, such as donations, fee systems, and new fund-raising ideas. Examine leases or easements as alternatives to fee simple purchases.

Design facilities to minimize maintenance and upkeep. Contract maintenance work when it is cost beneficial to do so.

Encourage volunteer help and utilize it to the fullest.

For recreation providers, civic organizations, activity groups, institutions, and the private sector:

Share ideas, solutions, facilities, and funds as much as possible to maximize recreation opportunities at the least cost.

For the Texas Parks and Wildlife Department:

Continue to serve as a clearinghouse for information on federal, state, and private grants and assistance programs.

Issue: Water Pollution

The water quality of some of the upper Colorado River lakes is affected by chloride pollution. Region 10 residents report that other regional rivers, especially the Pecos, have been polluted by brine, oil, chemicals, and pesticides, including DDT. Illegal dumping of chemicals and toxic substances in rivers

has also been reported. This pollution could be hazardous to humans, wildlife, and livestock, and renders the rivers unusable for recreation. The Pecos has also suffered from large fish kills in recent years, possibly due to outbreaks of toxic algae. This has resulted in lost recreation opportunities and economic benefits for landowners. (Also, see State Summary, "Conserving Natural Resources for Recreational Use" and "Rivers and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For federal, state, and local water agencies directly or indirectly responsible for water quality:

Encourage and establish "river watch" programs to monitor, detect, and react to pollution and fish kills promptly.

For federal, state, and local governments:

Increase emphasis on water quality research, monitoring, and enforcement. Address non-point source pollution.



Provide funds for research on fish kills. Continually review the adequacy of water quality standards and adopt additional or more stringent standards where appropriate.

Take quick, forceful action against polluters to clean up affected streams and lakes. Broadly publicize actions to discourage further pollution.

For the Texas Legislature:

Fund additional studies and encourage agencies and universities to conduct research on water quality problems.

Issue: Vandalism, Litter, and Trespass

Vandalism and litter are widespread, persistent problems plaguing owners of both public and private property. Vandalism and litter are not only costly for the taxpayer, but damaged, littered facilities and parks are unusable and unattractive. Programs such as the "Don't Mess With Texas" anti-litter campaign are helpful in raising public awareness, but other measures are needed.

Landowners find that litter, vandalism, poaching, and livestock harassment frequently accompany trespassing on private property, and the recreation-seeking public is too often the culprit. Careless actions result in damage to private property, and create a bad image for all recreationists, including those who respect private property and the environment. This leads to ill will between landowners and recreationists, and establishes barriers to resolving the problems. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Issues and Recommendations.")

Recommendations:

For conservation, environmental, sportsmen, recreational, landowner groups, and government:

Stress education as a means of deterring vandalism. Teach, as part of the curriculum in educational institutions, behavior that fosters respect for public and private property and natural resources. Initiate educational programs specifically targeted



The Concho Valley region's lakes are significant recreation resources for all of West Texas.

at the problems of vandalism, litter, and trespass.

Cooperate and work together to resolve the conflicts and problems resulting from the increasing recreational use of public waterways.

For recreation providers:

Try various approaches or combinations of approaches to the problems of vandalism and litter, including fee systems, increased surveillance, facility design, and immediate repair of damaged facilities.

Educate river users on the rights and responsibilities of both landowners and recreationists.

For local, state, and federal governments:

Encourage the establishment of "park watch" programs for neighborhood parks.

Increase emphasis on enforcement of existing laws against vandalism, litter, and trespass.

Describe and clearly mark public parks and river access points to navigable streams to define the limits of public ownership.

Provide public access points or parks on navigable recreational rivers where access is now limited to discourage trespass.

For the Texas Legislature:

Clarify and strengthen or revise as necessary, laws relating to riparian private property rights, and laws

regarding public use of state waterways (rivers, lakes, wetlands, bays, and beaches).

Issue: Water Safety

Accidents and fatalities occur on lakes and streams due to congestion, carelessness, alcohol abuse, weather, and other factors. Because region 10 lakes are popular, they are heavily used, but activities like skiing and swimming are not always compatible. Poor judgement by recreationists, failure to recognize hazardous conditions, and failure to use personal flotation devices are common causes of deaths and accidents.

Recommendations:

For recreation providers and law enforcement agencies:

Continue, and strengthen if necessary, enforcement of Texas water safety laws, local ordinances, and other regulations governing water safety and safe boating. Encourage public cooperation in reporting violations and unsafe practices. Strictly enforce laws prohibiting operation of a motorized watercraft while intoxicated.

Promote awareness and public education in water safety and boating laws.

Issue: Low Lake Levels

Low lake levels in dry years result in fewer surface acres available for recreation and increased crowding for visitors. Water quality may decline as dissolved material becomes more concentrated, which might pose health hazards. Facilities like fishing piers and boat ramps become unusable, and fish and fish habitats could be adversely affected.

Recommendations:

For reservoir managers:

Emphasize safety on low lakes because of possible public health hazards and increased recreation congestion.

For recreation providers:

When possible, build facilities so they can be used during periods of low water.

RESOURCES

Population Trends

The region 10 population is expected to increase 17 percent over the estimated 1986 population of 143 thousand to nearly 168 thousand by 1995, and is projected to have the lowest population density of all the West Texas regions at 10.2 people per square mile (figure 1 and table A1). Currently, San Angelo makes up about 60 percent of the regional population (table A2), and its growth will continue to impact parks and lakes near San Angelo and in adjacent regions.

The cities of Brady, Sonora, Big Lake, Ozona, and Junction account for about 14 percent of the regional population, while the remaining 26 percent lives in the smaller communities and rural areas of region 10. Growth of these areas will also impact regional recreation

facilities, but not nearly so much as San Angelo.

Resource Attractions

Region 10's lakes and rivers (figure 1) attract recreationists from all over West Texas. San Angelo's three major lakes, Nasworthy, O. C. Fisher, and Twin Buttes afford convenient recreation for city residents and draw people from the Midland-Odessa area. The U.S. Army Corps of Engineers facilities at O. C. Fisher are especially popular.

Other popular lakes for recreationists from region 10 and nearby urban areas are Brady Creek Reservoir, Lake Junction, Oak Creek Reservoir, and E. V. Spence Reservoir.

The two state parks in the region, Fort Lancaster and Fort McKavett state historical parks, are major attractions.

When open in the future, the South Llano River State Park will be an outstanding recreational resource.

The Concho River greenbelt development in San Angelo is a first-rate recreation and tourist attraction. Other significant waterways in region 10 are segments of the Colorado, Concho, Devils, Llano, Pecos, and San Saba rivers.

Recreation Supply

Region 10 has nearly twenty-one thousand acres of recreation land (table 1). At 133 acres of recreation land per thousand population, region 10 ranks below the statewide average of 209 acres per thousand (table A3). Federal and state agencies supply about 50 percent of the land with the Corps of Engineers supplying the most acres of any agency. River authorities furnish 6 percent of the

Figure 1
Region 10 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|---------------------|
| Counties | = | 13 |
| Land area | = | 16,290 square miles |
| Elevation | = | 1,258' - 3,058' |
| Annual rainfall | = | 14.7 - 24.7 inches |
| January minimum temperature | = | 29 - 38°F |
| July maximum temperature | = | 94 - 98°F |
| Growing season | = | 213 - 235 days |

POPULATION 1986

| | | | |
|--------------|----------------|------------|-------|
| Total | 142,854 | | |
| Counties | | | |
| Tom Green | 97,934 | Mason | 3,442 |
| McCulloch | 8,690 | Schleicher | 2,961 |
| Sutton | 4,889 | Concho | 2,611 |
| Reagan | 4,409 | Menard | 2,291 |
| Crockett | 4,342 | Irion | 1,928 |
| Kimble | 4,295 | Sterling | 1,575 |
| Coke | 3,487 | | |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 167,615 |
| People per square mile | 10.3 |
| Ethnic composition | |
| White | 71% |
| Black | 3% |
| Hispanic | 26% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 20,878 acres |
| Developed recreation land | = | 3,832 acres |

Fort Lancaster State Historical Park
Fort McKavett State Historical Park
O. C. Fisher Lake Corps Parks
South Llano River State Park
Walter Buck Wildlife Management Area

Lakes

| | |
|---------------|--------|
| Surface acres | 35,997 |
|---------------|--------|

Surface Acres

| | |
|------------------------|--------|
| Brady Creek Reservoir | 2,020 |
| Lake Junction | 200 |
| Lake Nasworthy | 1,598 |
| O. C. Fisher Lake | 5,440 |
| Oak Creek Reservoir | 2,375 |
| E. V. Spence Reservoir | 14,950 |
| Twin Buttes Reservoir | 9,080 |

Streams

| | |
|---------------------|--------------------|
| Colorado River | North Llano River |
| Concho River | Pecos River |
| Devils River | San Saba River |
| Llano River | South Concho River |
| Middle Concho River | South Llano River |
| North Concho River | Spring Creek |

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

recreation land; local governments, 36 percent; and the commercial sector, 9 percent. Counties, cities, and other local governments account for the greatest number of parks in the region, ninety-six, and supply most of the facilities.

Potential and Proposed Resources

Brady has proposed a greenbelt park along Brady Creek from downtown to Richards Park. This would be an excellent resource for the community.

An important future resource for region 10 is Stacy Reservoir, now under construction and slated for completion in 1990. The Colorado River Municipal

Water District plans to develop several public recreation areas at Stacy, which should make the lake a major regional and state attraction.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.



Low lake levels reduce opportunities for water-based recreation and render facilities unusable.

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 10, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|-------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | COMMERCIAL |
| Number of Parks/Rec. Areas | 0 | 0 | 0 | 5 | 3 | 1 | 0 | 1 | 4 | 32 | 62 | 2 | 28 | 138 |
| Total Parkland Acres | 0 | 0 | 0 | 7094 | 682 | 2123 | 0 | 500 | 1173 | 1441 | 5902 | 83 | 1880 | 20878 |
| Developed Land Acres | 0 | 0 | 0 | 670 | 24 | 0 | 0 | 0 | 70 | 401 | 1591 | 83 | 994 | 3832 |
| Developable Land Acres | 0 | 0 | 0 | 3785 | 491 | 1 | 0 | 0 | 1103 | 1040 | 4281 | 0 | 606 | 11307 |
| Preserved or Unsuitable for Development (Acres) | 0 | 0 | 0 | 2639 | 168 | 2122 | 0 | 500 | 0 | 0 | 31 | 0 | 280 | 5739 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 18 | 2 | 0 | 38 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 3 | 0 | 2 | 19 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 43 | 0 | 0 | 0 | 0 | 9 | 0 | 23 | 0 | 8 | 83 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 148 | 0 | 0 | 0 | 0 | 28 | 70 | 236 | 0 | 536 | 1018 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 2640 | 0 | 0 | 0 | 0 | 3800 | 0 | 13450 | 0 | 0 | 19890 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 265 | 0 | 200 | 465 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 36 | 9 | 54 | 135 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31010 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 |
| Picnic Tables | 0 | 0 | 0 | 180 | 7 | 0 | 0 | 0 | 34 | 321 | 332 | 6 | 15 | 893 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 37 | 1 | 9 | 56 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 12 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 10 | 1 | 0 | 18 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 19760 | 0 | 32200 | 53960 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4084 | 3265 | 0 | 3149 | 10498 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 7 | 2 | 0 | 17 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 9 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

OUTDOOR RECREATION PARTICIPATION

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 10 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 10 Occurring In | | |
| | Region 10 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 1.5 | 1.8 | 1.3 |
| Boat Ramp Lanes, SW | * | * | 0.3 |
| Boating (Pleasure), FW | 0.6 | 0.8 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 1.2 | 2.5 | 1.7 |
| Fishing, FW | 3.0 | 3.6 | 2.4 |
| Fishing from Banks | 1.0 | 1.2 | 0.8 |
| Fishing from Boats | 1.3 | 1.6 | 1.1 |
| Fishing from Structures | 0.7 | 0.8 | 0.5 |
| Fishing, SW | * | 0.2 | 0.7 |
| Fishing from Boats | * | * | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | * | 0.3 |
| Hiking | 0.3 | 0.3 | 0.4 |
| Hunting | 2.0 | 2.3 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.7 | 2.1 | 1.5 |
| Nature Study | 0.5 | 0.6 | 0.9 |
| Picnicking | 1.5 | 1.7 | 1.9 |
| Swimming, FW | 2.0 | 2.6 | 2.1 |
| Swimming, SW | * | 0.3 | 1.2 |
| Baseball | 1.5 | | 1.5 |
| Basketball | 1.8 | | 1.6 |
| Bicycling | 9.3 | | 10.7 |
| Bicycling on Trails | 0.6 | | 0.7 |
| Football | 0.9 | | 0.8 |
| Golf | 1.6 | | 1.3 |
| Horseback Riding | 0.9 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 4.2 | | 5.4 |
| Jogging/Running on Trails | 1.3 | | 1.7 |
| Off-road Vehicle Riding | 1.6 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.3 | | 0.3 |
| Open Space Activities | 2.9 | | 3.2 |
| Playground Use | 4.1 | | 4.8 |
| Soccer | 0.6 | | 1.2 |
| Softball | 1.7 | | 1.8 |
| Swimming, Pool | 5.8 | | 6.4 |
| Tennis | 1.5 | | 1.3 |
| Walking (Pleasure/Exercise) | 14.1 | | 14.8 |
| Walking on Trails | 3.3 | | 3.5 |

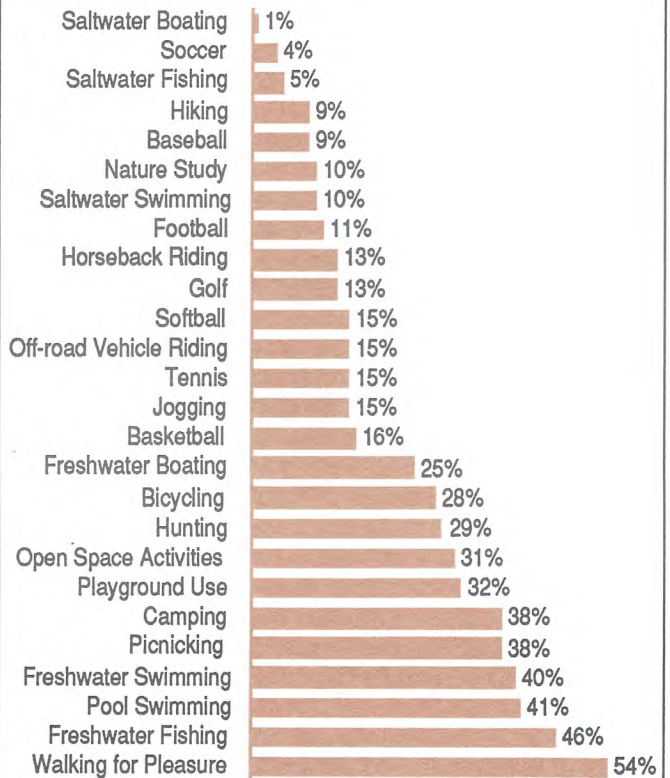
Notes: Asterisks indicate value is less than .1 occasion per capita.

Popular Activities

The top six activities in 1995 in terms of percentage of the population participating will be walking for pleasure, freshwater fishing, pool swimming, freshwater swimming, picnicking, and camping (figure 2). This compares to the top projected activities statewide of walking for pleasure, pool swimming, picnicking, playground use, open space activities, and bicycling (figure 4.1).

Region 10 residents are outdoor enthusiasts and enjoy a variety of recreational pursuits. Among the more popular activities, those which are expected to exceed the statewide participation rate in user-occasions per capita in 1995, are all types of freshwater boating, camping, all types of freshwater fishing, hunting, lake use, freshwater swimming, horseback riding, off-road vehicle riding, and games and sports, including basketball, football, golf, and tennis (table 2).

Figure 2
Region 10 Projected 1995 Percentage
of Population Participating



Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and figure and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 10 by Region 10 Residents,
Texans from Outside Region 10, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 10 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|------|-------------------------------|------|------|-----------------|------|------|
| | Residents of Region 10 | | | Texans from Outside Region 10 | | | Regional Totals | | |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 235 | 250 | 265 | 355 | 382 | 409 | 590 | 632 | 674 |
| Boating (Pleasure), FW | 95 | 101 | 107 | 106 | 114 | 122 | 200 | 215 | 229 |
| Camping | 185 | 198 | 211 | 389 | 418 | 447 | 573 | 615 | 658 |
| Fishing, FW | 469 | 501 | 533 | 797 | 856 | 915 | 1266 | 1357 | 1448 |
| Fishing from Banks | 153 | 163 | 174 | 260 | 279 | 299 | 413 | 443 | 472 |
| Fishing from Boats | 210 | 224 | 239 | 357 | 383 | 410 | 567 | 608 | 648 |
| Fishing from Structures | 106 | 113 | 120 | 180 | 193 | 207 | 286 | 307 | 327 |
| Hiking | 40 | 42 | 45 | 3 | 3 | 4 | 43 | 46 | 48 |
| Hunting | 315 | 335 | 355 | 995 | 1066 | 1138 | 1310 | 1401 | 1493 |
| Lake Use (BFS Suitable), FW | 268 | 285 | 303 | 405 | 436 | 466 | 673 | 721 | 769 |
| Nature Study | 76 | 81 | 87 | 21 | 23 | 24 | 96 | 104 | 112 |
| Picnicking | 229 | 244 | 258 | 70 | 75 | 80 | 300 | 319 | 337 |
| Swimming, FW | 323 | 342 | 361 | 360 | 384 | 408 | 683 | 726 | 769 |

Figure 3
Destinations of Region 10 Residents
for Resource-based Activities

2,483 Annual User Occasions (000's)
 Generated by Region 10 Residents, 1995

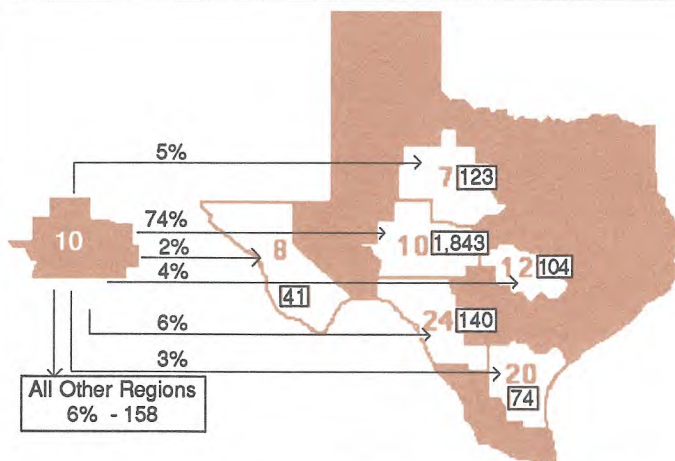
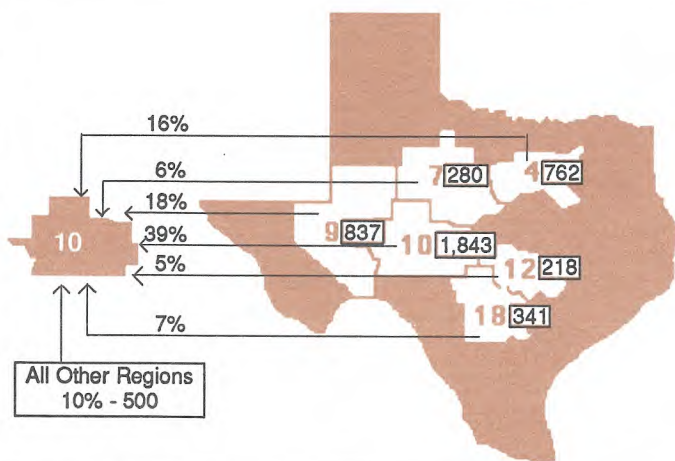


Figure 4
Origins of Participants Who Recreated
in Region 10 for Resource-based Activities

4,782 Annual User Occasions (000's)
 Occurring in Region 10, 1995



Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Recreation Travel Patterns

Region 10 is projected to be the top destination region in participation by residents in resource-based activities (figure 3). Seventy-four percent of the participation by region 10 residents in 1995 will take place in their home region. The next most popular destination region will be 24 with 6 percent of the participation, followed by regions 7, 12, 20, 8, and all other regions combined.

Of the total resource-based participation projected to occur in region 10 in 1995, 39 percent will be by region 10 residents (figure 4). Eighteen percent will come from region 9, and 16 percent will originate in region 4, followed by regions 18, 7 percent; 7, 6 percent; 12, 5 percent, and all other regions combined, 10 percent.

Projected Participation

Activities projected to have the highest total participation in region 10 in 1995 include walking for pleasure, bicycling, hunting, freshwater fishing, pool swimming, and freshwater swimming, respectively (tables 3 and 4). These

rankings reflect the popularity of water-related activities and hunting as well as the region's excellent resources. As might be expected, most of the top six activities in participation also rank high in days per thousand population and/or percentage of the population participating.

The heavy projected visitation from outside region 10 is also noteworthy (table 3). Participation in region 10 by visitors is expected to exceed resident participation for every activity except hiking, nature study, and picnicking.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

The most critical needs for region 10 for 1995 include fishing structures, freshwater swimming, soccer/football fields, tennis courts, multi-use trail

miles, and basketball goals (tables 5 and 6). Other needs include boat ramp lanes, campsites, hiking trails, horseback riding trails, playground areas, and softball fields.

Table A4 shows that region 10 is projected to exceed the 1995 statewide average needs per thousand population for eight facility/resource types: basketball goals, campsites, freshwater fishing structures, hiking trails, horseback riding trails, soccer/football fields, freshwater swimming square yards, and tennis courts.

Providers' Responsibilities

Federal and state agencies should be the primary suppliers of facilities that serve statewide and regional markets, and secondary suppliers of facilities that serve local areas. In region 10, the Corps of Engineers, Texas Parks and Wildlife Department, and river authorities should be major suppliers of boat lanes, campsites, fishing structures and hiking trails by 1995 (table 7). They should provide a portion of the needs for playgrounds and freshwater swimming.

Table 4
Projected Outdoor Recreation Participation
in Region 10 by Residents of Region 10, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (in 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 243 | 259 | 275 |
| Basketball | 285 | 303 | 321 |
| Bicycling | 1463 | 1557 | 1652 |
| Bicycling on Trails | 90 | 96 | 102 |
| Football | 136 | 144 | 152 |
| Golf | 246 | 263 | 281 |
| Horseback Riding | 144 | 154 | 164 |
| Horseback Riding on Trails | 37 | 39 | 42 |
| Jogging/Running | 660 | 698 | 736 |
| Jogging/Running on Trails | 203 | 215 | 227 |
| Off-road Vehicle Riding | 253 | 268 | 284 |
| ORV Riding on Trails | 49 | 53 | 56 |
| Open Space Activities | 460 | 484 | 509 |
| Playground Use | 644 | 683 | 722 |
| Soccer | 101 | 108 | 114 |
| Softball | 265 | 279 | 293 |
| Swimming, Pool | 921 | 980 | 1040 |
| Tennis | 232 | 247 | 261 |
| Walking (Pleasure/Exercise) | 2203 | 2368 | 2534 |
| Walking on Trails | 516 | 554 | 593 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 10, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 38 | * | * | * |
| Basketball Goals | 19 | 16 | 18 | 20 |
| Boat Ramp Lanes, FW | 83 | * | 2 | 8 |
| Campsites | 1018 | 50 | 128 | 207 |
| Fishing Structures, FW Lin.Yd. | 465 | 1509 | 1650 | 1792 |
| Golf Holes | 135 | * | * | * |
| Hiking Trail Miles | 0 | 6 | 6 | 7 |
| Horseback Riding Trail Miles | 0 | 5 | 6 | 6 |
| Lake Acres (BFS Suitable), FW | 31010 | * | * | * |
| Off-road Vehicle Riding Acres | 500 | * | * | * |
| Picnic Tables | 893 | * | * | * |
| Playground Areas, Equipped | 56 | 5 | 9 | 13 |
| Soccer/Football Fields | 12 | 11 | 11 | 12 |
| Softball Fields | 18 | 1 | 2 | 3 |
| Swimming, FW Sq.Yd. (000) | 54 | 127 | 138 | 149 |
| Swimming, Pool Sq.Yd. (000) | 10 | * | * | * |
| Tennis Courts | 17 | 44 | 48 | 52 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 9 | 5 | 6 | 7 |
| Developed Land Acres | | 253 | 299 | 353 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

City and county governments should provide facilities of a local nature, such as basketball goals, playground areas, soccer/football fields, softball fields, freshwater swimming, tennis courts, and multi-use trails. In addition, local governments should help furnish campsites, fishing structures, and hiking trails.

The commercial sector should offer facilities which it can operate profitably, such as campsites, fishing structures, and horseback riding trails.

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs in Region 10 Through 1995

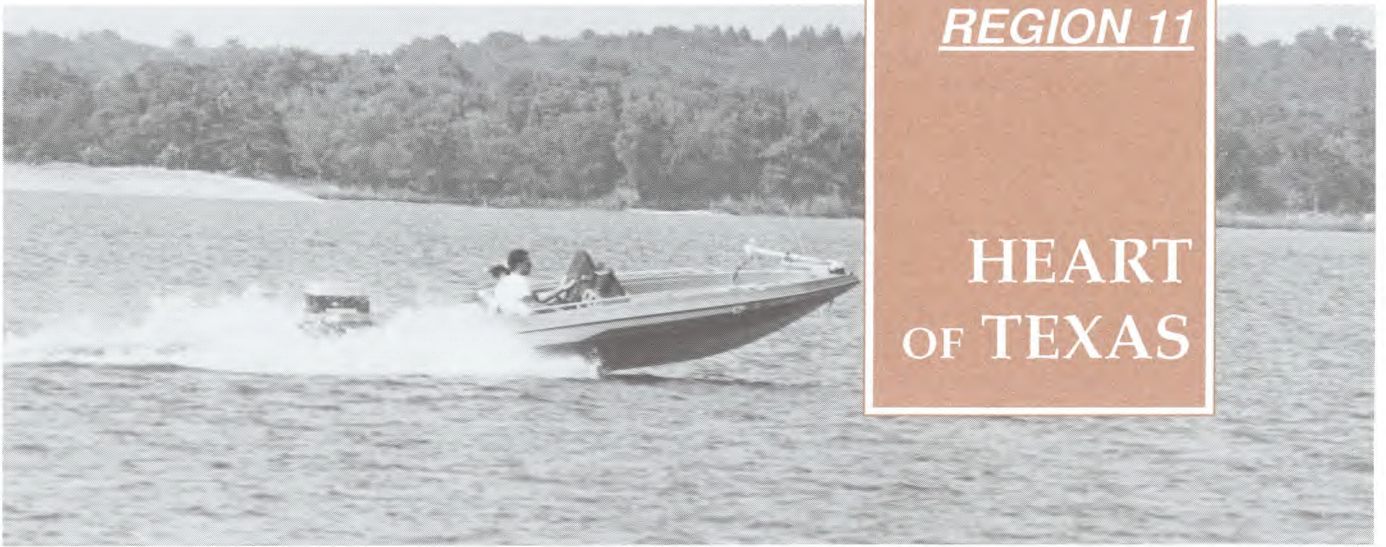
| <u>Need Rank</u> | <u>Facility/Resource</u> | <u>Need Rank</u> | <u>Facility/Resource</u> |
|------------------|---|------------------|-------------------------------|
| 1 | Fishing Struct., FW Lin.Yd. | 10 | Campsites |
| 2 | Swimming, FW Sq.Yd. | 11 | Softball Fields |
| 3 | Soccer/Football Fields | 12 | Boat Ramp Lanes, FW |
| 4 | Tennis Courts | 13 | Baseball Fields |
| 5 | Trail Miles, Multi-Use (Walk, Bike, Jog) | 14 | Swimming, Pool Sq. Yd. |
| 6 | Basketball Goals | 15 | Off-Road Vehicle Riding Acres |
| 7 | Hiking Trail Miles | 16 | Picnic Tables |
| 8 | Horseback Riding Trail Miles | 17 | Golf Holes |
| 9 | Playground Areas, Equipped | 18 | Lake Acres (BFS Suitable) |

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs in Region 10, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | | STATE | | | | | REG. | LOCAL | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|-----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Countries | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basketball Goals | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 |
| Boat Ramp Lanes, FW | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Campsites | 128 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 28 | 20 | 0 | 0 | 30 |
| Fishing Structures, FW Lin.Yd. | 1650 | 0 | 0 | 0 | 450 | 0 | 0 | 0 | 0 | 370 | 171 | 0 | 0 | 659 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 6 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 9 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 |
| Soccer/Football Fields | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 |
| Softball Fields | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 138 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 16 | 100 | 0 |
| Swimming, Pool Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tennis Courts | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 40 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 0 |
| Developed Land Acres | 299 | 0 | 0 | 0 | 10 | 37 | 8 | 0 | 0 | 18 | 31 | 97 | 42 | 57 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.



REGION 11

**HEART
OF TEXAS**

Lakeshore parks and greater recreational access are needed for some reservoirs in the region.

ISSUES AND RECOMMENDATIONS

Issue: Lack of Park Support

The budgets of cities and counties indicate a lack of support for parks and recreation services. Both citizens and budget decision-makers seem to view parks as a lower priority than such government services as police, water and wastewater. People do not appreciate the role of parks and recreation programs in attracting industries and tourists, preventing crime, and socializing children.

Recreation providers experience funding problems in many areas. The lack of sufficient maintenance funds allows facilities to fall into disrepair and creates greater needs for total rehabilitation. Citizens of small cities and towns especially find a lack of park facilities. Newly developing areas in cities go unserved if the city administrations cease to fund new acquisitions. Some public entities report they are unable to take advantage of grant funds for acquisition and development because they cannot provide the local match. Small cities and towns rarely fund a parks and recreation director. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Educate budget decision-makers and the public about the values of parks and recreation opportunities.

Manage existing budgets more efficiently, seek alternative funding sources, and increase or institute user fees where feasible.

Explore cooperative agreements among different taxing jurisdictions to maximize public resources for recreation.

For citizens:

Communicate their support for parks to city councils and county commissioners.

Form Adopt-a-Park groups to assist with park maintenance.

Issue: Crime and Law Enforcement

Parks in the region continue to suffer from vandalism and illegal activities. While area park managers work hard on prevention, the problem per-

sists. Regardless of whether the acts are kids' pranks, malicious crimes, illegal trash dumping, or inappropriate vehicle use, repairs and clean-up are costly. Vandalism reduces recreation opportunities and affects the attractiveness of parks. Vandalized facilities can be unsafe and thus place the provider in a liability situation.

Visitor security in parks becomes more important as crime increases. In region 11, respondents to the 1986 Origin-Destination Participation Survey felt that unsafe recreation areas kept them from recreating more often. This percentage is higher in region 11 than for any other region in the state. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Explore design and management options which can minimize damage to park facilities. Consider increasing park visitation, adding lights,



controlling access, locating facilities in visible parts of parks, and using park rangers and "park watch" programs.

Immediately repair damaged facilities.

Enlist school children as volunteers in park projects to give them a feeling of ownership.

Use the media and schools to inform the public of the problem.

For municipal and county judicial systems:

Implement restitution programs for convicted offenders.

Issue: Access to Recreation Waters

Public access in the region is a concern for both river recreationists and riparian landowners. While the city of Waco offers five parks with river frontage, public access in the rural areas is limited. Fishermen and floaters do not always know the locations of legal access sites. Some recreationists violate landowner rights by trespassing on private land trying to reach the public waters. The fear of liability keeps many private property owners from allowing the public on their land either free or for a fee.

In McLennan County, landowners requested the closing of a county road because of litter, trespass, noise, and other inappropriate behavior of river users. Local opposition kept the road open. For many rivers and streams, public roads provide the only access, but the sites are not ideal. Intense use below bridges can cause erosion when the right-of-way was not designed for public access. Illegal dumping and sanitation problems occur. Public riverside parks would offer preferable opportunities, but riparian land usually sells for top dollar and owners are reluctant to sell.

Lake access is also a problem at some lakes in the region. Several entities in the region have constructed lakes without considering recreation to be one of the reservoir purposes. The utility company that owns Lake Creek Lake has fenced the perimeter, allowing only walk-in bank fishing. Aquilla Lake came on line about 1985 with no devel-



Pool managers are especially fearful of being sued over accidents.

oped park facilities except two boat ramps. Recreationists may face a similar situation at the newly proposed Bosque Reservoir in Bosque County if the Brazos River Authority does not provide developed parkland. (Also, see State Summary, "Rivers and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For governments and private landowners:

Cooperate to accommodate the public's need to legally access public water and to protect the rights of private landowners.

For appropriate state and local agencies, commercial interests, and private landowners:

Cooperate on a rivers assessment to identify the full range of values for each river; include in the assessment a clear determination of public and private land along rivers, legal rights to float, and public access.

For recreation providers:

Educate river users on the rights and responsibilities of both landowners and recreationists.

Insure adequate public access to existing and newly developed recreation waters. Consider recreational easements to provide access points when acquisition is not necessary or desirable.

Provide river users with information on public access points, locations, and river mileages between access sites to clearly indicate private lands off limits to recreationists.

For federal, state, and local governments:

When constructing bridges or river crossings, consider providing stream access areas with parking and sanitation facilities.

For lake managers:

Re-evaluate the designated uses of existing reservoirs to include recreation.

For impounders of state waters:

Provide functional access points and lakeside facilities at any reservoir project suitable for outdoor recreation.

For law enforcement agencies:

Increase efforts to enforce trespass laws.

Issue: Liability

Park providers and landowners fear that recreationists may sue them for injuries incurred on their land. Providers feel that people are less willing to assume responsibility for their own actions. Agencies stand to lose money in costly settlements. Remedies can also be

expensive, and taxpayers must foot the bill. Insurance companies often raise rates even to those cities who have not lost lawsuits. Landowners fear they could lose their property and their livelihood, even to uninvited users. Some individuals in the region think landowners would be more likely to allow public recreation use of their land if governments would consider indemnifying private landowners from liability.

Recreationists face the loss of existing and future opportunities. Providers are sometimes reluctant to add certain facilities, like swimming pools. Some remove facilities that could cause accidents if misused. The threat of liability has become such a barrier to providing recreation that many feel the laws must be changed. (Also, see State Summary, "Liability and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For the Texas Legislature:

Enact further insurance and tort law reforms to limit liability of public and private recreation providers and volunteers.

For recreation providers:

Institute comprehensive risk management plans and place one person in charge of safety programs with authority to correct problems.

Train staff to identify and remedy negligent hazards.

Require user groups such as leagues and teams to carry their own accident insurance or to participate in self-insurance pools.

RESOURCES

Population Trends

The growth rate for region 11 is slowing down. The region grew 10 percent from 1980 to 1986 but is projected to grow only 6 percent from 1986 to 1995 (figure 1). Both these growth rates fall below the state averages. If the 1980-1986 patterns continue, Freestone and Limestone counties will increase faster than other counties in the region.

Population growth is not expected to have a significant impact on recreation. The region's above average proportion of senior citizens, however, is likely to play a role. While the state in 1995 is projected to have 10 percent of the population over sixty-five years of age, region

Figure 1
Region 11 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|--------------------|
| Counties | = | 6 |
| Land area | = | 5,577 square miles |
| Elevation | = | 209' - 1,221' |
| Annual rainfall | = | 31.3 - 38.5 inches |
| January minimum temperature | = | 36 - 38°F |
| July maximum temperature | = | 94 - 96°F |
| Growing season | = | 243 - 263 days |

POPULATION 1986

Total 288,884

| | |
|-----------|---------|
| Counties | |
| McLennan | 189,267 |
| Hill | 27,389 |
| Limestone | 24,277 |
| Freestone | 17,119 |
| Falls | 17,035 |
| Bosque | 13,797 |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 306,359 |
| People per square mile | 54.9 |
| Ethnic composition: | |
| White | 76% |
| Black | 15% |
| Hispanic | 9% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 47,663 acres |
| Developed recreation land | = | 7,055 acres |

Cameron Park (Waco)
Confederate Reunion Grounds State Historical Park
Fairfield Lake State Park
Falls on the Brazos (Falls County)
Fort Parker State Park
Lake Waco Corps Parks
Lake Whitney Corps Parks
Lake Whitney State Park
Meridian State Park
Old Fort Parker State Historical Park

Lakes

| | |
|---------------|--------|
| Surface acres | 53,885 |
|---------------|--------|

Surface Acres

| | |
|------------------------------|---------------|
| Aquilla Lake | 3,280 |
| Fairfield Lake | 2,353 |
| Fort Parker Lake | 700 |
| Lake Limestone | 10,944 (Part) |
| Lake Mexia | 1,400 |
| Navarro Mills Lake | 570 (Part) |
| Tradinghouse Creek Reservoir | 2,012 |
| Waco Lake | 7,270 |
| Whitney Lake | 23,560 |

Streams

Bosque River
Bosque River, Middle Fork
Bosque River, North and South Forks
Brazos River
Hog Creek
Navasota River
Nolan River
Richland Creek
Trinity River

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

11 will have 16 percent. Recreation providers should consider the different recreation needs of these citizens.

Resource Attractions

Region 11 boasts an abundance of resource attractions (figure 1). The Texas Parks and Wildlife Department manages six sites in the region: two historical parks and four water-based state parks. The Corps of Engineers provides recreation opportunities at twenty-three different parks on Lake Whitney and Waco Lake. Because of Waco Lake's location inside the city limits of Waco and

Woodway, it is the third most visited Corps lake in Texas.

Lake Whitney, the largest lake in the region, contains almost half of the 53,885 surface acres in the region. Nine other major reservoirs and seventeen small reservoirs provide water-based recreation opportunities. Numerous rivers and streams flow through the region. River users go most often to the Brazos and Bosque rivers.

Recreation Supply

Table 1 shows the supply of parkland

acres and facilities by administration. The Corps of Engineers manages the largest share of the total parkland acres, 51 percent, followed by the Texas Parks and Wildlife Department with 27 percent. Developed recreation land acres are distributed differently. The Corps still has the largest supply, 36 percent, but shares of developed land managed by cities and the commercial sector, 28 and 22 percent respectively, each surpass that of the Texas Parks and Wildlife Department, the second highest supplier of total land acres.

When compared to state averages

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 11, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | COMMERCIAL | TOTAL |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|--------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | |
| Number of Parks/Rec. Areas | 0 | 0 | 0 | 23 | 6 | 1 | 0 | 2 | 2 | 6 | 92 | 3 | 47 | 182 |
| Total Parkland Acres | 0 | 0 | 0 | 24474 | 3692 | 8993 | 0 | 303 | 62 | 1174 | 2949 | 48 | 5968 | 47663 |
| Developed Land Acres | 0 | 0 | 0 | 2556 | 625 | 0 | 0 | 10 | 62 | 313 | 1950 | 18 | 1522 | 7055 |
| Developable Land Acres | 0 | 0 | 0 | 3157 | 2367 | 0 | 0 | 273 | 0 | 574 | 756 | 30 | 2933 | 10090 |
| Preserved or Unsuitable for Development (Acres) | 0 | 0 | 0 | 18761 | 700 | 8993 | 0 | 20 | 0 | 287 | 243 | 0 | 1513 | 30517 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 26 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 35 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 43 | 9 | 0 | 0 | 0 | 2 | 9 | 5 | 3 | 30 | 101 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 611 | 400 | 0 | 0 | 0 | 0 | 61 | 158 | 58 | 681 | 1969 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 15520 | 4639 | 0 | 0 | 0 | 0 | 3200 | 250 | 0 | 3606 | 27215 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 200 | 126 | 0 | 0 | 0 | 0 | 40 | 580 | 42 | 1320 | 2308 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 81 | 117 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40849 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 15 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| Picnic Tables | 0 | 0 | 0 | 39 | 254 | 0 | 0 | 2 | 0 | 35 | 464 | 19 | 119 | 931 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 1 | 60 | 1 | 11 | 88 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 1 | 0 | 26 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 58300 | 114000 | 0 | 0 | 3 | 0 | 0 | 34500 | 4000 | 80555 | 291358 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 278 | 0 | 0 | 4415 | 0 | 11474 | 16167 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 0 | 1 | 71 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 9 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

in facilities per thousand population, region 11 offers an above average amount for thirteen out of nineteen facilities or designated resources (table A3). Those facilities whose supply falls below the statewide average in supply per thousand include baseball and softball fields, basketball goals, and three kinds of trail opportunities (hiking and multi-use trails and off-road vehicle riding acres).

Potential and Proposed Resources

The Brazos River corridor offers great recreation potential within the Waco city limits. The city created a spe-

cial taxing district which is currently constructing a one-mile segment in the downtown area. Planners hope the riverwalk brings both recreation and economic benefits to the city. Because the city owns parkland along both shores, the potential exists for many more trail miles.

Aquilla Lake has the potential to provide low impact recreation opportunities. The shoreline is all publicly owned by the U.S. Army Corps of Engineers. Recreationists desiring a primitive experience may find Aquilla Lake ideal. The potential for developed recreation

facilities in the future depends on there being a sponsor who is able to lease and cost-share with the Corps of Engineers.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

OUTDOOR RECREATION PARTICIPATION

Popular Activities

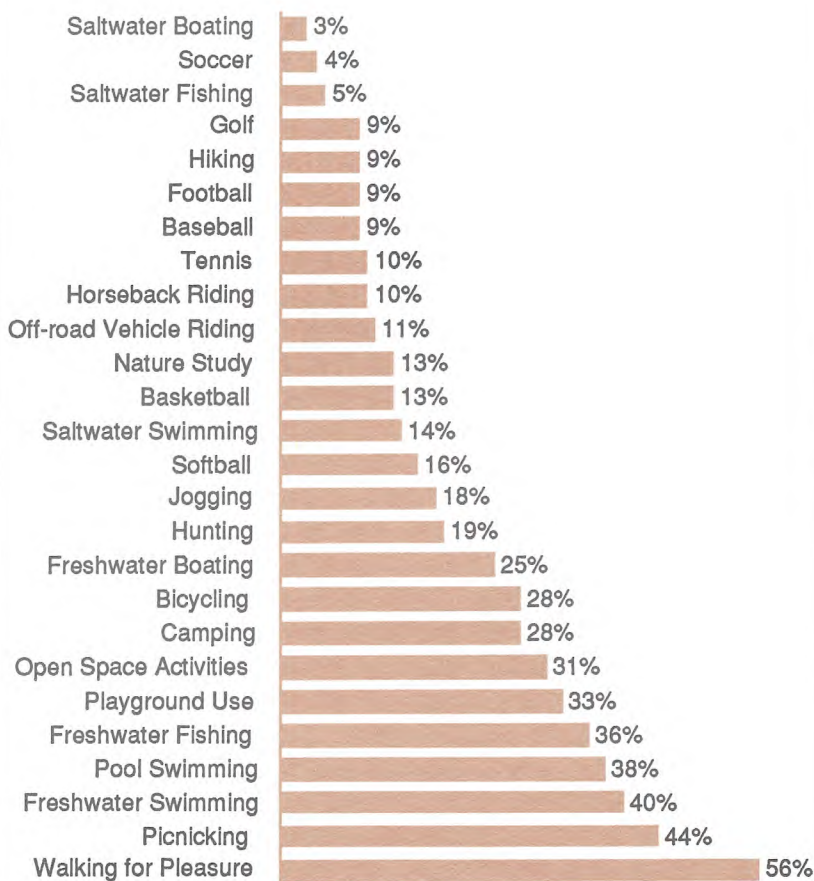
Region 11 residents are generally less likely to participate in outdoor recreation than Texans as a whole. Figure 2 shows the projected percent of the region's population participating in each of twenty-six activities. Region 11's percentages fall below the statewide average for all but five activities. The percentages participating in freshwater fishing and freshwater swimming are substantially higher than the Texas average, due to the close proximity of water resources to population centers. Residents are slightly more likely to participate in camping, picnicking, and hunting.

Per capita participation, a reflection of frequency of participation, shows region 11 residents spending the most occasions in walking, bicycling, pool swimming, jogging and using playgrounds (table 2). The rates in these activities, however, are consistently lower than the statewide averages. Region residents participate more frequently for only seven activities. The freshwater-based activities are some that show above average rates.

Recreation Travel Patterns

The lakes and other recreation attractions draw out-of-area visitors into region 11 for resource based activities. Five times as much participation comes into the region as leaves (figures 3 and 4). The number of user occasions coming from the Dallas-Fort Worth region almost equals the amount of resource-

Figure 2
Region 11 Projected 1995 Percentage
of Population Participating



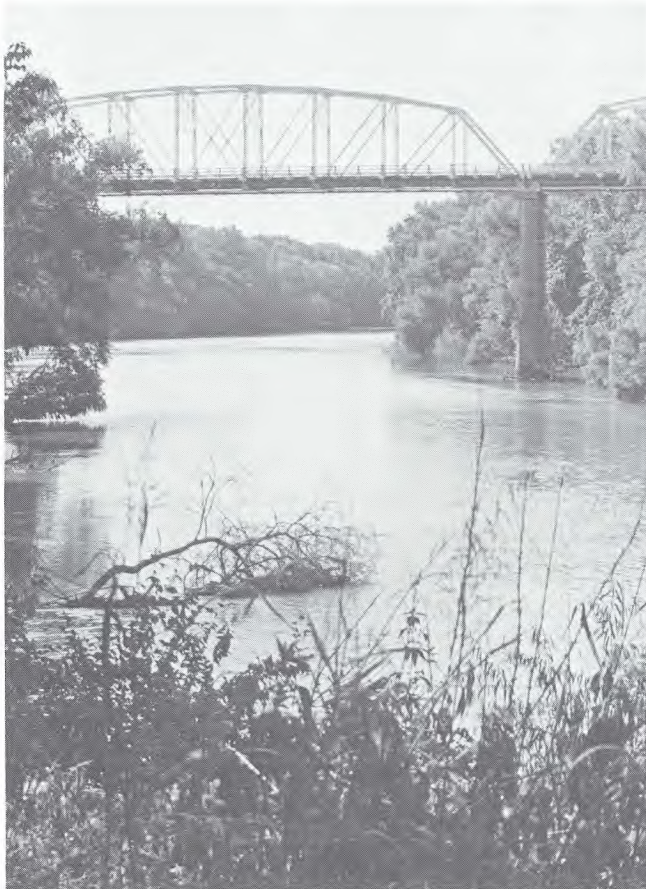
Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this figure and an explanation of research methods. See Appendix D for an explanation of terms.

based participation by region 11 residents staying in their home region. Seventy-seven percent of resource-based participation generated by region 11 residents occurs inside the region. When people leave, they go most often to the adjacent regions along Interstate 35 and to the coast near Galveston, Mustang, and Padre islands.

Projected Participation

Tables 3 and 4 show the projected participation to occur in region 11 in 1990, 1995, and 2000. Participation will increase for every projection year. Freshwater fishing, camping, and freshwater swimming will attract the most participation in the region for resource based activities (table 3). The influence of Texans from outside the region will be significant. Non-resident occasions will surpass resident participation for all resource-based activities except freshwater swimming. Participation in urban-oriented activities in 1995 (table 4) will be almost twice as high as participation in resource based activities in the region (table 3).



Steep river banks may contribute to poor river access even at public road crossings.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 11 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 11 | | |
| | Occurring In | | |
| | Region 11 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 1.2 | 1.5 | 1.3 |
| Boat Ramp Lanes, SW | * | * | 0.3 |
| Boating (Pleasure), FW | 0.5 | 0.7 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 1.2 | 1.9 | 1.7 |
| Fishing, FW | 2.3 | 2.8 | 2.4 |
| Fishing from Banks | 0.8 | 0.9 | 0.8 |
| Fishing from Boats | 1.1 | 1.2 | 1.1 |
| Fishing from Structures | 0.5 | 0.6 | 0.5 |
| Fishing, SW | * | 0.2 | 0.7 |
| Fishing from Boats | * | * | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | * | 0.3 |
| Hiking | 0.2 | 0.4 | 0.4 |
| Hunting | 1.1 | 1.5 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.4 | 1.7 | 1.5 |
| Nature Study | 0.7 | 0.8 | 0.9 |
| Picnicking | 1.7 | 1.9 | 1.9 |
| Swimming, FW | 2.3 | 2.6 | 2.1 |
| Swimming, SW | * | 0.4 | 1.2 |
| Baseball | 1.7 | | 1.5 |
| Basketball | 1.5 | | 1.6 |
| Bicycling | 9.0 | | 10.7 |
| Bicycling on Trails | 0.6 | | 0.7 |
| Football | 0.9 | | 0.8 |
| Golf | 1.2 | | 1.3 |
| Horseback Riding | 0.7 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 4.7 | | 5.4 |
| Jogging/Running on Trails | 1.5 | | 1.7 |
| Off-road Vehicle Riding | 1.2 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.2 | | 0.3 |
| Open Space Activities | 2.9 | | 3.2 |
| Playground Use | 3.8 | | 4.8 |
| Soccer | 0.7 | | 1.2 |
| Softball | 1.8 | | 1.8 |
| Swimming, Pool | 5.3 | | 6.4 |
| Tennis | 1.0 | | 1.3 |
| Walking (Pleasure/Exercise) | 14.4 | | 14.8 |
| Walking on Trails | 3.4 | | 3.5 |

Notes: Asterisks indicate value is less than .1 occasion per capita.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 11 by Region 11 Residents,
Texans from Outside Region 11, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 11 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|------|-------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | | | |
| | Residents of Region 11 | | | Texans from Outside Region 11 | | | Regional Totals | | |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 363 | 375 | 386 | 505 | 543 | 580 | 868 | 917 | 966 |
| Boating (Pleasure), FW | 160 | 165 | 170 | 212 | 226 | 240 | 372 | 391 | 410 |
| Camping | 367 | 379 | 391 | 1174 | 1261 | 1349 | 1541 | 1641 | 1740 |
| Fishing, FW | 697 | 719 | 742 | 996 | 1073 | 1150 | 1692 | 1792 | 1892 |
| Fishing from Banks | 227 | 235 | 242 | 325 | 350 | 375 | 552 | 585 | 617 |
| Fishing from Boats | 312 | 322 | 332 | 446 | 480 | 515 | 758 | 802 | 847 |
| Fishing from Structures | 157 | 163 | 168 | 225 | 242 | 260 | 382 | 405 | 428 |
| Hiking | 61 | 63 | 65 | 75 | 81 | 86 | 136 | 143 | 151 |
| Hunting | 331 | 341 | 350 | 472 | 507 | 543 | 803 | 848 | 893 |
| Lake Use (BFS Suitable), FW | 414 | 427 | 441 | 577 | 619 | 662 | 991 | 1047 | 1103 |
| Nature Study | 218 | 227 | 235 | 287 | 312 | 337 | 505 | 539 | 572 |
| Picnicking | 511 | 526 | 541 | 512 | 546 | 580 | 1023 | 1072 | 1121 |
| Swimming, FW | 684 | 702 | 720 | 648 | 685 | 722 | 1332 | 1387 | 1442 |

Figure 3
Destinations of Region 11 Residents
for Resource-based Activities

4,035 Annual User Occasions (000's)
 Generated by Region 11 Residents, 1995

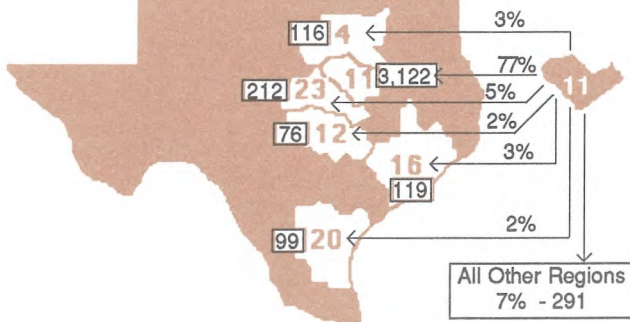
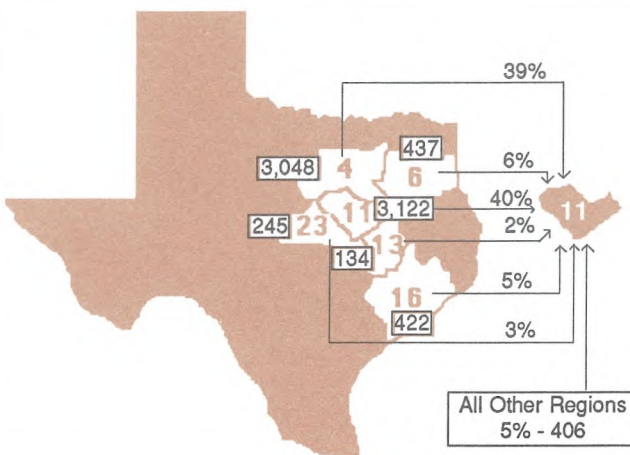


Figure 4
Origins of Participants Who Recreated
in Region 11 for Resource-based Activities

7,813 Annual User Occasions (000's)
 Occurring in Region 11, 1995



Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and these figures and an explanation of research methods. See Appendix D for an explanation of terms.

RESOURCE AND FACILITY NEEDS

Table 4
Projected Outdoor Recreation Participation
in Region 11 by Residents of Region 11, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (In 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 501 | 516 | 530 |
| Basketball | 453 | 465 | 476 |
| Bicycling | 2686 | 2763 | 2841 |
| Bicycling on Trails | 165 | 170 | 175 |
| Football | 259 | 266 | 274 |
| Golf | 350 | 365 | 379 |
| Horseback Riding | 214 | 220 | 227 |
| Horseback Riding on Trails | 55 | 57 | 58 |
| Jogging/Running | 1406 | 1446 | 1487 |
| Jogging/Running on Trails | 433 | 445 | 458 |
| Off-road Vehicle Riding | 356 | 366 | 376 |
| ORV Riding on Trails | 70 | 72 | 74 |
| Open Space Activities | 876 | 898 | 920 |
| Playground Use | 1143 | 1171 | 1199 |
| Soccer | 211 | 218 | 225 |
| Softball | 529 | 542 | 555 |
| Swimming, Pool | 1588 | 1630 | 1672 |
| Tennis | 300 | 310 | 320 |
| Walking (Pleasure/Exercise) | 4253 | 4411 | 4568 |
| Walking on Trails | 996 | 1033 | 1069 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Needed Facilities and Resources

Table 5 shows the region having needs for thirteen of the eighteen facilities/resources by 1995. Increases of more than 100 percent over existing supply are needed for three facilities/resources (hiking and multi-use trails and off-road vehicle riding acres). By 2000, there will be one more regional need (boat ramp lanes). Even where no regional needs are shown, inadequate distribution or local preferences may create local needs. Needed land acres shown at the bottom of table 5 represent only the acres required to develop the needed facilities.

Table 6 shows the regional facility needs ranked from most to least needed within the region. Rankings are based on a combination of two measures of need: the needed quantity relative to existing supply and the amount of projected user occasions that would go unserved if the needed facilities were not added.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 11, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 26 | 11 | 12 | 13 |
| Basketball Goals | 35 | 20 | 22 | 23 |
| Boat Ramp Lanes, FW | 101 | * | * | 6 |
| Campsites | 1969 | 901 | 1086 | 1272 |
| Fishing Structures, FW Lin.Yd. | 2308 | * | 19 | 149 |
| Golf Holes | 117 | * | * | * |
| Hiking Trail Miles | 6 | 13 | 14 | 15 |
| Horseback Riding Trail Miles | 6 | 2 | 2 | 2 |
| Lake Acres (BFS Suitable), FW | 40849 | * | * | * |
| Off-road Vehicle Riding Acres | 25 | 35 | 37 | 38 |
| Picnic Tables | 931 | * | * | * |
| Playground Areas, Equipped | 88 | 21 | 24 | 26 |
| Soccer/Football Fields | 25 | 16 | 17 | 17 |
| Softball Fields | 26 | 12 | 12 | 13 |
| Swimming, FW Sq.Yd. (000) | 291 | 47 | 61 | 75 |
| Swimming, Pool Sq.Yd. (000) | 16 | * | * | * |
| Tennis Courts | 71 | 8 | 10 | 13 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 9 | 19 | 20 | 21 |
| Developed Land Acres | | 690 | 768 | 848 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Table 6
Ranking of Outdoor Recreation Facility/Resource
Needs in Region 11 Through 1995

| Need Rank | Facility/Resource |
|-----------|---|
| 1 | Trail Miles, Multi-Use(Walk, Bike, Jog) |
| 2 | Soccer/Football Fields |
| 3 | Campsites |
| 4 | Hiking Trail Miles |
| 5 | Basketball Goals |
| 6 | Playground Areas, Equipped |
| 7 | Softball Fields |
| 8 | Off-Road Vehicle Riding Acres |
| 9 | Swimming, FW Sq.Yd. |
| 10 | Baseball Fields |
| 11 | Horseback Riding Trail Miles |
| 12 | Tennis Courts |
| 13 | Fishing Struc., FW Lin.Yd. |
| 14 | Boat Ramp Lanes, FW |
| 15 | Picnic Tables |
| 16 | Swimming, Pool Sq. Yd. |
| 17 | Golf Holes |
| 18 | Lake Acres (BFS Suitable) |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Providers' Responsibilities

Table 7 shows the administrations recommended to provide the needed facilities shown in table 5. Cities are suggested to provide most of the typically urban facilities (sports fields, courts, playgrounds, and multi-use trails). Counties should also provide some urban-type facilities to serve citizens in unincorporated areas. Freshwater swimming areas and fishing structures could be designated at county lakeside parks. The responsibility for the relatively large number of campsites would be shared by the Corps of Engineers, the Texas Parks and Wildlife Department, the river authorities, counties, cities, and the commercial sector. River authorities are further suggested to meet needs for freshwater swimming, off-road vehicle riding, and multi-use trail activities (walking, bicycling, and jogging). Adding playgrounds, hiking and horseback riding trails, and more off-road vehicle riding acres would enhance the

recreation opportunities at Corps parks. A new role for state wildlife management areas includes providing campsites and hiking trails at Richland Creek Wildlife Management Area.

Bicycling on streets may occur because of a deficiency of multi-use trails.

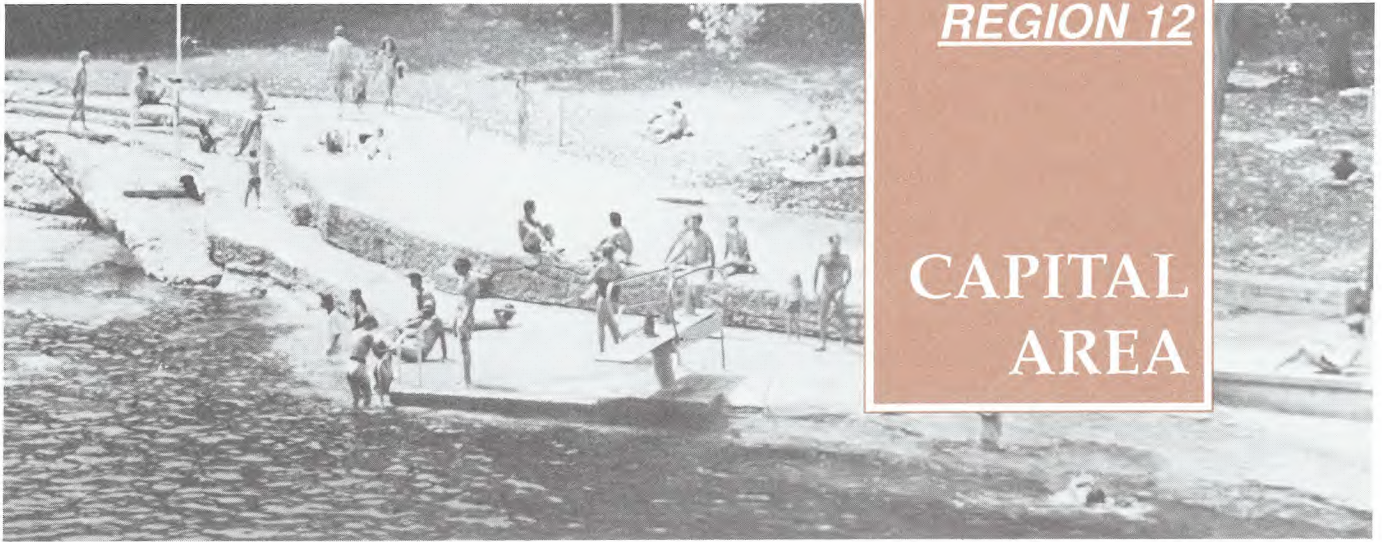


Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 11, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 |
| Basketball Goals | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 0 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 1086 | 0 | 0 | 0 | 80 | 70 | 36 | 0 | 0 | 200 | 160 | 80 | 0 | 460 |
| Fishing Structures, FW Lin.Yd. | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 14 | 0 | 0 | 0 | 8 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Off-road Vehicle Riding Acres | 37 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 24 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 10 | 0 | 0 |
| Soccer/Football Fields | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14 | 0 | 0 |
| Softball Fields | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 61 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 5 | 0 | 6 | 10 |
| Swimming, Pool Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tennis Courts | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 12 | 0 | 0 |
| Developed Land Acres | 768 | 0 | 0 | 0 | 122 | 50 | 25 | 0 | 0 | 83 | 108 | 241 | 3 | 136 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



REGION 12

CAPITAL AREA

Development in the Edwards Aquifer recharge area threatens the water quality and quantity of Barton Springs, a major tourist attraction.

ISSUES AND RECOMMENDATIONS

Issue: Natural Resources

Many people choose to live in the Capital Region because they appreciate its natural and scenic beauty. Citizens feel strongly about preserving the biodiversity. They also desire large tracts of land where the public can go to observe wildlife and have a wilderness-like experience.

Urban development continues to convert much of the scenic hill country from its natural condition. Undeveloped natural tracts of land are now farther from the inner city area. Development also threatens to destroy the habitat of many species, some of which are threatened or endangered. Off-road vehicle use can also damage plant and animal resources.

Even resources in public park areas are not immune from damage. Wildlife and plants can be harmed by the building of facilities in habitat areas, by the acts of malicious or unknowing people, or simply by too many human visitors. Many citizens often do not realize how their behavior affects resources and the ecological balance. Some unique natural ecosystems have fared better when left under the stewardship of conscientious private landowners. (Also, see State Summary, "Conserving Natural Re-

sources for Recreational Use" under "Issues and Recommendations.")

Recommendations:

For appropriate levels of government:

Identify natural areas and develop plans to preserve the best examples.

Continue to work with landowners willing to sell lands for parks; cooperate also with those desiring to provide protection for sensitive resources under the landowner's stewardship.

Exercise to the fullest their authorities to guide development away from the most sensitive resources. Strictly enforce local, state, and federal environmental laws, regulations, and policies.

Develop education programs to teach the public how to use and protect natural resources.

Participate in the Regional Habitat Conservation planning process for Central Texas.

Develop various incentive programs to encourage private landowners to manage their land for public non-consumptive recreation; consider voluntary landowner agreements,

conservation and recreation easements, and ways to limit landowners' liability exposure.

For managers of resource parks and public lands:

Consider leaving large portions of parks undeveloped for wildlife habitat and low-impact recreation activities.

Perform thorough resource evaluations on park sites before preparing development plans; invite the public to give input into the development and management plans of parks, natural areas, and public lands.

Issue: Water Resources

Since much of the outdoor recreation in the region focusses on water resources, many are

concerned with keeping them usable and accessible. Those who promote the Highland Lakes for tourism and those who drink the water feel strongly about main-



taining water quality. Downstream from Austin, users of the Colorado River are concerned with the city's effluent and urban runoff. Minimum in-stream flows are needed in the dry times of the year to maintain acceptable water quality. The poor quality of water in Onion Creek has caused a decline in recreational use at McKinney Falls State Park and Travis County's Moya Park.

On both the Colorado and San Gabriel rivers, people argue over the value of keeping water in the reservoirs versus allowing water to flow downstream. The flows of the San Marcos River and Barton Creek are closely tied to surface activities in the recharge area of the Edwards Aquifer. Land use in all the watersheds affects the quantity and quality of the streams.

Austin, Round Rock, Georgetown, and San Marcos should be applauded for their efforts to secure the creek and river corridors from development. Public acquisition of greenbelts along the streams provides recreational access to naturally flowing creeks and rivers. Buffers of public greenspace help keep development out of the sensitive floodplain areas, minimize flooding, and maintain water quality. When cities use the stream corridors for trail systems, they provide more recreational opportunities. (Also, see State Summary, "Rivers and Outdoor Recreation" and "Meeting Recreational Open Space Needs" under "Issues and Recommendations.")

Recommendations:

For cities and counties:

Continue to place priorities on acquiring greenbelts along the region's rivers and creeks.

Create, review, or amend local floodplain ordinances to maintain natural buffers along stream corridors.

For all public entities:

Control point source and non-point source pollution, and stress water conservation.

Educate the public on water conservation techniques, such as xeriscaping, and on the impacts of household and lawn chemicals.

For the regional planning council:

Coordinate existing land and water managing entities in the region into an effective multi-jurisdictional watershed management program.

Issue: Tourism Encouragement

Recreation providers, economic development planners, and chambers of commerce are cooperating to bring more tourists into the region. People are beginning to appreciate the economic value of recreation. Many actors are involved in promoting attractions in the Highland Lakes area. The cities of Round Rock and Georgetown would like to be seen as part of a package of attractions in the Austin-San Marcos-San Antonio corridor. City parks departments in Austin and Round Rock encourage out-of-area visitors with special events like sportsfests, bicycle races, and wildflower walks. Cities with historic resources plan to promote them along with their natural resources. The presence of the LBJ National Historic Site makes Johnson City a nationally known attraction. Ten state parks in the region play a major role in tourism. (Also, see State Summary, "Tourism and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers, tourist development agencies, and chambers of commerce:

Improve coordination and continue to promote regional and local attractions and events to foster the recreation and tourism industries. Continually seek to improve the marketing and packaging of events, sites, and attractions.

Examine the possibilities of developing new activities, attractions, and events to draw more visitors, encourage existing clientele to stay longer, and expand the tourist season. Consider including natural resource activities like birding, caving, rock-climbing, and wildflower viewing; interpretive exhibits and tours; sports tournaments and bicycle tours.

Seek the assistance of the Texas Department of Commerce on tourism development planning.

Issue: Funding Problems

The Texas economic downturn has affected the budgets of most park providers in the region. Cities are more reluctant to ask voters to pass bond elections. Budget decision-makers often cut operations and maintenance funds. The region's cities that grew so fast in the early to mid-eighties now face the problem of having increased parkland but fewer maintenance staff. This situation can make park system managers hesitant to develop more parks. At the same time, citizens aware of undeveloped acquisitions pressure cities to add facilities or make the parks usable by the public. Even though they have sites they can't afford to develop, future-thinking providers realize there is still a need to acquire large parks, natural areas, and linear corridors before the resources are lost to development.

State and federal budget problems mean less grant money is available to local governments and grants are more competitive. Innovative providers have turned their efforts toward alternatives like land donations, use of volunteers, and endowments. The city of Austin and Travis County are considering pooling their efforts into a metropolitan park system. Other cities seek to have joint programs with school districts. Some hope to solve funding problems by privatizing certain programs. Privatizing options being considered include using concessionaires, non-profit organizations and commercial providers to take over formerly government-sponsored functions.

The Lower Colorado River Authority faces a somewhat different funding problem. The Texas Public Utilities Commission has questioned the legality of spending money from electricity sales on parks. The river authority is trying to find ways to manage its parks so they will recover all operating costs through fee collections. The authority leases seven large tracts of land on Lake Travis to Travis County to manage as parks. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Explore cooperative agreements among different taxing jurisdictions and with the commercial sector to



Boating safety and conflicts among lake users challenge lake resource managers.

maximize public resources for recreation. Continue to pursue the concept of a metropolitan parks department.

Educate decision-makers and the public on the values of recreation opportunities, and developed and natural parks.

Seek donations of money, land, and labor from citizens and corporations; be creative in finding alternatives to funding.

Prepare cost-benefit studies of proposed fee structures and management contracts; include social and economic benefits as well as revenue.

Take advantage of the depressed real estate market to acquire major urban parks.

Support federal legislation to establish a dedicated trust, or similar mechanism, to provide funding for outdoor recreation.

Utilize volunteer labor in parks. Create a network of trained and committed volunteers and volunteer organizations.

Issue: Park and Lake Safety

Providers with water recreation responsibilities are concerned over water safety. Crowded conditions especially on Lakes Austin and Travis cause conflicts between boaters, swimmers, fishermen, and other lake users. Boating accidents and drownings are often alcohol-related.

Keeping parks safe for users challenges many resource managers. The threat of lawsuits causes some providers to remove certain facilities like diving boards and merry-go-rounds. The costs of construction increase as facilities must be made safer. The high amount of damages awarded in court cases has encouraged insurance companies to raise rates even for those entities who have not been sued. Travis County staff think the commercial owners of Hamilton Pool decided to sell to the county because of lawsuits from injured divers. Now the county faces the job of keeping people away from the cliffs.

Park security is a concern especially for managers of parks with overnight visitors. Transients using parks in the region as temporary residences often

makes traditional users uneasy. Drug and alcohol use in parks contributes to security problems. The presence of uniformed security officers would help but park surveillance is only one of many law enforcement duties of police and sheriffs. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Issues and Recommendations.")

Recommendations:

For providers of lakeside parks:

Promote awareness and public education in water safety and boating laws.

For political subdivisions of the state with lakes entirely within their jurisdictions:

Consider designating certain areas of the lakes for single uses where such zoning would improve public safety and be consistent with the Texas Water Safety Act. Consider adopting more stringent safety codes.

For recreation providers:

Consider providing or increasing lake patrols to supplement existing enforcement of boating safety regulations.

Consider offering courses in boater safety using official instruction materials from the Texas Parks and Wildlife Department.

Institute comprehensive risk management plans and place one person in charge of safety programs with authority to correct problems.

Train staff to identify and remedy negligent hazards.

Consider security lighting in appropriate areas of parks.

For park managers and law enforcement personnel:

Cooperate more fully in providing frequent and visible park patrols.

For managers of large metropolitan and rural parks:

Consider controlling park access with staffed entrances and gates locked at curfew.

RESOURCES

Population Trends

Region 12 park providers are still playing catch-up from the growth boom of the early 1980s. From 1980 to 1986, the region grew 34 percent, a rate twice as high as the state's. The pace is slowing down, however, like the state in general. Region 12 is expected to increase 11 percent from 1986 to 1995 (figure 1).

This rate is slightly below the state's projected growth of 14 percent for the same period. The population boom in region 12 has historically come more from in-migration than from natural increase. The economic slow-down affects the rate of in-migration to the region.

While Travis County experienced

the highest numbers of new residents in region 12, the greatest rates of growth occurred in adjacent Hays and Williamson counties (56 and 50 percent, respectively). Small cities and towns outside Austin grew at even higher rates: Kyle, 110 percent; Buda, 89 percent; Cedar Park, 83 percent, and Round Rock, 81 percent.

**Figure 1
Region 12 Characteristics**

GEOGRAPHY

| | | |
|-----------------------------|---|--------------------|
| Counties | = | 10 |
| Land area | = | 8,473 square miles |
| Elevation | = | 238' - 1,867' |
| Annual rainfall | = | 26.2 - 36.8 inches |
| January minimum temperature | = | 34 - 42°F |
| July maximum temperature | = | 94 - 98°F |
| Growing season | = | 229 - 277 days |

POPULATION 1986

Total 869,625

| | |
|------------|---------|
| Counties | |
| Travis | 550,487 |
| Williamson | 114,988 |
| Hays | 63,358 |
| Bastrop | 36,375 |
| Caldwell | 28,529 |
| Burnet | 23,936 |
| Fayette | 20,403 |
| Lee | 13,249 |
| Llano | 12,462 |
| Blanco | 5,838 |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 966,027 |
| People per square mile | 114.0 |
| Ethnic composition: | |
| White | 73% |
| Black | 9% |
| Hispanic | 19% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 52,126 acres |
| Developed recreation land | = | 8,986 acres |

Bastrop State Park
Blanco State Park
Buescher State Park
Emma Long Metro Park (Austin)

Enchanted Rock State Natural Area
Granger Lake Corps Parks
Granger Wildlife Management Area
Inks Lake State Park
Kreische Brewery State Historical Park
Lake Georgetown Corps Parks
Lake Somerville State Park (Nails)
Lockhart State Park
Longhorn Cavern State Park
Lyndon B. Johnson National Historical Park
McKinney Falls State Park
Monument Hill State Historical Park
Pace Bend Park (Travis County)
Pedernales Falls State Park
Somerville Wildlife Management Area
Wild Basin Wilderness Preserve (Travis County)
Zilker Park/Barton Springs (Austin)

Lakes

| | |
|--------------------------|----------------------|
| Surface acres | 62,906 |
| | <u>Surface Acres</u> |
| Fayette County Reservoir | 2,400 |
| Georgetown Lake | 1,310 |
| Granger Lake | 4,400 |
| Inks Lake | 803 |
| Lake Austin | 1,830 |
| Lake Bastrop | 906 |
| Lake Buchanan | 23,200 |
| Lake Walter E. Long | 1,210 |
| Lake Travis | 18,930 |
| Lyndon B. Johnson Lake | 6,375 |
| Marble Falls Lake | 470 |
| Somerville Lake | 229 (Part) |
| Town Lake | 525 |

Streams

Barton Creek
Blanco River
Colorado River
Cypress Creek
Lampasas River
Llano River
Onion Creek
Pedernales River
San Gabriel River, North and South Forks
San Marcos River

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

Resource Attractions

Popular lakes and eleven state parks make region 12 a desirable area to visit for outdoor recreation. People go most often to Lakes Travis, Buchanan, and LBJ, the three largest reservoirs in the region (figure 1). The U.S. Army Corps of Engineers operates twelve lakeside parks at Georgetown and Granger lakes. For its size, Georgetown Lake serves large numbers of visitors. In users per surface acre, Georgetown Lake is the second most congested Corps lake in Texas. A total of twenty-five public reservoirs in the region provide 62,906 surface acres of lake resources.

Lyndon B. Johnson National Historical Park is one of the most significant attractions in the region. State parks offer a variety of resources. Lake Somerville State Park and Inks Lake State Park provide lake recreation. Three state parks offer river or stream access: Pedernales Falls, McKinney Falls, and Blanco state parks. Bastrop State Park with its "lost pines" is the most visited state park in the region. Enchanted Rock State Natural Area is popular with hikers and rockclimbers. Users visit Buescher State Park for camping and fishing, Longhorn Cavern State Park for cave tours, Monument Hill and Kriesche

Brewery state historical parks for historic interpretation, and Lockhart State Park primarily for golf and pool swimming.

Rivers in the region are used most often inside the cities. The most popular rivers for recreation are the San Marcos (for swimming), the Colorado (for fishing), and the Blanco (also for fishing). Public parks on these rivers provide the major attractions.

Recreation Supply

Table 1 shows the supply of parkland acres and facilities by administration. The combined acres in state parks and wildlife management areas give the

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 12, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | | LOCAL | | COMMERCIAL | TOTAL |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|--------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | |
| Number of Parks/Rec. Areas | 1 | 1 | 0 | 13 | 12 | 2 | 2 | 0 | 7 | 35 | 279 | 11 | 132 | 495 |
| Total Parkland Acres | 38 | 59 | 0 | 5223 | 16792 | 9186 | 1 | 0 | 557 | 2817 | 11358 | 106 | 5989 | 52126 |
| Developed Land Acres | 20 | 38 | 0 | 833 | 1779 | 0 | 1 | 0 | 74 | 940 | 3260 | 53 | 1989 | 8986 |
| Developable Land Acres | 0 | 21 | 0 | 641 | 8596 | 0 | 0 | 0 | 484 | 787 | 3025 | 23 | 892 | 14468 |
| Preserved or Unsuitable for Development (Acres) | 18 | 0 | 0 | 3749 | 6416 | 9186 | 0 | 0 | 0 | 1090 | 5074 | 30 | 3109 | 28671 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 95 | 1 | 10 | 111 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 60 | 4 | 10 | 75 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 26 | 4 | 0 | 0 | 0 | 7 | 16 | 25 | 0 | 90 | 168 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 384 | 693 | 0 | 0 | 0 | 166 | 383 | 44 | 0 | 1710 | 3380 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 8240 | 4060 | 0 | 0 | 0 | 0 | 6725 | 400 | 0 | 300 | 19725 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 360 | 167 | 0 | 0 | 0 | 80 | 12 | 1428 | 0 | 3936 | 5983 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 81 | 0 | 72 | 180 |
| Hiking Trail Miles | 0 | 0 | 0 | 19 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 3 | 18 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 49517 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 |
| Picnic Tables | 0 | 6 | 0 | 251 | 457 | 0 | 1 | 0 | 10 | 737 | 1117 | 21 | 155 | 2754 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 3 | 7 | 146 | 5 | 26 | 210 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 41 | 2 | 3 | 47 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 82 | 1 | 8 | 96 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 18450 | 110500 | 0 | 0 | 0 | 27200 | 72350 | 11460 | 0 | 212880 | 452840 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 866 | 0 | 0 | 0 | 0 | 0 | 40369 | 3027 | 7590 | 51852 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 160 | 6 | 16 | 184 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 6 | 26 | 3 | 1 | 47 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Texas Parks and Wildlife Department the greatest share of parkland, 50 percent, followed by the cities' supply of 22 percent. Cities, however, manage the greatest share of developed parkland, 36 percent. With 22 percent, the commercial sector supplied the second largest share of developed areas.

When compared to other regions in resources per population, region 12 is relatively well endowed with facilities but not with total parkland. In parkland acres per thousand population (table A3), region 12 ranks eighteenth out of twenty-four regions. In developed parkland, however, the region's supply is slightly above the statewide average. Of nineteen facilities or designated resources, the region has an above average supply of twelve of them.

Potential and Proposed Resources

Cities along the San Marcos River want to protect the recreation potential of the corridor by preserving a greenbelt of public land along the remaining undeveloped segments. The city of Austin worked on a plan for Town Lake which included proposals to extend the Hike and Bike Trail. Barton Creek and Bull Creek greenbelts have the potential to be extended. Georgetown and Round Rock are planning parkland acquisitions and greenbelt development along the San Gabriel River, Brushy and Chandler creeks.

The Lower Colorado River Authority owns land around the Highland lakes, Fayette County Reservoir, and Lake Bastrop. The authority recently

completed a Land Inventory and Utilization Plan. Much of the land could provide further outdoor recreation opportunities if managed for recreation by the authority or through cooperative arrangements with other entities.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

OUTDOOR RECREATION PARTICIPATION

Popular Activities

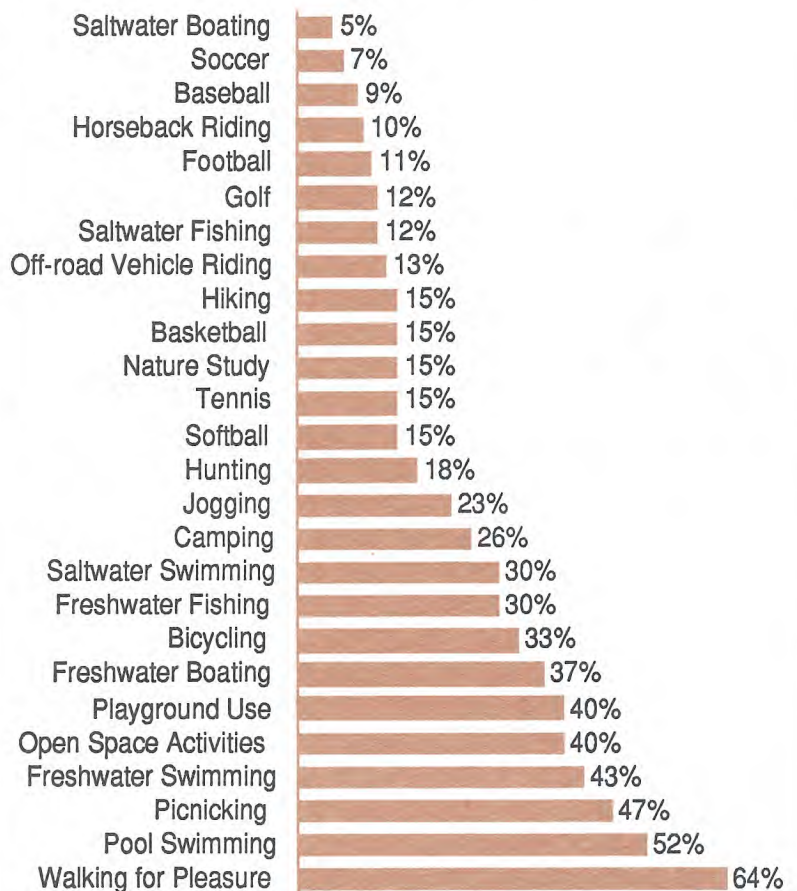
Region 12 residents are generally more likely to participate in outdoor recreation than Texans as a whole. Figure 2 shows the projected percent of the region's population participating in each of twenty-six activities. Region 12's percentages exceed the statewide average for fifteen of the twenty-six activities. The percentages participating in freshwater boating, freshwater and pool swimming, picnicking, walking, hiking, and open space activities are substantially higher than the Texas averages.

The frequency of participation by region 12 residents (in occasions per capita) shows the region to be above the statewide average for fourteen activities (table 2). Regional rates are especially high for jogging, freshwater and pool swimming, walking, and open space activities.

Recreation Travel Patterns

The resources in region 12 keep residents in their home region for 69 percent of their resource based participation (figure 3). Texans from outside the region make up 45 percent of the total resource based activity occurring in region 12 (figure 4). For every occasion a region 12 resident spends outside the region, there are almost two user occa-

Figure 2
Region 12 Projected 1995 Percentage
of Population Participating



Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this figure and an explanation of research methods. See Appendix D for an explanation of terms.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 12 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 12 Occurring In | | |
| | Region 12 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 1.4 | 1.6 | 1.3 |
| Boat Ramp Lanes, SW | * | 0.2 | 0.3 |
| Boating (Pleasure), FW | 0.9 | 1.1 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 0.8 | 1.7 | 1.7 |
| Fishing, FW | 2.1 | 2.4 | 2.4 |
| Fishing from Banks | 0.7 | 0.8 | 0.8 |
| Fishing from Boats | 0.9 | 1.1 | 1.1 |
| Fishing from Structures | 0.5 | 0.5 | 0.5 |
| Fishing, SW | * | 0.4 | 0.7 |
| Fishing from Boats | * | 0.2 | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | 0.2 | 0.3 |
| Hiking | 0.4 | 0.5 | 0.4 |
| Hunting | 0.7 | 1.4 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.6 | 1.9 | 1.5 |
| Nature Study | 0.8 | 1.0 | 0.9 |
| Picnicking | 1.8 | 2.1 | 1.9 |
| Swimming, FW | 2.4 | 2.8 | 2.1 |
| Swimming, SW | * | 1.0 | 1.2 |
| Baseball | 1.4 | | 1.5 |
| Basketball | 1.7 | | 1.6 |
| Bicycling | 10.2 | | 10.7 |
| Bicycling on Trails | 0.6 | | 0.7 |
| Football | 0.9 | | 0.8 |
| Golf | 1.5 | | 1.3 |
| Horseback Riding | 0.7 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 6.4 | | 5.4 |
| Jogging/Running on Trails | 2.0 | | 1.7 |
| Off-road Vehicle Riding | 1.4 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.3 | | 0.3 |
| Open Space Activities | 3.8 | | 3.2 |
| Playground Use | 4.7 | | 4.8 |
| Soccer | 1.1 | | 1.2 |
| Softball | 1.8 | | 1.8 |
| Swimming, Pool | 7.2 | | 6.4 |
| Tennis | 1.5 | | 1.3 |
| Walking (Pleasure/Exercise) | 16.1 | | 14.8 |
| Walking on Trails | 3.8 | | 3.5 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Asterisks indicate value is less than .1 occasion per capita. See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



A good supply of trail opportunities contributes to the demand for more trails of all kinds.

Table 3
Projected Outdoor Recreation Participation in Region 12 by Region 12 Residents,
Texans from Outside Region 12, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 12 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|------|-------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | Regional Totals | | |
| | Residents of Region 12 | | | Texans from Outside Region 12 | | | 1990 | 1995 | 2000 |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 1227 | 1346 | 1466 | 719 | 771 | 823 | 1946 | 2117 | 2288 |
| Boating (Pleasure), FW | 784 | 845 | 907 | 450 | 480 | 510 | 1234 | 1325 | 1417 |
| Camping | 702 | 771 | 839 | 1773 | 1905 | 2037 | 2475 | 2676 | 2876 |
| Fishing, FW | 1814 | 2023 | 2232 | 1086 | 1169 | 1252 | 2900 | 3191 | 3484 |
| Fishing from Banks | 592 | 660 | 728 | 354 | 381 | 408 | 946 | 1041 | 1136 |
| Fishing from Boats | 812 | 906 | 1000 | 486 | 523 | 560 | 1298 | 1429 | 1560 |
| Fishing from Structures | 410 | 457 | 504 | 245 | 264 | 283 | 655 | 721 | 787 |
| Hiking | 358 | 389 | 419 | 251 | 270 | 289 | 610 | 659 | 708 |
| Hunting | 618 | 668 | 718 | 502 | 540 | 577 | 1120 | 1207 | 1295 |
| Lake Use (BFS Suitable), FW | 1400 | 1536 | 1672 | 821 | 880 | 939 | 2221 | 2416 | 2611 |
| Nature Study | 683 | 771 | 859 | 207 | 225 | 242 | 891 | 996 | 1101 |
| Picnicking | 1631 | 1757 | 1883 | 839 | 894 | 948 | 2470 | 2650 | 2831 |
| Swimming, FW | 2198 | 2340 | 2483 | 2215 | 2349 | 2483 | 4412 | 4689 | 4966 |

Figure 3
Destinations of Region 12 Residents
for Resource-based Activities

13,890 Annual User Occasions (000's)
 Generated by Region 12 Residents, 1995

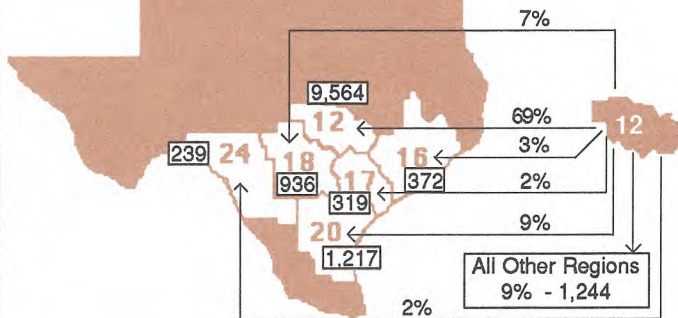
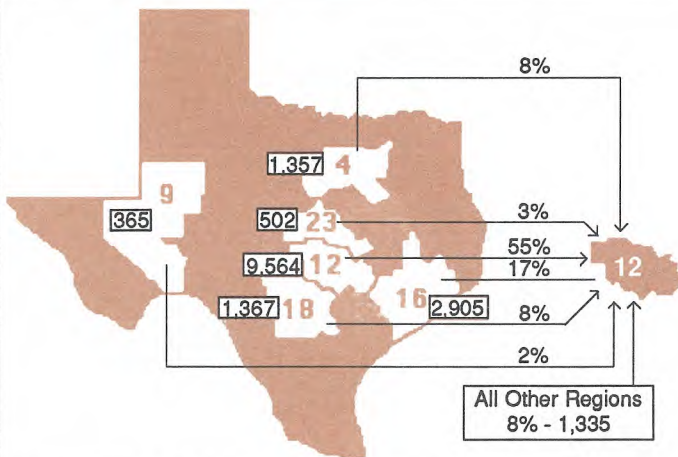


Figure 4
Origins of Participants Who Recreated
in Region 12 for Resource-based Activities

17,394 Annual User Occasions (000's)
 Occurring in Region 12, 1995



Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and these figures and an explanation of research methods. See Appendix D for an explanation of terms.

sions that come into the region from other parts of Texas. Texans come most often from the Houston, San Antonio, and Dallas-Fort Worth regions. When region 12 residents travel to other parts of Texas, they are usually going to the coast or the other Hill Country regions.

Projected Participation

Tables 3 and 4 show the projected participation to occur in region 12 in 1990, 1995, and 2000. Participation will increase for every projection year. Freshwater swimming, camping, and freshwater fishing will attract the most participation in the region for resource based activities (table 3). The influence of Texans from outside the region will be felt in most resource-based activities. Participation by out-of-state visitors is not shown in table 3. Occasions of non-resident Texans, however, will surpass resident participation only in freshwater swimming and camping. Participation in urban-oriented activities in 1995 (table 4) will be three times as high as participation in resource-based activities in the region.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Table 5 shows the region having needs for twelve of the eighteen facilities/resources by 1995. Increases of more than 100 percent over existing supply are needed for seven facilities. Even where no regional needs are shown, inadequate distribution or local preferences may create local needs.

Table 6 shows the regional facility needs ranked from most to least needed within the region. Rankings are based on a combination of two measures of need: the needed quantity relative to existing supply and the amount of projected user occasions that would go unserved if the needed facilities were not added.

Needed land acres shown at the bottom of table 7 represent only the acres required to develop the needed facilities. Austin and Round Rock have

identified acquisition of large parks as a priority. Numerous cities secure the land along the rivers and creeks in town to extend greenbelts and protect the corridors from development. The Lower Colorado River Authority and Travis County see the need to provide more access to area lakes.

Providers' Responsibilities

Table 7 shows the administrations recommended to provide the needed facilities shown in table 5. Cities are suggested to provide the greatest shares of the typically urban facilities: fields, courts, playgrounds, and multi-use trails. Some of those facility needs, however, should also be met by counties. The commercial sector is recommended for the next greatest share of developed parkland acres. Commercial enterprises are most likely to offer those facilities for which fees can be collected. It is sug-

Table 4
Projected Outdoor Recreation Participation
in Region 12 by Residents of Region 12, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (in 000's Annual User Occasions) | | |
|-----------------------------|---|-------|-------|
| | 1990 | 1995 | 2000 |
| Baseball | 1278 | 1379 | 1481 |
| Basketball | 1481 | 1595 | 1709 |
| Bicycling | 9126 | 9862 | 10599 |
| Bicycling on Trails | 562 | 608 | 653 |
| Football | 769 | 823 | 877 |
| Golf | 1262 | 1435 | 1609 |
| Horseback Riding | 611 | 669 | 726 |
| Horseback Riding on Trails | 157 | 172 | 186 |
| Jogging/Running | 5846 | 6168 | 6491 |
| Jogging/Running on Trails | 1801 | 1900 | 1999 |
| Off-road Vehicle Riding | 1265 | 1365 | 1465 |
| ORV Riding on Trails | 248 | 267 | 287 |
| Open Space Activities | 3426 | 3672 | 3919 |
| Playground Use | 4241 | 4542 | 4844 |
| Soccer | 961 | 1039 | 1116 |
| Softball | 1623 | 1704 | 1786 |
| Swimming, Pool | 6454 | 6947 | 7441 |
| Tennis | 1350 | 1459 | 1569 |
| Walking (Pleasure/Exercise) | 13877 | 15523 | 17172 |
| Walking on Trails | 3249 | 3634 | 4020 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 12, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|-------------|-------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 111 | * | * | * |
| Basketball Goals | 75 | 104 | 118 | 132 |
| Boat Ramp Lanes, FW | 168 | 91 | 114 | 136 |
| Campsites | 3380 | 1229 | 1602 | 1976 |
| Fishing Structures, FW Lin.Yd. | 5983 | * | * | * |
| Golf Holes | 180 | * | * | 13 |
| Hiking Trail Miles | 67 | 15 | 22 | 29 |
| Horseback Riding Trail Miles | 18 | 4 | 6 | 8 |
| Lake Acres (BFS Suitable), FW | 49517 | * | * | * |
| Off-road Vehicle Riding Acres | 5 | 208 | 225 | 242 |
| Picnic Tables | 2754 | * | * | * |
| Playground Areas, Equipped | 210 | 194 | 223 | 251 |
| Soccer/Football Fields | 47 | 64 | 72 | 80 |
| Softball Fields | 96 | 20 | 26 | 31 |
| Swimming, FW Sq.Yd. (000) | 453 | 608 | 674 | 741 |
| Swimming, Pool Sq.Yd. (000) | 52 | * | * | * |
| Tennis Courts | 184 | 169 | 198 | 227 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 47 | 50 | 59 | 69 |
| Developed Land Acres | | 1763 | 2121 | 2613 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

gested this sector provide the largest share of campsites plus portions of the off-road vehicle riding needs, freshwater swimming areas, boat ramps, tennis courts, and softball fields.

The Corps is only authorized to add facilities with the money returned from fees collected from camping. The few facilities suggested for the Corps include campsites, hiking trail miles, off-road vehicle riding acres, playgrounds, and designated freshwater swimming areas. Additions to existing state parks could include campsites and trail miles. A new role for state wildlife management areas includes providing hiking trails at Granger Wildlife Management Area. Significant shares of the facilities suitable for lakeside resource parks are shown as responsibilities for the Lower Colorado River Authority and the counties.

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs in Region 12 Through 1995

| <u>Need Rank</u> | <u>Facility/Resource</u> |
|------------------|--|
| 1 | Soccer/Football Fields |
| 2 | Swimming, FW Sq.Yd. |
| 3 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 4 | Basketball Goals |
| 5 | Playground Areas, Equipped |
| 6 | Off-Road Vehicle Riding Acres |
| 7 | Tennis Courts |
| 8 | Boat Ramp Lanes, FW |
| 9 | Campsites |
| 10 | Softball Fields |
| 11 | Horseback Riding Trail Miles |
| 12 | Hiking Trail Miles |
| 13 | Golf Holes |
| 14 | Baseball Fields |
| 15 | Swimming, Pool Sq. Yd. |
| 16 | Fishing Struc., FW Lin.Yd. |
| 17 | Picnic Tables |
| 18 | Lake Acres (BFS Suitable) |

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs in Region 12, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|--|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Basketball Goals | 118 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 98 | 0 | 0 |
| Boat Ramp Lanes, FW | 114 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 25 | 5 | 0 | 50 |
| Campsites | 1602 | 0 | 0 | 0 | 50 | 100 | 0 | 0 | 0 | 150 | 300 | 0 | 0 | 1002 |
| Fishing Structures, FW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 22 | 0 | 0 | 0 | 6 | 5 | 5 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Off-road Vehicle Riding Acres | 225 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 25 | 54 | 0 | 96 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 223 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 7 | 23 | 180 | 0 | 0 |
| Soccer/Football Fields | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 57 | 10 | 0 |
| Softball Fields | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 4 |
| Swimming, FW Sq.Yd.(000) | 674 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 150 | 250 | 50 | 0 | 174 |
| Swimming, Pool Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tennis Courts | 198 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 139 | 0 | 36 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 59 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 10 | 19 | 25 | 0 | 0 |
| Developed Land Acres | 2121 | 0 | 0 | 0 | 134 | 65 | 80 | 0 | 0 | 250 | 450 | 634 | 38 | 469 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Limited access hampers recreational use of streams in the Brazos Valley region.

ISSUES AND RECOMMENDATIONS

Issue: Rehabilitation of Older Facilities

Many parks and recreation facilities in region 13 have existed, and served citizens well, for a long time. A time comes when these older facilities must be renovated or replaced. After about twenty to thirty years, sometimes sooner, recreational equipment starts to show signs of age. When equipment or facilities become unusable or dangerous, they must be replaced or renovated; otherwise, the recreation provider is faced with a potential liability.

Costs of renovating a recreation facility often exceed the past price tag of the facility when it was built new. Similar items cost more now than they did years ago and citizens often demand higher quality facilities today. A local softball field that used to be a mowed lot with a backstop is now a multi-field, lighted, manicured sports complex. While quality is important, it is also costly. Unfortunately, many recreation providers failed to anticipate the need for periodic maintenance and renovation, and facilities were not designed with these future problems in mind. Facilities in need of renovation are often located in the established areas of cities.

This adds to the problem of providing parks and facilities in newly developing sections.

Recommendations:

For recreation providers:

Renovate or replace aged recreation facilities to continue to serve the public's outdoor recreation needs and reduce the liability created by these situations.

Implement a regular maintenance schedule and keep detailed records of inspections and reports.

Develop a long-range capital improvement program to fund rehabilitation of aged facilities.

Remove deteriorated equipment that may pose a danger to the public.

Issue: Greenbelts and River Access

Recreation providers in region 13 indicated a need for more water-based recreation opportunities including making public waterways more accessible. Sections of three rivers and numerous

creeks and streams flow through the Brazos Valley region. In general, access to these freshwater resources is limited, and their use by the public for recreational purposes is restricted. Creeks that flow through cities in the region, notably Bryan and College Station, have often been closed off by development on either side that runs up as close to the creek bed as possible. Thus the potential to create linear greenbelt parks and trails in many cases has been lost. With advance planning, these resources left in a natural state can be integrated into urban development and provide public linkages to key areas. They are also valuable in satisfying urban open space needs of citizens and for their wildlife/environmental benefits.

It is often impractical and/or undesirable to acquire greenbelts along rivers in rural areas. In these cases an increase of access points is needed to provide a way for the public to utilize these public resources. The rights of adjacent landowners must also be considered as



increased access often leads to increased litter and trespassing. Recreationists need to be informed of the distinction between public and private resources. (Also, see State Summary, "Rivers and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Accelerate the integration of natural greenbelt waterways into long range urban development plans.

Insure the provision of access points along freshwater rivers and streams.

Consider recreational easements to provide access points and trails along greenbelts when outright acquisition is not necessary or desired.

Issue: Population Increases

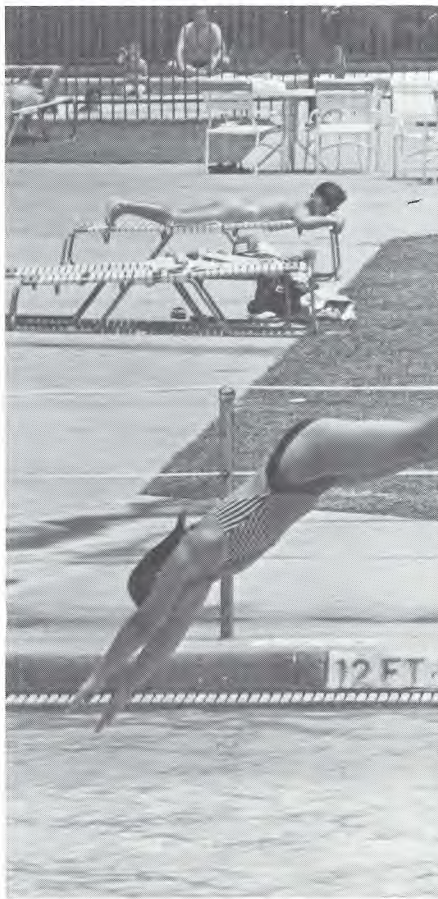
The dramatic increases in population in the Brazos Valley region have strained the ability of recreation providers to keep up with resulting outdoor recreation demand increases. Cities, especially Bryan and College Station, have been faced with providing parks and recreation facilities in developing sections of town. At the same time they are faced with maintaining and upgrading existing facilities during a period of budget constraints. Showing good foresight, the city of College Station implemented, and successfully defended, a mandatory parkland dedication ordinance. This ordinance provides for developers to help share the burden of providing outdoor recreation facilities to satisfy the local recreational needs generated by the people who move into their houses. The city of Bryan enacted a similar ordinance.

Shifts in the population within cities also is a concern of local recreation providers. Population shifts can leave existing recreation facilities in areas where demand is not great while newer areas are left with high unmet demand.

Recommendations:

For local recreation providers:

Continually assess the outdoor recreation needs of the public to assure limited resources are committed to projects that will result in the most good.



Almost half the residents of region 13 visit a swimming pool at least once a year.

Improve planning and development techniques to meet recreation needs as demanded by the public.

Consider implementing a mandatory parkland dedication ordinance if one does not already exist.

Develop flexible facilities such as multi-use fields and courts to meet changing recreation preferences.

Increase the public's awareness of available existing recreation opportunities.

Issue: Funding

The Brazos Valley region, as with most regions in the state, has been affected by the statewide economic downturn that occurred in the mid 1980's. While the "bottom fell out" of the oil and gas industries, declines in the agriculture sector contributed to the region's economic woes. Fortunately, Texas A&M University, the greatest economic

factor in Brazos County, continued growing and producing economic benefits for the region.

Some areas and cities of the region, such as the cities of Bryan and Somerville, have a greater reliance on the oil and gas industry. Local budgets declined in these areas and unemployment increased. Funding for park and recreation departments is often one of the first items to be reduced to make up budget shortfalls. To compound the problem, in some years the level of Lake Somerville fluctuates to the point where it renders many of the recreation facilities useless. These times hurt towns near the lake that usually realize significant economic benefits from the expenditures of water-oriented recreationists. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Continue to seek innovative funding methods to satisfy the outdoor recreation needs of constituents in the most effective manner possible.

Develop long-range outdoor recreation plans and periodically assess the needs of constituents to assure that existing funds are efficiently used.

Utilize volunteers to help maintain existing facilities, where practical.

Consider entering into joint use, cost-sharing partnerships with other public or private recreation providers to acquire and develop outdoor recreation opportunities.

Issue: Non-resident Use of Urban Facilities

The cities of Bryan and College Station are the focal point of the Brazos Valley region. Over 50 percent of the region's population and Texas A&M University reside within these two cities. Both cities have reputable parks and recreation departments that in the past decade have had the resources, ingenuity and support to develop quality recreation facilities. Counties and smaller cities in the region have not been as fortunate, or dedicated, in providing outdoor recreation opportunities. The result is that area citizens who live outside of the city limits often utilize city facilities to engage in various urban outdoor recreation activities.

Local recreation providers indicated that during peak use times some city residents may be displaced by non-city residents. Local recreation providers in Bryan and College Station do not think that this situation is fair. The bulk of the revenue to build these facilities comes from local property taxes.

Pricing can address this problem when the facility or program has a fee and on-site staff, as non-residents can be charged higher user fees than residents.

Recommendations:

For county governments:

Increase commitments to provide outdoor recreation opportunities by focusing on park and recreation facilities that have county-wide demand and by providing facilities in unincorporated communities.

Consider sharing costs via joint partnerships with cities within their borders.

For local recreation providers:

Consider differential fee structures for non-residents who wish to utilize city facilities to reflect the costs of providing these opportunities.

For commercial entities:

Consider providing outdoor recreation opportunities in instances where demand exceeds supply and profitability appears feasible.

RESOURCES

Population Trends

The Brazos Valley region has experienced tremendous and continuous population growth since 1960. In the six years from 1980 to 1986 the population in both the cities of Bryan and College Station increased by over 40 percent, or close to 7 percent annually. Current population projections show this growth is expected to continue through 1995.

The population of the region is projected to increase by about 60,000 people by 1995. Much of this growth will occur in the Bryan/College Station MSA (table A1). As of 1986, 51.1 percent of the total population of the region resided in these two cities. In general, the character of the Brazos Valley region is rural. About 38 percent of region residents live in rural areas or towns of under 5,000 population.

The population of region 13 is slightly older than the state population as a whole. Statewide only 9.8 percent of Texans are 65 years of age or older; 12.3 percent of region 13's population is in this age group (figure 1). This percentage is likely to increase in the years to come as the average age of Texans and Americans as a whole is projected to increase.

Figure 1
Region 13 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|--------------------|
| Counties | = | 7 |
| Land area | = | 5,080 square miles |
| Elevation | = | 190' - 496' |
| Annual rainfall | = | 34.5 - 41.5 inches |
| January minimum temperature | = | 38 - 43°F |
| July maximum temperature | = | 94 - 96°F |
| Growing season | = | 268 - 278 days |

POPULATION 1986

Total 229,073

| | | | |
|------------|---------|----------|--------|
| Counties | | | |
| Brazos | 131,217 | Burleson | 14,651 |
| Washington | 26,348 | Leon | 12,328 |
| Grimes | 17,272 | Madison | 11,852 |
| Robertson | 15,405 | | |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 287,752 |
| People per square mile | 56.6 |
| Ethnic composition: | |
| White | 77% |
| Black | 15% |
| Hispanic | 8% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 16,550 acres |
| Developed recreation land | = | 2,334 acres |

Fanthorp Inn State Historical Park
Fort Boggy State Park
Keechi Creek Wildlife Management Area
Lake Somerville State Park (Birch)
Somerville Lake Corps Parks
Somerville Wildlife Management Area
Washington-on-the-Brazos State Historical Park

Lakes

| | |
|---------------|--------|
| Surface acres | 17,430 |
|---------------|--------|

Surface Acres

| | |
|-------------------------|---------------|
| Bryan Utilities Lake | 828 |
| Gibbons Creek Reservoir | 2,490 |
| Lake Limestone | 2,736 (Part) |
| Madisonville Lake | 75 |
| Somerville Lake | 11,231 (Part) |

Streams

| | |
|----------------|---------------|
| Brazos River | Trinity River |
| Navasota River | Yegua Creek |

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

Resource Attractions

Lake Somerville is the number one outdoor recreation resource attraction in the Brazos Valley region (figure 1 and map). Many of the recreation land acres, picnicking, camping, and freshwater boating, swimming, and fishing opportunities in the region are concentrated at this one lake resource. The Army Corps of Engineers manages the reservoir and the level of the lake. The Corps operates four recreation sites on the lake and leases a fifth, Walsh Park, to the city of Somerville. All have boat ramps, picnic areas and campgrounds. The Birch Creek Unit of Lake Somerville State Park offers similar opportunities but also has

a group dining hall and hiking/horseback riding trails. (Note that the Nails Creek Unit of the state park area is also located on the shores of Lake Somerville but is in region 12.)

Gibbons Creek Reservoir and portions of Lake Limestone are the two other large bodies of freshwater in region 13. They are located on opposite sides of the region and offer freshwater recreation opportunities but no camping facilities. Bryan Utilities Lake, although substantially smaller than the three previously mentioned lakes, is located just northwest of the city of Bryan. Because of its short distance from the Bryan/College Station area, this lake receives

heavy use. Presently, Bryan Utilities Lake only has a boat ramp and day use facilities. The presence of a freshwater swimming and fishing opportunity accessible to a large population makes it extremely popular during summer weekends.

Sections of the Brazos, Navasota, and Trinity rivers flow through the region and all are permanently floatable. Public access to these waterways is extremely limited and they are not utilized much for recreation purposes.

Recreation Supply

More than half of region 13 residents live in Brazos County, so it comes

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 13, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | | LOCAL | | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|-------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | COMMERCIAL |
| Number of Parks/Rec. Areas | 0 | 0 | 0 | 6 | 4 | 2 | 0 | 0 | 2 | 5 | 70 | 5 | 9 | 103 |
| Total Parkland Acres | 0 | 0 | 0 | 6675 | 4365 | 2210 | 0 | 0 | 15 | 306 | 1414 | 774 | 791 | 16550 |
| Developed Land Acres | 0 | 0 | 0 | 541 | 317 | 0 | 0 | 0 | 15 | 205 | 877 | 147 | 232 | 2334 |
| Developable Land Acres | 0 | 0 | 0 | 1139 | 3976 | 0 | 0 | 0 | 0 | 101 | 479 | 627 | 559 | 6881 |
| Preserved or Unsuitable for Development (Acres) | 0 | 0 | 0 | 4995 | 71 | 2210 | 0 | 0 | 0 | 0 | 58 | 0 | 0 | 7334 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 28 | 2 | 0 | 33 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 0 | 2 | 56 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 16 | 4 | 0 | 0 | 0 | 3 | 5 | 4 | 5 | 4 | 41 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 407 | 186 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 328 | 921 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 2200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2640 | 0 | 4840 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 515 | 40 | 0 | 0 | 0 | 0 | 20 | 122 | 0 | 110 | 807 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 0 | 36 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 | 13694 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 250 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 325 |
| Picnic Tables | 0 | 0 | 0 | 78 | 121 | 0 | 0 | 0 | 0 | 49 | 422 | 25 | 0 | 695 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 60 | 1 | 3 | 67 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 30 | 0 | 0 | 31 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 16500 | 7500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22000 | 46000 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6279 | 1760 | 135 | 8174 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 40 | 2 | 0 | 44 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 7 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

as no surprise that more than half of the region's urban recreation facilities are also located there (table 1). The cities of Bryan and College Station have made great strides in the last decade in providing recreation opportunities for their residents. Both cities experienced tremendous growth during this time which posed a challenge of having sufficient recreational facilities supplies to keep up with increasing demands. A friendly inter-city rivalry exists when it comes to providing citizen services. Because the cities are adjacent and closely interwoven, anything that looks appealing or successful in one city is soon desired by residents of the other city. Park and recreation services have benefited by this healthy competition as citizens appear to be very interested in the quality and quantity of their parks and recreation facilities. Both departments also learn from each other's successes and failures. A good example is the high quality softball complex that College Station built in the early 1980s. Bryan is currently putting the finishing touches on their state-of-the-art softball and soccer complex. Overall efficiency could be increased if Bryan and College Station coordinated various aspects of their recreation providing roles. Many services are duplicated. Joint programming could save both parties money and time in most instances. Some facilities, such as multi-use trails that would pass through both cities, are a natural starting point for increased cooperation and joint cost sharing.

New park development in many areas has not occurred because the emphasis has been placed on retaining or improving the quality of parks and recreation sites that already exist. Many urban outdoor recreation facilities in the Brazos Valley region were built prior to 1960 and are showing signs of age. Smaller cities in the region have been forced to renovate aged facilities at prices that often exceed their original construction costs. Older facilities such as picnic tables and ballfields are not as inviting and do not stimulate participation that a newer facility would. Others such as aged playground equipment become dangerous and a liability.

In terms of the existing supply of outdoor recreation facilities in region 13 relative to other regions in the state, this region often falls in the middle third, or has fairly average supplies (table A3). Two notable exceptions are that region 13 has the second highest supply of bas-

ketball goals, relative to the population (0.22 goals per 1000 population) and the third highest soccer/football fields (0.12 fields per 1000 population).

Potential and Proposed Resources

The Trinity, Brazos, and Navasota river sections that flow through the region are currently used very little for recreation purposes. Access to these freshwater resources is limited. The potential to increase use of these waterways is great. Greenbelts with hike/bike trails and increased boat and canoe launching areas need to be considered. Texas A&M University currently owns a large tract of land along the Brazos River that has the potential to provide public access to the river.

One potential trail in the region is an urban multi-use trail along Carter's Creek. This trail could link various existing parks and other important landmarks in the cities of Bryan and College Station. Wolf Pen Creek is being considered as an urban corridor that could provide trail opportunities and, if developed with a series of ponds, promote economic development and tourism. The city of College Station owns a tract of land called Lick Creek Park that currently offers passive day-use opportunities such as walking, and nature view-

ing. The park's master plan calls for camping opportunities in the future.

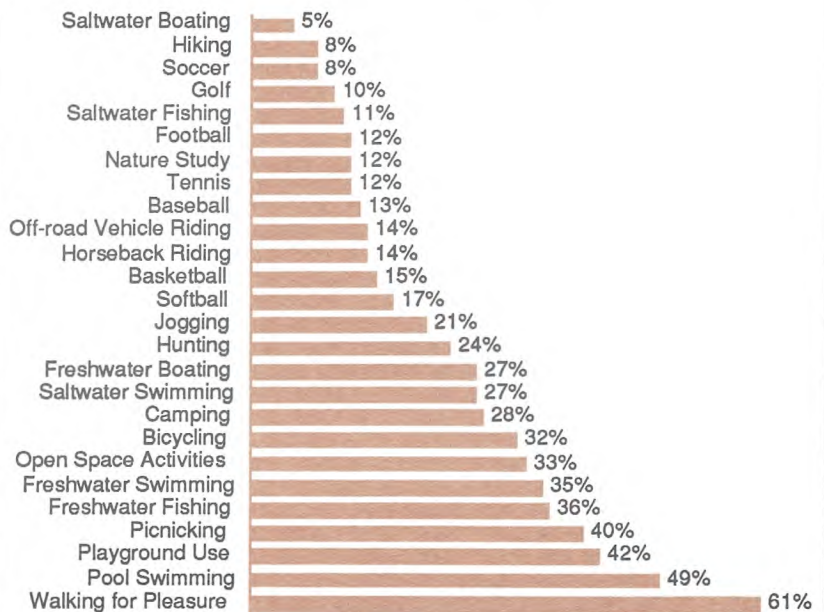
The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

OUTDOOR RECREATION PARTICIPATION

Popular Activities

Residents of the Brazos Valley region participate heavily in many urban-oriented outdoor recreation activities (figure 2 and table 2). The regional per capita participation rates in pool swimming and walking for pleasure, at 7.0 and 15.4 annual occasions per resident respectively, are the third highest of any region in the state. Soccer is participated

Figure 2
Region 13 Projected 1995 Percentage
of Population Participating



Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this figure and an explanation of research methods. See Appendix D for an explanation of terms.

in by region 13 residents at the second highest rates in the state, and baseball, basketball, football, and playground use are all the third highest of the 24 planning regions. It is not clear whether these high participation rates are an effect of quality facilities, good programming, or other factors.

Participation rates in rural outdoor recreation activities in the region are generally average compared to other regions in Texas. Therefore these high urban recreation rates do not appear to be a trade-off because of few rural recreation opportunities. In fact, residents of the Brazos Valley region have the third highest hunting participation rate in the state at 1.9 annual occasions per capita. Over three-quarters of the hunting occasions generated by region 13 residents are engaged in within the region. Camping is also a popular activity with residents of region 13. While residents camp about 1.8 nights per person per year in Texas, only about half of these occur within the region and many of these are on the shores of Lake Somerville.

Recreation Travel Patterns

Sixty-three percent of the rural resource-based activity occasions that are generated by residents of region 13 occur within the region itself (figure 3). Many of these activity occasions are enjoyed at Lake Somerville. The coastal areas of region 16 attract another 10 percent of the resource based activities enjoyed by region 13 residents. Twenty-seven percent of the region's population indicated that they annually swim in salt water, which is fairly high for a noncoastal region. The Highland Lakes and parks, along with Bastrop and Buescher state parks of region 12, are the recreation destinations of another five percent of resource-based outdoor recreation occasions. The national forests and lakes of region 14 attract another 5 percent, and the lakes and parks of region 6 account for 4 percent of this type of recreation participation.

As a recreation destination, region 13 is one of three planning regions in the state that has more resource-based recreation demand generated by an adjoining region than are generated from within the region itself. Residents of region 16, notably the Harris County/Houston area account for 50 percent of the resource based outdoor recreation occasions that occur in the Brazos Valley region (figure 4). The recreation sites around Lake Somerville and Gibbons Creek Reservoir are popular recreation destinations for resi-

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 13 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 13 Occurring In | | |
| | Region 13 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 1.0 | 1.4 | 1.3 |
| Boat Ramp Lanes, SW | * | 0.1 | 0.3 |
| Boating (Pleasure), FW | 0.4 | 0.7 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 1.0 | 1.8 | 1.7 |
| Fishing, FW | 2.0 | 2.7 | 2.4 |
| Fishing from Banks | 0.7 | 0.9 | 0.8 |
| Fishing from Boats | 0.9 | 1.2 | 1.1 |
| Fishing from Structures | 0.5 | 0.6 | 0.5 |
| Fishing, SW | * | 0.3 | 0.7 |
| Fishing from Boats | * | 0.2 | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | 0.1 | 0.3 |
| Hiking | * | 0.3 | 0.4 |
| Hunting | 1.5 | 1.9 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.2 | 1.6 | 1.5 |
| Nature Study | 0.5 | 0.7 | 0.9 |
| Picnicking | 1.4 | 1.8 | 1.9 |
| Swimming, FW | 1.5 | 2.3 | 2.1 |
| Swimming, SW | * | 0.9 | 1.2 |
| Baseball | 2.2 | | 1.5 |
| Basketball | 1.8 | | 1.6 |
| Bicycling | 10.2 | | 10.7 |
| Bicycling on Trails | 0.6 | | 0.7 |
| Football | 1.0 | | 0.8 |
| Golf | 1.2 | | 1.3 |
| Horseback Riding | 0.9 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 5.6 | | 5.4 |
| Jogging/Running on Trails | 1.7 | | 1.7 |
| Off-road Vehicle Riding | 1.5 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.3 | | 0.3 |
| Open Space Activities | 3.2 | | 3.2 |
| Playground Use | 5.1 | | 4.8 |
| Soccer | 1.4 | | 1.2 |
| Softball | 2.0 | | 1.8 |
| Swimming, Pool | 7.0 | | 6.4 |
| Tennis | 1.2 | | 1.3 |
| Walking (Pleasure/Exercise) | 15.4 | | 14.8 |
| Walking on Trails | 3.6 | | 3.5 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Asterisks indicate value is less than .1 occasion per capita. See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

dents of region 16. Another 41 percent of the resource-based recreation occasions that occur in this region are generated by residents from within the region.

Almost 2 million more resource-based recreation occasions occur in this region than are generated by residents of the region itself. On peak weekends, recreation visitors from the Houston area combined with residents from within the Brazos Valley region fill many recreation sites to capacity. While these visitors, at times, put a strain on resources and facilities, they provide important economic impacts to local economies near these areas.

Projected Participation

Projected population increases, if realized, will increase the demand for all outdoor recreation activities (tables 3 and 4). As society ages, participation in activities enjoyed by elderly citizens should increase faster than other forms of recreation. Walking for pleasure, bicycling and nature viewing opportunities will be desired by these residents.

Residents from the city of Houston and Harris County will continue to im-

act the many rural outdoor recreation resources. Their desire to get out of town to enjoy leisure pursuits will continue to fill many campgrounds on peak summer weekends.

Camping and entrance fees can help defray maintenance and operation costs.

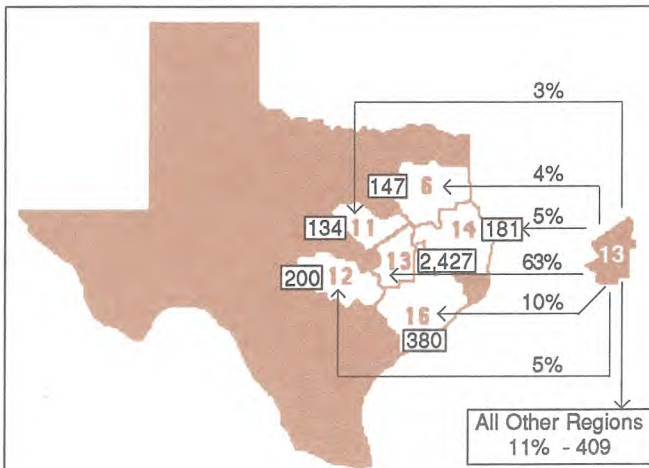


Figure 3
Destinations of Region 13 Residents
for Resource-based Activities

3,879 Annual User Occasions (000's)
Generated by Region 13 Residents, 1995

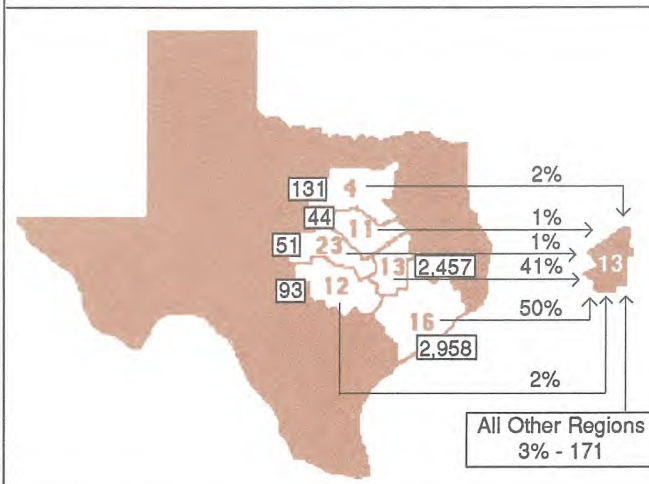


Figure 4
Origins of Participants Who Recreated
in Region 13 for Resource-based Activities

5,876 Annual User Occasions (000's)
Occurring in Region 13, 1995

Source: 1986 C-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting. See Appendix B for key points to interpret these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 13 by Region 13 Residents,
Texans from Outside Region 13, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 13 (in 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|------|----------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | | | |
| | Residents of Region 13 | | | Texans from Outside Region 13 | | | Regional Totals | | |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 271 | 301 | 332 | 360 | 391 | 422 | 631 | 692 | 754 |
| Boating (Pleasure), FW | 116 | 128 | 141 | 137 | 148 | 159 | 252 | 276 | 299 |
| Camping | 257 | 287 | 316 | 578 | 627 | 675 | 835 | 913 | 992 |
| Fishing, FW | 529 | 589 | 650 | 742 | 807 | 871 | 1271 | 1396 | 1521 |
| Fishing from Banks | 173 | 192 | 212 | 242 | 263 | 284 | 415 | 455 | 496 |
| Fishing from Boats | 237 | 264 | 291 | 332 | 361 | 390 | 569 | 625 | 681 |
| Fishing from Structures | 120 | 133 | 147 | 168 | 182 | 197 | 287 | 315 | 344 |
| Hiking | 26 | 28 | 31 | 38 | 42 | 45 | 64 | 70 | 76 |
| Hunting | 375 | 419 | 463 | 316 | 342 | 369 | 691 | 761 | 831 |
| Lake Use (BFS Suitable), FW | 309 | 344 | 378 | 411 | 446 | 481 | 720 | 790 | 860 |
| Nature Study | 134 | 151 | 168 | 517 | 568 | 619 | 651 | 719 | 787 |
| Picnicking | 360 | 400 | 440 | 249 | 267 | 285 | 608 | 667 | 726 |
| Swimming, FW | 387 | 426 | 465 | 606 | 648 | 690 | 993 | 1074 | 1155 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Table 4
Projected Outdoor Recreation Participation
in Region 13 by Residents of Region 13, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (in 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 561 | 626 | 691 |
| Basketball | 474 | 521 | 568 |
| Bicycling | 2629 | 2941 | 3256 |
| Bicycling on Trails | 162 | 181 | 201 |
| Football | 264 | 292 | 319 |
| Golf | 316 | 352 | 388 |
| Horseback Riding | 244 | 270 | 296 |
| Horseback Riding on Trails | 63 | 69 | 76 |
| Jogging/Running | 1460 | 1603 | 1746 |
| Jogging/Running on Trails | 450 | 494 | 538 |
| Off-road Vehicle Riding | 382 | 419 | 457 |
| ORV Riding on Trails | 75 | 82 | 89 |
| Open Space Activities | 838 | 916 | 994 |
| Playground Use | 1309 | 1456 | 1605 |
| Soccer | 349 | 390 | 432 |
| Softball | 532 | 578 | 624 |
| Swimming, Pool | 1806 | 2012 | 2218 |
| Tennis | 310 | 341 | 372 |
| Walking (Pleasure/Exercise) | 3917 | 4421 | 4927 |
| Walking on Trails | 917 | 1035 | 1153 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 13, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|-------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 33 | 8 | 12 | 17 |
| Basketball Goals | 56 | 1 | 7 | 13 |
| Boat Ramp Lanes, FW | 41 | 29 | 35 | 42 |
| Campsites | 921 | 635 | 780 | 925 |
| Fishing Structures, FW Lin.Yd. | 807 | 844 | 1006 | 1169 |
| Golf Holes | 36 | 2 | 6 | 11 |
| Hiking Trail Miles | 2 | 7 | 7 | 8 |
| Horseback Riding Trail Miles | 9 | * | 1 | 2 |
| Lake Acres (BFS Suitable), FW | 13694 | * | * | * |
| Off-road Vehicle Riding Acres | 325 | * | * | * |
| Picnic Tables | 695 | * | * | * |
| Playground Areas, Equipped | 67 | 58 | 72 | 86 |
| Soccer/Football Fields | 31 | 19 | 22 | 24 |
| Softball Fields | 25 | 13 | 16 | 20 |
| Swimming, FW Sq.Yd. (000) | 46 | 206 | 227 | 247 |
| Swimming, Pool Sq.Yd. (000) | 8 | 3 | 5 | 6 |
| Tennis Courts | 44 | 37 | 45 | 53 |
| Trail Miles, Multi-use (walk, Bike, Jog) | 7 | 20 | 23 | 26 |
| Developed Land Acres | | 659 | 819 | 1000 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

An analysis of current outdoor recreation facility supply and expressed recreation demand indicates that multi-use (walk/bike/jog) trails, and soccer/football fields are the urban recreation facilities that are of highest need (tables 5 and 6). Baseball fields, golf holes (courses), playground areas, softball fields, and tennis courts are also needed to satisfy current recreation demand.

It is anticipated that resource-based outdoor recreation demand of Texans from outside region 13 will continue to be significant. Many facilities necessary to engage in these types of activities are needed. More campsites and hiking trails are needed to satisfy future demands. Providing access to freshwater resources such as boat ramps, fishing structures, and swimming areas are all needed.

As mentioned previously in an issue, renovation and maintenance of

existing facilities is needed. Protecting past investments should take precedence over making new ones.

Providers' Responsibilities

Traditionally, it is the responsibility of local governments to provide for many of the urban outdoor recreation needs of their citizens. Local governments are recommended to continue to address these needs (table 7). However, in recent times, commercial recreation entities have begun to provide more recreation facilities and services. Golf courses, swimming pools, and sports complexes are examples of urban recreation facilities that are potentially profitable and have caught the interest of the commercial sector. These facilities, or ones developed by public/private sponsorships, should be encouraged. School districts within the Brazos Valley region should leave their outdoor recreation facilities open to the public when not

being used by school functions. County governments should help to provide urban-oriented recreation facilities when they serve regional clientele. All public agencies need to cooperate with one another and consider joint development of facilities to maximize scarce public funds when possible.

Needed rural outdoor recreation facilities should be provided by county, state, and federal agencies depending on who manages existing and new resources. Gibbons Creek Reservoir and Bryan Utilities Lake have the potential to increase their recreation opportunities. Both are popular day use sites, but currently neither have camping facilities.

Access to, and the existence of parks along freshwater streams within the region is limited. All outdoor recreation providing agencies within the Brazos Valley region should consider acquiring access points and parkland along these resources where practical.

Table 6
Ranking of Outdoor Recreation Facility/Resource
Needs in Region 13 Through 1995

Need Rank Facility/Resource

| | |
|----|--|
| 1 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 2 | Soccer/Football Fields |
| 3 | Playground Areas, Equipped |
| 4 | Swimming, FW Sq.Yd. |
| 5 | Boat Ramp Lanes, FW |
| 6 | Campsites |
| 7 | Hiking Trail Miles |
| 8 | Fishing Struc., FW Lin.Yd. |
| 9 | Tennis Courts |
| 10 | Softball Fields |
| 11 | Baseball Fields |
| 12 | Golf Holes |
| 13 | Basketball Goals |
| 14 | Horseback Riding Trail Miles |
| 15 | Swimming, Pool Sq. Yd. |
| 16 | Picnic Tables |
| 17 | Off-Road Vehicle Riding Acres |
| 18 | Lake Acres (BFS Suitable) |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Note: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



Resource-based parks attract visitors on weekends from outside the Brazos Valley region, particularly from the Houston area.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 13, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|-------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Cops of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 |
| Basketball Goals | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 |
| Boat Ramp Lanes, FW | 35 | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 10 | 5 | 5 | 5 | 2 |
| Campsites | 780 | 0 | 0 | 0 | 75 | 75 | 50 | 0 | 0 | 100 | 150 | 50 | 75 | 205 |
| Fishing Structures, FW Lin.Yd. | 1006 | 0 | 0 | 0 | 136 | 120 | 0 | 0 | 0 | 120 | 100 | 100 | 150 | 280 |
| Golf Holes | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Hiking Trail Miles | 7 | 0 | 0 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 72 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 2 | 14 | 47 | 4 | 0 |
| Soccer/Football Fields | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 16 | 0 | 0 |
| Softball Fields | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 4 | 0 | 4 |
| Swimming, FW Sq.Yd.(000) | 227 | 0 | 0 | 0 | 40 | 20 | 0 | 0 | 0 | 0 | 60 | 47 | 60 | 0 |
| Swimming, Pool Sq.Yd.(000) | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 |
| Tennis Courts | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 38 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 14 | 0 | 0 |
| Developed Land Acres | 819 | 0 | 0 | 0 | 80 | 53 | 13 | 0 | 0 | 56 | 165 | 278 | 49 | 126 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

DEEP
EAST
TEXAS



National forests are an important aspect of recreation in the Deep East Texas region.

ISSUES AND RECOMMENDATIONS

Issue: Tourism

The Deep East Texas region with its heavily wooded, rural character and abundance of freshwater recreation opportunities attracts many tourists. The region is especially popular with residents of the Houston and Golden Triangle areas, as the trees, fresh water and low density of people are stark contrasts to their city life. Many cities and towns in the region have recognized the positive economic benefits that follow recreation-related tourism. This feeling was partially responsible for local park and recreation department budgets remaining stable during recent economic downturns. Local politicians have come to realize that quality, well maintained local parks help to attract tourists' lodging, food, and gas dollars.

Staff at the federal recreation land managing agencies in the region, the U.S. Forest Service, the U.S. Army Corps of Engineers, and the National Park Service have indicated that many of their recreation sites are underutilized. Both agencies plan to increase public awareness of less used sites through information and public education programs. Travel distance is a major factor that affects where people choose to recreate. Toledo Bend Reservoir, less than two hundred miles from Houston, is lightly visited while Lake Livingston, about

eighty miles away, is overrun on many summer weekends. It appears that with promotion and education there is a potential to shift some use and increase regional tourism overall.

An increase in coordination among recreation providers and tourism interests would help to promote tourism in the region. Regional chambers of commerce should be kept informed of outdoor recreation attractions and provided with brochures and other items to satisfy public information requests. In turn, chambers of commerce could give higher priority to the promotion of outdoor recreation attractions and key on sites currently underutilized. Driving for pleasure is a popular activity in itself and an important component of most outdoor recreation experiences. The scenic quality and character of roadways, if developed, can help to attract tourism to the area. (Also, see State Summary, "Tourism and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers in conjunction with chambers of commerce:

Advertise and promote recreation opportunities that exist in region 14; key on those that are underutilized.

Encourage commercial recreation development to complement existing rural recreation opportunities.

Study the feasibility of establishing a regional agency to promote and coordinate outdoor recreation and tourism throughout the region.

Improve coordination and continue to promote regional and local attractions and events. Continually seek to improve the marketing and packaging of events, sites, and attractions.

Plan special events targeting special use groups such as horseback rider or recreational vehicle groups.

Provide information about recreation opportunities to hotels/motels and restaurants for distribution.

Seek guidance from the Texas Department of Commerce on tourism development and planning.

Coordinate with the Texas Department of Highways and Public Transportation, and other transportation



officials, to increase highway signs for key recreation attractions.

For the Texas Department of Highways and Public Transportation:

Retain the scenic qualities of roadways when making improvements or constructing new roadways.

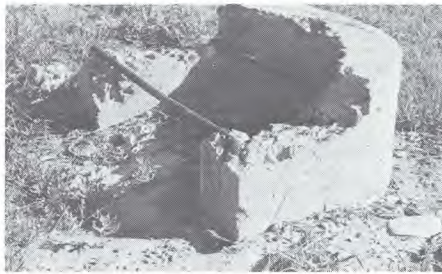
Provide automobile and bicycle touring maps and signs to promote scenic roadways and sightseeing.

Issue: National Forest Management

Most of the national forest land in Texas is located in the Deep East Texas region. These lands include all of the Sabine, Angelina, and Davy Crockett national forests and much of the Sam Houston National Forest. With adjoining freshwater lakes and streams, these resources dominate the regional recreation picture and offer many high quality recreation opportunities.

National forests throughout the United States are managed under a framework defined by the Multiple-Use Sustained-Yield Act passed in 1960. This act specifies that the multiple forest activities that occur on national forests be managed to optimize their benefits yet not degrade the resources for future uses. This land management scheme provides a wide variety of opportunities as well as economic benefits to the residents of the region. On occasion these activities (timbering, mining, grazing, recreation and wildlife) conflict with each other or they begin to affect environmental or social concerns. The U.S. Forest Service has the unenviable task of trying to manage all of these activities harmoniously.

In April of 1987, after years of research, evaluation and public input, the forest service released a **Land and Resource Management Plan for National Forests and Grassland** in Texas. The Forest Plan identifies specific recreation development that is proposed for the next twenty years of their planning cycle. During this period five new developed recreation sites are to be constructed in Texas national forests. One of these is located in region 14, a primitive campground on Tarkington Bayou adjacent to the Lone Star Hiking Trail. An increase in dispersed recreation opportunities will also be provided. These



Funding restrictions have forced the Forest Service to close some sites to concentrate funds at others. Closed facilities quickly deteriorate because of lack of attention.

include horse trails, hiking trails, off-road vehicle trails, scenic areas and better access to forest waterways.

The forest service is one of the only public land managing agencies in region 14 to make provisions for off-road-vehicle riding opportunities. Because of noise and the degradation it can cause to vegetation, with subsequent erosion problems, many agencies have decided to ban the activity from their lands altogether. The forest service recognizes off-road vehicle (ORV) use as a viable outdoor recreation activity and provides trail areas for it to occur. This allows them to protect sensitive areas while allowing intense recreational use elsewhere. The forest service plans to do an in-depth study of the effects of ORV use on resources. Unfortunately, development of new facilities is dependent upon federal funding, which has been very inconsistent during the past decade.

The forest service is also working closely with horseback riding groups to develop new riding trails, many with volunteer labor. Increased law enforcement is planned to help manage the various people that use and in some cases, misuse, the national forests in Texas. For years a quarter-mile-wide corridor along the scenic Neches River adjacent to the national forest has been protected by the forest service. It is their hope that this stretch of river can be part of a statewide scenic rivers system should one be created.

The U.S. Forest Service is also working under a new mandate called the "National Recreation Strategy." Under this program the forest service will increase the promotion of recreation opportunities available on forest lands and try to better understand the needs of their clientele. They are also offering a grant program to help initiate

additional outdoor recreation opportunity development on forest service lands.

Recommendations:

For the U.S. Forest Service:

Continue to provide a diversity of quality recreation opportunities.

Fully assess the benefits of outdoor recreation so as to more adequately compete with other forest activities under the multi-use management concept.

Continue to inform the public of the recreation opportunities available on forest lands.

For other recreation providers and the commercial sector:

Consider taking advantage of "Challenge Grants" offered under the National Recreation Strategy to develop recreation opportunities on national forest land.

Issue: Funding

The decline in the oil and gas market compounded with declines in the timber industry have had adverse affects on city budgets in Deep East Texas. Funding of local park and recreation department budgets has been reduced in many areas or stayed the same but with increased responsibilities. Priority has been given to maintaining existing facilities and has generally kept pace with use. Local park and recreation departments in the region were fairly small to begin with and avoided the personnel cuts that plagued departments in other regions. Political support for quality local parks and recreation facilities appears to be high because of the recreation-related tourism that the rural resources attract.

Federal recreation providing agencies in region 14 have experienced reduced funding and manpower levels. The forest service was forced to close less-used sites to focus funds at sites with heaviest use. Most new trail development has been accomplished with volunteer labor. Lack of funding has kept the Big Thicket National Preserve, managed by the National Park Service, from realizing its statutorily authorized goal of 85,000 acres. The park service hopes to attain that figure by the early 1990s.

Smaller, rural towns particularly have a hard time funding basic outdoor

recreation facilities. Low tax bases limit available funds, and lack of staff with recreation experience or education often means that innovative funding methods and available grants are not pursued. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Support federal legislation establishing a dedicated trust fund, or similar mechanism, to provide funding for outdoor recreation.

Utilize volunteers where practical.

Continue to operate urban park and recreation departments efficiently and effectively to further the current public and political support for local parks.

Seek assistance from federal and state agencies.

Consider entering into joint use, cost-sharing partnerships with other public or private recreation providers to acquire and develop outdoor recreation opportunities.

For county governments:

Assist rural areas to satisfy local recreational needs by developing recreation facilities that would serve regional areas and unincorporated communities.

Issue: Interagency Coordination

Over 15 percent of region 14's total area is made up of public lands and water available for various outdoor recreation endeavors. These public areas are managed by a variety of federal, state, local, and quasi-public agencies. Many of these agencies provide similar recreation facilities and services, some-

times at the same resource, such as at Sam Rayburn Reservoir. These agencies often employ talented land managers and their ideas and innovations, if shared with one another, would avoid duplicating efforts and help insure optimal management of resources. Decisions and actions by one agency often affect other agencies in the vicinity. Local recreation providers would benefit by shared experiences from the larger agencies who in turn could benefit by better understanding local public recreational needs and trends.

A regionwide desire to attract more outdoor recreation-related tourism to the area would be best accomplished by a multi-agency committee. This issue could serve as the catalyst to increase interagency coordination and mutually beneficial sharing of information. Local and regional chambers of commerce, recreation providers, councils of government, and interested private groups working together could help the region increase tourism. Individuals in the region suggested that the Texas Parks and Wildlife Department might be the appropriate agency to bring these various entities together. (Also, see State Summary, "Improving Outdoor Recreation Implementation Programs" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Cooperate by serving on regional outdoor recreation planning or tourism committees.

Freely share pertinent information and keep abreast of one another's activities.

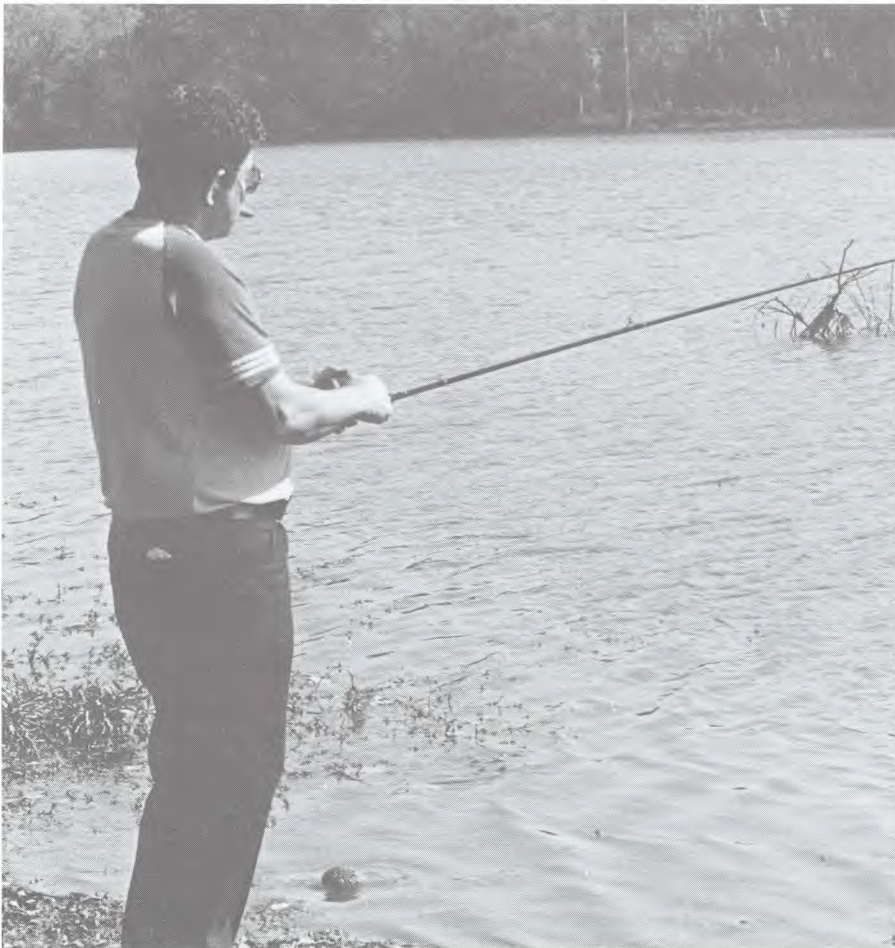
For local and regional chambers of commerce:

Help initiate, support, and become active in a regional outdoor recreation and tourism committee.

Identify key interested recreation related private concerns for inclusion in the above mentioned committee.

For the Texas Parks and Wildlife Department:

Consider acting as the coordinating agency at the onset of planning efforts to bring various entities together to form a regional outdoor recreation planning and tourism committee.



An abundance of lakes and streams make freshwater fishing the most popular activity in region 14.

RESOURCES

Population Trends

Region 14's population with a relatively low density of 36.5 people per square mile (figure 1) is primarily rural in nature. The cities of Lufkin and Nacogdoches both have slightly over thirty thousand residents and collectively make up about 20 percent of the total population of the region. Roughly 70 percent reside in towns of under four thousand. The regional population is projected to grow at the rate of 2 percent per year. Most of the growth will occur in the incorporated areas. The city of

Livingston has had the most rapid growth rate over the last fifteen years, about double the rate of the region.

Resource Attractions

Rural recreation resources dominate the Deep East Texas region. Toledo Bend Reservoir, Sam Rayburn Reservoir and Lake Livingston, at their normal levels, are three of the largest freshwater impoundments in Texas (figure 1 and state map). These, along with B.A. Steinhagen Lake, and other smaller reservoirs give region 14 more freshwater surface

acres than any of the other regions. These water resources have ample access and facilities providing freshwater boating, swimming and fishing opportunities.

The U.S. Forest Service, U.S. Army Corps of Engineers, National Park Service and Texas Parks and Wildlife Department manage large tracts of land that offer both developed and passive recreation opportunities. In fact, over 15 percent of the total regional area is covered by either public recreation lands or freshwater lakes. There are many places

Figure 1
Region 14 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|--------------------|
| Counties | = | 12 |
| Land area | = | 9,884 square miles |
| Elevation | = | 23' - 655' |
| Annual rainfall | = | 41.7 - 54.2 inches |
| January minimum temperature | = | 35 - 40°F |
| July maximum temperature | = | 93 - 95°F |
| Growing season | = | 228 - 265 days |

POPULATION 1986

Total 302,533

| | | | |
|-------------|--------|---------------|--------|
| Counties | | | |
| Angelina | 68,494 | Tyler | 16,730 |
| Nacogdoches | 53,283 | San Jacinto | 13,739 |
| Jasper | 31,631 | Newton | 13,196 |
| Polk | 29,138 | Trinity | 11,830 |
| Shelby | 23,429 | San Augustine | 8,946 |
| Houston | 23,234 | Sabine | 8,883 |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 357,559 |
| People per square mile | 36.2 |
| Ethnic composition: | |
| White | 80% |
| Black | 13% |
| Hispanic | 7% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|---------------|
| Recreation land | = | 580,643 acres |
| Developed recreation land | = | 7,514 acres |

Alabama Creek Wildlife Management Area
Alabama-Coushatta Indian Reservation
Angelina National Forest
B. A. Steinhagen Lake Corps Parks
Bannister Wildlife Management Area
Big Thicket National Preserve
Cassels/Boykin State Park
Dam B - Angelina - Neches Wildlife Management Area
Davy Crockett National Forest
Lake Livingston State Park
Martin Dies Jr. State Park
Mission Tejas State Historical Park
Moore Plantation Wildlife Management Area
Sabine National Forest
Sam Rayburn Reservoir Corps Parks
Sam Houston National Forest
North Toledo Bend Wildlife Management Area

Lakes

| | |
|---------------|---------|
| Surface acres | 397,571 |
|---------------|---------|

| | <u>Surface Acres</u> |
|-----------------------|----------------------|
| Houston County Lake | 1,485 |
| Lake Kurth | 800 |
| Lake Nacogdoches | 2,200 |
| Livingston Lake | 85,000 (Part) |
| Pinkston Reservoir | 800 |
| Ratcliff Lake | 60 |
| Sam Rayburn Reservoir | 114,500 |
| B. A. Steinhagen Lake | 13,700 |
| Toledo Bend Reservoir | 178,300 (Part) |

Streams

| | |
|-----------------|---------------|
| Angelina River | Neches River |
| Attoyac Bayou | Sabine River |
| Beech Creek | Trinity River |
| Big Cow Creek | Turkey Creek |
| Big Sandy Creek | |

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

to engage in rural recreation activities. Forest service lands offer the most diversity of opportunities from off-road-vehicle trails to designated passive wilderness areas. Four designated wilderness areas currently exist in region 14; they are Turkey Hill, Big Slough, Upland Island and Indian Mounds. Additional scenic areas are to be designated in the near future.

The northern half of the Big Thicket National Preserve is in region 14. The preserve was created because various habitat types meet and overlap there. Over a thousand different plant and animal species can be found within the

Big Thicket. Canoeing, bird watching, horseback riding, hiking, and nature viewing are the primary activities enjoyed there.

Recreation Supply

Four state park sites are located in the region. Lake Livingston State Park is one of the most heavily visited in the state. Various state wildlife management areas offer hunters an abundant supply of wildlife resources.

Over five hundred miles of permanently floatable freshwater rivers, creeks and bayous meander through the region. Portions of the Neches River,

Sabine River, Village Creek, and Big Sandy Creek are some of the most scenic in Texas. Waterways within the Big Thicket and national forests offer primitive outdoor recreation experiences.

Rural recreation facilities within the region are numerous. Over seven thousand campsites and three hundred boat ramps currently exist. Over half of these are provided by the commercial sector (table 1). Most residents have many recreation opportunity alternatives within an hour's drive. Many preferred sites are overrun by residents and tourists during peak weekends in the summer.

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 14, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | TOTAL | | |
|--|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------|-------------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | | Other Local | COMMERCIAL |
| Number of Parks/Rec. Areas | 8 | 0 | 30 | 26 | 4 | 16 | 0 | 4 | 7 | 3 | 50 | 8 | 115 | 271 |
| Total Parkland Acres | 31258 | 0 | 304804 | 15122 | 1722 | 211818 | 0 | 2424 | 428 | 41 | 2139 | 246 | 10641 | 580643 |
| Developed Land Acres | 387 | 0 | 1413 | 1115 | 432 | 0 | 0 | 103 | 138 | 41 | 870 | 184 | 2832 | 7514 |
| Developable Land Acres Preserved or Unsuitable for Development (Acres) | 30871 | 0 | 227699 | 11177 | 417 | 211818 | 0 | 2321 | 291 | 0 | 1267 | 45 | 1508 | 82506 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 12 | 9 | 52 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 26 | 2 | 4 | 35 |
| Boat Ramp Lanes, FW | 0 | 0 | 28 | 70 | 15 | 0 | 0 | 2 | 11 | 6 | 10 | 2 | 166 | 310 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 796 | 828 | 583 | 0 | 0 | 0 | 99 | 49 | 75 | 82 | 4524 | 7036 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 5500 | 8960 | 0 | 0 | 0 | 0 | 0 | 0 | 1500 | 0 | 1400 | 17360 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 33 | 490 | 396 | 0 | 0 | 0 | 280 | 0 | 113 | 50 | 4566 | 5928 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 126 | 144 |
| Hiking Trail Miles | 15 | 0 | 76 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 96 |
| Horseback Riding Trail Miles | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 20 |
| Lake Acres (BFS Suitable),FW | | | | | | | | | | | | | | 303307 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 13 |
| Picnic Tables | 0 | 0 | 116 | 73 | 228 | 0 | 0 | 14 | 50 | 37 | 248 | 28 | 38 | 833 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 1 | 1 | 35 | 0 | 22 | 66 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 2 | 0 | 14 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 1 | 0 | 18 |
| Swimming, FW Sq.Yd. | 0 | 0 | 32609 | 22525 | 4100 | 0 | 0 | 0 | 5000 | 500 | 102800 | 15600 | 214465 | 397599 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 300 | 0 | 0 | 0 | 0 | 0 | 3352 | 550 | 5865 | 10067 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 3 | 11 | 59 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 3 | 0 | 4 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 4 | 3 | 2 | 22 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Urban recreation opportunities have become more prevalent in recent years. However, current regional supplies of most urban recreation facilities are relatively lower than the statewide averages (table A3). Local residents are demanding a wider variety of recreation facilities than in the past. Parks are a way to retain a rural character in urbanized areas giving both residents and tourists what they desire. Many older facilities in established areas are in need of repair or renovation. Urban growth will create additional facility demands in new areas.

Potential and Proposed Resources

Most recreational waterways within the region are currently underutilized. Access to these resources is limited, thus,

waterways within the Big Thicket National Preserve and national forests, and the region as a whole, are lightly visited. Information and public awareness programs have been discussed to increase use of these beautiful public waterways.

Likewise, greenbelts within urban areas are generally also underutilized. Most cities within the region are interested in reclaiming these areas. A few, such as Nacogdoches, have developed parks with hike, bike, and jog trails along those scenic areas.

Currently 185 miles of hiking trails exist on national forest lands with others in the Big Thicket and state parks. These are adequate to meet projected demands for hiking, but there is demand for horseback and off-road vehicle trails. The forest service has an ambitious 10-

year trail construction program (1987-1996) that will add forty-five new trail miles within region 14. Big Thicket National Preserve also has nature and horseback trails planned for the near future. Many of these trails will be built with volunteer labor.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

OUTDOOR RECREATION PARTICIPATION

Popular Activities

With the abundance of quality freshwater lake resources within the region, it is not surprising that 53 percent of the region's population indicate that they annually go freshwater fishing (figure 2). This is the only region where fishing surpasses walking as the activity participated in by the most residents.

Residents of Deep East Texas have

high per capita participation rates for freshwater boating and fishing (table 2). Hunting, off-road vehicle riding, and camping are other activities with high per capita participation rates. This is probably due to the rural character of the region. In contrast, residents of the Deep East Texas region have relatively low participation rates in urban recreation activities. Region 14 has the lowest annual per capita participation rates of

any region for soccer (0.5), softball (1.5), pool swimming (4.7), playground use (3.4), and jogging (3.4) (table 2). Participation in most other urban activities is also below the statewide average. As the population increases in the urban areas, and more facilities are provided, participation in these activities should become more prevalent.

Recreation Travel Patterns

Looking at resource-based activities, 87 percent of the activity occasions generated by residents of the region occurs within the region (figure 3). This is the highest rate of rural recreation self-sufficiency of any region in the state. Residents do not have to travel far to reach quality resources and thus participate in these activities to a greater degree than others. Another 6 percent of resource-based activity occasions occurs in region 16. This is primarily travel to the Galveston area to engage in saltwater activities.

As a resource-based recreation destination, 45 percent of the resource use is from residents of region 16, the Houston area (figure 4). Over 2 million more resource recreation occasions are generated by region 16 residents than by residents within the region. Combined with other regions, over two-thirds of the annual user occasions that occur in region 14 are generated by residents from outside the region.



Over three hundred boat lanes provide access to lakes and streams in Deep East Texas.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 14 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 14 Occurring In | | |
| | Region 14 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 2.2 | 2.3 | 1.3 |
| Boat Ramp Lanes, SW | * | * | 0.3 |
| Boating (Pleasure), FW | 1.1 | 1.1 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 1.7 | 2.0 | 1.7 |
| Fishing, FW | 4.0 | 4.2 | 2.4 |
| Fishing from Banks | 1.3 | 1.4 | 0.8 |
| Fishing from Boats | 1.8 | 1.9 | 1.1 |
| Fishing from Structures | 0.9 | 0.9 | 0.5 |
| Fishing, SW | * | 0.2 | 0.7 |
| Fishing from Boats | * | * | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | * | 0.3 |
| Hiking | 0.3 | 0.3 | 0.4 |
| Hunting | 2.6 | 2.8 | 1.3 |
| Lake Use (BFS Suitable), FW | 2.5 | 2.6 | 1.5 |
| Nature Study | 0.9 | 0.9 | 0.9 |
| Picnicking | 1.4 | 1.7 | 1.9 |
| Swimming, FW | 2.4 | 2.7 | 2.1 |
| Swimming, SW | * | 0.5 | 1.2 |
| Baseball | 1.7 | | 1.5 |
| Basketball | 1.4 | | 1.6 |
| Bicycling | 9.1 | | 10.7 |
| Bicycling on Trails | 0.6 | | 0.7 |
| Football | 0.6 | | 0.8 |
| Golf | 0.8 | | 1.3 |
| Horseback Riding | 1.0 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 3.4 | | 5.4 |
| Jogging/Running on Trails | 1.0 | | 1.7 |
| Off-road Vehicle Riding | 2.3 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.5 | | 0.3 |
| Open Space Activities | 2.3 | | 3.2 |
| Playground Use | 3.4 | | 4.8 |
| Soccer | 0.5 | | 1.2 |
| Softball | 1.5 | | 1.8 |
| Swimming, Pool | 4.7 | | 6.4 |
| Tennis | 0.7 | | 1.3 |
| Walking (Pleasure/Exercise) | 13.4 | | 14.8 |
| Walking on Trails | 3.1 | | 3.5 |

Notes: Asterisks indicate value is less than .1 occasion per capita.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and figure and an explanation of research methods. See Appendix D for an explanation of terms.

Projected Participation

Participation in rural, resource based recreation activities will continue to dominate the outdoor recreation scene in Deep East Texas (table 3). If the population growth primarily occurs in the incorporated areas as projected, participation in urban recreation activities will become more of a regional factor (table 4). Currently, participation in flag football, jogging, and pool swimming appears to be increasing.

Harris County residents and those in the Bryan/College Station area will have even greater impacts upon rural recreation resources and facilities in the future. As the population density of these areas increases, so does their residents' desire to "get out of town" on weekends and Deep East Texas lakes seem to satisfy this desire. Planned recreation development on Lake Houston may curb a portion of this recreation travel demand.

Figure 2
Region 14 Projected 1995 Percentage
of Population Participating

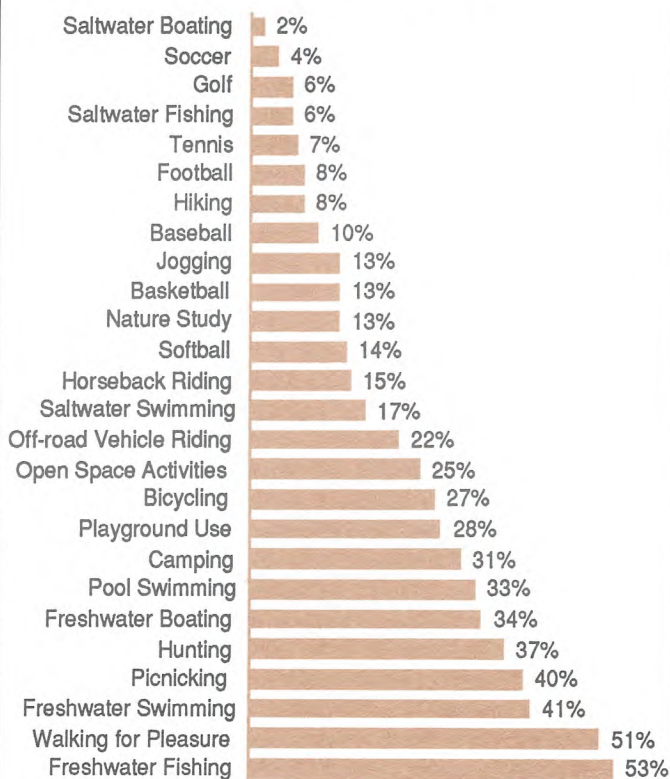


Table 3
Projected Outdoor Recreation Participation in Region 14 by Region 14 Residents,
Texans from Outside Region 14, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 14 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|------|-------------------------------|------|------|-----------------|------|------|
| | Generated By | | | Generated By | | | Generated By | | |
| | Residents of Region 14 | | | Texans from Outside Region 14 | | | Regional Totals | | |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 737 | 785 | 833 | 1817 | 1943 | 2070 | 2554 | 2728 | 2903 |
| Boating (Pleasure), FW | 354 | 377 | 399 | 654 | 694 | 734 | 1009 | 1071 | 1133 |
| Camping | 572 | 608 | 644 | 2212 | 2354 | 2496 | 2785 | 2962 | 3139 |
| Fishing, FW | 1351 | 1440 | 1529 | 3818 | 4096 | 4375 | 5169 | 5536 | 5904 |
| Fishing from Banks | 441 | 470 | 499 | 1245 | 1336 | 1427 | 1686 | 1806 | 1926 |
| Fishing from Boats | 605 | 645 | 685 | 1710 | 1834 | 1959 | 2314 | 2479 | 2644 |
| Fishing from Structures | 305 | 325 | 346 | 863 | 926 | 989 | 1168 | 1251 | 1334 |
| Hiking | 103 | 109 | 116 | 163 | 176 | 188 | 266 | 285 | 303 |
| Hunting | 863 | 913 | 963 | 999 | 1073 | 1147 | 1861 | 1986 | 2110 |
| Lake Use (BFS Suitable), FW | 841 | 896 | 950 | 2073 | 2217 | 2362 | 2914 | 3113 | 3312 |
| Nature Study | 287 | 307 | 328 | 173 | 185 | 197 | 460 | 492 | 525 |
| Picnicking | 483 | 511 | 539 | 759 | 806 | 853 | 1242 | 1317 | 1392 |
| Swimming, FW | 827 | 873 | 919 | 1772 | 1861 | 1950 | 2599 | 2734 | 2869 |

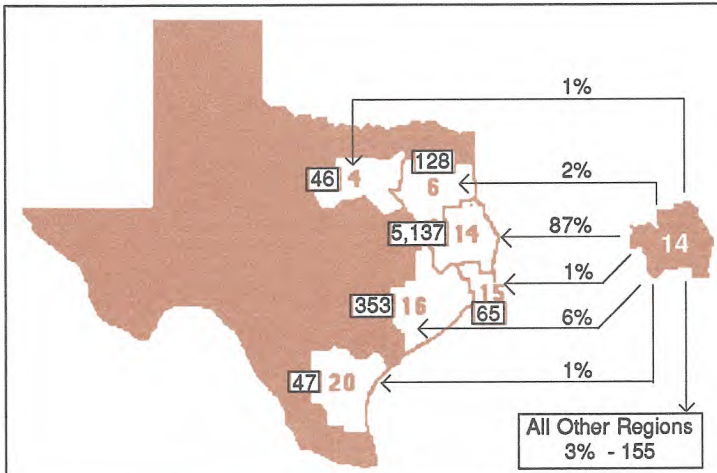


Figure 3
Destinations of Region 14 Residents
for Resource-based Activities

5,930 Annual User Occasions (000's)
 Generated by Region 14 Residents, 1995

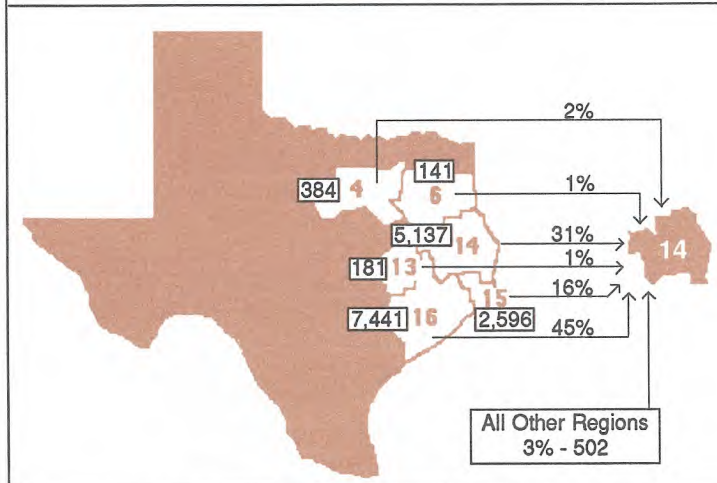


Figure 4
Origins of Participants Who Recreated
in Region 14 for Resource-based Activities

16,382 Annual User Occasions (000's)
 Occurring in Region 14, 1995

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and these figures and an explanation of research methods. See Appendix D for an explanation of terms.

RESOURCE AND FACILITY NEEDS

Table 4
Projected Outdoor Recreation Participation
in Region 14 by Residents of Region 14, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (in 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 579 | 609 | 640 |
| Basketball | 490 | 516 | 543 |
| Bicycling | 3073 | 3240 | 3408 |
| Bicycling on Trails | 189 | 200 | 210 |
| Football | 210 | 221 | 232 |
| Golf | 256 | 274 | 291 |
| Horseback Riding | 325 | 342 | 360 |
| Horseback Riding on Trails | 83 | 88 | 92 |
| Jogging/Running | 1149 | 1209 | 1270 |
| Jogging/Running on Trails | 354 | 372 | 391 |
| Off-road Vehicle Riding | 783 | 825 | 867 |
| ORV Riding on Trails | 153 | 162 | 170 |
| Open Space Activities | 781 | 825 | 869 |
| Playground Use | 1138 | 1199 | 1260 |
| Soccer | 187 | 197 | 206 |
| Softball | 522 | 549 | 577 |
| Swimming, Pool | 1595 | 1681 | 1769 |
| Tennis | 232 | 246 | 259 |
| Walking (Pleasure/Exercise) | 4483 | 4785 | 5088 |
| Walking on Trails | 1049 | 1120 | 1191 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Needed Facilities and Resources

Much of the outdoor recreation demand in region 14 is satisfied by current supply (table 5). Two of the three recreation facilities that are in high need are softball fields and soccer/football fields (table 6). These activities are becoming increasingly popular in urban areas of the region. As these areas grow so will the need for facilities to satisfy these urban recreation demands. Swimming pools, basketball goals, multi-use (walk, bike, and jog) trails, and playgrounds are the other recreation facilities that are needed.

The need for off-road vehicle riding trails and areas is also high. Current plans by the U.S. Forest Service to build more off-road-vehicle trails should help satisfy this need. Fishing structures are needed to provide greater fishing access to those without boats. Note that, regionally, freshwater boat ramps are not needed (there are 310 in the region) but

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 14, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 52 | * | * | * |
| Basketball Goals | 35 | 24 | 27 | 31 |
| Boat Ramp Lanes, FW | 310 | * | * | 10 |
| Campsites | 7036 | * | * | * |
| Fishing Structures, FW Lin.Yd. | 5928 | 785 | 1263 | 1741 |
| Golf Holes | 144 | * | * | * |
| Hiking Trail Miles | 96 | * | * | * |
| Horseback Riding Trail Miles | 20 | * | * | * |
| Lake Acres (BFS Suitable), FW | 303307 | * | * | * |
| Off-road Vehicle Riding Acres | 13 | 119 | 126 | 133 |
| Picnic Tables | 833 | * | 3 | 51 |
| Playground Areas, Equipped | 66 | 42 | 48 | 54 |
| Soccer/Football Fields | 14 | 15 | 15 | 16 |
| Softball Fields | 18 | 19 | 21 | 23 |
| Swimming, FW Sq.Yd. (000) | 398 | 262 | 296 | 331 |
| Swimming, Pool Sq.Yd. (000) | 10 | * | * | 1 |
| Tennis Courts | 59 | 2 | 5 | 9 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 22 | 6 | 7 | 9 |
| Developed Land Acres | | 404 | 443 | 506 |

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Table 6
Ranking of Outdoor Recreation Facility/Resource
Needs in Region 14 Through 1995

| Need Rank | Facility/Resource |
|-----------|---|
| 1 | Softball Fields |
| 2 | Soccer/Football Fields |
| 3 | Swimming, Pool Sq.Yd. |
| 4 | Playground Areas, Equipped |
| 5 | Basketball Goals |
| 6 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 7 | Fishing Struc., FW Lin.Yd. |
| 8 | Off-Road Vehicle Riding Acres |
| 9 | Tennis Courts |
| 10 | Swimming, FW Sq. Yd. |
| 11 | Picnic Tables |
| 12 | Boat Ramp Lanes, FW |
| 13 | Baseball Fields |
| 14 | Horseback Riding Trail Miles |
| 15 | Campsites |
| 16 | Hiking Trail Miles |
| 17 | Golf Holes |
| 18 | Lake Acres (BFS Suitable) |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Note: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

distribution is a problem. Most all waterways in the region have a need for additional boat ramps, while some ramps on reservoirs are lightly utilized.

Maintenance and renovation of existing facilities is also a high need in the region. Many older facilities are in need of repair and, if not given attention, will turn into liabilities in the future. Protecting past investments should be a high priority of all recreation providers.

Providers' Responsibilities

The burden to supply needed urban outdoor recreation facilities falls on local park and recreation departments (table 7). These agencies face the greatest challenge in the years to come. As population, service areas, and demands increase, creative funding and programming methods will be necessary to satisfy the urban outdoor recreation situation. Better cooperation with the local school districts to allow public use of school facilities when school is not in session is needed.

The U.S. Army Corps of Engineers and the U.S. Forest Service manage many lakefront sites that have the potential to add freshwater fishing structures. Horseback riding trails planned by the U.S. Forest Service and the National Park Service could make this region one of the prime destinations in the state to engage in this activity.

With the influx of recreationists from outside the region (tourists), commercial recreation facilities should be promoted when practical. There appears to be a potential to increase the economic impact of recreation-related tourism.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs in Region 14, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | | STATE | | | | | REG. | LOCAL | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basketball Goals | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 19 | 0 | 0 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fishing Structures, FW Lin.Yd. | 1263 | 50 | 0 | 200 | 200 | 150 | 75 | 0 | 0 | 90 | 150 | 148 | 0 | 200 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Off-road Vehicle Riding Acres | 126 | 0 | 0 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 14 | 0 | 20 |
| Picnic Tables | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| Playground Areas, Equipped | 48 | 0 | 0 | 4 | 4 | 2 | 0 | 0 | 0 | 0 | 10 | 28 | 0 | 0 |
| Soccer/Football Fields | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 |
| Softball Fields | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13 | 0 | 4 |
| Swimming, FW Sq.Yd.(000) | 296 | 0 | 0 | 50 | 75 | 0 | 0 | 0 | 0 | 75 | 0 | 50 | 0 | 46 |
| Swimming, Pool Sq.Yd.(000) | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Tennis Courts | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 |
| Developed Land Acres | 443 | 0 | 0 | 102 | 33 | 1 | 0 | 0 | 0 | 32 | 27 | 197 | 0 | 52 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



REGION 15

SOUTH- EAST TEXAS

A variety of nature viewing opportunities exist in the Southeast Texas region.

ISSUES AND RECOMMENDATIONS

Issue: Funding

The Southeast Texas region has been adversely affected by the economic downturn that Texas experienced in the mid 1980s. Much of the economy of region 15 is based upon the oil and gas industry. When these and related industries decline, laid-off workers move away from the region to find jobs elsewhere and local economies suffer.

Park and recreation facilities and services become low priority during these troubled economic times. Many local park and recreation departments experienced budget reductions and some were forced to reduce staff. The most extreme situation was probably in the city of Orange where a high percentage of park positions were cut. The city's personnel director also was given the responsibility of directing the park and recreation department. Emphasis during this time was placed on maintaining existing facilities. This task often had to be accomplished with reduced staffing and increased responsibilities. This put a strain on employees, but most parks were well maintained. Other towns in the region may forego opportunities because they are unaware of current grant programs.

Any capital improvements that were made in recent years relied primarily on Central Business District Grant

monies. The regional population during this time was stable or declining. However, population shifts from established inner city neighborhoods to newer developments occurred in many cities in the region. Local parks departments financially could not keep up with demands for new park and recreation facilities in these areas. At the same time, other sections of the city would have existing recreation facilities that would sit idle. These deficiencies and distribution problems will have to be resolved in the years to come.

Many large industries in the region own park and recreation facilities for use by their employees. These opportunities satisfied a portion of local, urban recreation demand. As the economy declined, these facilities were closed and not maintained. It is feared that not only will these employee parks never be reopened but that the lands will be sold. These recreational and/or open space areas will be lost forever and put an increased burden on local park and recreation agencies. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Support federal legislation establishing a dedicated trust fund, or similar

mechanism, to provide funding for outdoor recreation.

Continue to seek innovative funding methods to satisfy the outdoor recreation needs of constituents in the most effective manner possible.

Utilize volunteers when practical.

Encourage the private sector to donate existing corporate recreation facilities that are slated for closure so they can remain available to the public.

Encourage civic and church groups to assist in fundraising for certain programs and sports leagues.

Consider integrating concessionaires into recreation sites to increase both services and revenues.

Consider entering into joint use, cost-sharing partnerships with other public or private recreation providers to acquire and develop outdoor recreation opportunities.



Issue: Tourism

The interest in attracting outdoor recreation-related tourism has increased in the Southeast Texas region in recent years. Instability in the oil and gas industry has spurred local officials to look at diversifying the local economy with other, more stable, enterprises. Coastal resources are now being considered for their tourism potential, not just their shipping and industrial potential.

The city of Port Arthur is nearing completion of a multi-million dollar coastal destination resort, Pleasure Island. Regionally there is a heightened interest in improving the coastal resources to promote tourism, though little has been accomplished. Sabine Lake is a prime location for fishing tournaments and does host some, but coordinated promotion is needed to attract these events.

Local interest in outdoor recreation-related tourism as a viable, stable industry with economic benefits has become apparent in some cities. In 1987, the economic benefits of a state softball tournament held in Beaumont opened many eyes to the positive effects that an event like this produces. (Also, see State Summary, "Tourism and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Encourage and support regional chambers of commerce in promoting outdoor recreation-related tourism.

Educate and provide recreational information to related industries such as hotel/motels and restaurants.

Encourage commercial development of campgrounds, marinas, fishing structures and other recreation facilities sought by tourists.

Coordinate with the State Department of Highways and Public Transportation, and other transportation officials, to increase signs for outdoor recreation sites with tourism potential.

Study the feasibility of establishing a regional agency to promote and coordinate outdoor recreation and tourism throughout the region.

Issue: Urban Open Space

Many areas of region 15 are deficient in urban open spaces to engage in passive outdoor recreation activities close to home. The cities of Port Arthur, Groves, and Nederland are surrounded by either water, industrial development or other cities. There are few potential open space tracts in this area to acquire. Yet, public input indicated a desire for more public open space. (Also, see State Summary, "Meeting Recreational Open Space Needs" under "Issues and Recommendations.")

Recommendations:

For county governments:

Provide regional open space parks accessible to many.

For local recreation providers:

Develop local open space plans with citizen input to help identify local open space needs and guide future actions.

Inventory current publicly owned lands and examine which tracts have open space potential. Dedicate these lands for this purpose in perpetuity.

Explore alternatives to fee simple acquisition of parkland, such as transfer of development rights and mandatory parkland dedication ordinances.

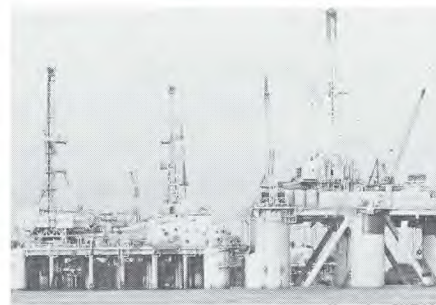
Increase the public's awareness of available existing recreation opportunities.

Issue: Education and Information

The lack of education and information about various aspects of outdoor recreation reduces the public's ability to use existing recreation opportunities. This causes a lack of support among citizens and politicians in the region.

Residents reported a lack of information about existing opportunities. Over 28 percent of regional residents surveyed in the 1986 Origin/Destination Recreation Participation Survey indicated that lack of information was a barrier to participation. This was the third highest regional rate of the twenty-four planning regions.

Equally important is an increase in environmental education to enhance the



Offshore industrial development reduces the quality of saltwater recreation opportunities.

appreciation of resources in the region and promote stewardship of our public lands. School children may learn about the Big Thicket in the classroom, but because of funding limitations and priorities, school outings are rarely taken to experience this unique, nearby resource.

Recreation providers in region 15 expressed a desire for information/education on funding methods, particularly for rural towns and counties. Most of these areas do not employ recreation professionals and lack information on innovative funding methods or current grant programs. Workshops in this area have been conducted in the past but not on a regular basis as decision makers are replaced.

Recommendations:

For recreation providers:

Increase efforts to inform the public about existing recreation opportunities and benefits accrued from enjoying these opportunities.

For local school districts:

Provide environmental education and awareness programs. Project Wild is an example of a nationally accepted curriculum.

Encourage/allow environmental education field trips to nearby natural resource sites in the area.

For the Texas Parks and Wildlife Department:

Provide to local communities technical assistance workshops on alternative funding methods and grantsmanship, scheduling workshops to coincide more closely with staff turnovers in the region.

RESOURCES

Population Trends

The Southeast Texas region, because of its economic problems, experienced a decline in population during the mid 1980s. Most of the population decline occurred in the region's three largest cities, Beaumont, Port Arthur, and Orange. The cities of Nederland, Groves, and Port Neches population levels remained fairly stable during this period while Bridge City actually saw substantial growth.

The region's population is fairly urbanized with almost 75 percent of the

total population residing in cities of 5,000 or more people (table A2). Over 30 percent of region residents live in the city of Beaumont. The population is, on the average, older than the state population as a whole with 16.3 percent sixty years of age or older compared to 13.2 percent statewide.

Projected population figures indicate that the region's population will grow 12.7 percent from 1986 to 1995 (figure 1). This rather optimistic projection depends heavily on the recovery of the oil and gas industry and the success of attracting new industries to the area.

Resource Attractions

A diversity of regional natural resources provides settings for many rural outdoor recreation activities to occur. Saltwater and freshwater resources are a short drive away for most residents of the region. Sabine Lake and the Gulf of Mexico offer good saltwater fishing opportunities and twenty-five miles of Gulf beachfront are accessible to the public (figure 1 and map). Freshwater resources in Hardin County include the Neches River, Village Creek, and Pine Island Bayou. All are very scenic and

Figure 1
Region 15 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|--------------------|
| Counties | = | 3 |
| Land area | = | 2,197 square miles |
| Elevation | = | 3' - 126' |
| Annual rainfall | = | 53.0 - 59.9 inches |
| January minimum temperature | = | 41 - 44°F |
| July maximum temperature | = | 91 - 93°F |
| Growing season | = | 240 - 250 days |

POPULATION 1986

Total 368,936

| | |
|-----------|---------|
| Counties | |
| Jefferson | 246,149 |
| Orange | 82,580 |
| Hardin | 40,207 |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 415,959 |
| People per square mile | 189.3 |
| Ethnic composition: | |
| White | 74% |
| Black | 23% |
| Hispanic | 3% |

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|---------|
| Recreation land | = | 161,670 |
| Developed recreation land | = | 3,290 |

Big Thicket National Preserve
Claiborne West Park (Orange County)
McFaddin National Wildlife Refuge
J. D. Murphree Wildlife Management Area
Pleasure Island (Port Arthur)
Sabine Pass Battleground State Historical Park
Sea Rim State Park
Texas Point National Wildlife Refuge
Village Creek State Park

Lakes

| | |
|---------------|-------|
| Surface acres | 6,886 |
|---------------|-------|

| | |
|---------------------|-------------------------------|
| J. D. Murphree Lake | <u>Surface Acres</u> 6,881 |
|---------------------|-------------------------------|

Streams

Adams Bayou
Beech Creek
Big Sandy Creek
Cow Bayou
Little Pine Island Bayou
Neches River
Pine Island Bayou
Sabine River
Taylor Bayou
Turkey Creek
Village Creek

Saltwater

| | |
|--------------------------------|---------|
| Miles accessible Gulf frontage | 25 |
| Surface acres saltwater bays | 113,000 |

Gulf Intracoastal Waterway
Gulf of Mexico
Sabine Lake
Sabine Pass

many stretches have a primitive character. Canoeing is becoming increasingly popular on these waterways. Unfortunately, access to freshwater streams in the region is rather scarce.

A large portion of the Big Thicket National Preserve is located in region 15. The Big Thicket is significant because a variety of major ecosystem types converge here. The result is an area of great biological diversity with over a thousand different species of plants and animals located there. Nature viewing and canoeing are the primary passive outdoor recreation opportunities of the Big Thicket National Preserve. The preserve has not yet reached the size proposed in

its master plan due to funding shortages. An interpretive visitor center and nature trails are located in the southern portion of the Turkey Creek Unit.

Two coastal wetland national wildlife refuges are located in Jefferson County: Texas Point and McFadden. Considering the shore birds and waterfowl located in these areas, and the species located inland in the Big Thicket, the Southeast Texas region is a bird-watchers paradise. As yet these areas are relatively underutilized but the promotion has been largely word of mouth.

Recreation Supply

Sea Rim State Park near Sabine Pass

offers camping, picnicking and nature viewing opportunities (table 1). A new state park along Village Creek is scheduled to be open to the public in 1990. The J.D. Murphee Wildlife Management Area offers hunting and fishing opportunities.

Claibourne West Park, managed by Orange County, is a fine example of a county park with regional significance. Located along Cow Bayou, it has picnicking, softball, trail, and soccer facilities. Popular for group and family outings, the park is easily accessed from Interstate 10 between Vidor and Orange.

Region 15 has the highest supply of saltwater fishing structures per thousand

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 15, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | | REG | LOCAL | | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|-------------|-------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Coops of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | COMMERCIAL |
| Number of Parks/Rec. Areas | 10 | 2 | 0 | 1 | 3 | 3 | 5 | 0 | 0 | 4 | 104 | 1 | 24 | 157 |
| Total Parkland Acres | 52754 | 51908 | 0 | 0 | 16098 | 35592 | 24 | 0 | 0 | 569 | 4089 | 6 | 632 | 161670 |
| Developed Land Acres | 31 | 3 | 0 | 0 | 163 | 8 | 3 | 0 | 0 | 144 | 2474 | 6 | 459 | 3290 |
| Developable Land Acres | 0 | 0 | 0 | 0 | 14992 | 0 | 16 | 0 | 0 | 425 | 1587 | 0 | 173 | 17192 |
| Preserved or Unsuitable for Development (Acres) | 52723 | 51905 | 0 | 0 | 942 | 35584 | 5 | 0 | 0 | 0 | 29 | 0 | 0 | 141187 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 2 | 0 | 35 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 41 | 0 | 0 | 42 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 |
| Boat Ramp Lanes, SW | 0 | 2 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 4 | 16 |
| Campsites | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 55 | 176 | 0 | 374 | 625 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1408 | 0 | 0 | 0 | 1408 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 12467 | 0 | 0 | 0 | 0 | 0 | 0 | 17580 | 0 | 0 | 30047 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 0 | 27 | 81 |
| Hiking Trail Miles | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 1539 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Picnic Tables | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 92 | 348 | 0 | 0 | 540 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 80 | 0 | 2 | 83 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 17 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 31 | 0 | 0 | 32 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 352000 | 0 | 0 | 0 | 0 | 150000 | 20000 | 0 | 0 | 522000 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5924 | 0 | 4741 | 10665 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 78 | 0 | 0 | 79 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 7 | 0 | 0 | 14 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

OUTDOOR RECREATION PARTICIPATION

population in the state and the fourth highest supply of saltwater boat ramps (table A3). To contrast, the region has the third lowest supply of freshwater boat lanes per thousand population and no public freshwater fishing structures were reported. The supply of freshwater bank fishing areas that are accessible is currently low. No public horseback riding trails or areas were reported and the region has the second lowest number of picnic tables per thousand population at 1.3.

The city of Port Arthur's public/private resort development on Pleasure Island is an adventurous project to increase tourism and provide more saltwater opportunities for local residents. This project should help to draw attention to the Southeast Texas coastal area and Sabine Lake.

Beaumont had the opportunity to showcase its new softball complex when the city hosted a state softball tournament in 1987. The economic benefits that the city realized from this event has caused others in the region to express desires for similar facilities.

Potential and Proposed Resources

Freshwater streams in the region are relatively underutilized and access is generally poor. The already-mentioned new Village Creek State Park and proposed additions to the Big Thicket National Preserve should help to alleviate this problem. Any opportunity to acquire access points along other freshwater streams in the region should be carefully considered. The proposed Village Creek corridor addition to the Big Thicket National Preserve would provide an important buffer to the new state park located there.

The National Park Service recently constructed a bridge over Village Creek to extend the Kirby Nature Trail. Plans are to construct a trail to join the Kirby Nature Trail with the Turkey Creek Trail. This will provide approximately twenty miles of continuous hiking opportunities along Turkey Creek.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

Popular Activities

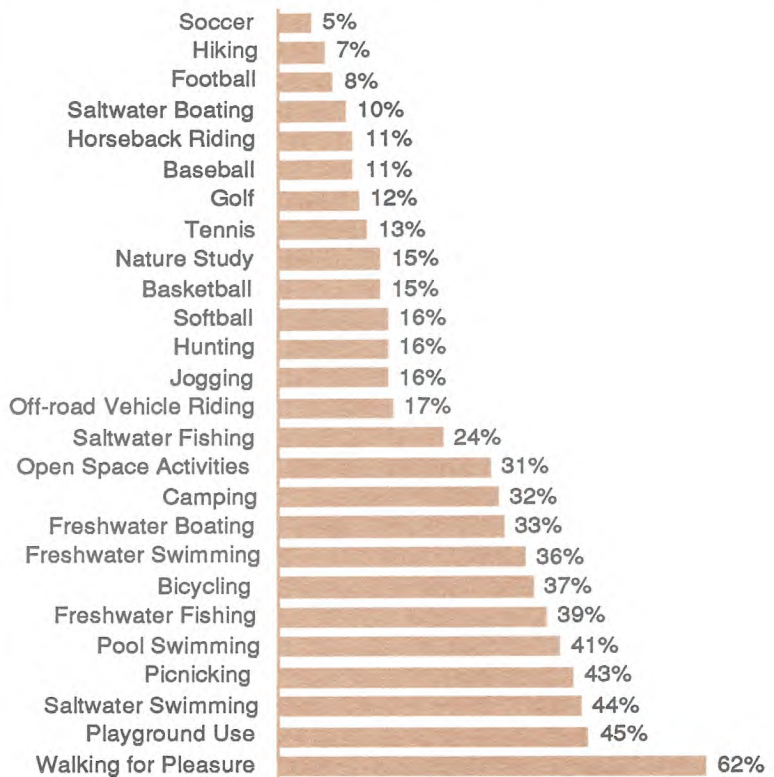
Walking for pleasure is the most popular activity as it is enjoyed by 62 percent of all region residents (figure 2). Considering the current age structure of the population and projections for the average age to increase in the years ahead, participation in this activity should remain high. As would be expected in a coastal region, saltwater activities are participated in at rates much higher than the state as a whole. Somewhat surprising is that a greater percentage of the region's population indicated that they engage in freshwater fishing over saltwater fishing (39 versus 24 percent). Boating is popular in the Southeast Texas region and has the fourth highest rates of both freshwater

and saltwater boating participation in the state.

Off-road vehicle riding and camping are two other activities that in region 15 the percent of the population participating is well above statewide averages. This is probably an effect of the diverse opportunities to engage in these activities that exist within the region and in the national forests to the north.

Table 2 shows the annual per capita participation of the region's residents in various outdoor recreation activities. These figures are fairly close to the statewide averages with the exception of the saltwater activities. This comes as no surprise given the abundance of saltwater recreation opportunities located within a short drive of most residents of the region.

Figure 2
Region 15 Projected 1995 Percentage of Population Participating



Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this figure and an explanation of research methods. See Appendix D for an explanation of terms.

Recreation Travel Patterns

Almost twice as many resource-based recreation activity occasions are generated by residents of region 15 than occur within the region itself (figures 3 and 4). This indicates that many residents are willing to drive some distance to find recreation opportunities that they cannot find within the region or are of higher quality. Again, the largest lakes in the state and the national forests located in region 14, just to the north attract many visitors from the Southeast Texas region.

Forty-one percent of the resource-based activity occasions generated by residents of region 15 is engaged in within the region (figure 3). An almost equally large portion (37 percent) of resource-based recreation demand is satisfied in region 14. Another 16 percent of participation occurs in region 16, primarily on Galveston Island, the Galveston Bay system, and Bolivar Peninsula.

Unfortunately, few from outside the region come to recreate in this region. As previously mentioned, the Big Thicket National Preserve and Sabine Lake are some of the best kept recreation resource secrets in the state. There is a great potential to increase recreation-related tourism to these areas and the region as a whole. Currently 78 percent of the resource-based recreation occasions that occur in the region are initiated by residents of the region (figure 4). Another 16 percent of rural recreation occasions that occur in the region come from region 16, or the Houston area. Another 3 percent of occasions are generated by residents of the Dallas-Fort Worth Metroplex and 2 percent from nearby region 14. The other twenty planning regions combined make up the remaining 2 percent of the resource-based recreation utilization. Other coastal areas are located closer to most of the other regions in the state.

Projected Participation

Activities that are currently popular such as walking for pleasure, bicycling, swimming and fishing will continue to receive heavy participation in the years to come (tables 3 and 4). Most of these activities are popular with elderly citizens, and as their numbers increase so will the participation in these activities.

Increased access to both fresh and saltwater resources will likely result in similar increases in participation of activities that utilize these resources.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 15 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 15 | | |
| | Occurring In | | |
| | Region 15 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 0.6 | 1.8 | 1.3 |
| Boat Ramp Lanes, SW | 0.5 | 0.7 | 0.3 |
| Boating (Pleasure), FW | 0.4 | 0.9 | 0.6 |
| Boating (Pleasure), SW | 0.2 | 0.3 | 0.1 |
| Camping | 0.2 | 2.0 | 1.7 |
| Fishing, FW | 0.8 | 3.0 | 2.4 |
| Fishing from Banks | 0.3 | 1.0 | 0.8 |
| Fishing from Boats | 0.4 | 1.4 | 1.1 |
| Fishing from Structures | 0.2 | 0.7 | 0.5 |
| Fishing, SW | 1.1 | 1.5 | 0.7 |
| Fishing from Boats | 0.5 | 0.7 | 0.3 |
| Fishing from Shore | 0.2 | 0.2 | 0.1 |
| Fishing from Structures | 0.4 | 0.6 | 0.3 |
| Hiking | 0.1 | 0.3 | 0.4 |
| Hunting | 0.6 | 1.3 | 1.3 |
| Lake Use (BFS Suitable), FW | 0.7 | 2.0 | 1.5 |
| Nature Study | 0.5 | 0.9 | 0.9 |
| Picnicking | 1.2 | 1.9 | 1.9 |
| Swimming, FW | 0.7 | 2.3 | 2.1 |
| Swimming, SW | 0.9 | 2.1 | 1.2 |
| Baseball | 1.9 | | 1.5 |
| Basketball | 1.6 | | 1.6 |
| Bicycling | 11.9 | | 10.7 |
| Bicycling on Trails | 0.7 | | 0.7 |
| Football | 0.7 | | 0.8 |
| Golf | 1.5 | | 1.3 |
| Horseback Riding | 0.7 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 4.5 | | 5.4 |
| Jogging/Running on Trails | 1.4 | | 1.7 |
| Off-road Vehicle Riding | 1.7 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.3 | | 0.3 |
| Open Space Activities | 2.8 | | 3.2 |
| Playground Use | 5.1 | | 4.8 |
| Soccer | 0.8 | | 1.2 |
| Softball | 1.8 | | 1.8 |
| Swimming, Pool | 5.8 | | 6.4 |
| Tennis | 1.2 | | 1.3 |
| Walking (Pleasure/Exercise) | 16.1 | | 14.8 |
| Walking on Trails | 3.8 | | 3.5 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Asterisks indicate value is less than .1 occasion per capita. See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Nature viewing has the potential for greatly increased participation because of the unmatched birding opportunities located in region 15. An educational/promotional campaign that identifies these resources is needed as many are unaware of their value.

The potential to increase recreation-related tourism, especially from the Houston area, appears to be high. Pleasure Island may help attract visitors to the coast while the Big Thicket National Preserve and Village Creek State Park should increase visitation at inland resources.

Softball remains very popular in the region. Most facilities are currently used to capacity. Flag football, soccer, golf and urban multi-use trail use (walking/jogging/bicycling) appear to be increasing in participation.



A recently constructed bridge across Village Creek will increase access to the Big Thicket National Preserve once opened.

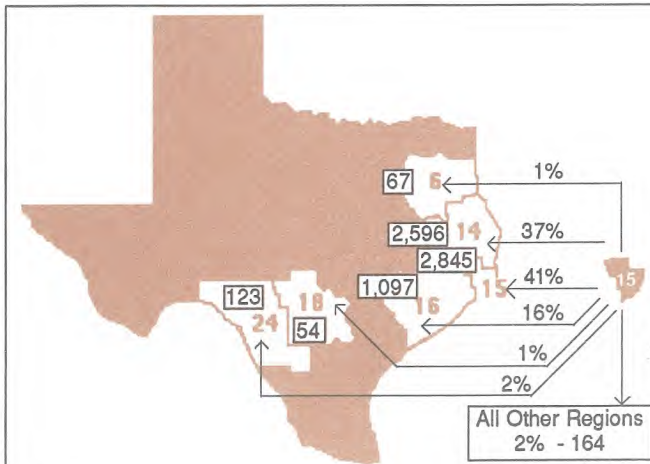


Figure 3
Destinations of Region 15 Residents
for Resource-based Activities

6,946 Annual User Occasions (000's)
Generated by Region 15 Residents, 1995

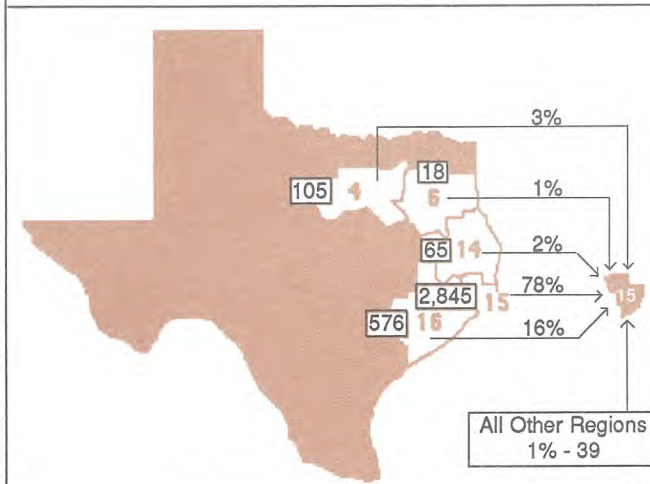


Figure 4
Origins of Participants Who Recreated
in Region 15 for Resource-based Activities

3,649 Annual User Occasions (000's)
Occurring in Region 15, 1995

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting. See Appendix B for key points to interpret these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 15 by Region 15 Residents,
Texans from Outside Region 15, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 15 (in 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|------|----------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | | | |
| | Residents of Region 15 | | | Texans from Outside Region 15 | | | Regional Totals | | |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 242 | 246 | 250 | 15 | 17 | 18 | 257 | 263 | 268 |
| Boat Ramp Lanes, SW | 193 | 195 | 198 | 31 | 33 | 36 | 224 | 229 | 233 |
| Boating (Pleasure), FW | 165 | 167 | 169 | 1 | 1 | 2 | 166 | 168 | 170 |
| Boating (Pleasure), SW | 89 | 90 | 91 | 15 | 16 | 18 | 104 | 106 | 108 |
| Camping | 67 | 67 | 68 | 63 | 68 | 73 | 130 | 135 | 141 |
| Fishing, FW | 335 | 343 | 350 | 41 | 45 | 48 | 376 | 387 | 399 |
| Fishing from Banks | 109 | 112 | 114 | 13 | 15 | 16 | 123 | 126 | 130 |
| Fishing from Boats | 150 | 153 | 157 | 18 | 20 | 22 | 168 | 173 | 179 |
| Fishing from Structures | 76 | 77 | 79 | 9 | 10 | 11 | 85 | 88 | 90 |
| Fishing, SW | 440 | 446 | 451 | 67 | 73 | 79 | 507 | 519 | 530 |
| Fishing from Banks | 192 | 195 | 197 | 29 | 32 | 34 | 222 | 227 | 232 |
| Fishing from Boats | 70 | 71 | 72 | 11 | 12 | 13 | 81 | 83 | 85 |
| Fishing from Structures | 177 | 180 | 182 | 27 | 29 | 32 | 204 | 209 | 214 |
| Hiking | 55 | 56 | 57 | 116 | 126 | 136 | 171 | 182 | 193 |
| Hunting | 252 | 253 | 254 | 189 | 206 | 222 | 441 | 459 | 477 |
| Lake Use (BFS Suitable), FW | 276 | 281 | 286 | 17 | 19 | 20 | 294 | 300 | 306 |
| Nature Study | 218 | 224 | 230 | 73 | 80 | 87 | 291 | 304 | 317 |
| Picnicking | 512 | 515 | 518 | 85 | 91 | 98 | 597 | 606 | 616 |
| Swimming, FW | 295 | 295 | 296 | 36 | 39 | 41 | 331 | 334 | 337 |
| Swimming, SW | 387 | 388 | 390 | 55 | 59 | 62 | 443 | 447 | 452 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

The analysis of current supply and expressed demand for outdoor recreation facilities indicates that, as a whole, region 15 is deficient in most facilities (table 5). With the exception of golf courses (analysis by holes), there is a current and projected need for all urban-based outdoor recreation facilities. Multi-use (walk/jog/bike) trails, soccer/football fields, basketball goals, softball fields and swimming pools are the highest ranking urban facilities needed (table 6). Urban open space for structured and unstructured outdoor recreation activities is also highly needed.

Many rural, resource-based outdoor

recreation facilities are also needed. Freshwater boat ramps (lanes), fishing structures and swimming areas are all of high need. Generally there is a high need to increase access to freshwater resources within the region. More waterfront sites or public easements to gain access from private lands are needed. Specifically, there is a need for a boat ramp at the northern end of Sabine Lake. Demand for both hiking and horseback riding currently exceeds the supply of trails in region 15. A need for off-road vehicle riding area/trails also exists.

With the recent decline in the economy, and associated funding limitations, many existing facilities are in need of repair or renovation. Making sure that

these facilities still serve area needs and then repairing or renovating them should be a top priority.

Providers' Responsibilities

Cities traditionally bear the burden of providing various urban outdoor recreation opportunities for their citizens. Most all of the cities in the Southeast Texas region are deficient in one or more recreation facilities. At the same time, these cities are under great financial constraints while trying to address these deficiencies. It will take a concerted effort, with community support and creative funding, to meet the urban recreation needs of residents.

In the Nederland-Port Arthur-

Table 4
Projected Outdoor Recreation Participation
in Region 15 by Residents of Region 15, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (in 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 771 | 773 | 776 |
| Basketball | 669 | 671 | 673 |
| Bicycling | 4902 | 4946 | 4990 |
| Bicycling on Trails | 302 | 305 | 307 |
| Football | 287 | 290 | 293 |
| Golf | 599 | 610 | 622 |
| Horseback Riding | 307 | 308 | 308 |
| Horseback Riding on Trails | 79 | 79 | 79 |
| Jogging/Running | 1892 | 1884 | 1875 |
| Jogging/Running on Trails | 583 | 580 | 578 |
| Off-road Vehicle Riding | 717 | 719 | 722 |
| ORV Riding on Trails | 140 | 141 | 141 |
| Open Space Activities | 1186 | 1185 | 1183 |
| Playground Use | 2131 | 2134 | 2136 |
| Soccer | 337 | 338 | 339 |
| Softball | 745 | 741 | 737 |
| Swimming, Pool | 2387 | 2394 | 2401 |
| Tennis | 514 | 515 | 516 |
| Walking (Pleasure/Exercise) | 6511 | 6708 | 6905 |
| Walking on Trails | 1524 | 1570 | 1617 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Groves triangle, land is scarce within incorporated areas. A regional athletic complex, located outside these cities should be provided by the county or commercial concerns. It would appear to be a profitable endeavor considering the team sport-oriented recreational demand currently expressed.

The immediate future in addressing rural recreation needs is more optimistic. With a new state park, Village Creek, scheduled to open, and greater access to Big Thicket National Preserve in the works, the potential to provide a variety of needed recreation opportunities exists.

Counties within region 15 and the commercial sector should consider building both freshwater and saltwater boat ramps when practical (table 7). These facilities usually draw visitation from a regional area and should be provided by regional government entities. The commercial sector could probably realize a profit with a well managed, family-oriented off-road vehicle riding

(ORV) area. The need for such an area exists in this region, but most government agencies shy away from providing ORV riding areas for environmental reasons and because ORV riding often conflicts with other activities.

Shifting demographics and funding problems caused this facility to become neglected and unuseable.



Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 15, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 35 | 21 | 21 | 21 |
| Basketball Goals | 42 | 39 | 40 | 40 |
| Boat Ramp Lanes, FW | 6 | 22 | 23 | 24 |
| Boat Ramp Lanes, SW | 16 | 7 | 7 | 8 |
| Campsites | 625 | * | * | * |
| Fishing Structures, FW Lin.Yd. | 0 | 488 | 503 | 518 |
| Fishing Structures, SW Lin.Yd. | 30047 | * | * | * |
| Golf Holes | 81 | * | * | * |
| Hiking Trail Miles | 2 | 21 | 22 | 24 |
| Horseback Riding Trail Miles | 0 | 11 | 11 | 11 |
| Lake Acres (BFS Suitable), FW | 1539 | * | * | * |
| Off-road Vehicle Riding Acres | 15 | 106 | 106 | 107 |
| Picnic Tables | 540 | * | * | * |
| Playground Areas, Equipped | 83 | 120 | 120 | 120 |
| Soccer/Football Fields | 17 | 23 | 23 | 23 |
| Softball Fields | 32 | 21 | 21 | 20 |
| Swimming, FW Sq.Yd. (000) | 0 | 84 | 85 | 85 |
| Swimming, SW Sq.Yd. (000) | 522 | * | * | * |
| Swimming, Pool Sq.Yd. (000) | 11 | 5 | 5 | 5 |
| Tennis Courts | 79 | 56 | 56 | 56 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 14 | 28 | 28 | 29 |
| Developed Land Acres | | 898 | 907 | 931 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs
in Region 15 Through 1995

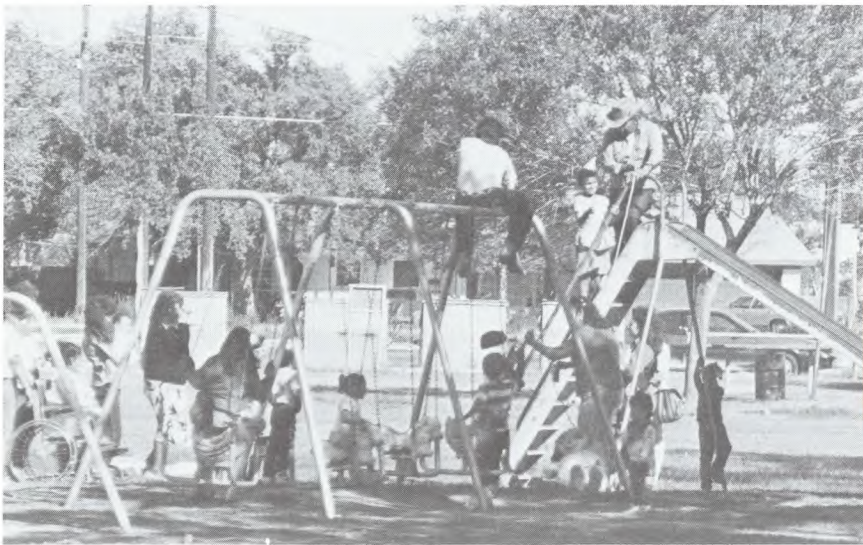
| <u>Need Rank</u> | <u>Facility/Resource</u> | <u>Need Rank</u> | <u>Facility/Resource</u> |
|------------------|--|------------------|-------------------------------|
| 1 | Swimming, FW Sq.Yd. | 11 | Horseback Riding Trail Miles |
| 2 | Trail Miles, Multi-Use (Walk, Bike, Jog) | 12 | Off-Road Vehicle Riding Acres |
| 3 | Soccer/Football Fields | 13 | Tennis Courts |
| 4 | Playground Areas, Equipped | 14 | Baseball Fields |
| 5 | Hiking Trail Miles | 15 | Boat Ramp Lanes, SW |
| 6 | Fishing Struc., FW Lin.Yd. | 16 | Golf Holes |
| 7 | Boat Ramp Lanes, FW | 17 | Picnic Tables |
| 8 | Basketball Goals | 18 | Campsites |
| 9 | Swimming, Pool Sq. Yd. | 19 | Swimming, SW Sq. Yd. |
| 10 | Softball Fields | 20 | Lake Acres (BFS Suitable) |
| | | 21 | Fishing Struc., SW Lin.Yd. |

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 15, by Administration

| <u>Facility/Resource</u> | <u>Needs Through 1995</u> | <u>FEDERAL</u> | | | | <u>STATE</u> | | | | <u>REG.</u> | <u>LOCAL</u> | | | |
|---|---------------------------|------------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------|----------------------------------|--|--------------------|--------------------------|-----------------|---------------|--------------------|-------------------|
| | | <u>National Park Service</u> | <u>US Fish and Wildlife Service</u> | <u>US Forest Service</u> | <u>Cops of Engineers</u> | <u>TPWD State Park System</u> | <u>TPWD Wildlife Mgmt. Areas</u> | <u>Dept. of Hwy. & Public Trans.</u> | <u>Other State</u> | <u>River Authorities</u> | <u>Counties</u> | <u>Cities</u> | <u>Other Local</u> | <u>COMMERCIAL</u> |
| Baseball Fields | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 17 | 0 | 0 | |
| Basketball Goals | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 30 | 0 | 0 | |
| Boat Ramp Lanes, FW | 23 | 4 | 0 | 0 | 0 | 5 | 2 | 0 | 0 | 6 | 4 | 0 | 2 | |
| Boat Ramp Lanes, SW | 7 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | |
| Campsites | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Fishing Structures, FW Lin.Yd. | 503 | 50 | 0 | 0 | 0 | 65 | 50 | 0 | 0 | 0 | 100 | 88 | 0 | 150 |
| Fishing Structures, SW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Hiking Trail Miles | 22 | 6 | 3 | 0 | 0 | 4 | 0 | 0 | 0 | 3 | 3 | 3 | 0 | 0 |
| Horseback Riding Trail Miles | 11 | 4 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 |
| Off-road Vehicle Riding Acres | 106 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 25 | 0 | 56 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 100 | 0 | 0 |
| Soccer/Football Fields | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 17 | 0 | 0 |
| Softball Fields | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 11 | 0 | 4 |
| Swimming, FW Sq.Yd.(000) | 85 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85 | 0 | 0 |
| Swimming, SW Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd.(000) | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| Tennis Courts | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 48 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 28 | 3 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 5 | 15 | 0 | 0 |
| Developed Land Acres | 907 | 107 | 40 | 0 | 0 | 52 | 1 | 24 | 0 | 24 | 179 | 412 | 0 | 70 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.



REGION 16

THE GULF COAST

Lack of local parks, particularly in the Houston area, hampers participation in many urban-based activities.

ISSUES AND RECOMMENDATIONS

Issue: Lack of Parkland and Open Space

Recreation providers in the region and input from the public indicated that lack of parkland and open space was a major concern. Region 16 has the fewest developed recreation acres per capita of any planning region at only 4.69 acres per thousand citizens. This is less than half of the statewide average of 9.81 acres per thousand population. The Gulf Coast region also has the fewest number of individual park sites per capita with 0.27 park sites per thousand population (table A3). During the past decade, strides have been made to remedy this situation but the problem persists. The city of Conroe has successfully doubled its park acreage during this time by using various resources and innovative funding methods but deficiencies still exist.

The high price of land in Region 16 has been a limiting factor. In some areas there is very little undeveloped land available. Many cities such as Pasadena, La Porte, and Bellaire, are completely surrounded by other incorporated areas or water, leaving no room to grow.

To compound this lack of parkland situation, many cities have experienced population shifts and in many cases

tremendous population growth. Growing areas are faced with new and increased outdoor recreation demands, while other areas have lost population and have established parks getting little use. (Also, see State Summary, "Meeting Recreational Open Space Needs" under "Issues and Recommendations.")

Recommendations

For local recreation providers:

Develop local park and open space plans with citizen input to help identify local needs and guide future actions.

Inventory current publicly owned lands and examine which tracts have park or open space potential. Dedicate these lands for this purpose.

Explore alternatives to fee simple acquisition of parkland, such as transfer of development rights and mandatory parkland dedication ordinances.

Encourage donations of parklands and open space areas.

Consider converting abandoned railway and utility rights-of-way to recreational trails.

Increase the public's awareness of available existing outdoor recreation opportunities.

For the Texas State Department of Highways and Public Transportation and other transportation officials:

Give greater consideration in transportation planning to provide for bicycling routes. Consider a sign and information program on these roadways to provide needed recreational opportunities at relatively low cost.

Issue: Funding

In the early 1980s the city of Houston with the help of the Parks People, the Houston Parks Board, and a new director for their Parks and Recreation Department made a commitment to address parks and recreation deficiencies in the city. Then in the mid 1980s, the "bottom fell out" of the oil and gas industries. The city of Houston and Harris County experienced



their most financially troubled times in recent history. Local recreation providers mentioned that budget and staff reductions made it necessary to shift emphasis toward maintaining existing facilities rather than increasing urban outdoor recreation opportunities that had been planned. In some instances, recreation programs were reduced to address budget shortfalls. Now that the economic picture is brighter, it is hoped that the city's parks and recreation department will regain the momentum that was lost when funding became the limiting factor.

Most other areas of region 16 also experienced budget and funding shortfalls that affected park and recreation services. With the high costs of maintaining parks, recreation providers have become aware of the future importance of building low maintenance facilities. Many park and recreation agencies have actively solicited donations to help make up facility deficiencies caused by reduced funding.

Many large industries in the region used to own park and recreation facilities for use by their employees. These opportunities satisfied a portion of the local urban recreation demand. As the economy declined, these facilities were closed and not maintained. It is feared that not only will these employee parks never be reopened but that the lands will be sold. The loss of such areas will place an increased burden on local park and recreation agencies.

The Lower Colorado River Authority donated funds to both the cities of Wharton and Bay City that when combined with local funds enabled them to pursue matching grants from the Local Parks Fund to develop riverfront parks. This is a good example of how inter-agency coordination and cooperation can provide impressive recreation opportunities where, at the onset, funding appeared to be prohibitive. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For local recreation providers:

Support federal legislation establishing a dedicated trust fund, or similar mechanism, to provide funding for outdoor recreation.

Continue to seek innovative funding methods to satisfy the outdoor rec-

reation needs of constituents in the most effective manner possible.

Build facilities that require low maintenance and/or establish maintenance trust funds when the facility is built.

Utilize volunteers when practical.

Consider entering into joint use, cost-sharing partnerships with other public or private recreation providers to acquire and develop outdoor recreation opportunities.

Encourage civic and church groups to assist in fundraising for certain programs and sports leagues.

Seek assistance from federal and state governments.

For the Texas Parks and Wildlife Department:

Provide technical assistance workshops on alternative funding sources and grantsmanship to local communities.

Issue: Tourism

Many individuals in the region expressed an interest in increasing tourism in the area. The city of Galveston has been a popular destination of tourists seeking saltwater recreation opportunities for quite some time. Now other coastal communities in region 16 are expressing an increased interest in attracting tourism and the associated economic benefits. Brazoria County has encouraged recreation participation in the San Luis Pass area, and their parks at Quintana Beach and Surfside Beach are becoming popular. Communities on the Bolivar Peninsula promote the fishing and undeveloped beachfront recreation opportunities located there. The city of Galveston has added a trolley system to attract more visitors. Unfortunately, most tourists come from Harris County so these coastal communities end up competing for the same visitors.

Areas near Lake Conroe and the Sam Houston National Forest have come to realize the positive economic effects created by tourists seeking outdoor recreation opportunities. Public access to Lake Conroe is very limited at this time. Greater access would surely enhance tourism development and benefits. The U.S. Forest Service manages all of the

public parksites in this area and is under new directives to increase recreational use of its resources. (Also, see State Summary, "Tourism and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Develop needs assessments that address the recreation demand generated by tourists.

Encourage and support regional chambers of commerce in promoting outdoor recreation-related tourism.

Educate and provide recreational information to related industries such as hotel/motels and restaurants.

For local governments and chambers of commerce:

Promote outdoor recreation-related tourism regionwide with emphasis given to sites that are currently underutilized.

Encourage commercial development of campgrounds, marinas, fishing structures and other recreation facilities sought by tourists.

Issue: Greenbelts and Greenways

As previously mentioned, many areas of the Gulf Coast region are in need of parkland and public open space, but land costs are prohibitive. Local individuals and conservation groups have suggested that establishing greenbelts and greenways along freshwater streams and drainages could help address this problem by creating new outdoor recreation opportunities. Currently, access to these freshwater resources is limited.

Development opportunities are limited in these floodplain areas, thus many remain fairly undeveloped at this time. In addition, many counties in region 16 are developing floodplain plans to best manage these areas for protection against future flooding of cities. Outdoor recreation needs must be addressed as a component of these plans. Greenbelts have the potential to link parks, cities, the coast and other important resources to one another. Health and fitness would be promoted by encouraging participation in walking, bicycling, and jogging activities along trails that could be located along these resources.



Cleaning illegal dumping and littering on the coast is a financial drain for many recreation providers.

In general, there is a lack of public access to freshwater streams in the region. Resources exist, and there is high demand to participate in freshwater activities, but waterways are underutilized because of limited access. Use of waterways often adversely impacts adjacent private landowners because of littering and trespassing by some recreationists. A public awareness/information campaign is needed to explain public versus private rights, and to identify which lands are public and which are private. (Also, see State Summary, "Rivers and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Integrate natural greenbelt waterways into long range urban development and floodplain plans.

Assure adequate access points along freshwater streams are provided.

Consider recreational easements to provide access points and trails along greenbelts when outright acquisition is not necessary or desired.

Initiate a public awareness/information campaign to address public and private rights and to identify available public access.

Develop hike/bike trails along existing waterways whose corridors are in public ownership.

Issue: Environmental Protection and Education

With 376.3 people per square mile (projected for 1995), region 16 has the highest population density of any region in Texas. As would be expected in a highly developed area, protection of the environment is a major concern, and this concern was voiced repeatedly during public input meetings. The population of the region is projected to increase substantially in the foreseeable future. Thus, environmental concerns must be addressed now. Habitat preservation and water quality are two of the primary concerns. The loss and degradation of riparian corridors, wetlands, and natural areas must be slowed.

Environmental education and awareness should be taught to citizens so natural values are recognized and stewardship of public lands promoted. Project WILD is a good example of a nationally accepted curriculum to educate school children of the importance of the environment.

Texas is currently the only coastal state in the nation that has yet to adopt a state coastal zone management plan. Such a plan would help to protect vital coastal resources and is supported by Galveston and Brazoria County recreation providers.

Passive recreation opportunities requiring low levels of development are usually compatible with environmental protection concerns. Highly developed recreation areas, however, are often detrimental to the resource. Environmental values need to be considered along with recreational values when planning future actions on public lands. For example, floodplains should be left in their natural state to provide wildlife habitat and prevent erosion. (Also, see State Summary, "Conserving Natural Resources for Recreational Use" under "Issues and Recommendations.")

Recommendations:

For the state of Texas:

Develop and adopt a state coastal management plan.

For recreation providers and land managers:

Identify natural areas and develop plans to preserve the best examples.

Educate the public about the values of wetlands and natural areas and why it is important that they remain in their natural state.

Coordinate with other land managing agencies in the area and share expertise.

Develop various incentive programs to encourage private landowners to manage their land for public non-consumptive recreation opportunities; consider voluntary landowner agreements, tax reductions, easements, and ways to limit landowners' liability.

Perform thorough resource evaluations on park sites before preparing development plans; invite the public to give input into the management plans of parks and natural areas.

Figure 1
Region 16 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|---------------------|
| Counties | = | 13 |
| Land area | = | 12,386 square miles |
| Elevation | = | 2' - 450' |
| Annual rainfall | = | 41.3 - 52.8 inches |
| January minimum temperature | = | 39 - 49°F |
| July maximum temperature | = | 86 - 95°F |
| Growing season | = | 261 - 335 days |

POPULATION 1986

Total 3,817,448

| | |
|------------|-----------|
| Counties | |
| Harris | 2,812,563 |
| Galveston | 211,420 |
| Brazoria | 186,115 |
| Fort Bend | 179,732 |
| Montgomery | 159,696 |
| Liberty | 52,049 |
| Walker | 52,017 |
| Matagorda | 41,570 |
| Wharton | 40,421 |
| Waller | 23,355 |
| Austin | 20,190 |
| Colorado | 19,354 |
| Chambers | 18,966 |

1995 PROJECTED POPULATION

| | |
|------------------------|-----------|
| Total | 4,660,979 |
| People per square mile | 376.3 |
| Ethnic composition: | |
| White | 63% |
| Black | 16% |
| Hispanic | 21% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|---------------|
| Recreation land | = | 317,237 acres |
| Developed recreation land | = | 19,984 acres |

- Addicks Reservoir (COE)
- Anahuac National Wildlife Refuge
- Attwater Prairie Chicken Refuge
- Barker Reservoir (COE)
- Bear Creek Park (Harris County)
- Big Boggy National Wildlife Refuge
- Big Thicket National Preserve
- Bolivar Beach
- Brazoria County Park
- Brazoria National Wildlife Refuge
- Brazos Bend State Park
- Bryan Beach State Park
- Cullen Park (Houston)
- Davis Hill State Park
- Galveston Island State Park
- Hermann Park (Houston)
- Huntsville State Park
- Jones State Forest

- Lake Houston State Park
- Mad Island Wildlife Management Area
- Matagorda Peninsula State Park
- Memorial Park (Houston)
- Peach Point Wildlife Management Area
- Quintana Beach (Brazoria County)
- Sam Houston National Forest
- San Bernard National Wildlife Refuge
- San Luis County Park (Brazoria County)
- San Jacinto Battleground/Battleship Texas State Historical Park
- Sheldon State Park
- Sheldon Wildlife Management Area
- Stephen F. Austin State Historical Park
- Stewart Beach (Galveston)
- Surfside Beach (Brazoria County)
- Varner-Hogg Plantation State Historical Park
- West Beach (Galveston)

Lakes

Surface acres 52,422

Surface Acres

| | |
|-----------------|--------------|
| Lake Anahuac | 5,300 |
| Lake Conroe | 21,000 |
| Lake Houston | 12,240 |
| Livingston Lake | 5,000 (Part) |

Streams

- Armand Bayou
- Bastrop Bayou
- Brays Bayou
- Brazos River
- Buffalo Bayou
- Caney Creek
- Cedar Bayou
- Chocolate Bayou
- Clear Creek
- Colorado River
- Cypress Creek
- Dickinson Bayou
- Hall's Bayou
- Oyster Creek
- San Bernard River
- San Jacinto River
- San Jacinto River, East Fork
- Spring Creek
- Trinity River

Saltwater

Miles accessible Gulf frontage 96
Surface acres saltwater bays 824,000

- Chocolate Bay
- Clear Lake
- East Bay
- East Matagorda Bay
- Galveston Bay
- Gulf of Mexico
- Intracoastal Waterway
- Matagorda Bay
- Rollover Pass
- San Luis Pass
- Trinity Bay
- West Bay

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

Population Trends

In spite of a depressed economy, the population of region 16 experienced substantial growth during the 1980s. Population growth rates were not consistent throughout the region, however. The highest growth rates appear to have occurred in the relatively affluent communities near the city of Houston. The cities of Friendswood, Sugar Land, Missouri City, La Porte, and Rosenberg all had population growth rates during 1980 to 1986 that were over 30 percent. In contrast, the three largest coastal cities, Galveston, Freeport, and Texas City, all had the smallest population growth rates of cities in the region, less than seven percent.

Population projections anticipate that the regional population will continue to grow through 1995 at rates similar to the 1980-1986 rates. From 1986 to 1995, the population should increase 22 percent to over 4.6 million people (figure 1). These increases will surely create new, and compound existing, outdoor recreation facility needs.

The age structure of the region, relative to the statewide averages, shows the Gulf Coast region to have a high percentage of young adults. Forty-three percent of regional residents are between the ages of 20 and 44 years of age compared to 39 percent statewide. Only 9 percent of Gulf Coast region residents are sixty years of age or older, while 13.2

percent are of this age statewide. This age structure poses a challenge to recreation providers as the largest group, young adults, are also viewed as the hardest to satisfy in terms of urban outdoor recreation needs. As this group and the population in general ages, a greater recreation emphasis will have to be placed on providing facilities for senior citizens.

Resource Attractions

Saltwater resources that include the Gulf of Mexico, the Galveston Bay system, and Matagorda Bay system are the dominant recreation opportunities in region 16. What makes the Texas coast so appealing is that a variety of opportunities and recreation experiences can be found there. In the Galveston Island, Bolivar Peninsula, and Brazosport areas, everything from luxury hotels to undeveloped beaches can be found. Bay, jetty, pier, surf, and deep sea fishing opportunities all exist in the Gulf Coast region. Residents of Matagorda County, and to a greater extent, Brazoria County, have expressed an increased interest in developing tourism opportunities along their coastlines.

The federal government manages valuable public resources that contain numerous outdoor recreation opportunities. The U.S. Fish and Wildlife Service administers the Big Boggy, San Bernard, Brazoria, and Anahuac national wildlife

refuges on the coast. These refuges protect wetlands that serve as wintering grounds for migratory birds and support healthy fisheries. These areas offer hunting, fishing, and nature viewing opportunities. The Attwater Prairie Chicken National Wildlife Refuge is also located in region 16 in Colorado County along the San Bernard River. The Sam Houston National Forest, managed by the U.S. Forest Service, offers various outdoor recreation opportunities including camping, hiking, horseback riding, off-road vehicle riding, picnicking, nature viewing, and access to freshwater.

The U.S. Army Corps of Engineers manages both Addicks and Barker reservoirs. Individual sites within these two resources are leased to various county and local subdivisions in the area and provide a variety of outdoor recreation opportunities. The potential to provide additional dispersed and organized recreation opportunities exists.

Recreation Supply

Eight state parks are located in the Gulf Coast region (table 1). These sites offer many recreation opportunities in diverse habitats. Huntsville State Park is heavily wooded and next to the Sam Houston National Forest; Galveston Island and Bryan Beach state parks are located on the Gulf of Mexico; and Brazos Bend State Park has freshwater wetlands and is adjacent to the Brazos River. The Texas Parks and Wildlife Department also manages three wildlife management areas in region 16 that offer places to hunt.

Potential and Proposed Resources

In general, ample access to saltwater resources exists in region 16. A few specific key resources are currently underutilized because of limited access. Clear Lake has the potential to satisfy a greater portion of waterbased recreation demand if it had more public access. Likewise, there is considerable access to the Gulf of Mexico near Galveston, but access to Galveston Bay needs to be improved.

Recreation-related tourism has a major economic impact on many coastal communities.



Access to freshwater resources is limited. The shores of Lake Conroe already have been heavily developed. The U.S. Forest Service plans to increase the capacity of its recreation sites along the northern shores of Lake Conroe if funding is adequate. Locally there is high demand for freshwater opportunities, thus public access to Lake Conroe should be a high priority. The San Jacinto River Authority is considering developing a day use recreation site near the Lake Conroe dam. They should be encouraged to pursue this project. A new state park planned on the shores of Lake Houston was scheduled to be open by 1990. A

conflict with a planned freeway has kept this park from being developed.

Access to rivers and streams in region 16 is currently limited. There is great potential to increase use of these public resources with improved access. Harris and Brazoria counties have begun to try to integrate outdoor recreation opportunities with floodplain planning. These areas have the potential to provide public trails, open space, and ballfields with low development. Many of these, if not protected, are in danger of modification and/or development.

When abandoned, railway and utility rights-of-way should be converted

to trails. These linear corridors, in many areas, often offer the only hope of providing long linear trail opportunities. They have the potential to link population centers with parks and the coast.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references such as open space plans should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 16, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG | LOCAL | | | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|-------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | COMMERCIAL |
| Number of Parks/Rec. Areas | 2 | 6 | 9 | 12 | 11 | 4 | 5 | 1 | 1 | 169 | 735 | 23 | 187 | 1165 |
| Total Parkland Acres | 1557 | 69108 | 101918 | 43772 | 24483 | 21719 | 8 | 1725 | 1 | 18713 | 24434 | 2917 | 6881 | 317237 |
| Developed Land Acres | 0 | 6 | 432 | 172 | 1301 | 25 | 3 | 25 | 1 | 7340 | 6911 | 1168 | 2599 | 19984 |
| Developable Land Acres | 0 | 0 | 236 | 41666 | 18179 | 0 | 5 | 0 | 0 | 10866 | 16794 | 1727 | 3394 | 92867 |
| Preserved or Unsuitable for Development (Acres) | 1557 | 69102 | 101250 | 1934 | 5003 | 21694 | 0 | 1700 | 0 | 507 | 728 | 22 | 888 | 204385 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 155 | 152 | 8 | 5 | 319 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74 | 482 | 17 | 12 | 585 |
| Boat Ramp Lanes, FW | 0 | 0 | 8 | 3 | 2 | 2 | 0 | 0 | 2 | 16 | 2 | 0 | 54 | 89 |
| Boat Ramp Lanes, SW | 0 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 28 | 3 | 22 | 79 | 138 |
| Campsites | 0 | 0 | 56 | 0 | 592 | 0 | 0 | 0 | 0 | 731 | 0 | 108 | 4306 | 5793 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 2150 | 1000 | 18480 | 6000 | 0 | 0 | 0 | 7245 | 3767 | 202 | 180 | 39024 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 138 | 100 | 0 | 0 | 10 | 300 | 15 | 11 | 675 | 1249 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 38959 | 0 | 0 | 0 | 0 | 0 | 4780 | 1083 | 22040 | 6340 | 73202 |
| Golf Holes | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 90 | 189 | 18 | 117 | 432 |
| Hiking Trail Miles | 0 | 0 | 93 | 0 | 14 | 0 | 0 | 0 | 0 | 9 | 0 | 2 | 3 | 120 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 5 | 14 |
| Lake Acres (BFS Suitable),FW | | | | | | | | | | | | | | 35976 |
| Off-road Vehicle Riding Acres | 0 | 0 | 420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 13 | 448 |
| Picnic Tables | 0 | 0 | 28 | 0 | 580 | 0 | 0 | 27 | 0 | 3237 | 2631 | 125 | 397 | 7025 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 68 | 535 | 8 | 30 | 650 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 114 | 123 | 4 | 0 | 241 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 232 | 3 | 0 | 280 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 0 | 5000 | 0 | 0 | 0 | 0 | 900 | 12000 | 0 | 42800 | 60700 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 140800 | 0 | 0 | 0 | 0 | 454370 | 0 | 135650 | 58080 | 788900 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 512 | 0 | 0 | 0 | 0 | 497 | 47335 | 1525 | 6448 | 56317 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 401 | 17 | 7 | 484 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 2 | 0 | 0 | 26 | 0 | 0 | 1 | 0 | 48 | 65 | 45 | 0 | 188 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 16 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 16 Occurring In | | |
| | Region 16 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 0.7 | 1.2 | 1.3 |
| Boat Ramp Lanes, SW | 0.6 | 0.7 | 0.3 |
| Boating (Pleasure), FW | 0.3 | 0.5 | 0.6 |
| Boating (Pleasure), SW | 0.3 | 0.3 | 0.1 |
| Camping | 0.5 | 1.7 | 1.7 |
| Fishing, FW | 1.3 | 2.4 | 2.4 |
| Fishing from Banks | 0.4 | 0.8 | 0.8 |
| Fishing from Boats | 0.6 | 1.1 | 1.1 |
| Fishing from Structures | 0.3 | 0.5 | 0.5 |
| Fishing, SW | 1.4 | 1.5 | 0.7 |
| Fishing from Boats | 0.6 | 0.7 | 0.3 |
| Fishing from Shore | 0.2 | 0.2 | 0.1 |
| Fishing from Structures | 0.6 | 0.6 | 0.3 |
| Hiking | 0.2 | 0.4 | 0.4 |
| Hunting | 0.4 | 1.2 | 1.3 |
| Lake Use (BFS Suitable), FW | 0.8 | 1.4 | 1.5 |
| Nature Study | 0.7 | 1.0 | 0.9 |
| Picnicking | 1.6 | 2.0 | 1.9 |
| Swimming, FW | 0.9 | 1.9 | 2.1 |
| Swimming, SW | 2.1 | 2.3 | 1.2 |
| Baseball | 1.7 | | 1.5 |
| Basketball | 1.9 | | 1.6 |
| Bicycling | 11.7 | | 10.7 |
| Bicycling on Trails | 0.7 | | 0.7 |
| Football | 0.8 | | 0.8 |
| Golf | 1.5 | | 1.3 |
| Horseback Riding | 0.7 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 5.9 | | 5.4 |
| Jogging/Running on Trails | 1.8 | | 1.7 |
| Off-road Vehicle Riding | 1.2 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.2 | | 0.3 |
| Open Space Activities | 3.5 | | 3.2 |
| Playground Use | 5.0 | | 4.8 |
| Soccer | 1.1 | | 1.2 |
| Softball | 1.8 | | 1.8 |
| Swimming, Pool | 7.2 | | 6.4 |
| Tennis | 1.7 | | 1.3 |
| Walking (Pleasure/Exercise) | 15.0 | | 14.8 |
| Walking on Trails | 3.5 | | 3.5 |

Note: Asterisks indicate value is less than .1 occasion per capita.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987

Notes: See Appendix B for key points to interpret this table and figure and an explanation of research methods. See Appendix D for an explanation of terms.

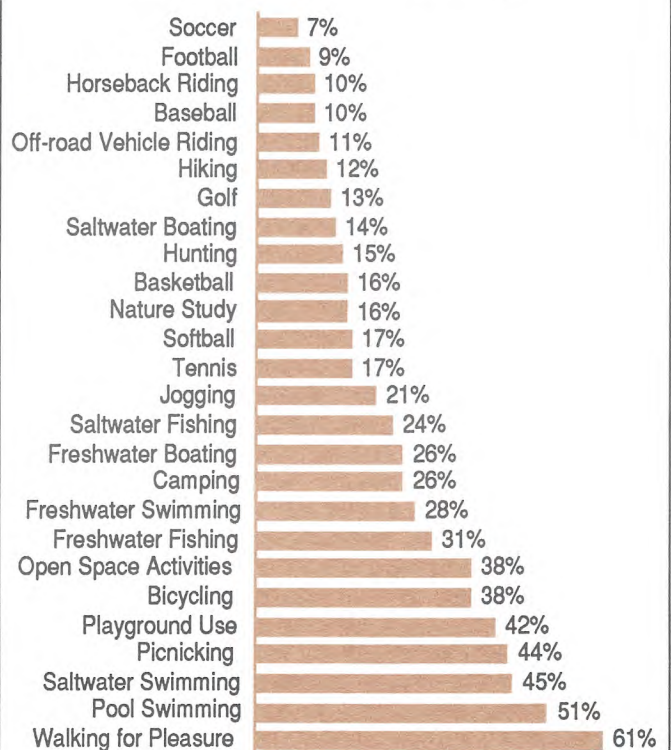
OUTDOOR RECREATION PARTICIPATION

Popular Activities

More residents of the Gulf Coast region participate in walking for pleasure and pool swimming than any other outdoor recreation activity (figure 2). The percent of the region 16 population participating in the saltwater activities of boating, swimming, and fishing is higher than the statewide average. In fact, the percent of population participating in this region is at or above the statewide average for all activities with the exception of freshwater activities and hunting. The urban character of the region and the lack of hunting opportunities are likely reasons for the lower interest in this activity.

The annual per capita rates of outdoor recreation activity participation by residents of region 16 dramatically show their propensity to recreate in the outdoors. Residents express the highest per capita rates of participation in tennis of any planning region in the state with 1.7 annual occasions per capita, and the second highest pool swimming rates at 7.2 annual occasions per capita (table 2). Walking for pleasure and

Figure 2
Region 16 Projected 1995 Percentage



bicycle riding have more participation per capita than any of the other activities. Some people participate in these activities over a hundred times a year, which is a rarity for other activities. Relative to the other planning regions, region 16 residents engage in basketball and golf at high rates. Participation rates in soccer, softball, and football are all below the statewide average. Regionally, participation in these activities is probably constrained by the lack of opportunities currently available. However, in some local areas these activities are very popular and participation is high.

The high participation rates in golf, tennis, and pool swimming are interesting because region 16 has relatively low public supplies of facilities that are needed to participate in these activities. Facilities at private clubs, apartment

complexes, and homeowner association facilities likely satisfy much of the expressed demand for these opportunities. These facilities are not included in the **Texas Outdoor Recreation Inventory System (TORIS)** because they are not open to the general public but are for members only. When estimating participation rates, respondents to a mail survey were asked to report activities engaged in only on public facilities. The high needs for these activities indicates that respondents may have inadvertently counted some of their participation at these private facilities. To address the needs for these facilities at a local level, a more in-depth analysis is probably warranted.

As would be expected for this region, participation rates in saltwater-based activities are above the statewide average and freshwater-based activity

rates are all below the average. This is a direct reflection of the opportunities available. Expressed behavior indicates that Gulf Coast residents are willing to travel to quality freshwater-based recreation destinations. In a sense they are forced to, as Lake Conroe and Lake Houston are the only large freshwater bodies in the region. Lake Conroe is very congested on summer weekends and access to Lake Houston is currently limited. Most of the nearby quality camping opportunities are also located outside regional boundaries. Although camping participation rates are close to the statewide average, less than a third of the nights camped by region residents occur within the region. This is perhaps due to the scarcity of quality resource camping destinations within region 16.

Table 3
Projected Outdoor Recreation Participation in Region 16 by Region 16 Residents, Texans from Outside Region 16, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 16 (in 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|-------|----------------------------------|------|------|-----------------|-------|-------|
| | Generated By | | | | | | Regional Totals | | |
| | Residents of Region 16 | | | Texans from Outside Region 16 | | | 1990 | 1995 | 2000 |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 2853 | 3101 | 3350 | 49 | 52 | 55 | 2902 | 3154 | 3405 |
| Boat Ramp Lanes, SW | 2568 | 2789 | 3011 | 385 | 410 | 435 | 2953 | 3200 | 3447 |
| Boating (Pleasure), FW | 1282 | 1389 | 1497 | 24 | 25 | 27 | 1306 | 1415 | 1523 |
| Boating (Pleasure), SW | 1124 | 1216 | 1308 | 212 | 226 | 240 | 1336 | 1442 | 1548 |
| Camping | 2281 | 2481 | 2681 | 1083 | 1153 | 1224 | 3365 | 3635 | 3905 |
| Fishing, FW | 5426 | 5908 | 6390 | 91 | 96 | 101 | 5516 | 6004 | 6492 |
| Fishing from Banks | 1770 | 1927 | 2085 | 30 | 31 | 33 | 1799 | 1958 | 2118 |
| Fishing from Boats | 2430 | 2646 | 2862 | 41 | 43 | 45 | 2470 | 2689 | 2907 |
| Fishing from Structures | 1226 | 1335 | 1444 | 20 | 22 | 23 | 1247 | 1357 | 1467 |
| Fishing, SW | 5985 | 6514 | 7042 | 799 | 850 | 902 | 6784 | 7364 | 7944 |
| Fishing from Banks | 2617 | 2848 | 3079 | 349 | 372 | 394 | 2966 | 3219 | 3473 |
| Fishing from Boats | 956 | 1041 | 1125 | 128 | 136 | 144 | 1084 | 1177 | 1269 |
| Fishing from Structures | 2412 | 2625 | 2838 | 322 | 343 | 364 | 2734 | 2968 | 3201 |
| Hiking | 1040 | 1130 | 1221 | 122 | 129 | 136 | 1162 | 1260 | 1357 |
| Hunting | 1692 | 1849 | 2006 | 204 | 215 | 227 | 1896 | 2065 | 2233 |
| Lake Use (BFS Suitable), FW | 3255 | 3539 | 3822 | 56 | 60 | 63 | 3311 | 3598 | 3885 |
| Nature Study | 3101 | 3408 | 3715 | 259 | 280 | 301 | 3360 | 3688 | 4017 |
| Picnicking | 6949 | 7494 | 8040 | 311 | 327 | 343 | 7260 | 7822 | 8383 |
| Swimming, FW | 3889 | 4164 | 4440 | 78 | 82 | 85 | 3967 | 4246 | 4525 |
| Swimming, SW | 8979 | 9651 | 10322 | 2596 | 2727 | 2858 | 11576 | 12378 | 13180 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Recreation Travel Patterns

Residents of the Gulf Coast region have a propensity to recreate and express a willingness to travel to quality resource-based recreation destinations. This is especially true when a freshwater lake or stream, or saltwater beach, is the destination on a hot summer weekend when the desire to "get out of the city" is the greatest.

Region 16 residents generate a total of 70.6 million resource-based recreation occasions annually (figure 3). This is the largest number of rural outdoor recreation occasions generated by any single region. Over 45 million annual occasions, or 64 percent of the participation in these resource-based outdoor recreation activities are engaged in within the region itself. Participation in freshwater activities on/in Lake Conroe, and saltwater activities on/in Galveston Island and in the many bays account for many of these occasions.

Lake Livingston, Sam Rayburn Reservoir, Toledo Bend Reservoir, and the national forests located in region 14 attract 7.4 million rural-based recreation occasions annually, 10 percent of rural recreation occasions enjoyed by region 16 residents.

The freshwater resources located in regions 12, 13, and 18 attract another 4 percent each of participation in rural recreation activities. Corpus Christi and the many other coastal destinations of region 20 satisfy 3 percent, or almost 2 million annual occasions of resource-based recreation demand expressed by Gulf Coast region residents.

A fairly large portion (88 percent) of the resource-based recreation that occurs in region 16 is generated by residents of the region (figure 4). The recreation impact of Texans from outside the region is relatively small compared with the demand generated from region 16 itself. Residents from region 4, notably the Dallas-Fort Worth metroplex, account for 4 percent of resource-based recreation in the region. This is primarily travel to one of the many coastal destinations located in the Gulf Coast region. Region 15, a coastal region itself, generates another 2 percent of the rural resource-based recreation occasions. The remaining 6 percent of this type of recreation that occurs in region 16 comes from the other remaining 21 regions combined.

Projected Participation

Paralleling the projected increase in population, participation in all outdoor recreation activities is projected to increase (tables 3 and 4). As the mean age of region residents is expected to rise, participation in activities enjoyed by elderly residents will increase at higher rates than other activities. The total participation occasions of walking for pleasure, golf, nature viewing, and saltwater fishing are projected to increase by about 20 percent between 1990 and the year 2000. Other activities such as softball, playground use, freshwater swimming, and saltwater swimming are projected to increase by only 15 percent during this period. Of course, these future participation projections could be affected by the quality and quantity of additional facilities provided between now and the year 2000. Participation in soccer has the potential to increase at a rate greater than projected. The United States is hosting the soccer World Cup in 1994, so publicity generated by this event should increase interest and participation in soccer.

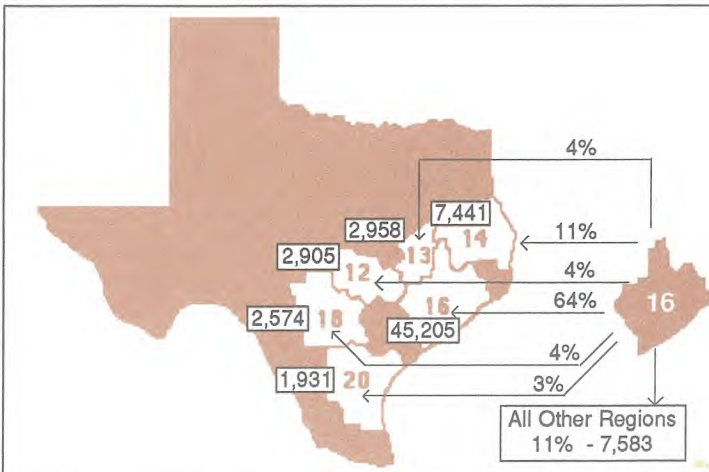


Figure 3
Destinations of Region 16 Residents
for Resource-based Activities

70,597 Annual User Occasions (000's)
Generated by Region 16 Residents, 1995

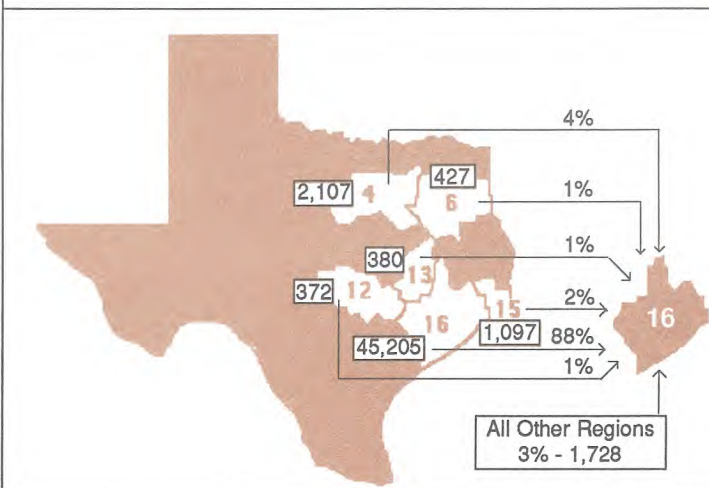


Figure 4
Origins of Participants Who Recreated
in Region 16 for Resource-based Activities

51,316 Annual User Occasions (000's)
Occurring in Region 16, 1995

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting. See Appendix B for key points to interpret these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 4
Projected Outdoor Recreation Participation
in Region 16 by Residents of Region 16, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (In 000's Annual User Occasions) | | |
|-----------------------------|---|-------|-------|
| | 1990 | 1995 | 2000 |
| Baseball | 7209 | 7950 | 8692 |
| Basketball | 7907 | 8654 | 9402 |
| Bicycling | 49739 | 54452 | 59166 |
| Bicycling on Trails | 3064 | 3355 | 3645 |
| Football | 3221 | 3558 | 3895 |
| Golf | 6490 | 7175 | 7861 |
| Horseback Riding | 2906 | 3137 | 3368 |
| Horseback Riding on Trails | 746 | 805 | 864 |
| Jogging/Running | 25724 | 27702 | 29681 |
| Jogging/Running on Trails | 7923 | 8532 | 9142 |
| Off-road Vehicle Riding | 5272 | 5718 | 6165 |
| ORV Riding on Trails | 1033 | 1120 | 1208 |
| Open Space Activities | 15294 | 16448 | 17603 |
| Playground Use | 21827 | 23462 | 25098 |
| Soccer | 4634 | 5041 | 5449 |
| Softball | 7793 | 8376 | 8958 |
| Swimming, Pool | 30741 | 33395 | 36049 |
| Tennis | 7128 | 7749 | 8371 |
| Walking (Pleasure/Exercise) | 62901 | 69726 | 76554 |
| Walking on Trails | 14725 | 16323 | 17921 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 16, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|--------------|--------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 319 | 207 | 261 | 315 |
| Basketball Goals | 585 | 370 | 460 | 550 |
| Boat Ramp Lanes, FW | 89 | 231 | 259 | 287 |
| Boat Ramp Lanes, SW | 138 | 164 | 189 | 214 |
| Campsites | 5793 | 473 | 975 | 1478 |
| Fishing Structures, FW Lin.Yd. | 1249 | 5916 | 6549 | 7183 |
| Fishing Structures, SW Lin.Yd. | 73202 | * | * | 1251 |
| Golf Holes | 432 | 347 | 429 | 511 |
| Hiking Trail Miles | 120 | 36 | 50 | 63 |
| Horseback Riding Trail Miles | 14 | 93 | 101 | 109 |
| Lake Acres (BFS Suitable), FW | 35976 | * | * | * |
| Off-road Vehicle Riding Acres | 448 | 441 | 516 | 591 |
| Picnic Tables | 7025 | * | * | * |
| Playground Areas, Equipped | 650 | 1429 | 1585 | 1740 |
| Soccer/Football Fields | 241 | 256 | 304 | 352 |
| Softball Fields | 280 | 277 | 318 | 360 |
| Swimming, FW Sq.Yd. (000) | 61 | 946 | 1017 | 1088 |
| Swimming, SW Sq.Yd. (000) | 789 | 5902 | 6366 | 6830 |
| Swimming, Pool Sq.Yd. (000) | 56 | 139 | 156 | 173 |
| Tennis Courts | 484 | 1379 | 1541 | 1704 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 188 | 258 | 302 | 345 |
| Developed Land Acres | | 13458 | 15826 | 18184 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

An analysis of current outdoor recreation facility supply and expressed demand indicates that more of every facility will be needed by 1995 with the sole exception of picnic tables (table 5). Note this analysis does not take into account the current distribution of facilities nor their quality. In the past the city of Houston was identified in national comparisons as being severely deficient in recreational lands and facilities. The dominance of the city of Houston upon region 16 skews the recreational data and derived needs of the entire region. Local recreation facility needs of other cities in the region should be analyzed separately to get an accurate picture of their local situation.

All urban-based recreation facilities are in high need (table 6). In most instances, a 50 to 100 percent increase over existing supplies of facilities will be needed by 1995. Many of these needs

are due to current deficiencies in the region and the city of Houston in particular.

Many local park and recreation directors have also expressed a need for open space tracts that have a natural character. Many incorporated areas near Houston are essentially landlocked, being surrounded by other incorporated areas. Land costs are at a premium in many of these areas and in some instances there literally is no open space left.

Rural resource-based outdoor recreation facilities of all types are also needed, though these deficiencies are not as drastic as with urban oriented facilities. Fresh and saltwater boat ramps and swimming areas are all classified as being high needs. Currently region residents swarm to water-based recreation resources and fill these sites to capacity during summer weekends. Campgrounds, horseback trails, and off-road

vehicle riding areas are also greatly needed.

Providers' Responsibilities

To address deficiencies in regional urban recreation facility needs, attention once again must focus on the Harris County area. Local governments have traditionally been responsible for providing the basic urban outdoor recreation needs of their citizens and are recommended to do so in the future (table 7). Many cities in the region are in need of a few types of recreation facilities but, Harris County needs most all urban recreation facilities and more importantly, the land to develop them. Recreation providers in Harris County need to aggressively increase the outdoor recreation opportunities in that area. Commercial enterprises should be encouraged to develop opportunities with profit potential.

Increased access to water-based

recreation resources should be considered by all practical recreation providers, as these destinations are favored by region residents. The U.S. Forest Service plans to increase the recreation opportunities on the northern half of Lake Conroe in the near future. A planned state park on Lake Houston should also help address these needs. Local and county governments should consider riverfront parks and access where it is practical.

The U.S. Forest Service has recently created horseback riding trails with the help of volunteers from local horse groups. They are also one of the few remaining land managing agencies that recognize the needs of off-road vehicle riders and plan to create more trails for this use.

Protecting existing recreational investments should be a high priority of all recreation providers in the region. Many older facilities are in need of re-

pair or maintenance. How the continued maintenance of a facility is to be funded should be considered in its planning stage. Low maintenance features are

more likely to be integrated if stressed at the onset and the facility will not become an unexpected funding drain in years to come.

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs
in Region 16 Through 1995

| <u>Need Rank</u> | <u>Facility/Resource</u> | <u>Need Rank</u> | <u>Facility/Resource</u> |
|------------------|--|------------------|-------------------------------|
| 1 | Swimming, FW Sq.Yd. | 11 | Swimming, SW Sq. Yd. |
| 2 | Soccer/Football Fields | 12 | Boat Ramp Lanes, SW |
| 3 | Playground Areas, Equipped | 13 | Golf Holes |
| 4 | Trail Miles, Multi-Use (Walk, Bike, Jog) | 14 | Baseball Fields |
| 5 | Boat Ramp Lanes, FW | 15 | Basketball Goals |
| 6 | Softball Fields | 16 | Off-Road Vehicle Riding Acres |
| 7 | Swimming, Pool Sq. Yd. | 17 | Hiking Trail Miles |
| 8 | Horseback Riding Trail Miles | 18 | Campsites |
| 9 | Fishing Struc., FW Lin.Yd. | 19 | Fishing Struc., SW Lin.Yd. |
| 10 | Tennis Courts | 20 | Picnic Tables |
| | | 21 | Lake Acres (BFS Suitable) |

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 16, by Administration

| <u>Facility/Resource</u> | <u>Needs Through 1995</u> | <u>FEDERAL</u> | | | | <u>STATE</u> | | | | <u>REG.</u> | <u>LOCAL</u> | | | |
|---|---------------------------|------------------------------|-------------------------------------|--------------------------|---------------------------|-------------------------------|----------------------------------|---|--------------------|--------------------------|-----------------|---------------|--------------------|-------------------|
| | | <u>National Park Service</u> | <u>US Fish and Wildlife Service</u> | <u>US Forest Service</u> | <u>Corps of Engineers</u> | <u>TPWD State Park System</u> | <u>TPWD Wildlife Mgmt. Areas</u> | <u>Dept. of Hwys. & Public Trans.</u> | <u>Other State</u> | <u>River Authorities</u> | <u>Counties</u> | <u>Cities</u> | <u>Other Local</u> | <u>COMMERCIAL</u> |
| Baseball Fields | 261 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 198 | 10 | 10 | |
| Basketball Goals | 460 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 390 | 0 | 0 | |
| Boat Ramp Lanes, FW | 259 | 0 | 6 | 6 | 0 | 8 | 0 | 0 | 0 | 13 | 52 | 25 | 0 | 149 |
| Boat Ramp Lanes, SW | 189 | 0 | 6 | 0 | 5 | 8 | 4 | 0 | 0 | 0 | 40 | 20 | 20 | 86 |
| Campsites | 975 | 0 | 0 | 100 | 0 | 300 | 50 | 0 | 0 | 75 | 100 | 0 | 0 | 350 |
| Fishing Structures, FW Lin.Yd. | 6549 | 0 | 200 | 200 | 0 | 450 | 100 | 0 | 0 | 1013 | 1500 | 500 | 0 | 2000 |
| Fishing Structures, SW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 429 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 144 | 0 | 213 |
| Hiking Trail Miles | 50 | 0 | 3 | 8 | 0 | 6 | 3 | 0 | 0 | 5 | 10 | 10 | 5 | 0 |
| Horseback Riding Trail Miles | 101 | 0 | 0 | 10 | 20 | 10 | 5 | 0 | 0 | 0 | 25 | 10 | 0 | 21 |
| Off-road Vehicle Riding Acres | 516 | 0 | 0 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 216 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 1585 | 0 | 0 | 2 | 0 | 10 | 0 | 0 | 0 | 0 | 150 | 1293 | 0 | 130 |
| Soccer/Football Fields | 304 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 194 | 30 | 10 |
| Softball Fields | 318 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 158 | 40 | 40 |
| Swimming, FW Sq.Yd.(000) | 1017 | 0 | 0 | 50 | 0 | 50 | 0 | 0 | 0 | 50 | 100 | 300 | 50 | 417 |
| Swimming, SW Sq.Yd.(000) | 6366 | 0 | 0 | 0 | 0 | 1000 | 0 | 0 | 0 | 0 | 2366 | 1500 | 500 | 1000 |
| Swimming, Pool Sq.Yd.(000) | 156 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 116 | 0 | 20 |
| Tennis Courts | 1541 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 150 | 1241 | 0 | 150 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 302 | 0 | 10 | 20 | 15 | 10 | 0 | 30 | 0 | 15 | 50 | 152 | 0 | 0 |
| Developed Land Acres | 15826 | 0 | 112 | 404 | 333 | 737 | 79 | 240 | 0 | 210 | 3347 | 6204 | 547 | 3612 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.



REGION 17

**GOLDEN
CRESCENT**



Recreational activities, such as horseshoe pitching for adults and senior citizens, are important in the region, especially since they appeal to Winter Texans.

ISSUES AND RECOMMENDATIONS

Issue: Tourism

The Golden Crescent region has tremendous tourism potential. It has a stream of Winter Texans passing through the region twice a year, excellent freshwater and saltwater fishing resources, an assortment of festivals and events, and resources providing bird-watching, nature study, and hunting opportunities. Interpretation of natural and cultural resources, beach development, and development of facilities, such as campgrounds, are some of the improvements that could bolster the region's attractiveness.

The Golden Crescent Regional Planning Commission is addressing this issue through a tourism committee composed of representatives appointed by elected officials from each county. The committee has been successful in identifying resources with tourism potential and in developing promotional materials for the region.

This tourism committee has already developed a points-of-interest brochure and a quarterly calendar of events, and is now developing a tourist guide. This is in line with the current marketing practice of developing promotional packages on a regional basis for maxi-

mum effect. These efforts indicate that the communities in the region are able to work together as an economic entity. For a stronger implementation approach, it might be advantageous for the committee to form single-purpose subcommittees or task forces.

Winter Texans and international markets are of special interest to the region. With the newly developed promotional materials, the region is planning to participate in travel shows, especially those in the Rio Grande Valley which target Winter Texans. Other issues pursued by the committee are the optimal placement of directional signs and the role of the public sector in the provision of basic infrastructure such as water and sewers.

The committee is emphasizing the natural resource base of the region and is promoting the region as an alternative to the intensive development of South Padre Island and of the Galveston area. The importance of balanced development and natural resource conservation are recognized by committee members. (Also, see State Summary, "Tourism and Outdoor Recreation" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For the tourism committee of the regional planning commission:

Continue to develop and promote tourism in the region.

Consider the formation of single-purpose subcommittees or task forces, within the framework of the tourism committee, to expedite the work of the committee.

Consider the formation of a Winter Texan task force to study this market and to educate communities on its characteristics and preferences.

For all entities involved in tourism planning and development:

Continue to be sensitive to the natural resource base which supports most of the recreational attractions of the region.



For the public sector:

Respond to the issues identified by the committee, especially in connection with infrastructure needs.

For local groups, such as birdwatchers and historical societies:

Assist in the development and dissemination of information on the significance of the region's resources.

Issue: Recreation Programs

The region is deficient in recreational programs. Recreation providers are barely able to keep up with maintenance costs, so they cannot afford to expand services through recreational programs. This is especially true in small communities. Most communities in the region feel that recreational programs should be supported through fees. This can, in turn, result in higher liability insurance costs. Some of the recreational needs are met through school programs and through ball associations, but this is limited. (Also, see State Summary, "Financing Parks and Recreation" under "Outdoor Recreation Issues and Recommendations.")

Communities interested in attracting Winter Texans are concerned about the group's requirements for recreation programs. Generally, Winter Texans like to have a recreational hall where they can organize and direct their own activities. Dances, card games, and pot luck dinners are some of the indoor activities they enjoy. In the Valley, most of their recreational halls are provided by the commercial campgrounds where they stay. Some of the organized activities they enjoy are sightseeing tours and saltwater fishing classes.

Recommendations:

For local governments:

Develop cooperative agreements with educational institutions to provide more recreational opportunities.

For local governments and other recreation providers:

Assess outdoor recreation needs.

Encourage joint efforts with recreationists, such as the formation of ball associations, to provide recreation programs.



Adequate access to recreational water is a major issue in region 17.

Address the need for recreational halls for residents and Winter Texans.

Issue: Maintenance

Budget cutbacks in some communities are reflected in lower maintenance funds for parks. Some facilities are in dire need of renovation, especially because older park designs did not emphasize low maintenance. Costs to repair vandalism are compounding the problem. Destruction of restroom and picnic facilities is one of the more common problems. Erosion and turf degradation result from uncontrolled vehicular traffic. Communities have instituted curfews for parks, but, with few exceptions, these are difficult to enforce because of the manpower requirements. Victoria County has been very successful in controlling vandalism at Saxet Lake Park. This case could be used as a model to address this problem in other communities. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Outdoor Recreation Issues and Recommendations.")

Some small communities, such as Waelder and Hallettsville, report needs for basic recreational facilities and are developing noteworthy cooperative approaches to get things done. Local communities have recognized the importance of having clean and appealing communities before attempting to attract tourists. Toward this end, beautification projects have been undertaken. This not only complements the tourism development efforts but also the emphasis on improving the quality of life for residents.

Recommendations:

For recreation providers:

Stress low maintenance in park development and redevelopment projects.

Encourage intergovernmental maintenance/use agreements, especially with school districts.

Encourage the formation of "adopt-a-park" programs to foster public involvement.

For the regional planning commission, Victoria County, and other appropriate entities:

Consider developing an anti-vandalism/maintenance program that could be shared among communities in the region.

Issue: Inaccessible Water Resources

The region has saltwater and freshwater resources for recreation but accessibility is a problem. Natural saltwater beaches are not common. Areas with potential, such as Old Town, do not have facilities; others such as Port O'Connor, are crowded and need more boat ramps.

Local chambers of commerce are working with riverside landowners to make them aware of the recreation potential of the rivers and the economic gains. Chamber of commerce officials, tourism committee members, and other local officials recommended that the Texas Department of Highways and Public Transportation (TDHPT) consider the construction of boat ramps in conjunction with highway projects. The boat ramp construction program has been transferred to Texas Parks and Wildlife (TPWD) and is now a matching grant program with local sponsors.

Recommendations:

For the tourism committee:

Identify the resource/facility needs for water-oriented recreation and develop an implementation plan.

For local entities:

Coordinate with TDHPT to identify highway rights-of-way suitable for the construction of boat ramps.

RESOURCES

Population Trends

The 1995 population projection for the region is 192,661 which represents an 11 percent population increase from 1986 (figure 1). This is below the state-wide population growth of 13.8 percent. In-migration to the region could be higher than originally estimated as a result of the Formosa Plastics production

facility being built in Point Comfort and of the ancillary business activity it will generate.

A comparison of age groups between the region and the state reveals that the region has a higher proportion of people who are over fifty-nine years of age and a lower percentage of those between twenty and fifty-nine years old. The proportion of those under twenty

years old is comparable to the state figure.

Resource Attractions

An origin-destination survey conducted by the TPWD revealed that the top regional recreational resources are Coletto Creek Reservoir, Lake Texana, Magnolia Beach, and the Guadalupe River. It is interesting to note that in

Figure 1
Region 17 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|--------------------|
| Counties | = | 7 |
| Land area | = | 6,079 square miles |
| Elevation | = | 4' - 504' |
| Annual rainfall | = | 32.1 - 39.7 inches |
| January minimum temperature | = | 42 - 47°F |
| July maximum temperature | = | 92 - 96°F |
| Growing season | = | 270 - 300 days |

POPULATION 1986

| | |
|--------------|----------------|
| Total | 173,608 |
| Counties | |
| Victoria | 77,015 |
| Calhoun | 21,173 |
| Lavaca | 19,335 |
| De Witt | 18,765 |
| Gonzales | 18,599 |
| Jackson | 13,269 |
| Goliad | 5,452 |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 192,661 |
| People per square mile | 31.7 |
| Ethnic composition: | |
| White | 63% |
| Black | 6% |
| Hispanic | 31% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 53,714 acres |
| Developed recreation land | = | 1,634 acres |

Aransas National Wildlife Refuge
Brackenridge Park (Aransas County)
Coletto Creek Regional Park (Goliad County)
Fannin Battleground State Historical Park

Goliad State Historical Park
Independence Park (Gonzales)
Indianola Beach (Calhoun County)
Lake Texana State Park
Magnolia Beach (Calhoun County)
Matagorda Island State Park
Matagorda Island Wildlife Management Area
Palmetto State Park
Pioneer Village (Gonzales)
Port Lavaca State Fishing Pier
Riverside Park (Victoria)
Saxet Lake Park (Victoria)

Lakes

| | |
|-------------------------|----------------------|
| Surface acres | 15,269 |
| | <u>Surface Acres</u> |
| Coletto Creek Reservoir | 3,100 |
| Lake Gonzales (H-4) | 696 |
| Lake Texana | 11,000 |
| Wood Lake (H-5) | 448 |

Streams

Coletto Creek
Garcitas Creek
Guadalupe River
Lavaca River
Navidad River
San Antonio River
San Marcos River

Saltwater

| | |
|--------------------------------|---------|
| Miles accessible Gulf frontage | 1 |
| Surface acres saltwater bays | 399,000 |

Carancahua Bay
Chocolate Bay
Cox Bay
Espiritu Santo Bay
Gulf of Mexico
Intracoastal Waterway
Keller Bay
Lavaca Bay
Matagorda Bay
San Antonio Bay

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

other coastal regions, the saltwater resources usually top the list of regional attractions. Riverside Park in Victoria and Independence Park in Gonzales are two of the urban parks considered regional attractions.

In this region, the TPWD has six sites that are part of the state park system and three wildlife management areas. The Matagorda Island site is managed jointly as a state park and a wildlife management area.

Camping, saltwater fishing, and hunting are the top activities enticing visitors to the region. Lavaca, Victoria, and DeWitt counties provide most of the hunting opportunities.

Recreation Supply

Nineteen eighty-six outdoor recreational resources/facilities are analyzed against 1990 projected population in this section. The recreational land in the region totaled 53,714 acres in 1986 when most of the resource inventory for this plan was conducted (table 1). The region has 290 acres of recreational land per thousand population for 1990 and ranks eighth out of twenty-four regions (table A3). The state average is 209 acres per thousand population. The region ranks seventeenth in the number of developed acres per thousand population with nine acres. This compares to the state average

of ten developed acres per thousand population, forty-five acres for the region with the highest number of developed acres, and five acres for the region with the lowest number of developed acres for recreation.

A look at 1986 facilities per thousand population for 1990 reveals that recreational facilities in the region are below the state average in the number of trails, areas for recreational vehicles, tennis courts, soccer and football fields, campsites, and basketball goals. The region exceeds the state average in the number of baseball and softball fields, golf holes, picnic tables, and swimming pools.

Of five coastal regions, this region is

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 17, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | COMMERCIAL | TOTAL |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|-------------|------------|--------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | |
| Number of Parks/Rec. Areas | 0 | 1 | 0 | 1 | 6 | 3 | 0 | 0 | 9 | 16 | 47 | 3 | 13 | 99 |
| Total Parkland Acres | 0 | 1704 | 0 | 0 | 8361 | 40930 | 0 | 0 | 891 | 198 | 1512 | 42 | 77 | 53714 |
| Developed Land Acres | 0 | 2 | 0 | 0 | 280 | 0 | 0 | 0 | 167 | 152 | 957 | 12 | 65 | 1634 |
| Developable Land Acres | 0 | 0 | 0 | 0 | 728 | 0 | 0 | 0 | 724 | 40 | 310 | 30 | 11 | 1843 |
| Preserved or Unsuitable for Development (Acres) | 0 | 1703 | 0 | 0 | 7352 | 40930 | 0 | 0 | 0 | 6 | 244 | 0 | 2 | 50237 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 3 | 1 | 45 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 21 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 18 | 2 | 0 | 0 | 3 | 25 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 4 | 0 | 9 | 28 |
| Campsites | 0 | 0 | 0 | 0 | 227 | 0 | 0 | 0 | 229 | 0 | 99 | 0 | 218 | 773 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2400 | 0 | 520 | 0 | 500 | 3420 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 425 | 0 | 0 | 0 | 488 | 10 | 110 | 0 | 275 | 1308 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 2270 | 1067 | 0 | 0 | 0 | 0 | 570 | 133 | 0 | 98 | 4138 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 0 | 0 | 54 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10015 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Picnic Tables | 0 | 0 | 0 | 0 | 166 | 0 | 0 | 0 | 236 | 98 | 530 | 22 | 18 | 1069 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 38 | 1 | 1 | 47 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 32 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 0 | 14800 | 0 | 0 | 0 | 107940 | 8750 | 0 | 0 | 0 | 131490 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21760 | 0 | 0 | 0 | 21760 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 375 | 0 | 0 | 0 | 0 | 0 | 3913 | 0 | 2995 | 7283 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 6 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

first in the number of saltwater boat ramp lanes and is last in saltwater swimming area per thousand population. The region has fifty-four water surface acres for freshwater recreation per thousand population. This is below the state average of sixty-seven surface acres of water. It is about the same as the state average in the number of freshwater boat lanes and is below the state average in bank fishing access. Freshwater swimming resources and fishing structures in the region exceed the state average.

Potential and Proposed Resources

The partial listing of recreational attractions and resources shown in figure 1, conservation sites listings maintained by the Texas Natural Heritage Program of the TPWD, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other developments.

The city of Port Lavaca is developing a beach and a boardwalk and improving the RV hook-ups on a site next to the Lavaca Causeway.

The tourism committee of the regional planning commission is proposing the development and promotion of Magnolia Beach as a major recreational area. It is also proposing the establishment of Indianola Wildlife Refuge and History Center. The proposed area is between Magnolia Beach and the Old Indianola Townsite.

The tourism committee is recommending full implementation of the Matagorda Island State Park Plan to improve visitation to the island. The committee also feels that a scheduled jitney service on the island would encourage the establishment of a commercial passenger service to the island.

The Lavaca-Navidad River Authority is proposing to develop at Lake Texana a pavilion, a recreational hall, boat docks, a playground, and facilities for volleyball and baseball. The river authority is keenly interested in attracting Winter Texans. Given its resources, it has the potential for developing Lake Texana into a Winter Texan destination.

The Victoria area reports potential for a riverwalk development on the Guadalupe River. A lead agency needs to be identified for a project of this magnitude.

Cuero is working on a historic tour for bus tour groups and has submitted



Goliad State Historical Park is one of the region's many recreational and tourist attractions.

historic district nominations to the national register. Yoakum is also planning a historic home tour and is considering developing RV campsites at a city park. The Guadalupe-Blanco River Authority (GBRA) is proposing to add more RV sites at Coletto Creek Park. GBRA is also active in attracting Winter Texans.

Waelder is in the process of developing a park.

Ganado is interested in developing access to Lake Texana to complement the city pool and school facilities.

Goliad is developing a trail network to connect recreational areas and other sightseeing attractions.

OUTDOOR RECREATION PARTICIPATION

Popular Activities

Figure 2 shows the percentage of the population participating in recreational activities. For example, over half of the population walk for pleasure and about 40 percent either picnic or swim in pools or saltwater resources.

Table 2 projects per capita participation statewide and for region residents both in the region and in all twenty-four regions. Activities that do not show per capita participation for all twenty-four regions on the table are considered urban activities, meaning that these activities usually occur close to home and not

Figure 2
Region 17 Projected 1995 Percentage of Population Participating

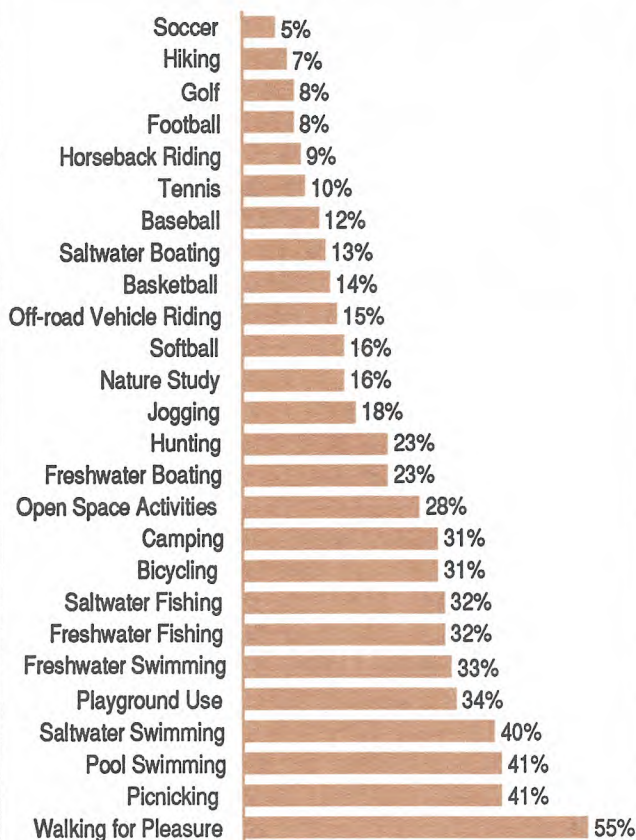


Table 2
Projected 1995 Per Capita Outdoor Recreation Participation Generated by Residents of Region 17 and Texans (in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|---|----------------|---------------------------|
| | Residents of Region 17 Occurring In | | |
| | Region 17 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 1.1 | 1.2 | 1.3 |
| Boat Ramp Lanes, SW | 0.6 | 0.8 | 0.3 |
| Boating (Pleasure), FW | 0.4 | 0.5 | 0.6 |
| Boating (Pleasure), SW | 0.2 | 0.3 | 0.1 |
| Camping | 1.1 | 2.0 | 1.7 |
| Fishing, FW | 2.3 | 2.5 | 2.4 |
| Fishing from Banks | 0.7 | 0.8 | 0.8 |
| Fishing from Boats | 1.0 | 1.1 | 1.1 |
| Fishing from Structures | 0.5 | 0.6 | 0.5 |
| Fishing, SW | 1.5 | 2.0 | 0.7 |
| Fishing from Boats | 0.7 | 0.9 | 0.3 |
| Fishing from Shore | 0.2 | 0.3 | 0.1 |
| Fishing from Structures | 0.6 | 0.8 | 0.3 |
| Hiking | 0.1 | 0.2 | 0.4 |
| Hunting | 1.6 | 1.8 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.3 | 1.4 | 1.5 |
| Nature Study | 0.7 | 1.1 | 0.9 |
| Picnicking | 1.5 | 1.8 | 1.9 |
| Swimming, FW | 1.6 | 2.2 | 2.1 |
| Swimming, SW | 0.9 | 2.0 | 1.2 |
| Baseball | 1.9 | | 1.5 |
| Basketball | 1.5 | | 1.6 |
| Bicycling | 10.1 | | 10.7 |
| Bicycling on Trails | 0.6 | | 0.7 |
| Football | 0.7 | | 0.8 |
| Golf | 0.9 | | 1.3 |
| Horseback Riding | 0.7 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 4.9 | | 5.4 |
| Jogging/Running on Trails | 1.5 | | 1.7 |
| Off-road Vehicle Riding | 1.6 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.3 | | 0.3 |
| Open Space Activities | 2.7 | | 3.2 |
| Playground Use | 4.0 | | 4.8 |
| Soccer | 0.8 | | 1.2 |
| Softball | 1.8 | | 1.8 |
| Swimming, Pool | 5.8 | | 6.4 |
| Tennis | 1.0 | | 1.3 |
| Walking (Pleasure/Exercise) | 14.1 | | 14.8 |
| Walking on Trails | 3.3 | | 3.5 |

Notes: Asterisks indicate value is less than .1 occasion per capita.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



An increase in litter is often the result of cutbacks in park maintenance funding.

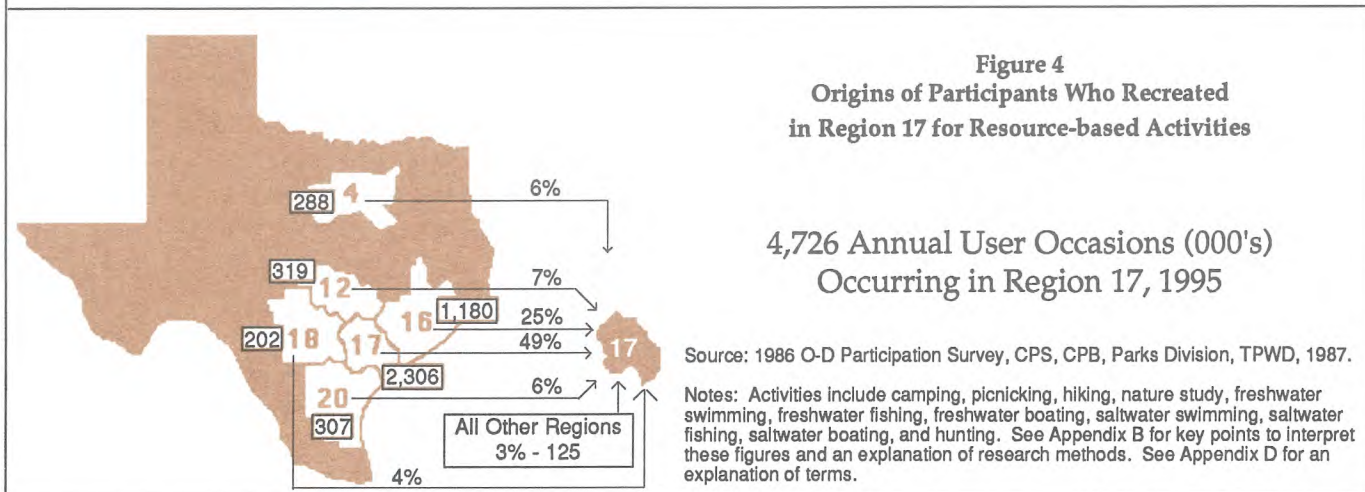
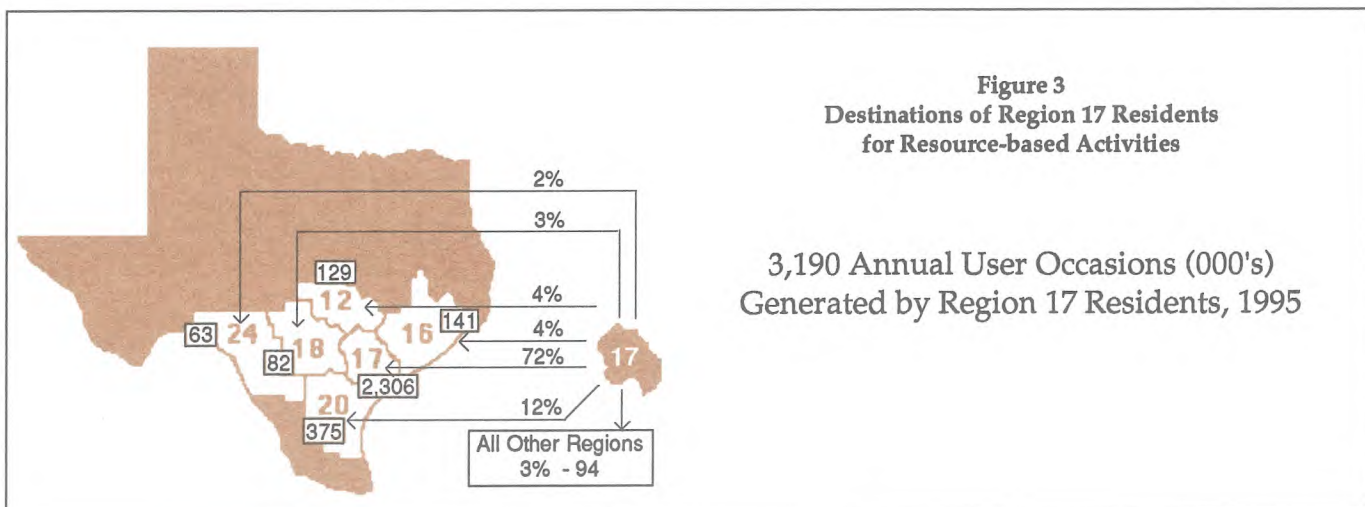
outside the region of residence. State-wide per capita participation reflects participation by all Texans. Freshwater fishing and swimming have the highest user occasions of the resource based recreational activities. Of the urban activities, walking, cycling, and swimming pool use are the highest. When only the participation occurring on trails is considered, the activities with the highest user occasions are swimming pool and playground use.

Recreation Travel Patterns

Recreationists are generally willing to travel longer distances and to undertake overnight trips for resource-based recreational resources, which are also

known as rural resources. Figures 3 and 4 show the travel patterns in relationship to region 17. Seventy-two percent of the region residents stay in the region to participate in these activities. The remaining 28 percent go elsewhere in Texas. The Coastal Bend region is the primary destination for those leaving the region.

For resource-based activities, 49 percent of the recreation activity occurring in region 17 is generated by region residents. The remaining 51 percent is generated by Texans visiting the region. The highest percentage of visitors comes from the Houston area which is about 25 percent of the recreational activity in the region. Region 12, the Austin area, is a distant second with about 7 percent.



Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting. See Appendix B for key points to interpret these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 17 by Region 17 Residents,
Texans from Outside Region 17 and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 17 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|------|----------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | Regional Totals | | |
| | Residents of Region 17 | | | Texans from Outside Region 17 | | | | | |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 208 | 216 | 223 | 156 | 168 | 181 | 364 | 384 | 404 |
| Boat Ramp Lanes, SW | 111 | 115 | 120 | 198 | 216 | 233 | 309 | 331 | 353 |
| Boating (Pleasure), FW | 81 | 84 | 86 | 81 | 86 | 92 | 162 | 170 | 179 |
| Boating (Pleasure), SW | 41 | 42 | 44 | 52 | 56 | 60 | 92 | 98 | 104 |
| Camping | 212 | 220 | 228 | 399 | 433 | 466 | 611 | 652 | 694 |
| Fishing, FW | 423 | 440 | 456 | 274 | 296 | 319 | 697 | 736 | 775 |
| Fishing from Banks | 138 | 143 | 149 | 89 | 97 | 104 | 227 | 240 | 253 |
| Fishing from Boats | 190 | 197 | 204 | 123 | 133 | 143 | 312 | 330 | 347 |
| Fishing from Structures | 96 | 99 | 103 | 62 | 67 | 72 | 157 | 166 | 175 |
| Fishing, SW | 278 | 288 | 298 | 541 | 591 | 640 | 819 | 879 | 938 |
| Fishing from Banks | 121 | 126 | 130 | 237 | 258 | 280 | 358 | 384 | 410 |
| Fishing from Boats | 44 | 46 | 48 | 87 | 94 | 102 | 131 | 140 | 150 |
| Fishing from Structures | 112 | 116 | 120 | 218 | 238 | 258 | 330 | 354 | 378 |
| Hiking | 24 | 25 | 26 | 21 | 23 | 25 | 46 | 48 | 51 |
| Hunting | 289 | 300 | 311 | 378 | 411 | 443 | 667 | 710 | 754 |
| Lake Use (BFS Suitable), FW | 237 | 246 | 255 | 178 | 192 | 206 | 415 | 438 | 461 |
| Nature Study | 133 | 140 | 146 | 46 | 51 | 55 | 180 | 190 | 201 |
| Picnicking | 283 | 291 | 299 | 88 | 94 | 99 | 371 | 385 | 399 |
| Swimming, FW | 295 | 303 | 311 | 238 | 253 | 267 | 533 | 556 | 578 |
| Swimming, SW | 169 | 173 | 177 | 119 | 127 | 136 | 288 | 300 | 312 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Projected Participation

Table 3 projects the demand that will be placed on region 17 rural recreational resources both by region residents and by Texans from outside the region. For example, in 1995, the most popular resource-based activities in the region will be saltwater and freshwater fishing, hunting, and camping. It should be noted that demand generated by out-of-state visitors is not included.

Table 4 shows the same projections for those activities that usually occur close to home and involve region residents primarily.

Table 4
Projected Outdoor Recreation Participation
in Region 17 by Residents of Region 17, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (in 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 357 | 366 | 376 |
| Basketball | 286 | 294 | 303 |
| Bicycling | 1887 | 1942 | 1998 |
| Bicycling on Trails | 116 | 120 | 123 |
| Football | 121 | 125 | 130 |
| Golf | 161 | 166 | 172 |
| Horseback Riding | 122 | 127 | 131 |
| Horseback Riding on Trails | 31 | 33 | 34 |
| Jogging/Running | 921 | 949 | 976 |
| Jogging/Running on Trails | 284 | 292 | 301 |
| Off-road Vehicle Riding | 297 | 304 | 312 |
| ORV Riding on Trails | 58 | 60 | 61 |
| Open Space Activities | 500 | 512 | 524 |
| Playground Use | 758 | 774 | 791 |
| Soccer | 140 | 145 | 149 |
| Softball | 331 | 340 | 349 |
| Swimming, Pool | 1085 | 1118 | 1151 |
| Tennis | 185 | 191 | 197 |
| Walking (Pleasure/Exercise) | 2596 | 2710 | 2825 |
| Walking on Trails | 608 | 634 | 661 |

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Regionwide, projections through the year 2000 show no needs for baseball fields, freshwater fishing structures, golf, freshwater lake surface acres for recreation, picnic tables, softball fields, freshwater swimming resources, and swimming pools (table 5). Since these figures are regional aggregates, local need assessments should be conducted to determine community needs within the region. Table 6 is based on table 5 and ranks the resources/facilities needed in the region to meet all projected in-state participation.

Some communities have identified their local needs. Edna reports a need to supplement existing facilities with ball fields and picnicking facilities, including a pavillion. Port O'Connor reports a need for more boat ramps and related facilities to address current crowded conditions. Facility development at Seadrift could alleviate the pressure on Port O'Connor resources and at the same time benefit Seadrift. Hallettsville reports needing a community center or an enclosed pavilion for activities.

Provider's Responsibilities

Table 7 shows the resource/facility needs for 1995 and makes recommendations on how to meet these needs by administration. Campsites, saltwater fishing structures, and freshwater boat lanes are among the high needs for the region. Campsites and areas for off-road vehicles are the primary resources recommended that the commercial sector provide. Recommended responsibilities for the state include campsites, boat ramps, fishing structures, and trails.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 17, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 45 | * | * | * |
| Basketball Goals | 21 | 13 | 14 | 15 |
| Boat Ramp Lanes, FW | 25 | 23 | 26 | 29 |
| Boat Ramp Lanes, SW | 28 | 4 | 6 | 8 |
| Campsites | 773 | 365 | 442 | 519 |
| Fishing Structures, FW Lin.Yd. | 1308 | * | * | * |
| Fishing Structures, SW Lin.Yd. | 4138 | 3540 | 4098 | 4657 |
| Golf Holes | 54 | * | * | * |
| Hiking Trail Miles | 2 | 4 | 5 | 5 |
| Horseback Riding Trail Miles | 0 | 4 | 5 | 5 |
| Lake Acres (BFS Suitable), FW | 10015 | * | * | * |
| Off-road Vehicle Riding Acres | 0 | 50 | 51 | 53 |
| Picnic Tables | 1069 | * | * | * |
| Playground Areas, Equipped | 47 | 25 | 27 | 28 |
| Soccer/Football Fields | 4 | 13 | 14 | 14 |
| Softball Fields | 32 | * | * | * |
| Swimming, FW Sq.Yd. | 131 | * | 2 | 8 |
| Swimming, SW Sq.Yd. | 22 | 145 | 152 | 159 |
| Swimming, Pool Sq.Yd. | 7 | * | * | * |
| Tennis Courts | 19 | 30 | 31 | 33 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 6 | 12 | 13 | 13 |
| Developed Land Acres | | 447 | 504 | 535 |

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs
in Region 17 Through 1995

| Need Rank | Facility/Resource |
|-----------|---|
| 1 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 2 | Swimming, SW Sq. Yd. |
| 3 | Soccer/Football Fields |
| 4 | Playground Areas, Equipped |
| 5 | Tennis Courts |
| 6 | Boat Ramp Lanes, FW |
| 7 | Campsites |
| 8 | Hiking Trail Miles |
| 9 | Fishing Struc., SW Lin.Yd. |
| 10 | Basketball Goals |
| 11 | Off-Road Vehicle Riding Acres |
| 12 | Horseback Riding Trail Miles |
| 13 | Boat Ramp Lanes, SW |
| 14 | Swimming, Pool Sq. Yd. |
| 15 | Swimming, FW Sq.Yd. |
| 16 | Fishing Struc., FW Lin.Yd. |
| 17 | Softball Fields |
| 18 | Baseball Fields |
| 19 | Golf Holes |
| 20 | Picnic Tables |
| 21 | Lake Acres (BFS Suitable) |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Note: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 17, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basketball Goals | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 |
| Boat Ramp Lanes, FW | 26 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 10 | 4 | 4 | 0 | 4 |
| Boat Ramp Lanes, SW | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 0 |
| Campsites | 442 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 242 |
| Fishing Structures, FW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fishing Structures, SW Lin.Yd. | 4098 | 0 | 0 | 0 | 0 | 500 | 450 | 0 | 0 | 348 | 900 | 900 | 0 | 1000 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Off-road Vehicle Riding Acres | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 20 | 0 | 0 |
| Soccer/Football Fields | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Swimming, SW Sq.Yd.(000) | 152 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 142 | 10 | 0 | 0 |
| Swimming, Pool Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tennis Courts | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 13 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 2 | 6 | 0 | 0 |
| Developed Land Acres | 504 | 0 | 0 | 0 | 0 | 93 | 1 | 0 | 0 | 49 | 82 | 122 | 0 | 156 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

**ALAMO
AREA**

Region 18 has major resources for river recreation enthusiasts.

ISSUES AND RECOMMENDATIONS

Issue: Recreational Land Deficits

One of the greatest recreation needs in the region is land acquisition. Of twenty-four regions in the state, the Alamo Area ranks twenty-second in recreation land on a per capita basis. In addition to the deficit, the existing recreational land in the region is poorly distributed. Bandera County, for example, is the least populous county but has the highest share of recreational land per capita when compared to the other eleven counties.

Recreation providers note that land distribution problems also exist within communities. Northern San Antonio, for example, lags behind the rest of the city. This pattern evolved because the central, south, east, and west parts of the city qualify for intergovernmental aid for capital improvements, which have included park acquisition and development. The city of San Antonio does not have and does not favor a mandatory dedication ordinance, but a voluntary dedication program is being developed by the parks and recreation department and the planning department. Other areas with smaller populations such as Kerrville and Wilson County, especially the Floresville area,

also report land acquisition needs.

In early 1989, the San Antonio City Council accepted the recommendations of the Open Space Development Policy Task Force. Some of the recommendations included the adoption of an open space ordinance, increase of the number of regional parks and open spaces, and identification of an entity to receive conservation easements and voluntary dedications. A number of the recommendations have been under consideration for well over a decade. (Also, see State Summary, "Meeting Recreational Open Space Needs" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For local entities:

Acquire parklands as needed to improve quantities and distributions of recreational opportunities.

Consider mandatory dedication ordinances, where feasible, for local land acquisition.

Develop voluntary dedication programs where mandatory dedication is not feasible.

Encourage the formation of park advocacy foundations such as the Park Partners in San Antonio.

Continue to seek innovative funding methods to satisfy the outdoor recreation needs of constituents in the most effective manner possible.

For the city of San Antonio:

Implement the recommendations of the Open Space Development Policy Task Force.

Issue: Funding

Some regions need to be made aware of the potential that tourism presents. This region is most definitely in tune with tourism, but might be neglecting some of the recreational needs of its residents. The economic decline in the state has also been felt in this region, making it difficult to fund new parks and park maintenance programs.

Residents in small communities indicate that some areas



have an adequate supply of open space; however, the recreational amenities are often oriented to visitors while the needs of local recreationists, especially youth, are neglected. Rodeo is an important youth activity in the region, but more diversity is desired. Schools are the primary facility providers in some areas, but after school use of facilities is not an optimal solution in sparsely populated areas where large travel distances to school are involved.

In some communities, facility deficits are associated with the age structure of the population. Kerrville, for example, has a high incidence of retirees who are very civic-minded and constitute a strong voting bloc. A recent bond election for land acquisition and development of a sports complex failed. Other city services usually fare better.

In some cases, private organizations and individuals have provided needed recreational facilities through fundraising, donations, and volunteer labor. One complaint expressed about this approach is that maintenance and programming of the facility is often dependent on the leadership (officers) of the organization and not on the actual demand.

Local entities feel that small communities are at a disadvantage relative to the Land and Water Conservation Fund (LWCF) and the Local Park Fund (LPF). Small communities often cannot produce the 50 percent match required, and when they can, they often lack grantsmanship skill to submit a successful application. It is also felt that aid for maintenance should be provided under these funds because, in the long run, lack of maintenance can result in the loss of recreational opportunities. Also, communities that cannot afford to develop needed parks and cannot meet maintenance needs are considered to have the greatest needs for financial assistance. The establishment of a revolving fund for maintenance was recommended by region residents. The city of San Antonio favors using these matching programs only for land acquisition and capital improvements.

Another concern is that these programs do not go far enough in encouraging intergovernmental cooperation and public/private cooperation. Cooperative use agreements, for example, with civic organizations are not recognized. (Also, see State Summary, "Financing Parks and Recreation" under

"Outdoor Recreation Issues and Recommendations.")

Region residents also feel that the Texas Parks and Wildlife Department (TPWD) should take a leadership role in providing technical assistance to local communities. Workshops on alternative funding, grantsmanship, and park design were some of the topics suggested. (Also, see State Summary, "Improving Outdoor Recreation Implementation Programs" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For recreation providers:

Coordinate in the development, maintenance, and operation of recreational resources.

Support federal legislation to establish a dedicated trust fund, or similar mechanism, to provide funding for outdoor recreation.

Encourage the development of recreational facilities and programming by civic organizations and churches.

Encourage greater involvement of adults in the organization of youth recreational programs to provide more continuity and more structured programming.

Make maximum use of federal, state, local government, and private grants and assistance.

For the Texas Parks and Wildlife Department:

Continue to assess the input provided on the LWCF/LPF during the review of the project selection criteria.

Increase efforts to provide outdoor recreation technical assistance to local levels of government.

Issue: Resource Protection

The region is heavily dependent on natural resources for its recreation. These resources often have competing uses which could detract from the recreational experience and result in the degradation of the resource. The Guadalupe and Comal rivers are just two of the settings exemplifying the problem and the need to address the

maintenance of stream flows.

Congestion on roads, crowding in the river, trespassing on private property, litter, and related safety issues are some of the problems noted by region residents relative to river resources. Comal County and the city of New Braunfels developed a cooperative process among various interest groups to address these issues. The process culminated in the creation of a water-oriented recreation district.

Some entities are not complying with the regulations of the district. The district board of directors will have to enforce its authority to avoid rampant noncompliance in the long run. It should be remembered that the lack of voluntary compliance to address some of these issues was one of the reasons why a legal framework such as a district was needed.

Other resources in the region, such as the upper Guadalupe River and the Salado and Leon creeks, need similar approaches. Development densities and effluent discharges are two critical areas that need to be monitored to protect these resources. A related issue is the pressure being placed on the Edwards Aquifer for water supply and the potential adverse effect on the Comal and San Marcos springs.

The Salado Creek Foundation was formed as a partnership of private property owners and interested citizens and public entities. The foundation's priorities include water quality and quantity, alternative flood control programs, and open space conservation.

Some region residents and entities such as the San Antonio River Authority opposed the inclusion of areas for off-road vehicles (ORVs) in this plan. It was felt that the resource degradation caused by this activity and the liability issues outweigh any benefits and should be banned. Others proposed a tax on ORVs to acquire ORV areas and to develop and disseminate a safety education program. (Also, see State Summary, "Conserving Natural Resources for Recreational Use" and "Rivers and Outdoor Recreation" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For local entities:

Apply a process similar to the one used by Comal County - New Braunfels to address river issues and resolve conflicting uses of natural resources.

For recreation providers:

Provide river users with information on public access point locations, and river mileages between access sites to clearly indicate private lands off limits to recreationists.

Consider the acquisition of aquifer recharge areas for open space.

For appropriate state and local agencies, commercial interests, and private landowners:

Cooperate on a rivers assessment to identify the full range of values for each river; include in the assessment a clear determination of public and private land along rivers, legal rights to float, and public access.

Assess the status of ORVs and develop recommendations.

Continue working through the Salado Creek Foundation to address the Salado Creek's resource protection issues.

Population Trends

Between 1986 and 1995, the region is projected to grow by 8 percent (figure 1). This is well below the statewide average of 14 percent. The counties that seem to be growing fastest are Kendall, Comal, Kerr, and Bandera. Karnes County actually lost population between 1980 and 1986.

**Figure 1
Region 18 Characteristics**

GEOGRAPHY

| | | |
|-----------------------------|---|---------------------|
| Counties | = | 12 |
| Land area | = | 11,382 square miles |
| Elevation | = | 225' - 2,303' |
| Annual rainfall | = | 23.4 - 33.2 inches |
| January minimum temperature | = | 32 - 44°F |
| July maximum temperature | = | 94 - 98°F |
| Growing season | = | 216 - 282 days |

POPULATION 1986

| | |
|-----------|-----------|
| Total | 1,448,016 |
| Counties | |
| Bexar | 1,163,685 |
| Guadalupe | 57,271 |
| Comal | 48,716 |
| Kerr | 36,353 |
| Atascosa | 28,215 |
| Medina | 25,942 |
| Wilson | 18,815 |
| Frio | 16,922 |
| Gillespie | 16,099 |
| Kendall | 14,420 |
| Karnes | 12,815 |
| Bandera | 8,763 |

1995 PROJECTED POPULATION

| | |
|------------------------|-----------|
| Total | 1,566,718 |
| People per square mile | 137.7 |
| Ethnic composition: | |
| White | 49% |
| Black | 6% |
| Hispanic | 45% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 45,912 acres |
| Developed recreation land | = | 10,342 acres |

Admiral Nimitz State Historical Park
Brackenridge Park (San Antonio)

- Canyon Lake Corps Parks
- Enchanted Rock State Natural Area
- Friedrich Park (San Antonio)
- Guadalupe River State Park
- Hill Country State Natural Area
- Honey Creek State Natural Area
- Ladybird Park (Fredericksburg)
- Landa Park (New Braunfels)
- Lyndon B. Johnson National Historical Park
- Lyndon B. Johnson State Historical Park
- Kerr Wildlife Management Area
- Kerrville-Schreiner State Park
- Landmark Inn State Historical Park
- Lost Maples State Natural Area
- McAllister Park (San Antonio)
- Rancho De Las Cabras State Historical Park
- San Antonio Missions National Historical Park
- Sebastopol House State Historical Park

Lakes

| | |
|---------------------|----------------------|
| Surface acres | 21,017 |
| | <u>Surface Acres</u> |
| Victor Braunig Lake | 1,350 |
| Calaveras Lake | 3,450 |
| Canyon Lake | 8,240 |
| Ingram Lake | 40 |
| Lake Chacon | 1,917 |
| Lake Dunlap | 410 |
| Lake McQueeney | 487 |
| Lake Placid | 214 |
| Meadow Lake | 488 |
| Medina Lake | 5,575 |

Streams

- Atascosa River
- Cibolo Creek
- Comal River
- Frio River
- Guadalupe River
- Leona River
- Medina River
- Pedernales River
- Sabinal River
- Salado Creek
- San Antonio River
- San Marcos River

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.



Playground areas will be a top priority need for region 18 by 1995.

The region has twelve counties. Some distribution problems in recreational resources are evident when the 1986 supply is compared to 1986 estimated population by county. Bexar County is the most populous but ranks fourth in recreational acres of land with 18 percent of the region's total. Bandera County is the least populous county but is first in recreational land. Most of Bandera's recreational land is accounted for by the Hill Country State Natural Area and by commercial enterprises such as dude ranches and campgrounds. Frio County is last in the percentage of recreational land but eighth in population size.

Resource Attractions

The region is rich and varied in regional attractions: historic sites such as the Alamo, natural areas, access to lakes and rivers, and numerous festivals and events. Some of the significant resources that have come on line since the 1985 TORP include Sea World of Texas, the Hill Country State Natural Area, Eisenhower Park, the extension of the River Walk, and the conservatory at the Botanical Center.

The state has twelve recreational sites that account for 29 percent of the total recreational land in the region. The Rancho de las Cabras site is currently closed to the public.

In fiscal year 1987, the highest visitation at state parks in the region was at LBJ State Historical Park with 655,075 and at Enchanted Rock State Natural Area with 227,438. In the period between 1982 and 1987, Enchanted Rock and Hill Country state natural areas, and Guadalupe River State Park each had visitation growth of over 120 percent.

The two historical parks under the National Park Service and the water recreation-oriented resources of the Corps of Engineers and the river authorities are other major attractions in the region. The commercial sector also makes significant contributions to the region's attractions with dude ranches, fishing camps, and resources for white-water recreation.

Recreation Supply

Nineteen eighty-six outdoor recreational resources/facilities are analyzed in this section against 1990 projected

population. The recreational land in the region totaled 45,912 acres in 1986 when most of the resource inventory for this plan was conducted (table 1). This represents a 9 percent increase from the 42,193 acres reported in the 1985 TORP. The region has thirty-one acres of recreational land per thousand population for 1990 and ranks 22nd when compared to the other twenty-three regions (table A3). The state average is 209 acres per thousand population.

The total number of recreational sites increased from 371 to 437, an increase of 18 percent. Commercial enterprises, such as campgrounds, account for 42 percent of the additional sites. The region is 22nd in the number of sites per thousand population with .30. The state average is .43.

The region is above the state average in the number of basketball goals, picnic tables, and tennis courts. In horseback riding trails the region ranks fourth, double the state average of .02 miles.

The region is below the state average in soccer/football fields, hiking trails, walking trails, softball fields, campsites, golf holes, areas for off-road vehicles, and swimming pool area. The region is last in the number of baseball fields and penultimate in equipped playgrounds.

Despite several lakes throughout the region, the number of surface acres suitable for recreation per thousand population is eleven, compared to the state average of sixty-seven lake surface acres. The region is also below the state average in boat lanes, fishing structures, bank fishing, and swimming areas.

Potential and Proposed Resources

The partial listing of recreational attractions and resources shown in Figure 1, conservation information maintained by the Texas Natural Heritage Program of the TPWD, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other developments.

Riverpark and waterfront projects are especially significant in this region. The extension of San Antonio's River Walk is a primary example of this development. The city of Kerrville and the city of Boerne are considering riverwalk-type developments in their communities.

The Salado and Leon creeks in Bexar County have tremendous recreation

potential. Local residents are interested in protecting these resources through cooperation among the various sectors owning creekside property. The archeological/historical resources of Salado Creek are especially noteworthy.

Aquifer recharge areas may present a unique opportunity for acquisition of open space. The city of San Antonio's Open Space Development Policy Task Force recommended that the city map significant recharge features of the aquifer.

The city of Seguin has approved the construction of a wave pool. It is felt that this will be a major regional at-

traction, considering the popularity of water recreation in the region.

The Alamo Area Council of Governments, in conjunction with the Golden Crescent Regional Planning Commission and the San Antonio River Authority, is taking a leadership role in the planning and development of the Alamo to La Bahia Historical/Cultural Corridor. The corridor runs along the San Antonio River from Bexar to Goliad County. This is an economic development project focussing on tourism. Some of the proposed projects under this effort are: the development of a state park named

after John B. Connally, the protection of the falls occurring on the San Antonio River around Falls City, the development of pocket parks for recreation and historic interpretation, the identification of historic resources to develop historic tours, and the organization and promotion of festivals, arts and crafts fairs, and birdwatching trips. Individually, most communities in the area do not have major historic/recreational resources, but collectively promoted, the area has potential as a tourist destination. One of the major difficulties will be the initial investment required.

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 18, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | COMMERCIAL | TOTAL | |
|---|-----------------------|------------------------------|-------------------|-------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|------------|-------|-------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Cops of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | | | Other Local |
| Number of Parks/Rec. Areas | 2 | 0 | 0 | 16 | 12 | 1 | 0 | 0 | 9 | 15 | 242 | 10 | 130 | 437 |
| Total Parkland Acres | 775 | 0 | 0 | 1927 | 13360 | 6493 | 0 | 0 | 627 | 315 | 8083 | 59 | 14272 | 45912 |
| Developed Land Acres | 97 | 0 | 0 | 939 | 666 | 0 | 0 | 0 | 371 | 218 | 4917 | 52 | 3082 | 10342 |
| Developable Land Acres | 500 | 0 | 0 | 828 | 5940 | 0 | 0 | 0 | 251 | 97 | 2857 | 7 | 4055 | 14535 |
| Preserved or Unsuitable for Development (Acres) | 178 | 0 | 0 | 160 | 6755 | 6493 | 0 | 0 | 5 | 0 | 309 | 0 | 7135 | 21035 |
| Baseball Fields | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 83 | 7 | 2 | 101 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 193 | 0 | 9 | 209 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 35 | 1 | 0 | 0 | 0 | 17 | 0 | 4 | 0 | 16 | 73 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 432 | 324 | 0 | 0 | 0 | 25 | 30 | 172 | 0 | 3429 | 4412 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 8180 | 500 | 0 | 0 | 0 | 7640 | 0 | 10962 | 0 | 0 | 27282 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 70 | 40 | 0 | 0 | 0 | 80 | 0 | 102 | 0 | 1146 | 1438 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 162 | 0 | 63 | 225 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 3 | 26 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 65 |
| Lake Acres (BFS Suitable),FW | | | | | | | | | | | | | | 15718 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 60 |
| Picnic Tables | 0 | 0 | 0 | 121 | 228 | 0 | 0 | 0 | 55 | 671 | 1917 | 36 | 537 | 3565 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 2 | 14 | 168 | 3 | 31 | 226 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 110 | 0 | 1 | 112 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 101 | 1 | 2 | 111 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 25600 | 3300 | 0 | 0 | 0 | 6800 | 0 | 10327 | 0 | 41080 | 87107 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 600 | 0 | 0 | 0 | 0 | 0 | 29436 | 120 | 10863 | 41019 |
| Tennis Courts | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 30 | 182 | 0 | 48 | 263 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 0 | 2 | 10 | 0 | 0 | 0 | 3 | 21 | 0 | 1 | 37 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

OUTDOOR RECREATION PARTICIPATION

Popular Activities

Figure 2 shows the percent of region residents that participate in each of the twenty-six activities studied. Sixty-one percent of the region residents walk for pleasure and about half use swimming pools. Region residents exceed state averages in fourteen activities, most notably saltwater swimming and fishing, pool use, and hiking.

Table 2 projects per capita participation statewide and by region residents in the region and in all twenty-four regions. Activities that do not show per capita participation for all twenty-four regions on the table are considered urban activities, meaning that these activities usually

Figure 2
Region 18 Projected 1995 Percentage
of Population Participating

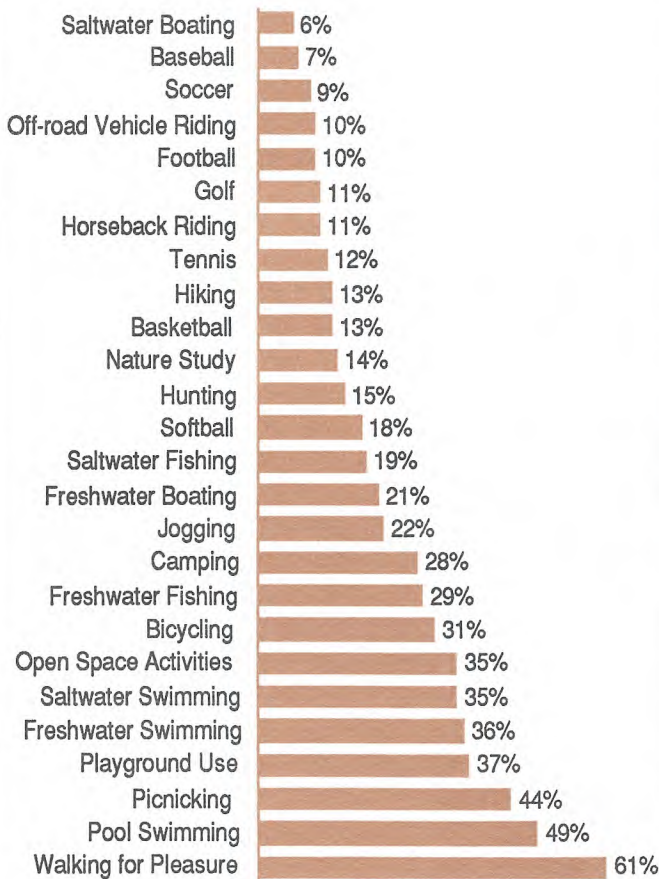


Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 18 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 18 | | |
| | Occurring In | | |
| | Region 18 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 0.9 | 1.2 | 1.3 |
| Boat Ramp Lanes, SW | * | 0.3 | 0.3 |
| Boating (Pleasure), FW | 0.5 | 0.6 | 0.6 |
| Boating (Pleasure), SW | * | 0.1 | 0.1 |
| Camping | 0.8 | 1.8 | 1.7 |
| Fishing, FW | 1.6 | 2.2 | 2.4 |
| Fishing from Banks | 0.5 | 0.7 | 0.8 |
| Fishing from Boats | 0.7 | 1.0 | 1.1 |
| Fishing from Structures | 0.4 | 0.5 | 0.5 |
| Fishing, SW | * | 0.6 | 0.7 |
| Fishing from Boats | * | 0.3 | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | 0.2 | 0.3 |
| Hiking | 0.4 | 0.5 | 0.4 |
| Hunting | 0.9 | 1.2 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.0 | 1.4 | 1.5 |
| Nature Study | 0.7 | 0.9 | 0.9 |
| Picnicking | 1.6 | 2.0 | 1.9 |
| Swimming, FW | 1.8 | 2.4 | 2.1 |
| Swimming, SW | * | 1.1 | 1.2 |
| Baseball | 1.1 | | 1.5 |
| Basketball | 1.5 | | 1.6 |
| Bicycling | 10.4 | | 10.7 |
| Bicycling on Trails | 0.6 | | 0.7 |
| Football | 0.8 | | 0.8 |
| Golf | 1.3 | | 1.3 |
| Horseback Riding | 0.7 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 6.1 | | 5.4 |
| Jogging/Running on Trails | 1.9 | | 1.7 |
| Off-road Vehicle Riding | 1.0 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.2 | | 0.3 |
| Open Space Activities | 3.2 | | 3.2 |
| Playground Use | 4.5 | | 4.8 |
| Soccer | 1.4 | | 1.2 |
| Softball | 2.1 | | 1.8 |
| Swimming, Pool | 6.9 | | 6.4 |
| Tennis | 1.2 | | 1.3 |
| Walking (Pleasure/Exercise) | 15.4 | | 14.8 |
| Walking on Trails | 3.6 | | 3.5 |

Notes: Asterisks indicate value is less than .1 occasion per capita.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and figure and an explanation of research methods. See Appendix D for an explanation of terms.

occur close to home and not outside the region of residence. Statewide per capita participation reflects participation in Texas by all Texans. Of the rural activities, freshwater swimming and fishing have the highest occasions per year for each region resident. Fitness activities such as walking, cycling, and swimming in pools top the urban activities. When only the participation occurring on trails is considered, the top urban activities are swimming in pools, playground use, and walking on trails.

Recreation Travel Patterns

Recreationists are generally willing to travel longer distances and to undertake overnight trips for resource-based recreational resources, which are also known as rural resources. Figures 3 and 4 show the travel patterns in relationship to region 18. Sixty-two percent of the region residents stay in the region to participate in these activities. The remaining 38 percent go elsewhere in Texas. The Coastal Bend region, which is the Corpus Christi area, is the primary destination for those leaving the region. Region 12, the Austin area, is a distant



Ball fields and open space are important neighborhood recreational resources.

second destination for region residents. For resource-based activities, 71 percent of the recreation activity occurring in region 18 is generated by region residents. The remaining 29 percent is generated by Texans visiting the region.

The highest percentage (14 percent) of recreational activity from outside the region comes from region 16, the Houston area. The Capital Area region is a distant second with 5 percent of the recreational activity.

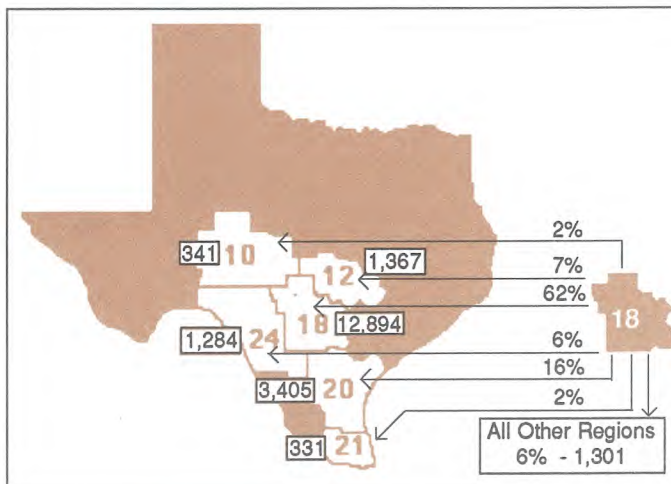


Figure 3
Destinations of Region 18 Residents
for Resource-based Activities

20,923 Annual User Occasions (000's)
Generated by Region 18 Residents, 1995

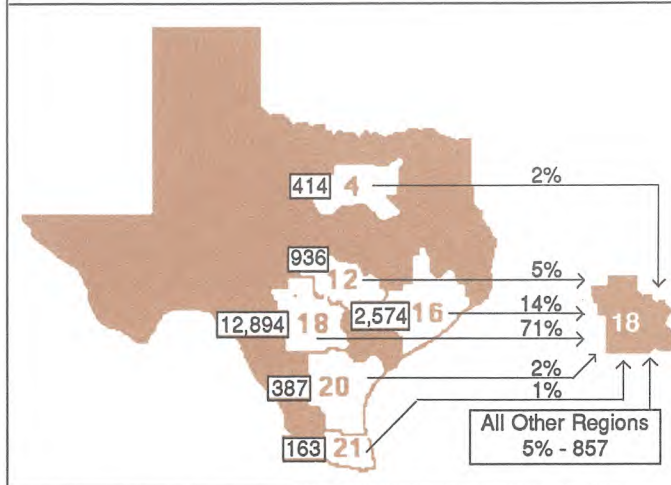


Figure 4
Origins of Participants Who Recreated
in Region 18 for Resource-based Activities

18,225 Annual User Occasions (000's)
Occurring in Region 18, 1995

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting. See Appendix B for key points to interpret these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 18 by Region 18 Residents,
Texans from Outside Region 18, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 18 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|------|----------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | Regional Totals | | |
| | Residents of Region 18 | | | Texans from Outside Region 18 | | | 1990 | 1995 | 2000 |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 1323 | 1404 | 1484 | 235 | 255 | 274 | 1558 | 1658 | 1758 |
| Boating (Pleasure), FW | 671 | 709 | 747 | 182 | 196 | 209 | 853 | 905 | 956 |
| Camping | 1235 | 1315 | 1396 | 1427 | 1546 | 1665 | 2662 | 2861 | 3061 |
| Fishing, FW | 2345 | 2494 | 2644 | 278 | 303 | 329 | 2622 | 2798 | 2973 |
| Fishing from Banks | 765 | 814 | 863 | 91 | 99 | 107 | 855 | 913 | 970 |
| Fishing from Boats | 1050 | 1117 | 1184 | 124 | 136 | 147 | 1174 | 1253 | 1331 |
| Fishing from Structures | 530 | 564 | 598 | 63 | 69 | 74 | 593 | 632 | 672 |
| Hiking | 523 | 558 | 593 | 220 | 238 | 256 | 742 | 796 | 849 |
| Hunting | 1289 | 1368 | 1447 | 691 | 748 | 805 | 1980 | 2116 | 2253 |
| Lake Use (BFS Suitable), FW | 1509 | 1601 | 1693 | 269 | 291 | 313 | 1778 | 1892 | 2006 |
| Nature Study | 956 | 1033 | 1111 | 189 | 207 | 226 | 1145 | 1241 | 1337 |
| Picnicking | 2389 | 2521 | 2653 | 455 | 487 | 520 | 2844 | 3008 | 3172 |
| Swimming, FW | 2753 | 2895 | 3037 | 1506 | 1605 | 1705 | 4259 | 4500 | 4742 |

Freshwater swimming, camping, and hunting opportunities are expected to draw the most visitation to the region by Texans from outside region 18 (table 3). Combining region residents and visitors from Texas, freshwater swimming and picnicking will be the most popular activities (table 3).

Projected Participation

The highest total participation in region 18 for resource-based activities will be for freshwater swimming and picnicking (table 3). Of the urban-based activities, walking, cycling, and pool use will be the most popular (table 4).

It is important to note that out-of-state participation is not included in the total participation occurring in the region. This is especially significant to regions such as this that have a high number of out-of-state tourists. The projected needs for resources in high demand by these tourists will probably be underestimated.

Table 4
Projected Outdoor Recreation Participation
in Region 18 by Residents of Region 18, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (In 000's Annual User Occasions) | | |
|-----------------------------|---|-------|-------|
| | 1990 | 1995 | 2000 |
| Baseball | 1654 | 1751 | 1848 |
| Basketball | 2214 | 2339 | 2464 |
| Bicycling | 15285 | 16237 | 17191 |
| Bicycling on Trails | 942 | 1000 | 1059 |
| Football | 1165 | 1233 | 1301 |
| Golf | 1944 | 2108 | 2271 |
| Horseback Riding | 1076 | 1141 | 1206 |
| Horseback Riding on Trails | 276 | 293 | 309 |
| Jogging/Running | 9068 | 9546 | 10025 |
| Jogging/Running on Trails | 2793 | 2940 | 3088 |
| Off-road Vehicle Riding | 1530 | 1618 | 1705 |
| ORV Riding on Trails | 300 | 317 | 334 |
| Open Space Activities | 4845 | 5090 | 5336 |
| Playground Use | 6691 | 7041 | 7391 |
| Soccer | 2024 | 2142 | 2259 |
| Softball | 3167 | 3321 | 3474 |
| Swimming, Pool | 10162 | 10759 | 11357 |
| Tennis | 1749 | 1845 | 1942 |
| Walking (Pleasure/Exercise) | 22396 | 24088 | 25783 |
| Walking on Trails | 5243 | 5639 | 6036 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Table 5 shows the additional resources and facilities that will be needed to meet recreation participation in the region. As a regional aggregate, no needs are shown for horseback riding trails, lake surface acres, and picnic tables. It should be noted, however, that given the distribution of resources/facilities in the region, these are needed in some parts of the region. Local needs assessments can be used to quantify these needs. Table 6 is based on table 5 and ranks the resources/facilities needed in the region to meet all projected in-state participation.

Providers' Responsibilities

The region needs 3,927 more developed land acres for recreation (table 7). It is recommended that the state meet about 10 percent of the need, the commercial sector about 25 percent, cities about 43 percent, and the federal government about 4 percent. For water oriented facilities such as boat ramps and fishing structures, the local governments are being given a larger share of responsibility than their traditional role. Another departure is the recommendation that federal providers supply playgrounds.

Table 5
Additional Outdoor Recreation Facilities/Resources Needed in Region 18, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------|-------------------------------------|-------------|-------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 101 | 19 | 27 | 34 |
| Basketball Goals | 209 | 58 | 73 | 88 |
| Boat Ramp Lanes, FW | 73 | 134 | 148 | 161 |
| Campsites | 4412 | 546 | 917 | 1288 |
| Fishing Structures, FW Lin.Yd. | 1438 | 2539 | 2805 | 3072 |
| Golf Holes | 225 | 8 | 28 | 48 |
| Hiking Trail Miles | 26 | 74 | 82 | 89 |
| Horseback Riding Trail Miles | 65 | * | * | * |
| Lake Acres (BFS Suitable), FW | 15718 | * | * | * |
| Off-road Vehicle Riding Acres | 60 | 198 | 213 | 228 |
| Picnic Tables | 3565 | * | * | * |
| Playground Areas, Equipped | 226 | 411 | 445 | 478 |
| Soccer/Football Fields | 112 | 86 | 97 | 109 |
| Softball Fields | 111 | 115 | 126 | 137 |
| Swimming, FW Sq.Yd. (000) | 87 | 937 | 995 | 1053 |
| Swimming, Pool Sq.Yd. (000) | 41 | 24 | 28 | 31 |
| Tennis Courts | 263 | 195 | 220 | 245 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 37 | 118 | 129 | 139 |
| Developed Land Acres | | 3316 | 3927 | 4521 |

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs in Region 18 Through 1995

Need Rank Facility/Resource

- 1 Trail Miles, Multi-Use (Walk, Bike, Jog)
- 2 Swimming, FW Sq.Yd.
- 3 Playground Areas, Equipped
- 4 Soccer/Football Fields
- 5 Boat Ramp Lanes, FW
- 6 Hiking Trail Miles
- 7 Softball Fields
- 8 Swimming, Pool Sq. Yd.
- 9 Tennis Courts
- 10 Fishing Struc., FW Lin.Yd.
- 11 Basketball Goals
- 12 Campsites
- 13 Picnic Tables
- 14 Baseball Fields
- 15 Golf Holes
- 16 Horseback Riding Trail Miles
- 17 Off-Road Vehicle Riding Acres
- 18 Lake Acres (BFS Suitable)

Source: CPS, CPB, Parks Division, TPWD, 1988.

Note: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 18, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | | LOCAL | | |
|--|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 17 | 0 | 5 |
| Basketball Goals | 73 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 67 | 0 | 0 |
| Boat Ramp Lanes, FW Campsites | 148 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 56 | 24 | 0 | 44 |
| | 917 | 0 | 0 | 0 | 0 | 205 | 0 | 0 | 0 | 100 | 200 | 0 | 0 | 400 |
| Fishing Structures, FW Lin.Yd. | 2805 | 0 | 0 | 0 | 0 | 150 | 0 | 0 | 0 | 405 | 550 | 1000 | 0 | 700 |
| Golf Holes | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 10 |
| Hiking Trail Miles | 82 | 0 | 0 | 0 | 7 | 15 | 6 | 0 | 0 | 8 | 22 | 18 | 0 | 6 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Off-road Vehicle Riding Acres | 213 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 33 | 30 | 0 | 135 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 445 | 0 | 0 | 0 | 12 | 6 | 0 | 0 | 0 | 22 | 22 | 355 | 0 | 28 |
| Soccer/Football Fields | 97 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 80 | 0 | 10 |
| Softball Fields | 126 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 100 | 0 | 20 |
| Swimming, FW Sq.Yd.(000) | 995 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 25 | 0 | 912 |
| Swimming, Pool Sq.Yd.(000) | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 |
| Tennis Courts | 220 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 220 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 129 | 5 | 0 | 0 | 5 | 20 | 4 | 0 | 0 | 10 | 15 | 60 | 0 | 10 |
| Developed Land Acres | 3927 | 40 | 0 | 0 | 113 | 333 | 80 | 0 | 0 | 189 | 503 | 1674 | 0 | 992 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



REGION 19

SOUTH TEXAS

Of the resource-based activities, fishing is the second most popular in total participation.

ISSUES AND RECOMMENDATIONS

Issue: Funding Problems

The region has the lowest number of recreational land acres when compared to the other twenty-three regions in the state. The region is not densely populated but open space for recreation is still needed.

Funding problems are also reflected in park maintenance. Often, local governments are able to acquire and develop a park site but are later unable to maintain it. The redevelopment required in the long run is often more expensive. Lake Casa Blanca has gone through several redevelopment iterations. The parks in the Hebbronville area are another example of redevelopment needs in the region.

Region residents indicate that funding for recreation does not have a high priority when unemployment is high, revenues are declining, and basic services such as education, water, and sewers need to be met. Another problem is the lack of information on alternative funding sources and of grantsmanship skills. Technical assistance to communities was suggested to address this issue.

Some entities note that part of the parkland needs could be met through land lease agreements with the International Boundary and Water Commission

(IBWC). Also mentioned has been the possibility of working with local congressmen to channel funds for recreation through the IBWC.

The Laredo Chamber of Commerce has been promoting the establishment of a state park in Webb County as an economic development tool. Currently, economic development is not a criterion of the state park system. It was also suggested that the state park system policy on site size should be flexible when a donation is being offered to the Texas Parks and Wildlife Department (TPWD). (Also, see State Summary "Financing Parks and Recreation" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For local recreation providers:

Enter into land lease agreements with IBWC to provide more parklands.

Coordinate with educational institutions in the development, maintenance, and operation of recreational resources. Use the city of Laredo and the Laredo Independent School District as a successful model for cooperation.

Develop new recreational facilities close to schools to maximize the use of facilities.

Make maximum use of federal, state, local government, and private grants and assistance.

Support federal legislation to establish a dedicated trust fund, or similar mechanism, to provide funding for outdoor recreation.

For the Texas Parks and Wildlife Department:

Continue to act as a clearinghouse for information on federal, state, local government and private grants and assistance.

Increase efforts to provide outdoor recreation technical assistance to local levels of government.

Issue: Tourism

Since Mexico's major peso devaluation in 1982, the Laredo area has been trying to



diversify the regional economy. One of the objectives has been to develop the U.S. tourist market. The Laredo Chamber of Commerce indicates that Winter Texans are a market of special interest to the region. One of the problems is the persistent notion that Winter Texans make a negligible contribution to the host economy. Studies conducted in the Rio Grande Valley do not support this view. Also, rising operating costs in the Valley are putting some campgrounds out of business. This could result in campsite shortages sending Winter Texans to other areas.

Lake Casa Blanca could be a key magnet for this market since it provides two of the activities Winter Texans prefer: golf and freshwater fishing. Other facilities such as RV hook-ups, however, are lacking.

Summer tourism should be promoted. Tourists to Sea World in San Antonio have been identified as a potential market to be targeted. Region residents noted that other recreational activities requiring attention are hunting and fishing. Hunting opportunities need to be better coordinated and promoted. Day-hunting opportunities need to be increased. More fishing access from banks and piers is needed. Fishing tournaments occur on Falcon Lake but it is felt that the opportunities for this activity have not been maximized. (Also, see State Summary, "Tourism and Outdoor Recreation" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For appropriate entities:

Develop a comprehensive master plan and an operational plan for Lake Casa Blanca; carefully assess concession operations.

For chambers of commerce and other local entities:

Educate local communities on the economic benefits of Winter Texans.

Develop other markets in addition to the Winter Texans because of the seasonality of this market.

Coordinate and promote hunting, especially day-hunting opportunities.

Promote more fishing tournaments at Falcon Lake.

Issue: Resource Protection

Residents on both sides of the border recognize that water pollution from effluent and urban runoff are threatening the water quality and fishing resources of the Rio Grande. The U.S. side is in compliance but Mexico is dumping untreated sewage into the river. A task force with members from both sides of the border is exploring solutions to this problem. One of the items being considered is the construction of a treatment plant that would serve both Laredo and Nuevo Laredo. This item is temporarily on hold until the new administration takes over in Mexico. (Also, see State Summary, "Conserving Natural Resources for Recreational Use" under "Outdoor Recreation Issues and Recommendations.")

Fishermen and fisheries managers indicate that the commercial fishing practices on the Mexican side of Falcon Lake continue to adversely affect sport fishing. Texas has tried to negotiate an agreement with Mexico to close the lake to commercial fishing at least for a couple of months during the spawning season. Another threat to the fishing industry is the water level fluctuations. (Also, see State Summary, "Improving Outdoor Recreation Implementation Programs" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For appropriate entities:

Continue work on river pollution problems.

Accelerate efforts to address other issues such as tourism, resource protection, etc.

For the Texas Parks and Wildlife Department:

Work with the state of Tamaulipas and appropriate federal and international agencies to manage the fishing resources of Falcon Lake.

Encourage the development of a sport fishing industry on the Mexican side of Falcon Lake.

Issue: Maintenance and Vandalism

Vandalism and theft of items such as restroom fixtures, plants, fences, and nets

continue to be a regional problem. The poor design of some parks and the lapses in maintenance contribute to this problem. Vandalism is a serious problem especially where the financial resources to correct the problem are limited.

The parks and recreation department of the city of Laredo has instituted a restitution program for youth offenders. This program provides the department with additional manpower and the opportunity to instill pride in community resources among the youth participating in the program. The department has also had some success with the use of school colors to try to curtail problems with spray paint. Cooperation with schools for the use of facilities has also helped.

The parks and recreation department of the city of Laredo and the Laredo Independent School District are considering the implementation of Project WILD. Project WILD is a supplemental environmental education program. It is being considered as a long-term preventive approach to illegal activities such as vandalism, litter, and poaching. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For local governments, school districts, non-profit groups, and other interested parties:

Encourage vandalism-proof design in the development and redevelopment of parks.

Encourage beautification campaigns to improve the aesthetic quality of recreation to areas and their surroundings.

Develop an integrated approach to vandalism that would include the adoption of Project WILD as recreation programming and as an environmental education supplement to school instruction.

Develop a park ranger program to improve surveillance.

Encourage the formation of neighborhood watch programs with an adopt-a-park feature.

Coordinate programs and events for maximum publicity and public education.

RESOURCES

Population Trends

Between 1986 and 1995, the region's population will grow by 23 percent (figure 1). The projected statewide growth is 14 percent. Webb, Starr, and Zapata counties each will have a growth rate above 20 percent. The projected growth for Jim Hogg is 4 percent.

For the most part, the supply of urban recreational facilities follows the distribution of the population. Resource-based recreation is concentrated around the Falcon Lake area.

Resource Attractions

Falcon Lake, Lake Casa Blanca, and the Rio Grande continue to be the primary resource attractions of the region. The two lakes combined comprise about eighty thousand surface acres of water with 52,571 acres of that suitable for boating, fishing, and skiing. The Rio Grande has about 195 permanently floatable miles through the region.

The city of Laredo is developing a major riverfront park on the Rio Grande. On the Mexican side, Nuevo Laredo is also making improvements on the river-

front. The new softball complex with regulation fields for tournaments is another significant regional attraction in the Laredo area.

The state has 875 acres of recreational land in the region. Falcon State Park comprises about 65 percent of this; Las Palomas Wildlife Management Unit comprises the balance of the state land.

Recreation Supply

Nineteen eighty-six outdoor recreational resources/facilities are analyzed against 1990 projected population in this section.

The recreational land in the region totaled 2960 acres in 1986 when most of the resource inventory for this plan was conducted (table 1). This represents a 7.7 percent increase from the 2749 acres reported in the 1985 TORP. The region has sixteen acres of recreational land per thousand population for 1990 and ranks last when compared to the other twenty-three regions (table A3). The next lowest region has twenty-four acres per thousand population; the state average is 209 acres.

The number of recreational sites increased from seventy-seven to 107. Most of the increase is accounted for by commercial campgrounds around Falcon Lake that were inventoried for the first time. The region is now third in the number of campsites with eleven per thousand population.

On a per capita basis for 1990 projected population, the region has the highest number of basketball goals, about an average number of tennis courts, and the lowest number of softball fields.

The number of picnic tables is three per thousand population and is above the statewide average of 2.4. The number of playgrounds is .19 and is below the state average. For trail activities, the region has six miles for walking/bicycling/jogging, but none for hiking or horseback riding.

The region ranks fourth with 280 lake surface acres suitable for recreation per thousand population. The state average is sixty-seven surface acres. Boat lanes and swimming area are comparable to the state average, but fishing structures are below the state average and bank fishing access ranks last in the state.

Figure 1
Region 19 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|--------------------|
| Counties | = | 4 |
| Land area | = | 6,724 square miles |
| Elevation | = | 143' - 899' |
| Annual rainfall | = | 17.2 - 20.8 inches |
| January minimum temperature | = | 46 - 48°F |
| July maximum temperature | = | 98 - 100°F |
| Growing season | = | 303 - 322 days |

POPULATION 1986

| | |
|--------------|----------------|
| Total | 173,166 |
| Counties | |
| Webb | 125,717 |
| Starr | 34,080 |
| Zapata | 8,017 |
| Jim Hogg | 5,352 |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 213,127 |
| People per square mile | 31.7 |
| Ethnic composition: | |
| White | 7% |
| Black | 0% |
| Hispanic | 93% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|-------------|
| Recreation land | = | 2,960 acres |
| Developed recreation area | = | 1,424 acres |

Falcon State Park

Lakes

| | |
|---------------|--------|
| Surface acres | 79,956 |
|---------------|--------|

Surface Acres

| | |
|--------------------------------|--------|
| International Falcon Reservoir | 78,300 |
| Lake Casa Blanca | 1,656 |

Streams

| | |
|------------|--|
| Rio Grande | |
|------------|--|

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

Potential and Proposed Resources

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the TPWD, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other developments.

The status of resources with recreation potential which were listed in the 1985 TORP are discussed first.

Easements are beginning to be acquired for the flood control project of

the Los Olmos Creek watershed. No specific recreation plans have been developed yet.

A softball complex was built adjacent to Chacon Creek. One of the proposed trails would link this complex to Lake Casa Blanca.

A riverfront park is being developed by the city of Laredo. The city of La Grulla has a 32-acre riverfront site for a park. Boat ramps are one of the facilities being considered.

The watershed north of Roma-Los Saenz has undergone tremendous development. Relocation would be required to acquire land for open

space. The area of the recommended riverside scenic drive has had the same fate.

The Attractions Committee of the Laredo Chamber of Commerce is seeking a riverfront site that can be proposed to the TPWD as a potential state park site. Finding a suitable site and landowners willing to sell the resource has been difficult.

Jim Hogg County is planning a greenbelt with trails along Mesquite and Noriacitas creeks as part of a drainage improvements project. The county has four park sites in need of redevelopment. A larger site for the county fair and a community center are also needed.

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 19, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | | LOCAL | | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|-----------|--------|-------------|-------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Countries | Cities | Other Local | | COMMERCIAL |
| Number of Parks/Rec. Areas | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 27 | 36 | 0 | 42 | 107 |
| Total Parkland Acres | 0 | 0 | 0 | 0 | 573 | 300 | 0 | 0 | 0 | 1521 | 93 | 0 | 474 | 2960 |
| Developed Land Acres | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 906 | 81 | 0 | 337 | 1424 |
| Developable Land Acres | 0 | 0 | 0 | 0 | 473 | 300 | 0 | 0 | 0 | 595 | 12 | 0 | 117 | 1496 |
| Preserved or Unsuitable for Development (Acres) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 40 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10 | 0 | 0 | 16 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 12 | 0 | 0 | 44 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 19 | 25 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 0 | 159 | 0 | 0 | 0 | 0 | 56 | 0 | 0 | 1817 | 2032 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 60 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 180 | 0 | 0 | 355 | 535 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 18 | 36 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 10 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 164 | 0 | 0 | 0 | 0 | 376 | 26 | 0 | 7 | 573 |
| Picnic Tables | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 21 | 10 | 0 | 4 | 36 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 6 |
| Softball Fields | 0 | 0 | 0 | 0 | 220 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66000 | 66220 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 365 | 3269 | 0 | 2357 | 5991 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 16 | 0 | 0 | 34 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 6 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Zapata County is considering the development of recreational facilities in conjunction with a project to improve and expand the county fair grounds. The county is deficient in a number of facilities but it has land that could be developed for recreation.

Starr County is considering a boat ramp at River Park, an eight-acre park in the La Casita area, campsites and playgrounds at Falcon Park, and land acquisition for a park in the Alto Bonito area.

OUTDOOR RECREATION PARTICIPATION

Popular Activities

Figure 2 shows the percentage of the population participating in recreational activities. For example, 57 percent of the region's population walks for pleasure, while the statewide percentage is 59.

Table 2 projects per capita participation statewide and for region residents, both in

Figure 2
Region 19 Projected 1995 Percentage of Population Participating

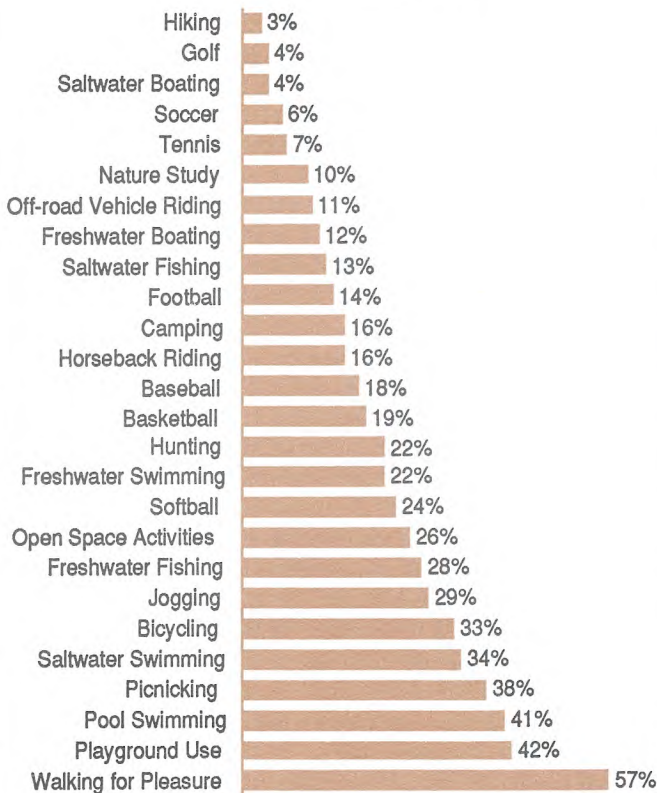


Table 2
Projected 1995 Per Capita Outdoor Recreation Participation Generated by Residents of Region 19 and Texans (in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|---|----------------|---------------------------|
| | Residents of Region 19 Occurring In | | |
| | Region 19 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 0.9 | 1.3 | 1.3 |
| Boat Ramp Lanes, SW | * | 0.2 | 0.3 |
| Boating (Pleasure), FW | 0.2 | 0.2 | 0.6 |
| Boating (Pleasure), SW | * | 0.1 | 0.1 |
| Camping | 0.4 | 1.0 | 1.7 |
| Fishing, FW | 2.1 | 2.2 | 2.4 |
| Fishing from Banks | 0.7 | 0.7 | 0.8 |
| Fishing from Boats | 0.9 | 1.0 | 1.1 |
| Fishing from Structures | 0.5 | 0.5 | 0.5 |
| Fishing, SW | * | 0.4 | 0.7 |
| Fishing from Boats | * | 0.2 | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | 0.2 | 0.3 |
| Hiking | * | 0.1 | 0.4 |
| Hunting | 1.4 | 1.7 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.0 | 1.0 | 1.5 |
| Nature Study | 0.5 | 0.6 | 0.9 |
| Picnicking | 1.5 | 1.7 | 1.9 |
| Swimming, FW | 0.9 | 1.4 | 2.1 |
| Swimming, SW | * | 1.1 | 1.2 |
| Baseball | 2.7 | | 1.5 |
| Basketball | 2.2 | | 1.6 |
| Bicycling | 11.6 | | 10.7 |
| Bicycling on Trails | 0.7 | | 0.7 |
| Football | 1.1 | | 0.8 |
| Golf | 0.4 | | 1.3 |
| Horseback Riding | 1.0 | | 0.7 |
| Horseback Riding on Trails | 0.3 | | 0.2 |
| Jogging/Running | 7.9 | | 5.4 |
| Jogging/Running on Trails | 2.4 | | 1.7 |
| Off-road Vehicle Riding | 1.2 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.2 | | 0.3 |
| Open Space Activities | 2.4 | | 3.2 |
| Playground Use | 5.4 | | 4.8 |
| Soccer | 0.9 | | 1.2 |
| Softball | 2.8 | | 1.8 |
| Swimming, Pool | 6.1 | | 6.4 |
| Tennis | 0.6 | | 1.3 |
| Walking (Pleasure/Exercise) | 14.2 | | 14.8 |
| Walking on Trails | 3.3 | | 3.5 |

Notes: Asterisks indicate value is less than .1 occasion per capita.

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and figure and an explanation of research methods. See Appendix D for an explanation of terms.

the region and in all twenty-four regions. Activities that do not show per capita participation for all twenty-four regions on the table are considered urban activities, meaning that these activities usually occur close to home and not outside the region of residence. Statewide per capita participation reflects all participation by all Texans within the state.

Freshwater fishing, hunting, and picnicking have the highest user occasions of the resource based activities. Of the urban activities, walking, cycling, and jogging are the highest. When only the participation occurring on trails is considered, the activities with the highest user occasions are swimming in pools and playground use (table 2).

Recreation Travel Patterns

Recreationists are generally willing to travel longer distances and to undertake overnight trips for resource-based recreational resources, which are also known as rural resources. Figures 3 and 4 show the travel patterns in relationship to region 19. Sixty-seven percent of the region residents stay in the region to



Golf is becoming an increasingly important activity as this region attempts to attract more Winter Texans.

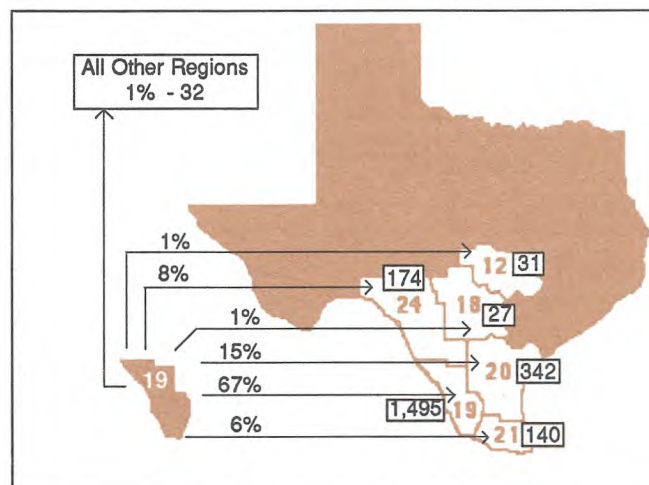


Figure 3
Destinations of Region 19 Residents
for Resource-based Activities

2,241 Annual User Occasions (000's)
Generated by Region 19 Residents, 1995

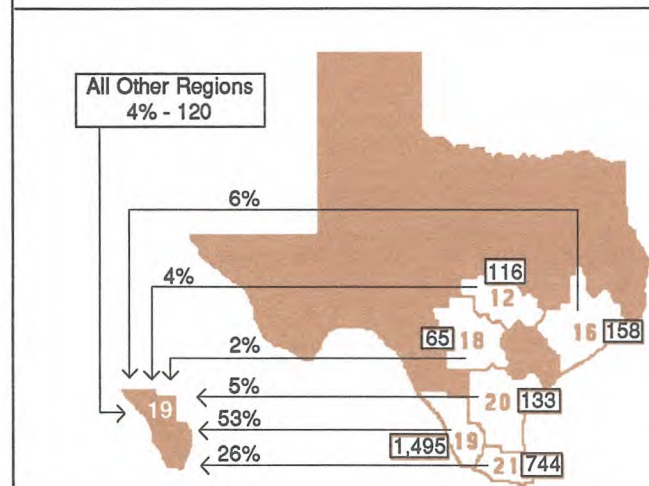


Figure 4
Origins of Participants Who Recreated
in Region 19 for Resource-based Activities

2,832 Annual User Occasions (000's)
Occurring in Region 19, 1995

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting. See Appendix B for key points to interpret these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 19 by Region 19 Residents,
Texans from Outside Region 19, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 19 (in 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|------|----------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | Regional Totals | | |
| | Residents of Region 19 | | | Texans from Outside Region 19 | | | 1990 | 1995 | 2000 |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 161 | 183 | 205 | 119 | 128 | 138 | 280 | 312 | 344 |
| Boating (Pleasure), FW | 33 | 37 | 42 | 52 | 56 | 60 | 85 | 93 | 102 |
| Camping | 76 | 86 | 96 | 98 | 108 | 117 | 174 | 193 | 213 |
| Fishing, FW | 395 | 449 | 504 | 230 | 248 | 267 | 624 | 697 | 771 |
| Fishing from Banks | 129 | 147 | 164 | 75 | 81 | 87 | 204 | 227 | 251 |
| Fishing from Boats | 177 | 201 | 226 | 103 | 111 | 119 | 280 | 312 | 345 |
| Fishing from Structures | 89 | 102 | 114 | 52 | 56 | 60 | 141 | 158 | 174 |
| Hiking | 9 | 10 | 11 | 12 | 13 | 14 | 21 | 23 | 25 |
| Hunting | 262 | 299 | 336 | 745 | 808 | 871 | 1007 | 1107 | 1206 |
| Lake Use (BFS Suitable), FW | 184 | 209 | 234 | 135 | 147 | 158 | 319 | 356 | 392 |
| Nature Study | 88 | 100 | 112 | 24 | 26 | 28 | 111 | 126 | 140 |
| Picnicking | 276 | 311 | 346 | 27 | 29 | 31 | 303 | 340 | 378 |
| Swimming, FW | 175 | 198 | 221 | 44 | 48 | 52 | 220 | 246 | 273 |

Table 4
Projected Outdoor Recreation Participation
in Region 19 by Residents of Region 19, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (in 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 511 | 576 | 641 |
| Basketball | 413 | 466 | 518 |
| Bicycling | 2189 | 2465 | 2742 |
| Bicycling on Trails | 135 | 152 | 169 |
| Football | 216 | 243 | 271 |
| Golf | 69 | 78 | 87 |
| Horseback Riding | 197 | 223 | 250 |
| Horseback Riding on Trails | 51 | 57 | 64 |
| Jogging/Running | 1491 | 1679 | 1868 |
| Jogging/Running on Trails | 459 | 517 | 575 |
| Off-road Vehicle Riding | 228 | 256 | 285 |
| ORV Riding on Trails | 45 | 50 | 56 |
| Open Space Activities | 462 | 519 | 576 |
| Playground Use | 1024 | 1151 | 1278 |
| Soccer | 187 | 187 | 208 |
| Softball | 524 | 589 | 654 |
| Swimming, Pool | 1160 | 1307 | 1454 |
| Tennis | 119 | 133 | 147 |
| Walking (Pleasure/Exercise) | 2665 | 3034 | 3403 |
| Walking on Trails | 624 | 710 | 797 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

participate in these activities. The remaining 33 percent go elsewhere in Texas.

While the primary destination for region residents is region 20 (the Coastal Bend), region 21 (the Valley) is the primary origin of those visiting region 19 (figures 3 and 4). The key attractions for visitors are Falcon Lake and the region's hunting resources. Of the resource based activities analyzed, hunting and freshwater fishing are the primary activities enticing visitation from outside the region.

Projected Participation

Table 3 projects the demand that will be placed on region 19 rural recreational resources both by region residents and by Texans from outside the region. For example, in 1995, the most popular resource-based activities in the region will be hunting and freshwater fishing. It should be noted that demand generated by out-of-state visitors is not included.

Table 4 shows the same projections for those activities that usually occur close to home and involve region residents primarily.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Regionwide, projections through the year 2000 show no needs for campsites, golf courses, lake acres, picnic tables, and freshwater swimming (table 5). This is the combined effect of regional aggregation and the absence of out-of-state participation. For example, most of the camping and swimming resources are concentrated around Falcon Lake and are lacking in other parts of the region. The demand generated by Winter Texans for facilities such as golf and camping is not included. Local need assessments should be conducted to determine community needs within the region.

Table 6 is based on table 5 and ranks resources/facilities needed in the region to meet all projected in-state participation.

Providers' Responsibilities

The region needs about 587 more acres of recreational land by 1995 (table 7). It is recommended that the state meet about 14 percent of the need, the local public sector about 82 percent, and the commercial sector the balance of the needed land. Other recommended state responsibilities are for fishing structures, horseback trails, multi-use trails, and a playground.

In addition to the facilities traditionally provided by counties, counties are encouraged to provide some ball fields and courts. Cities have been assigned the usual urban-oriented facilities. The commercial sector is encouraged to meet about a third of the land area needed for off-road vehicles and about 11 percent of the miles for multi-use trails.

Table 5
Additional Outdoor Recreation Facilities/Resources Needed in Region 19, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------|-------------------------------------|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 16 | 21 | 26 | 30 |
| Basketball Goals | 44 | 6 | 12 | 18 |
| Boat Ramp Lanes, FW | 25 | 12 | 16 | 21 |
| Campsites | 2032 | * | * | * |
| Fishing Structures, FW Lin.Yd. | 535 | 412 | 523 | 634 |
| Golf Holes | 36 | * | * | * |
| Hiking Trail Miles | 0 | 3 | 3 | 3 |
| Horseback Riding Trail Miles | 0 | 7 | 8 | 9 |
| Lake Acres (BFS Suitable), FW | 52571 | * | * | * |
| Off-road Vehicle Riding Acres | 10 | 28 | 33 | 38 |
| Picnic Tables | 573 | * | * | * |
| Playground Areas, Equipped | 36 | 61 | 74 | 86 |
| Soccer/Football Fields | 0 | 25 | 28 | 32 |
| Softball Fields | 6 | 31 | 36 | 40 |
| Swimming, FW Sq.Yd. (000) | 66 | * | * | * |
| Swimming, Pool Sq.Yd. (000) | 6 | 1 | 2 | 3 |
| Tennis Courts | 34 | * | 1 | 5 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 6 | 15 | 18 | 21 |
| Developed Land Acres | | 502 | 587 | 672 |

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs in Region 19 Through 1995

Need Rank Facility/Resource

| | |
|----|--|
| 1 | Soccer/Football Fields |
| 2 | Softball Fields |
| 3 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 4 | Playground Areas, Equipped |
| 5 | Baseball Fields |
| 6 | Off-Road Vehicle Riding Acres |
| 7 | Swimming, Pool Sq. Yd. |
| 8 | Boat Ramp Lanes, FW |
| 9 | Tennis Courts |
| 10 | Horseback Riding Trail Miles |
| 11 | Fishing Struc., FW Lin.Yd. |
| 12 | Hiking Trail Miles |
| 13 | Basketball Goals |
| 14 | Swimming, FW Sq.Yd. |
| 15 | Picnic Tables |
| 16 | Golf Holes |
| 17 | Campsites |
| 18 | Lake Acres (BFS Suitable) |

Source: CPS, CPB, Parks Division, TPWD, 1988.

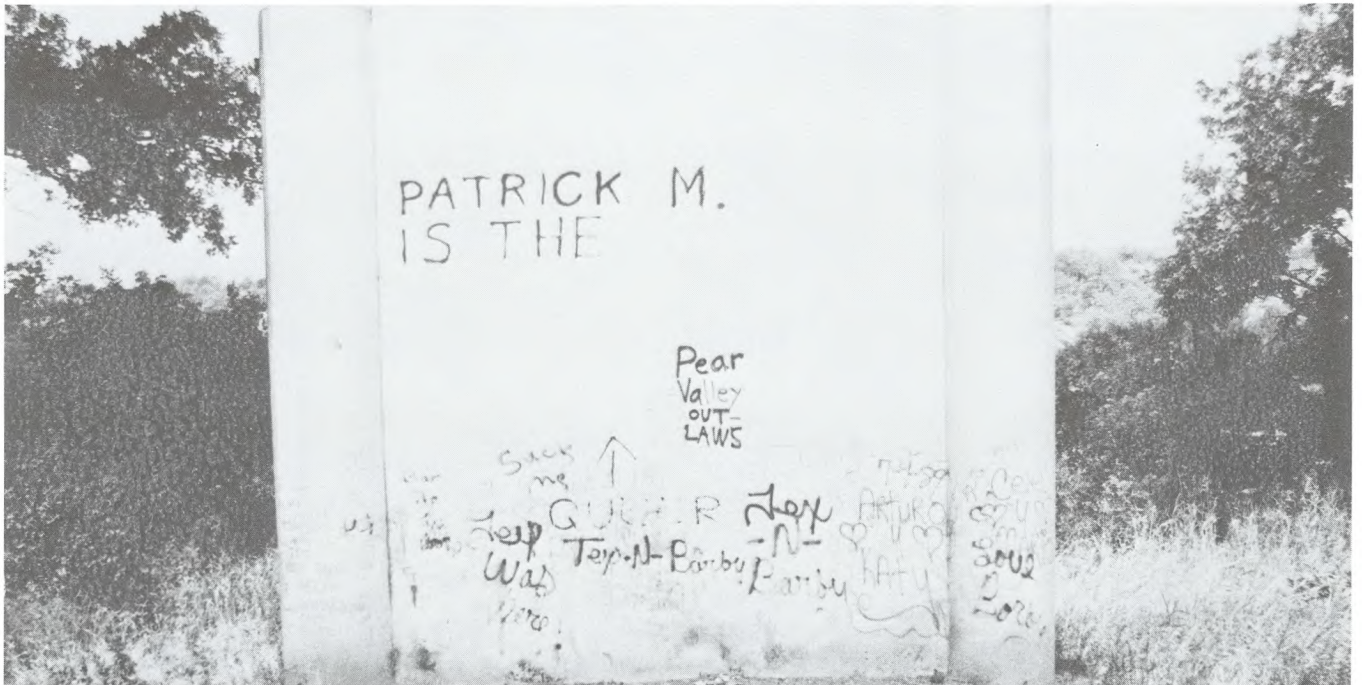
Note: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 19, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 20 | 0 | 0 |
| Basketball Goals | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 0 |
| Boat Ramp Lanes, FW | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fishing Structures, FW Lin.Yd. | 523 | 0 | 0 | 0 | 0 | 260 | 0 | 0 | 0 | 0 | 263 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 8 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Off-road Vehicle Riding Acres | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 11 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 74 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 65 | 0 | 0 |
| Soccer/Football Fields | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 20 | 0 | 0 |
| Softball Fields | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 18 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd.(000) | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| Tennis Courts | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 18 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 2 |
| Developed Land Acres | 587 | 0 | 0 | 0 | 0 | 81 | 0 | 0 | 0 | 0 | 233 | 246 | 0 | 27 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



Local governments and school districts are working together to prevent vandalism.



REGION 20

COASTAL BEND

Corpus Christi Bay is the setting for a wide diversity of water-related activities.

ISSUES AND RECOMMENDATIONS

Issue: Funding

This region is heavily dependent on export industries such as oil and gas, tourism, and defense and has experienced the economic decline that has plagued the domestic oil and gas industry. The economic decline has resulted in budget cutbacks which in turn result in lack of funds for park development, maintenance, and programming.

The city of Corpus Christi has a mandatory dedication program in place but has indicated the need for funds to develop dedicated parkland. This will, of course, add maintenance costs to an already strained maintenance budget. A related issue is the need for larger park sites. The mandatory dedication ordinance has resulted in numerous but small park sites.

In smaller communities, the need is for land acquisition and park development. Maintenance standards are also low. Some communities are aware of state grant programs but are reluctant to apply because they feel they lack expertise to prepare the application. Local entities expressed an interest in having the Texas Parks and Wildlife Department (TPWD) take a more active role in this issue through miscellaneous technical assistance programs to communities.

In connection with the Local Park Fund (LPF), it was suggested that it be modified to meet the state's situation, instead of just patterning it after the federal program for expediency. Another suggestion was for the TPWD to do more to inform small communities about the grants programs. The council of governments' Resource Conservation and Open Space Committee had additional recommendations on these grant programs. They were submitted to the TPWD Grants-in-Aid Branch for consideration.

Some communities have cut their programs; others have increased fees to recover more of the costs. Another trend is for commercial ball parks to try to meet some of the demand as local governments increase league fees. Federal recreational resources are also experiencing funding problems. The Padre Island National Seashore and the Aransas National Wildlife Refuge began charging an entrance fee in November of 1987. It was stressed that the private sector play a stronger role in providing recreation and that the public sector provide information on potential ventures whenever possible. (Also, see State Summary, "Financing Parks and Recreation" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For the Texas Parks and Wildlife Department:

Continue to assess the input provided on the Land and Water Conservation Fund (LWCF)/LPF during the review of the project selection criteria.

Continue to act as a clearinghouse for information on federal, state, local government and private grants and assistance.

Increase efforts to provide outdoor recreation technical assistance to local levels of government.

For recreation providers:

Seek alternative funding sources by developing gift catalogues, adopt-a-park programs, and cooperative agreements for park development, maintenance, and programming.

Support federal legislation establishing a dedicated trust fund or similar mechanism, to



provide funding for outdoor recreation.

The public and private sectors should continue to work together to identify ventures better suited for the private sector.

Issue: Tourism

Most of the key recreational attractions are coastal, but Choke Canyon Lake is now a major inland resource. It is especially significant in the region's efforts to tap the Winter Texans market. The region is diversifying its tourist attractions and improving the geographic distribution of these attractions. The potential of birdwatching is not fully recognized in the region. Fishing on bays is another activity needing promotion. Also, providing beach access between private developments becomes more critical as more development occurs.

Private development is proposing the dredging of Packery Channel on Padre Island as a means to boost fishing and recreation. Some entities are recommending a cost-benefit analysis because of the considerable cost to undertake the project and to maintain it on a long-term basis. Another project aimed at tourism is the implementation of the Kennedy Causeway Master Plan which was developed by state and local entities, including the private sector.

Ranchers in the region are exploring ways to attract visitors as a money-making operation. TPWD has participated on some of the discussions. Ranchers want to market the wildlife observation and ranching experience they can offer. A couple of ranches in the Falfurrias area have considered organizing tours from the Rio Grande Valley.

Entities such as the city of Corpus Christi and Kleberg County are becoming more aggressive in attracting and keeping tourists. The Corpus Christi Parks and Recreation Department, for example, set up a visitor information center at Nueces River Park off Interstate 37. As part of this effort, the department compiled a directory of campgrounds.

It appears that Winter Texans are more interested in freshwater fishing than saltwater. Choke Canyon is providing these resources. Winter Texans enjoy golf, freshwater fishing, dances, card games, and potluck suppers. The latter activities require a recreation hall. Fishing access from the bank and from fish-

ing structures is important, especially for Winter Texans.

Improvements have also been made in the coordination of festivals and events in the region. Especially noteworthy are efforts to link inland attractions. An example of this is the Tex-Mex Express' "Great Train Robbery." The train, which runs a tour service between Corpus Christi and Laredo, has a special tour to Alice where a hold up is staged and passengers stop for entertainment before returning to Corpus Christi.

Recreational needs projected in this plan do not include the recreation demand generated by out-of-state visitors to the region. The result is that the actual recreation needs for resources heavily used by tourists are understated. Fishing structures, beaches, boat ramps, and golf courses are some examples of facilities with needs underestimated because of the out-of-state demand. (Also, see State Summary, "Tourism and Outdoor Recreation" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For recreation providers:

Promote the availability and development of ranches for nonconsumptive recreation as a money-making venture for the landowner and as a means to diversify the attractions in the region.

For chambers of commerce and other appropriate entities:

Analyze the recreational preferences of Winter Texans and other tourists; then develop and implement a marketing plan for each tourist segment.

Do more to promote coastal events such as sailing and windsurfing.

Continue coordination in the scheduling of festivals and events to avoid unnecessary competition.

Educate locals on the economic benefits of tourism.

Issue: Resource Protection

Texas is the only state, out of thirty coastal states, that does not have an approved coastal zone management plan integrating efforts to address issues such as beach erosion or development in

high-risk areas. A number of agencies are involved in coastal issues but there is no lead agency. Various entities have arisen periodically to consider these issues, but most have been temporary. Local governments may expand their jurisdiction through annexation in an effort to control development. This is often a burden on already strained budgets.

Officials in coastal communities feel that the state's contribution to the beach cleaning program is too low. A movement by local officials is underway to try to move the beach cleaning program to the General Land Office (GLO). A proposal has been submitted to designate the Gulf of Mexico a "special area" under Annex V of the MARPOL treaty (the International Convention for the Prevention of Pollution from Ships) to prohibit dumping of solid waste from ships.

Dredging, disposal of dredge spoil, and discharge of industrial and domestic waste are related environmental issues in the region. The erosion of beaches and shorelines of the intracoastal waterway will have severe economic and recreational impacts. Beach nurturing stabilization projects have proved successful; but are costly and temporary. Access to saltwater resources is becoming a problem as increased private shoreline ownership and development continue to restrict access. Region residents report the need to acquire public access corridors to allow access for wide fishing and beach activities. A related issue is the acquisition of wetlands for protection. The region's reliance on natural resources for its tourist attractions requires a careful balance in the use of these resources. (Also, see State Summary, "Conserving Natural Resources for Recreational Use" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For governmental and private entities:

Develop and adopt a state coastal management plan.

Continue to work in the best interest of the beach cleaning programs.

Continue to address the need for habitat acquisition and protection, especially wetlands.

Address the need for public access corridors to saltwater resources.

Encourage project WILD instruction in schools and through parks and recreation programming.

For the Coastal Bend Council of Governments in conjunction with Corpus Christi State University, the U.S. Fish and Wildlife Service, and other entities:

Consider the development of a regional list of natural areas and environmentally sensitive sites.

RESOURCES

Population Trends

The 1995 population projection for the region is 606,536 which represents a 17.6 percent population increase from 1986 (figure 1). This is above the state-wide population growth of 13.8 percent. A comparison of age groups between the

region and the state reveals that the region has a higher proportion of people in two age categories: below nineteen years and above sixty years of age.

Resource Attractions

The Gulf, the Laguna Madre, and the bays are the star attractions in this

**Figure 1
Region 20 Characteristics**

GEOGRAPHY

| | | |
|-----------------------------|---|---------------------|
| Counties | = | 12 |
| Land area | = | 11,537 square miles |
| Elevation | = | 3' - 783' |
| Annual rainfall | = | 23.2 - 33.8 inches |
| January minimum temperature | = | 42 - 48°F |
| July maximum temperature | = | 92 - 98°F |
| Growing season | = | 285 - 319 days |

POPULATION 1986

| | | | |
|-----------------|----------------|----------|--------|
| Total | 515,865 | | |
| Counties | | | |
| Nueces | 298,309 | Duval | 13,397 |
| San Patricio | 59,268 | Live Oak | 9,615 |
| Jim Wells | 38,217 | Brooks | 9,072 |
| Kleberg | 32,997 | Refugio | 8,301 |
| Bee | 27,604 | McMullen | 944 |
| Aransas | 17,480 | Kenedy | 661 |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 606,536 |
| People per square mile | 52.6 |
| Ethnic composition: | |
| White | 43% |
| Black | 3% |
| Hispanic | 54% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|---------------|
| Recreation land | = | 200,432 acres |
| Developed recreation land | = | 5,636 acres |

Aransas National Wildlife Refuge
 Bayfront Arts and Science Park (Corpus Christi)
 Bob Hall Pier (Nueces County)
 Cargo Dock One (Corpus Christi)
 Choke Canyon State Park (Calliham)
 Choke Canyon State Park (South Shore)

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

Cole Park (Corpus Christi)
 Copano Bay State Fishing Pier
 Corpus Christi Marina (Corpus Christi)
 Dick Kleberg Park (Kleberg County)
 Fulton Mansion State Historical Park
 Goose Island State Park
 Guadalupe Delta Wildlife Management Area
 Hans Suter Park (Corpus Christi)
 Heritage Park (Corpus Christi)
 James Daughtrey Wildlife Management Area
 J. P. Luby Surf Park
 Kaufer Hubert Memorial Park
 Lake Corpus Christi State Park
 Mustang Island State Park
 North Beach (Corpus Christi)
 Oso Creek Parkway (Corpus Christi)
 Padre Island National Seashore
 Rockport Beach (Aransas County Navigation District)
 Taft Blackland Museum (Taft)
 Texas Maritime Museum (Rockport)
 Texas State Aquarium (Corpus Christi)

Lakes

Surface acres 48,703

| | <u>Surface Acres</u> |
|------------------------|----------------------|
| Alice City Lake | 700 |
| Choke Canyon Reservoir | 26,000 |
| Lake Corpus Christi | 21,900 |

Streams

Aransas River
 Atascosa River
 Frio River
 Guadalupe River
 Medio Creek
 Mission River
 Nueces River
 Oso Creek

Saltwater

Miles accessible Gulf frontage 35
 Surface acres saltwater bays 674,000

Alazan Bay Intracoastal Waterway
 Aransas Bay Laguna Madre
 Baffin Bay Mustang Island
 Cayo del Grullo Nueces Bay
 Copano Bay Oso Bay
 Corpus Christi Bay Padre Island
 Gulf of Mexico

region and provide a wide variety of recreational opportunities. All water-oriented recreational activities are growing in the region. Tournaments and special events are especially noteworthy. An example of a new event is the "Ultimate Yacht Race," an international competition to determine the fastest 30-foot monohull yacht. Good fishing spots are especially popular. An example is Kaufer-Hubert Memorial Park which provides boating access from the mainland to Baffin Bay, one of the best saltwater trout fishing areas.

Federal, state, and local entities offer regional attractions. The federal govern-

ment has the Padre Island National Seashore and the Aransas National Wildlife Refuge. The TPWD has a fishing pier and two parks with saltwater resources and two other parks offering freshwater recreational opportunities. It also has the Fulton Mansion, a state historical park. The GCCA-CP&L Marine Development Center has maricultural facilities and aquarium displays for the general public.

Inland, the primary regional attractions are Choke Canyon Lake and the hunting opportunities provided in Duval, Live Oak, and Brooks counties.

Recreation Supply

Nineteen eighty-six outdoor recreational resources/facilities are analyzed against 1990 projected population in this section. The recreational land in the region totaled 200,432 acres in 1986 when most of the resource inventory for this plan was conducted (table 1). The region has 353 acres of recreational land per thousand population and ranks fourth out of twenty-four regions (table A3). The state average is 209 acres per thousand population. The region ranks thirteenth in the number of developed acres per thousand population with ten

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 20, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|-------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | COMMERCIAL |
| Number of Parks/Rec. Areas | 2 | 2 | 0 | 1 | 7 | 2 | 0 | 0 | 0 | 33 | 237 | 11 | 100 | 395 |
| Total Parkland Acres | 126796 | 53125 | 0 | 0 | 8125 | 6000 | 0 | 0 | 0 | 1932 | 3284 | 232 | 938 | 200432 |
| Developed Land Acres | 1200 | 10 | 0 | 0 | 1094 | 0 | 0 | 0 | 0 | 652 | 1937 | 137 | 606 | 5636 |
| Developable Land Acres | 0 | 0 | 0 | 0 | 3079 | 0 | 0 | 0 | 0 | 889 | 1321 | 1 | 315 | 5605 |
| Preserved or Unsuitable for Development (Acres) | 125596 | 53115 | 0 | 0 | 3952 | 6000 | 0 | 0 | 0 | 391 | 26 | 95 | 16 | 189190 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 40 | 3 | 0 | 56 |
| Basketball Goals | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 23 | 43 | 0 | 5 | 73 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 38 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 18 | 10 | 50 | 84 |
| Campsites | 47 | 0 | 0 | 0 | 431 | 0 | 0 | 0 | 0 | 286 | 61 | 0 | 3106 | 3931 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 0 | 1320 | 0 | 0 | 0 | 0 | 300 | 0 | 0 | 0 | 1620 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 428 | 0 | 0 | 0 | 0 | 60 | 15 | 0 | 769 | 1272 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 6496 | 9430 | 0 | 0 | 0 | 0 | 6267 | 12304 | 1400 | 5736 | 41633 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 99 | 0 | 0 | 117 |
| Hiking Trail Miles | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Acres (BFS Suitable),FW | | | | | | | | | | | | | | 30448 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 |
| Picnic Tables | 15 | 0 | 0 | 0 | 412 | 0 | 0 | 0 | 0 | 423 | 459 | 72 | 152 | 1533 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 35 | 152 | 2 | 13 | 214 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 10 | 0 | 0 | 27 |
| Softball Fields | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 12 | 35 | 1 | 5 | 55 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 0 | 13700 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23550 | 37250 |
| Swimming, SW Sq.Yd. | 1232000 | 0 | 0 | 0 | 1004999 | 0 | 0 | 0 | 0 | 72537 | 129183 | 6000 | 64500 | 2509219 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 544 | 0 | 0 | 0 | 0 | 1058 | 12821 | 800 | 2603 | 17826 |
| Tennis Courts | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 18 | 41 | 4 | 3 | 67 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 1 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 8 | 0 | 0 | 17 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

acres. This compares to ten acres of developed acres per thousand population as the state average, forty-five acres for the region with the most developed acres, and five acres for the region with the lowest number of developed acres.

A comparison of facilities per thousand population reveals that recreational facilities in the region are about the same as the state average in the number of baseball and softball fields, basketball courts, and golf holes. The region is deficient in trails, areas for recreational vehicles, tennis courts, and soccer/football fields. Campsites, picnic tables, playgrounds, and swimming pool facilities in the region exceed the state average.

Of five coastal regions, this region ranks second in the number of saltwater boat ramp lanes and fishing structures per thousand population. Freshwater recreational resources are below the state average. The region has fifty-four surface acres of suitable recreational water per thousand population; the state average is sixty-seven surface water acres.

Potential and Proposed Resources

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the TPWD, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other developments.

The completion of the Oso Creek Parkway is one of the proposed projects of the city of Corpus Christi. A related project is the creation of botanical gardens adjacent to the Oso Creek Parkway by a private organization. The botanical gardens society and the city are cooperating to integrate these two projects.

The Texas Legislature has officially designated both the recently completed Texas Maritime Museum in Rockport and the Texas State Aquarium, scheduled for completion in 1990 in Corpus Christi, as state museums. The Port of Corpus Christi is renovating Cargo Dock One into an open pavilion to serve as a festival marketplace and serve as the site for special events. The Corpus Christi Greyhound Park will provide dog racing which will add to the recreational attractions of the region.

Ranchers in the region are exploring ventures for passive recreation such as wildlife observation.

The city of Taft has adopted a comprehensive plan. The parks component of the plan recommends the development of a 117-acre park site and the acquisition of twelve more acres of parkland by 1993.

The region has a tremendous potential to develop more trails and to promote birdwatching. The city of Sinton is considering the acquisition of a wooded floodplain and wetland area to provide trails and birdwatching. The city is seeking assistance to fund this project.

The GLO and the city of Corpus Christi are in the implementation stage of the Kennedy Causeway Master Plan to foster development that would complement and protect the natural resource base. Landscaping and a hike and bike trail over the causeway are being proposed.

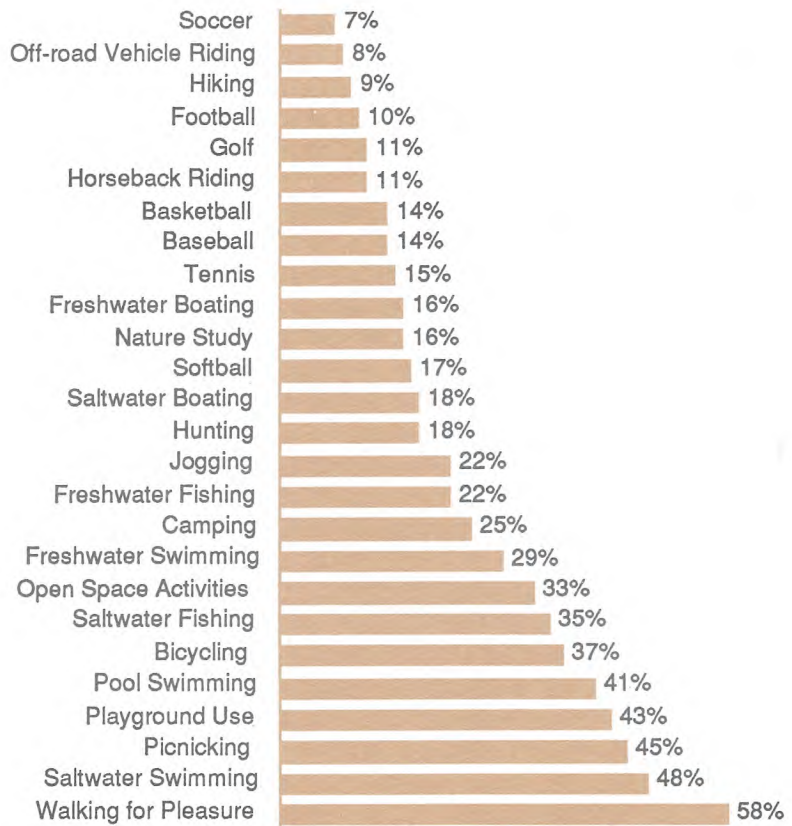
OUTDOOR RECREATION PARTICIPATION

Popular Activities

Figure 2 shows the percentage of the population participating in recreational activities. For example, over half of the population walk for pleasure and about half swim in saltwater resources.

Table 2 projects per capita participation statewide and for region residents both in the region and in all twenty-four regions. Activities that do not show per capita participation for all twenty-four regions on the table are considered urban activities, meaning that these activities usually occur close to home

Figure 2
Region 20 Projected 1995 Percentage
of Population Participating



Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this figure and an explanation of research methods. See Appendix D for an explanation of terms.



Organized beach clean-ups and adopt-a-beach programs are instrumental in maintaining attractive beaches.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 20 and Texans
(in Annual User Occasions)

| <u>Activity/Facility Use</u> | <u>Projected Per Capita Participation</u> <u>Generated By</u> | | |
|-----------------------------------|--|---------------------------------|--|
| | <u>Residents of Region 20</u> <u>Occurring In</u> | | |
| | <u>Region</u> <u>20 Only</u> | <u>All 24</u> <u>Regions</u> | <u>All Texans</u> <u>Statewide Avg.</u> |
| Boat Ramp Lanes, FW | 0.9 | 1.0 | 1.3 |
| Boat Ramp Lanes, SW | 0.8 | 0.8 | 0.3 |
| Boating (Pleasure), FW | 0.4 | 0.6 | 0.6 |
| Boating (Pleasure), SW | 0.2 | 0.2 | 0.1 |
| Camping | 0.8 | 1.6 | 1.7 |
| Fishing, FW | 1.5 | 1.7 | 2.4 |
| Fishing from Banks | 0.5 | 0.6 | 0.8 |
| Fishing from Boats | 0.7 | 0.8 | 1.1 |
| Fishing from Structures | 0.3 | 0.4 | 0.5 |
| Fishing, SW | 2.1 | 2.2 | 0.7 |
| Fishing from Boats | 0.9 | 1.0 | 0.3 |
| Fishing from Shore | 0.3 | 0.4 | 0.1 |
| Fishing from Structures | 0.9 | 0.9 | 0.3 |
| Hiking | 0.3 | 0.3 | 0.4 |
| Hunting | 0.9 | 1.4 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.0 | 1.2 | 1.5 |
| Nature Study | 1.0 | 1.0 | 0.9 |
| Picnicking | 1.8 | 2.0 | 1.9 |
| Swimming, FW | 1.2 | 1.9 | 2.1 |
| Swimming, SW | 2.3 | 2.4 | 1.2 |
| Baseball | 2.2 | | 1.5 |
| Basketball | 1.5 | | 1.6 |
| Bicycling | 12.2 | | 10.7 |
| Bicycling on Trails | 0.8 | | 0.7 |
| Football | 0.8 | | 0.8 |
| Golf | 1.3 | | 1.3 |
| Horseback Riding | 0.7 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 5.9 | | 5.4 |
| Jogging/Running on Trails | 1.8 | | 1.7 |
| Off-road Vehicle Riding | 0.9 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.2 | | 0.3 |
| Open Space Activities | 3.0 | | 3.2 |
| Playground Use | 5.3 | | 4.8 |
| Soccer | 1.3 | | 1.2 |
| Softball | 1.9 | | 1.8 |
| Swimming, Pool | 5.8 | | 6.4 |
| Tennis | 1.4 | | 1.3 |
| Walking (Pleasure/Exercise) | 14.7 | | 14.8 |
| Walking on Trails | 3.4 | | 3.5 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Asterisks indicate value is less than .1 occasion per capita. See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

and not outside the region of residence. Statewide per capita participation reflects all participation by all Texans within the state. Saltwater fishing and swimming have the highest user occasions of the resource-based recreational activities. When considering trail activities taking place on and off trails, walking, cycling, and jogging are the urban activities with the highest number of user occasions per capita. Swimming pool and playground use have the highest user occasions, when only the trail activities actually occurring on trails are considered.

Recreation Travel Patterns

Recreationists are generally willing to travel longer distances and to undertake overnight trips for resource-based recreational resources. Figures 3 and 4 show the travel patterns in relationship to region 20. Eighty-one percent of the region residents stay in the region to participate in these activities. The remaining 19 percent go elsewhere in Texas. The Middle Rio Grande region and the Alamo region (region 18) are the primary destinations for those leaving the region.

Forty-two percent of the recreation activity occurring in region 20 is generated by region residents. The remaining 58 percent is generated by Texans visiting the region. The highest percentage of visitors comes from the Alamo region, which is about 19 percent.

Projected Participation

Table 3 projects the demand that will be placed on region 20 rural recreational resources both by region residents and by Texans from outside the region. For example, in 1995, the most popular resource-based activities in the region will be saltwater swimming and fishing, and camping. It should be noted that demand generated by out-of-state visitors is not included.

Table 4 shows the same projections for those activities that usually occur close to home and involve region residents primarily.

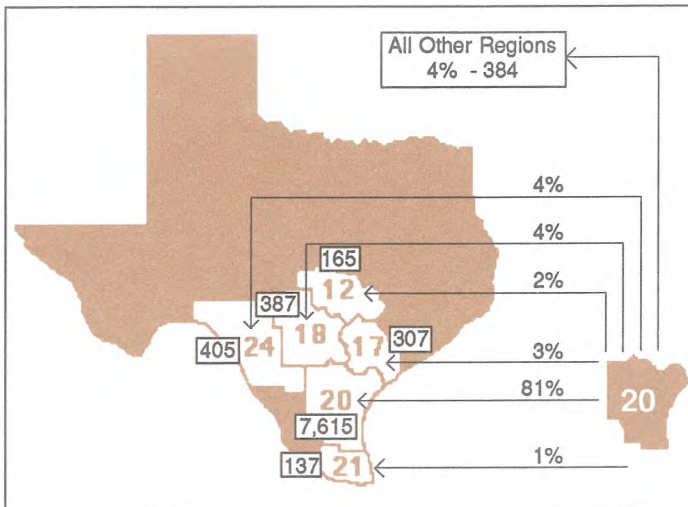


Figure 3
Destinations of Region 20 Residents
for Resource-based Activities

9,400 Annual User Occasions (000's)
Generated by Region 20 Residents, 1995

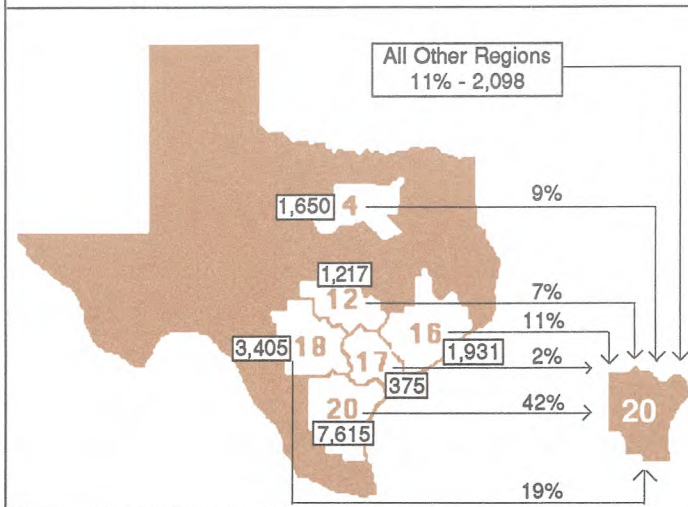


Figure 4
Origins of Participants Who Recreated
in Region 20 for Resource-based Activities

18,292 Annual User Occasions (000's)
Occurring in Region 20, 1995

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting. See Appendix B for key points to interpret these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 20 by Region 20 Residents,
Texans from Outside Region 20, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 20 (in 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|------|----------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | | | |
| | Residents of Region 20 | | | Texans from Outside Region 20 | | | Regional Totals | | |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 491 | 523 | 556 | 122 | 131 | 140 | 613 | 654 | 696 |
| Boat Ramp Lanes, SW | 462 | 490 | 518 | 838 | 908 | 978 | 1299 | 1397 | 1496 |
| Boating (Pleasure), FW | 255 | 271 | 286 | 44 | 47 | 49 | 299 | 317 | 335 |
| Boating (Pleasure), SW | 136 | 144 | 152 | 388 | 420 | 452 | 525 | 564 | 604 |
| Camping | 435 | 465 | 495 | 1644 | 1770 | 1896 | 2079 | 2235 | 2392 |
| Fishing, FW | 856 | 916 | 975 | 258 | 277 | 297 | 1113 | 1193 | 1272 |
| Fishing from Banks | 279 | 299 | 318 | 84 | 90 | 97 | 363 | 389 | 415 |
| Fishing from Boats | 383 | 410 | 437 | 115 | 124 | 133 | 499 | 534 | 570 |
| Fishing from Structures | 193 | 207 | 220 | 58 | 63 | 67 | 252 | 270 | 288 |
| Fishing, SW | 1227 | 1303 | 1379 | 1903 | 2063 | 2224 | 3130 | 3366 | 3603 |
| Fishing from Banks | 536 | 570 | 603 | 832 | 902 | 972 | 1368 | 1472 | 1575 |
| Fishing from Boats | 196 | 208 | 220 | 304 | 330 | 355 | 500 | 538 | 576 |
| Fishing from Structures | 495 | 525 | 556 | 767 | 832 | 896 | 1261 | 1357 | 1452 |
| Hiking | 150 | 160 | 171 | 100 | 107 | 115 | 250 | 268 | 286 |
| Hunting | 532 | 565 | 597 | 530 | 577 | 623 | 1063 | 1141 | 1220 |
| Lake Use (BFS Suitable), FW | 560 | 597 | 634 | 140 | 150 | 160 | 700 | 747 | 794 |
| Nature Study | 551 | 593 | 634 | 505 | 552 | 598 | 1057 | 1145 | 1232 |
| Picnicking | 1027 | 1086 | 1145 | 429 | 457 | 486 | 1456 | 1544 | 1631 |
| Swimming, FW | 681 | 718 | 755 | 69 | 73 | 78 | 750 | 791 | 833 |
| Swimming, SW | 1328 | 1395 | 1461 | 4075 | 4333 | 4592 | 5403 | 5727 | 6053 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Table 4
Projected Outdoor Recreation Participation
in Region 20 by Residents of Region 20, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (in 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 1284 | 1362 | 1439 |
| Basketball | 882 | 936 | 991 |
| Bicycling | 6959 | 7385 | 7811 |
| Bicycling on Trails | 429 | 455 | 481 |
| Football | 438 | 465 | 492 |
| Golf | 745 | 807 | 869 |
| Horseback Riding | 411 | 434 | 457 |
| Horseback Riding on Trails | 106 | 111 | 117 |
| Jogging/Running | 3391 | 3559 | 3728 |
| Jogging/Running on Trails | 1044 | 1096 | 1148 |
| Off-road Vehicle Riding | 498 | 525 | 553 |
| ORV Riding on Trails | 98 | 103 | 108 |
| Open Space Activities | 1763 | 1849 | 1934 |
| Playground Use | 3032 | 3195 | 3357 |
| Soccer | 716 | 761 | 806 |
| Softball | 1107 | 1168 | 1229 |
| Swimming, Pool | 3323 | 3520 | 3717 |
| Tennis | 813 | 862 | 912 |
| Walking (Pleasure/Exercise) | 8297 | 8917 | 9537 |
| Walking on Trails | 1942 | 2088 | 2233 |



The private sector plays a significant role in the provision of outdoor recreation opportunities in region 20.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Regionwide, projections through the year 2000 show no needs for saltwater fishing structures, golf, freshwater lake surface acres for recreation, and picnic tables (table 5). Since these figures are regional aggregates and out-of-state participation is not estimated, local needs assessments should be conducted to determine community needs within the region. Table 6 is based on table 5 and ranks the resources/facilities needed in the region to meet all projected in-state participation.

This region has a wide diversity of water-related activities, such as sailing, regattas, and sailboarding, which need support facilities, but are not analyzed in this plan. The scope of the recreational activities analyzed in the plan is defined by the type of facilities that the LWCF/LPF support and by the significance of the recreational activity statewide.

Providers' Responsibilities

Table 7 shows the resource/facility needs for 1995 and makes recommendations on how to meet these needs by

administration. By 1995 the region will need 1,830 more acres of developed land for recreation. It is recommended that cities and counties provide about 63 percent of the need, the federal and state governments about 10 percent each, and the commercial sector about 13 percent. Saltwater and freshwater boat ramps combined indicate a need for 108 lanes by 1995. About 42 percent of the deficit is assigned to the commercial sector and about 46 percent to local governments. The remainder is divided among the federal and state governments and river authorities.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 20, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|-------------|-------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 56 | 38 | 44 | 49 |
| Basketball Goals | 73 | 33 | 40 | 47 |
| Boat Ramp Lanes, FW | 38 | 44 | 49 | 55 |
| Boat Ramp Lanes, SW | 84 | 49 | 59 | 69 |
| Campsites | 3931 | * | 232 | 523 |
| Fishing Structures, FW Lin.Yd. | 1272 | 417 | 537 | 658 |
| Fishing Structures, SW Lin.Yd. | 41633 | * | * | * |
| Golf Holes | 117 | * | * | * |
| Hiking Trail Miles | 2 | 32 | 34 | 37 |
| Horseback Riding Trail Miles | 0 | 15 | 16 | 17 |
| Lake Acres (BFS Suitable), FW | 30448 | * | * | * |
| Off-road Vehicle Riding Acres | 20 | 64 | 69 | 73 |
| Picnic Tables | 1533 | * | * | * |
| Playground Areas, Equipped | 214 | 75 | 90 | 106 |
| Soccer/Football Fields | 27 | 45 | 50 | 54 |
| Softball Fields | 55 | 25 | 29 | 33 |
| Swimming, FW Sq.Yd. (000) | 37 | 143 | 153 | 163 |
| Swimming, SW Sq.Yd. (000) | 2509 | 614 | 801 | 989 |
| Swimming, Pool Sq.Yd. (000) | 18 | 3 | 5 | 6 |
| Tennis Courts | 67 | 145 | 158 | 171 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 17 | 42 | 46 | 50 |
| Developed Land Acres | | 1562 | 1830 | 2114 |

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Source: CPS, CPB, Parks Division, TPWD, 1988.

Note: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Table 6
Ranking of Outdoor Recreation Facility/Resource
Needs in Region 20 Through 1995

| Need Rank | Facility/Resource |
|-----------|--|
| 1 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 2 | Swimming, FW Sq. Yd. |
| 3 | Hiking Trail Miles |
| 4 | Soccer/Football Fields |
| 5 | Boat Ramp Lanes, SW |
| 6 | Playground Areas, Equipped |
| 7 | Boat Ramp Lanes, FW |
| 8 | Swimming, SW Sq. Yd. |
| 9 | Tennis Courts |
| 10 | Baseball Fields |
| 11 | Off-Road Vehicle Riding Acres |
| 12 | Swimming, Pool Sq. Yd. |
| 13 | Softball Fields |
| 14 | Fishing Struc., FW Lin.Yd. |
| 15 | Horseback Riding Trail Miles |
| 16 | Basketball Goals |
| 17 | Campsites |
| 18 | Golf Holes |
| 19 | Fishing Struc., SW Lin.Yd. |
| 20 | Picnic Tables |
| 21 | Lake Acres (BFS Suitable) |

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 20, by Administration

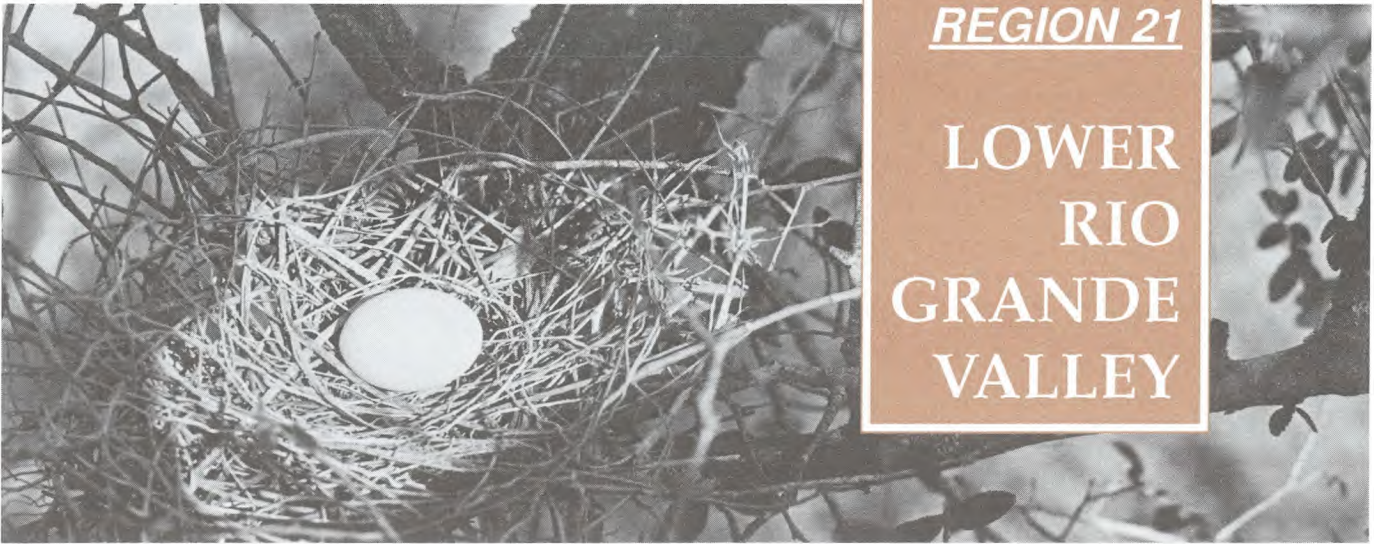
| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|------------|------------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 33 | 0 | 0 |
| Basketball Goals | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 32 | 0 | 0 |
| Boat Ramp Lanes, FW | 49 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 5 | 15 | 10 | 0 | 15 |
| Boat Ramp Lanes, SW | 59 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 10 | 9 | 0 | 30 |
| Campsites | 232 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 100 |
| Fishing Structures, FW Lin.Yd. | 537 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 100 | 200 | 0 | 137 |
| Fishing Structures, SW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 34 | 0 | 6 | 0 | 0 | 6 | 6 | 0 | 0 | 6 | 10 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 16 | 10 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Off-road Vehicle Riding Acres | 69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 10 | 0 | 30 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 90 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 75 | 0 | 0 |
| Soccer/Football Fields | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 35 | 0 | 5 |
| Softball Fields | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 25 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 91 | 0 | 62 |
| Swimming, SW Sq.Yd.(000) | 801 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 401 | 300 | 0 | 100 |
| Swimming, Pool Sq.Yd.(000) | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| Tennis Courts | 158 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | 80 | 0 | 15 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 46 | 6 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 10 | 18 | 0 | 6 |
| Developed Land Acres | 1830 | 131 | 48 | 0 | 0 | 100 | 96 | 0 | 0 | 54 | 479 | 678 | 0 | 244 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



As competition for tourists becomes more intense, cities like Corpus Christi are developing promotional themes.



REGION 21

LOWER RIO GRANDE VALLEY

The region's birdwatching opportunities led a local economic development foundation to develop a major promotional piece to attract birdwatchers.

ISSUES AND RECOMMENDATIONS

Issue: Resource Protection

This region is heavily dependent on natural resources for its major recreational activities: swimming, fishing, birdwatching, nature study, hunting, and camping. Most of these activities attract significant visitation which results in economic benefits to the region. Region residents have identified the protection of the natural resources supporting these activities as one of the region's top priorities. Habitat acquisition and habitat restoration are a couple of resource protection measures used.

Another protection mechanism is the Texas Coastal Preserves System established in 1987 by the Texas Parks and Wildlife Department (TPWD) and the General Land Office (GLO) to protect unique natural areas and fragile biological habitats on coastal state lands. The region has one of the first two coastal preserves established with the designation of South Bay, a 3,419-acre estuarine area.

The U.S. Fish and Wildlife Service (USFWS) developed a land protection plan for the Lower Rio Grande Valley in 1983. The plan identifies 107,500 acres that need protection to maintain ten distinct wildlife communities. Of special concern is habitat protection of endan-

gered species such as the jaguarundi, ocelot, bald eagle, peregrine falcon, and brown pelican. Only about twenty-seven thousand acres are in the hands of conservation agencies and organizations; the rest is held by about a thousand private landowners.

The McAllen Botanical Gardens, the Valley Nature Center, and Project WILD instruction are some of the environmental gains made since the 1985 TORP. Trail activities and nature observation in the region are on the rise. The USFWS reports peak visitation at the national wildlife refuges in the region. In fact, USFWS officials had to develop a list of other resources offering a similar outdoor experience because of the heavy demand at the refuges. This would indicate that open space for passive recreation is needed in urban areas close to the population. This demand, however, is either not articulated to local officials or not recognized.

The apparent lack of interest in urban open space is disconcerting, especially because these resources require minimum funds after acquisition to provide a recreational experience. Some of the resources that could be used are canals, holding ponds, levees, and vacant land. Park professionals indicate that constituencies generally press for

immediate development of parkland as soon as it is acquired. Residents hope that the region will appreciate the value of urban open space well before it approaches the population densities of areas such as Dallas and Houston.

Texas is the only state, out of thirty coastal states, that does not have an approved coastal zone management plan with an integrated approach to address issues such as beach erosion and development in high-risk areas. A number of agencies are involved in coastal issues, but there is no lead agency. Various entities have arisen periodically to consider these issues, but most have been temporary.

Officials in coastal communities feel that the state's contribution to the beach cleaning program is too low. A movement by local officials is underway to try to move the beach cleaning program to the GLO. The ratification of Annex V of the MARPOL treaty (the International Convention for the Prevention of Pollution from Ships) has resulted in a proposal to designate the Gulf of Mexico a "special area" under Annex V to prohibit dump-



ing of solid waste from ships.

Region residents suggested that undeveloped areas such as Boca Chica Beach be designated under the Coastal Barrier Resources System. Another resource management recommendation was the banning of off-road vehicles (ORVs) from sand dunes. (Also, see State Summary, "Conserving Natural Resources for Recreational Use" under "Outdoor Recreation Issues and Recommendations.")

Tourism is a key industry which is largely dependent on the region's natural resource base. This requires a balanced approach to development. Water quality standards for recreation should be maintained and habitat conservation efforts should continue. (Also, see State Summary, "Tourism and Outdoor Recreation" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For governmental and private entities:

Develop and adopt a state coastal management plan.

Support the land protection plan of the USFWS.

Encourage passage of stiffer anti-litter laws and better enforcement.

Continue to encourage Project WILD instruction.

Continue to work in the best interest of the beach cleaning programs.

For federal, state, and private conservation entities:

Work with local governments on the need for habitat acquisition and protection.

Assist communities to inventory and assess urban open space such as vacant land.

Issue: Funding

Budget cutbacks resulting from the economic decline have been reflected in lower maintenance standards. Recreation providers report that vandalism and theft of items such as restroom fixtures, plants, and fences compound the problem. Some of the acts of vandalism have included setting facilities on fire, posing serious safety problems.

It has been noted that communities that are unable to maintain existing facilities are receiving Land and Water Conservation Fund and Local Park Fund (LWCF/LPF) grants for land acquisition and development. Some local officials suggest that the applicant's maintenance record on all sites, whether previously supported by a grant or not, should be a criterion in the application process. Another suggestion is that part of the grant fund be used for maintenance.

Some region residents feel that unincorporated communities have the greatest need for facilities. Another problem cited is that some eligible sponsors of grant applications cannot generate their 50 percent match and do not have skilled grantsmen to prepare a grant application. It was also suggested that the LPF criteria be separated from the LWCF criteria and be modified to reflect Texas needs. (Also, see State Summary, "Financing Parks and Recreation" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For recreation providers:

Support federal legislation to establish a dedicated trust fund, or similar mechanism, to provide funding for outdoor recreation.

Establish cooperative development/maintenance agreements.

Encourage "adopt-a-park" programs to encourage public involvement.

Participate in the review of the open project selection process and provide input to make it responsive to changing needs.

Make maximum use of federal, state, local government, and private grants and assistance programs.

For the Texas Parks and Wildlife Department:

Continue to assess the input provided on the LWCF/LPF during the review of the project selection criteria.

Continue to act as a clearinghouse for information on federal, state, local government, and private grants and assistance.

Increase efforts to provide outdoor recreation technical assistance to local levels of government.

Issue: Liability

Recreation providers indicate that they are finding it increasingly difficult to afford insurance. The "pay to play" attitude in some communities has compounded their liability problems. The provisions of the Open Beaches Act and the need to control vehicular traffic on beaches for public safety are often difficult to balance. Recreation providers suggest that risk management seminars covering design, construction, and maintenance be developed. (Also, see State Summary, "Liability and Outdoor Recreation" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For recreation providers:

Institute comprehensive risk management plans and place one person in charge of safety programs, with authority to correct problems.

Educate park staff on current liability statutes and case law.

Consider requiring user groups such as leagues and teams to carry their own accident insurance or to participate in self-insurance pools.

For the Texas Legislature:

Enact further insurance and tort law reforms to limit liability of public and private recreation providers and volunteers.

Issue: Coordination with Mexico

Region officials have recognized the need to coordinate with Mexico on several issues: habitat protection, improvement of recreational opportunities, and coordination of tournaments and special events. During the development of the 1985 TORP, officials recommended that the TPWD play a role in coordinating these issues with Mexico. In response to this issue, the TPWD, the National Park Service, and the Governor's Office organized and participated in a conference on parks and wildlife with the four Mexican states bordering Texas. The first conference was held in Laredo in 1985, the second one in Saltillo in 1988, and the third one was held in McAllen in 1989. Training programs

and information exchanges have evolved from these conferences. Federal and local officials have noted the need for a Texas state agency to take a leadership role in exchanges with Mexico on outdoor recreation issues, and have recommended that the TPWD take such a role. (Also, see State Summary, "Improving Outdoor Recreation Implementation Programs" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

Federal, state, and local officials should:

Continue to coordinate with Mexico on resource protection and outdoor recreation issues.

Establish international task forces to address issues requiring coordination.

RESOURCES

Population Trends

Between 1986 and 1995, it is projected that the region will have a population growth of 108,015 which translates into a 17 percent growth (figure 1). This is above the statewide rate of growth of 14 percent.

The population of the region is young compared to the statewide figures. Twenty-two percent of the region's population is less than ten years old, compared to 16 percent statewide. In the ten to nineteen age range, the region has 20 percent; the state has 16 percent.

Of the three counties in the region, Hidalgo County has the largest popula-

tion. It is also projected to have the highest rate of growth.

Resource Attractions

The main regional attractions are saltwater related and concentrated on South Padre Island. An origin-destination participation survey conducted by the TPWD ranked recreational destinations as follows: South Padre Island, Boca Chica Beach, Bentsen-Rio Grande Valley State Park, Lower Laguna Madre, and Andy Bowie Park on South Padre Island. Anzalduas Park and Delta Lake ranked seventh and eighth, respectively, as recreational destinations.

Figure 1
Region 21 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|--------------------|
| Counties | = | 3 |
| Land area | = | 3,063 square miles |
| Elevation | = | 3' - 325' |
| Annual rainfall | = | 19.9 - 25.8 inches |
| January minimum temperature | = | 49 - 51°F |
| July maximum temperature | = | 95 - 97°F |
| Growing season | = | 327 - 341 days |

POPULATION 1986

Total 637,959

| | |
|----------|---------|
| Counties | |
| Hidalgo | 363,879 |
| Cameron | 255,651 |
| Willacy | 18,429 |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 745,974 |
| People per square mile | 243.5 |
| Ethnic composition: | |
| White | 20% |
| Black | 0% |
| Hispanic | 80% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 73,212 acres |
| Developed recreation land | = | 7,377 acres |

Adolph Thomae, Jr. Park (Cameron County)
Andy Bowie Park (Cameron County)
Anzalduas Park (Hidalgo County)
Arroyo Colorado State Park

Boca Chica Beach
Bentsen-Rio Grande Valley State Park
Isla Blanca Park (Cameron County)
Laguna Atascosa National Wildlife Refuge
Las Palomas Wildlife Management Area
Padre Island National Seashore
Port Isabel Lighthouse State Historical Park
Queen Isabella State Fishing Pier
Resaca De La Palma State Park
Santa Ana National Wildlife Refuge

Lakes

Surface acres 16,756

Surface Acres

| | |
|----------------------|-------|
| Anzalduas Reservoir | 1,750 |
| Delta Lake | 2,371 |
| Donna Reservoir | 340 |
| Edinburg Lake | 250 |
| Lake La Joya | 525 |
| San Benito Reservoir | 973 |

Streams

Arroyo Colorado
Rio Grande

Saltwater

Miles accessible Gulf frontage 17
Surface acres saltwater bays 101,000

Gulf of Mexico
Intracoastal Waterway
Laguna Madre
South Bay
South Padre Island

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

The TPWD has five sites that are part of the state park system plus a number of sites that make up most of the Las Palomas Wildlife Management Area. Two of the units of the state park system, Arroyo Colorado and Resaca de la Palma, are currently closed.

Recreation Supply

The recreational land in the region totaled 73,212 acres in 1986 when most of the resource inventory for this plan was conducted. This represents a 7.6 percent increase from the 68,031 acres reported in the 1985 TORP. The region has 108 acres of recreational land per

thousand population and ranks 14th when compared to the other twenty-three regions. The state average is 209 acres (table 1). The total number of recreational sites increased from 215 to 470, most of which are commercial campgrounds not previously inventoried. The state average number of sites per thousand population is .43, compared to the region's .70 which ranks seventh compared to the rest of the state (table A3).

The region is below the state average in the number of softball, baseball, and soccer/football fields; tennis courts; hiking and horseback riding trails; and

areas for off-road vehicles. Resources/facilities in the region exceeding the state average include campsites, picnic tables, playgrounds, golf, basketball, swimming pools, and walking trails.

Of five coastal regions, this region ranks last, on a per capita basis, in saltwater fishing structures and is penultimate in the number of saltwater swimming areas. The region is among the lowest in freshwater resources. It has five surface acres of freshwater per thousand population for recreational activities, compared to the state average of sixty-seven acres. Better access to existing freshwater resources could

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 21, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | TOTAL | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|-------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | | COMMERCIAL |
| Number of Parks/Rec. Areas | 1 | 3 | 0 | 2 | 5 | 3 | 0 | 0 | 0 | 14 | 157 | 6 | 279 | 470 |
| Total Parkland Acres | 9123 | 51491 | 0 | 0 | 2323 | 1133 | 0 | 0 | 0 | 783 | 2198 | 37 | 6124 | 73212 |
| Developed Land Acres | 600 | 15 | 0 | 0 | 98 | 0 | 0 | 0 | 0 | 325 | 1517 | 35 | 4787 | 7377 |
| Developable Land Acres | 0 | 0 | 0 | 0 | 1871 | 0 | 0 | 0 | 0 | 435 | 653 | 2 | 1254 | 4213 |
| Preserved or Unsuitable for Development (Acres) | 8523 | 51477 | 0 | 0 | 355 | 1133 | 0 | 0 | 0 | 24 | 28 | 0 | 83 | 61621 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 55 | 1 | 0 | 57 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 88 | 1 | 6 | 95 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 4 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 6 | 15 | 28 |
| Campsites | 0 | 0 | 0 | 0 | 144 | 0 | 0 | 0 | 0 | 478 | 6 | 0 | 30667 | 31295 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 8800 | 500 | 0 | 30 | 9430 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 32 | 62 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 7298 | 1296 | 0 | 0 | 0 | 0 | 0 | 200 | 0 | 2604 | 11398 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 0 | 141 | 231 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 3300 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| Picnic Tables | 0 | 3 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 957 | 1051 | 2 | 1104 | 3148 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 10 | 122 | 1 | 55 | 189 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 2 | 0 | 33 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 25 | 3 | 0 | 31 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1500 | 0 | 0 | 1500 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100000 | 0 | 0 | 100 | 100100 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1066 | 20961 | 0 | 0 | 22027 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 82 | 9 | 13 | 104 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 17 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 31 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

improve recreational opportunities. Also, the multi-use of local reservoirs should be encouraged.

Potential and Proposed Resources

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the TPWD, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other developments.

The city of Harlingen developed plans for a trail along the Arroyo Colorado that would connect three city parks. To encourage multi-recreational use, the trail should keep as much of the native vegetation as possible so that nature study can be enjoyed, as opposed to simply encouraging traditional urban recreational activities.

The plans for Playa del Rio are still in evolutionary stages. Proponents of the project claim that the project will actually improve the quality of the wetland; opponents claim that it will be totally destructive.

The primary emphasis of local governments appears to be in redevelopment projects.

The Native Plant Project is proposing the development of an arboretum in the Valley.

The Palo Alto Battlefield is an authorized national historic site, but appropriations are needed to establish the national historical park, which would protect about a thousand acres.

The development of some basic sanitary facilities at Boca Chica Beach has been proposed by local officials.

OUTDOOR RECREATION PARTICIPATION

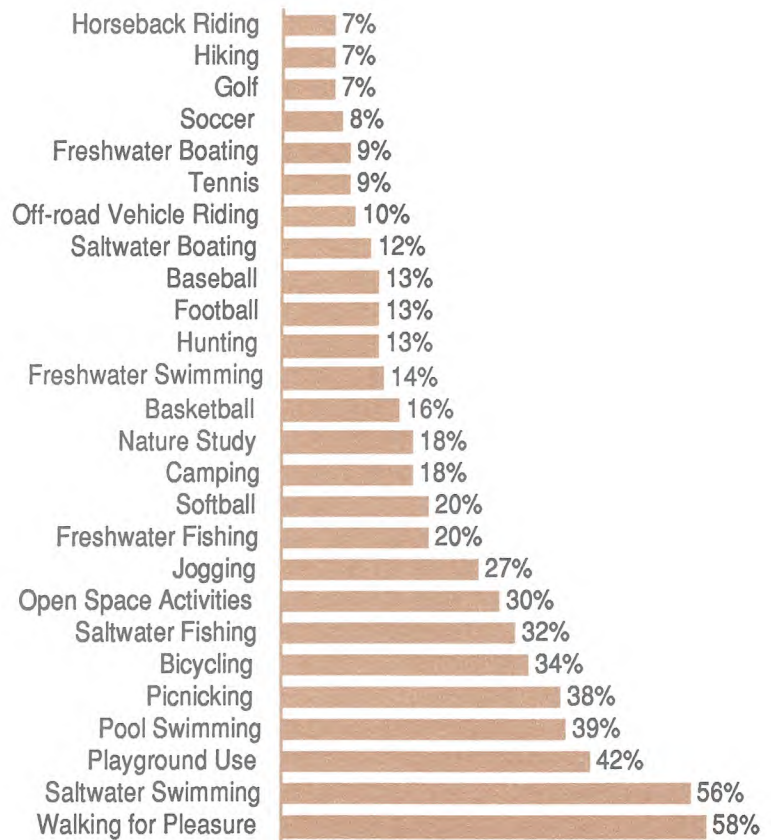
Popular Activities

Recreation participation by out-of-state visitors is not included in these estimates. This is especially significant in regions such as this where out-of-state tourism is high year-round. Also, it especially underestimates the demand for those resources most heavily used by these tourists. The heavy demand for golf by Winter Texans is a case in point.

Figure 2 shows the percent of region residents that participate in each of the twenty-six activities analyzed. These figures are especially useful to determine the recreational resources and facilities that serve the greatest number of region residents. Region residents exceed state averages in over ten activities, most notably saltwater recreational activities, jogging, softball and baseball, and nature study.

Table 2 projects per capita participation statewide and for region residents both in the region and in all twenty-four regions. Activities that do not show per capita participation for all twenty-four regions on the table are considered urban activities, meaning that these activities usually occur close to home and not outside the region of residence. Statewide per capita participation reflects all participation by all Texans within the state. Of the rural activities, swimming and fishing in saltwater and picnicking have the highest participation occasions per year for each region resident. Fitness activities such as walking, cycling, and jogging top the urban activities. When only the participation occurring on trails is considered, the top urban activities are pool swimming and playground activities.

Figure 2
Region 21 Projected 1995 Percentage
of Population Participating



Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this figure and an explanation of research methods. See Appendix D for an explanation of terms.



Where lands have been cleared of mature trees, nest boxes provide critical nesting sites for elf owls and other cavity nesting species.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 21 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-----|------------------------------|
| | Residents of Region 21 | | |
| | Occurring In | | All Texans Statewide Avg. |
| Region 21 Only | All 24 Regions | | |
| Boat Ramp Lanes, FW | 0.5 | 0.7 | 1.3 |
| Boat Ramp Lanes, SW | 0.8 | 0.8 | 0.3 |
| Boating (Pleasure), FW | 0.1 | 0.2 | 0.6 |
| Boating (Pleasure), SW | 0.3 | 0.3 | 0.1 |
| Camping | 0.6 | 1.2 | 1.7 |
| Fishing, FW | 1.2 | 1.5 | 2.4 |
| Fishing from Banks | 0.4 | 0.5 | 0.8 |
| Fishing from Boats | 0.5 | 0.7 | 1.1 |
| Fishing from Structures | 0.3 | 0.3 | 0.5 |
| Fishing, SW | 2.0 | 2.0 | 0.7 |
| Fishing from Boats | 0.9 | 0.9 | 0.3 |
| Fishing from Shore | 0.3 | 0.3 | 0.1 |
| Fishing from Structures | 0.8 | 0.8 | 0.3 |
| Hiking | 0.2 | 0.3 | 0.4 |
| Hunting | 0.3 | 1.0 | 1.3 |
| Lake Use (BFS Suitable), FW | 0.6 | 0.8 | 1.5 |
| Nature Study | 1.1 | 1.1 | 0.9 |
| Picnicking | 1.6 | 1.7 | 1.9 |
| Swimming, FW | 0.6 | 1.0 | 2.1 |
| Swimming, SW | 2.7 | 2.7 | 1.2 |
| Baseball | 1.9 | | 1.5 |
| Basketball | 1.8 | | 1.6 |
| Bicycling | 12.0 | | 10.7 |
| Bicycling on Trails | 0.7 | | 0.7 |
| Football | 1.1 | | 0.8 |
| Golf | 0.9 | | 1.3 |
| Horseback Riding | 0.5 | | 0.7 |
| Horseback Riding on Trails | 0.1 | | 0.2 |
| Jogging/Running | 7.3 | | 5.4 |
| Jogging/Running on Trails | 2.2 | | 1.7 |
| Off-road Vehicle Riding | 1.1 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.2 | | 0.3 |
| Open Space Activities | 2.9 | | 3.2 |
| Playground Use | 5.4 | | 4.8 |
| Soccer | 1.3 | | 1.2 |
| Softball | 2.2 | | 1.8 |
| Swimming, Pool | 5.8 | | 6.4 |
| Tennis | 0.9 | | 1.3 |
| Walking (Pleasure/Exercise) | 14.6 | | 14.8 |
| Walking on Trails | 3.4 | | 3.5 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Asterisks indicate value is less than .1 occasion per capita. See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Recreation Travel Patterns

Recreationists are generally willing to travel longer distances and to undertake overnight trips for resource-based recreational resources. Figures 3 and 4 show the travel patterns in relationship to region 21. Eighty-two percent of the region residents stay in the region to participate in recreational activities; the remaining 18 percent go elsewhere in Texas. Most of those leaving the region go to region 19, which is the Falcon-Laredo area.

Seventy-four percent of the recreation activity occurring in region 21 is generated by region residents; the remaining 26 percent is generated by Texas visitors from outside the region. The highest participation from any one region comes from the Dallas-Fort Worth area with 8 percent. The activities more likely to entice visitation to the region are saltwater swimming and fishing and camping.



Heavy visitation at South Padre Island beaches poses serious safety and liability problems for recreation providers.

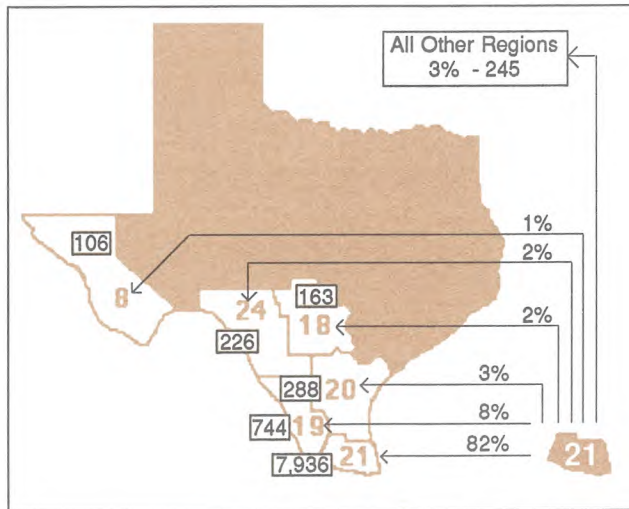


Figure 3
Destinations of Region 21 Residents
for Resource-based Activities

9,708 Annual User Occasions (000's)
Generated by Region 21 Residents, 1995

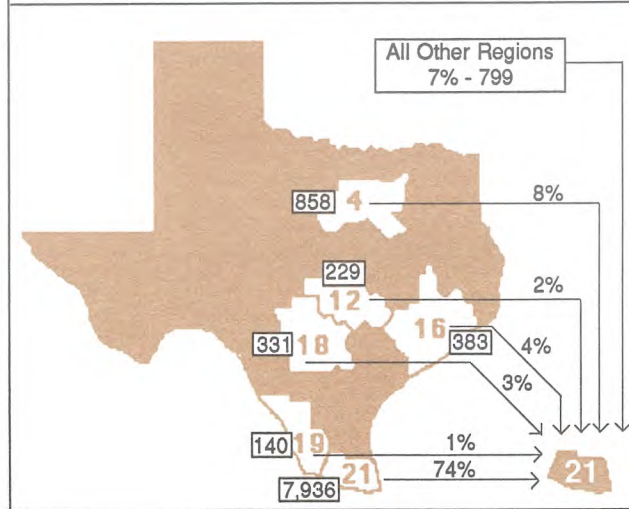


Figure 4
Origins of Participants Who Recreated
in Region 21 for Resource-based Activities

10,677 Annual User Occasions (000's)
Occurring in Region 21, 1995

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting. See Appendix B for key points to interpret these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 3
Projected Outdoor Recreation Participation in Region 21 by Region 21 Residents,
Texans from Outside Region 21, and Regional Totals, 1990, 1995, 2000

| <u>Activity/Facility Use</u> | Projected Participation Occurring in Region 21 (In 000's Annual User Occasions) | | | | | | | | |
|------------------------------|--|------|------|----------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | | | |
| | Residents of Region 21 | | | Texans from Outside Region 21 | | | Regional Totals | | |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 356 | 389 | 422 | 3 | 3 | 3 | 359 | 392 | 426 |
| Boat Ramp Lanes, SW | 545 | 597 | 648 | 184 | 200 | 215 | 730 | 796 | 862 |
| Boating (Pleasure), FW | 98 | 107 | 115 | 0 | 0 | 0 | 98 | 107 | 115 |
| Boating (Pleasure), SW | 200 | 220 | 239 | 83 | 90 | 97 | 283 | 310 | 336 |
| Camping | 398 | 437 | 477 | 402 | 431 | 460 | 799 | 868 | 937 |
| Fishing, FW | 817 | 893 | 969 | 8 | 9 | 10 | 825 | 902 | 978 |
| Fishing from Banks | 267 | 291 | 316 | 3 | 3 | 3 | 269 | 294 | 319 |
| Fishing from Boats | 366 | 400 | 434 | 4 | 4 | 4 | 370 | 404 | 438 |
| Fishing from Structures | 185 | 202 | 219 | 2 | 2 | 2 | 186 | 204 | 221 |
| Fishing, SW | 1360 | 1485 | 1611 | 425 | 459 | 493 | 1785 | 1945 | 2104 |
| Fishing from Banks | 595 | 649 | 704 | 186 | 201 | 216 | 780 | 850 | 920 |
| Fishing from Boats | 217 | 237 | 257 | 68 | 73 | 79 | 285 | 311 | 336 |
| Fishing from Structures | 548 | 599 | 649 | 171 | 185 | 199 | 719 | 784 | 848 |
| Hiking | 116 | 128 | 140 | 34 | 36 | 39 | 150 | 165 | 179 |
| Hunting | 200 | 218 | 236 | 23 | 24 | 26 | 223 | 242 | 262 |
| Lake Use (BFS Suitable), FW | 407 | 444 | 482 | 3 | 4 | 4 | 410 | 448 | 486 |
| Nature Study | 711 | 791 | 872 | 112 | 123 | 133 | 823 | 914 | 1005 |
| Picnicking | 1087 | 1187 | 1286 | 81 | 87 | 92 | 1168 | 1273 | 1379 |
| Swimming, FW | 426 | 465 | 504 | 5 | 5 | 6 | 431 | 470 | 510 |
| Swimming, SW | 1834 | 2005 | 2176 | 1383 | 1476 | 1569 | 3217 | 3480 | 3744 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Projected Participation

Table 3 projects the demand that will be placed on region 21 rural recreational resources both by region residents and by Texans from outside the region. For example, in 1995, the most popular resource-based activities in the region will be swimming and fishing in saltwater and picnicking. Table 4 shows the same projections for those activities that usually occur close to home and involve region residents primarily.

Table 4
Projected Outdoor Recreation Participation
in Region 21 by Residents of Region 21, 1990, 1995, 2000

| <u>Activity/Facility Use</u> | Projected Participation (In 000's Annual User Occasions) | | |
|------------------------------|---|-------|-------|
| | 1990 | 1995 | 2000 |
| Baseball | 1317 | 1446 | 1575 |
| Basketball | 1189 | 1306 | 1422 |
| Bicycling | 8145 | 8984 | 9822 |
| Bicycling on Trails | 502 | 553 | 605 |
| Football | 719 | 791 | 864 |
| Golf | 629 | 701 | 772 |
| Horseback Riding | 309 | 339 | 368 |
| Horseback Riding on Trails | 79 | 87 | 94 |
| Jogging/Running | 4978 | 5436 | 5894 |
| Jogging/Running on Trails | 1533 | 1674 | 1815 |
| Off-road Vehicle Riding | 724 | 795 | 865 |
| ORV Riding on Trails | 142 | 156 | 169 |
| Open Space Activities | 1951 | 2128 | 2305 |
| Playground Use | 3706 | 4061 | 4415 |
| Soccer | 870 | 959 | 1049 |
| Softball | 1528 | 1670 | 1812 |
| Swimming, Pool | 3892 | 4292 | 4692 |
| Tennis | 606 | 663 | 719 |
| Walking (Pleasure/Exercise) | 9782 | 10897 | 12012 |
| Walking on Trails | 2290 | 2551 | 2812 |

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Regionwide, projections through the year 2000 show no needs for campsites, golf, freshwater recreational resources, and picnic tables (table 5). Table 6 is based on table 5 and ranks the resources/facilities needed in the region to meet all projected in-state participation.

Regional aggregation and the lack of out-of-state demand data tend to under-

estimate needs in some areas of the region. Local needs assessments should be conducted to determine community needs within the region.

Providers' Responsibilities

Table 7 shows recommended responsibilities by administration to meet the region's projected recreational needs. It is recommended that the federal government provide some of the trail re-

sources needed. The recommendations for the TPWD include boat ramps, fishing structures, trails, and playgrounds. Local governments are encouraged to provide urban recreational facilities, trails, fishing structures, and boat ramps. Substantial responsibility is suggested for the commercial sector in the provision of fishing structures and boat ramps.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 21, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|-------------|-------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 57 | 39 | 49 | 58 |
| Basketball Goals | 95 | 49 | 63 | 77 |
| Boat Ramp Lanes, FW | 4 | 44 | 48 | 53 |
| Boat Ramp Lanes, SW | 28 | 47 | 53 | 60 |
| Campsites | 31295 | * | * | * |
| Fishing Structures, FW Lin.Yd. | 62 | 1190 | 1306 | 1422 |
| Fishing Structures, SW Lin.Yd. | 11398 | 5330 | 6827 | 8325 |
| Golf Holes | 231 | * | * | * |
| Hiking Trail Miles | 0 | 20 | 22 | 24 |
| Horseback Riding Trail Miles | 0 | 11 | 12 | 13 |
| Lake Acres (BFS Suitable), FW | 3300 | * | * | * |
| Off-road Vehicle Riding Acres | 50 | 72 | 84 | 96 |
| Picnic Tables | 3148 | * | * | * |
| Playground Areas, Equipped | 189 | 164 | 198 | 232 |
| Soccer/Football Fields | 33 | 69 | 79 | 89 |
| Softball Fields | 31 | 79 | 89 | 99 |
| Swimming, FW Sq.Yd. (000) | 2 | 102 | 112 | 121 |
| Swimming, SW Sq.Yd. (000) | 100 | 1759 | 1912 | 2064 |
| Swimming, Pool Sq.Yd. (000) | 22 | 3 | 5 | 8 |
| Tennis Courts | 104 | 55 | 70 | 84 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 31 | 44 | 52 | 60 |
| Developed Land Acres | | 2187 | 2480 | 2768 |

Notes: Asterisks indicate no needs exist based on a regional analysis of supply and participation; however, needs may exist locally within the region due to inadequate distribution of existing facilities.

Source: CPS, CPB, Parks Division, TPWD, 1988.

Note: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs
in Region 21 Through 1995

| Need Rank | Facility/Resource |
|-----------|--|
| 1 | Soccer/Football Fields |
| 2 | Softball Fields |
| 3 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 4 | Swimming, SW Sq. Yd. |
| 5 | Swimming, FW Sq.Yd. |
| 6 | Playground Areas, Equipped |
| 7 | Boat Ramp Lanes, SW |
| 8 | Fishing Struc., FW Lin.Yd. |
| 9 | Boat Ramp Lanes, FW |
| 10 | Baseball Fields |
| 11 | Swimming, Pool Sq. Yd. |
| 12 | Basketball Goals |
| 13 | Hiking Trail Miles |
| 14 | Fishing Struc., SW Lin.Yd. |
| 15 | Off-Road Vehicle Riding Acres |
| 16 | Tennis Courts |
| 17 | Horseback Riding Trail Miles |
| 18 | Picnic Tables |
| 19 | Lake Acres (BFS Suitable) |
| 20 | Golf Holes |
| 21 | Campsites |

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 21, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|-------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Cops of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 47 | 0 | 0 |
| Basketball Goals | 63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 60 | 0 | 0 |
| Boat Ramp Lanes, FW | 48 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 13 | 15 | 0 | 15 |
| Boat Ramp Lanes, SW | 53 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 12 | 3 | 0 | 34 |
| Campsites | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fishing Structures, FW Lin.Yd. | 1306 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 506 | 100 | 600 |
| Fishing Structures, SW Lin.Yd. | 6827 | 0 | 0 | 0 | 0 | 1000 | 0 | 0 | 0 | 0 | 1000 | 1000 | 0 | 3827 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 22 | 5 | 5 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| Horseback Riding Trail Miles | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 8 |
| Off-road Vehicle Riding Acres | 84 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 20 | 0 | 44 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 198 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 23 | 170 | 0 | 0 |
| Soccer/Football Fields | 79 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 74 | 0 | 0 |
| Softball Fields | 89 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 80 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 112 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 | 0 | 0 |
| Swimming, SW Sq.Yd.(000) | 1912 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1912 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd.(000) | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| Tennis Courts | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 10 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 52 | 0 | 10 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 15 | 17 | 0 | 5 |
| Developed Land Acres | 2480 | 40 | 120 | 0 | 0 | 89 | 40 | 0 | 0 | 0 | 1049 | 954 | 0 | 188 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



Federal and state agencies and private conservation groups work together to protect and set aside areas for wildlife.



REGION 22

TEXOMA



Many cities in the region market their parks as tourist attractions.

ISSUES AND RECOMMENDATIONS

Issue: Tourism Encouragement

In response to the stressed economy, planners in region 22 are turning to tourism to make up for the declining oil industry. Decision-makers have not always appreciated the economic benefits of recreation. In 1987 when floodwaters caused Lake Texoma to swell to record levels, media coverage overstated the impacts on lakeside facilities. As a result, some lake area businesses suffered from low visitation. The event, which happened during peak season, heightened awareness of the importance of the tourist dollar.

Even though recreationists from outside the region already outnumber local participants more than two to one, planners are looking for ways to encourage more spending by visitors. While Lake Texoma is the primary attraction in the region, cities want to develop tourist industries that will more directly benefit the economy inside their jurisdictions. In Bonham, planners are emphasizing historic sites, one of which is located at a city park. The Sherman Parks and Recreation Department offers softball tournaments to attract out-of-area players who fill local motels. Gainesville touts the Frank Buck Zoo and its many historic homes and buildings.

There is controversy around the types of attractions to offer in the Lake Texoma vicinity. Some fear the introduction of unsightly commercial tourist traps. While the idea of a sandy beach has been suggested, high bluffs and a steeply sloping lake bottom on the Texas side of the lake could hinder the success of such an endeavor. (Also, see State Summary, "Tourism and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers, tourist development agencies, and chambers of commerce:

Improve coordination and continue to promote regional and local attractions and events to foster the recreation and tourism industries. Coordinate events with lodging and camping parks in the area.

Continually seek to improve the marketing and packaging of on-going and new events, sites, and attractions which could draw more visitors, encourage existing clientele to stay longer, or expand the tourist season. Consider including interpretive exhibits and tours, regional fishing and

sports tournaments, and bicycle tours.

Seek the assistance of the Texas Department of Commerce on tourism development planning.

Consider differential fee structures to increase visitation during off-peak times.

For the Texas Legislature:

Clarify the use of the local hotel/motel tax relative to outdoor recreation resources that serve as tourist attractions.

Issue: Upgrading of Facilities

In recent years, park visitors have shown an increased desire for higher quality facilities. The U.S. Army Corps of Engineers is gradually adding electricity, water, and hook-ups to Lake Texoma campsites to meet the needs of larger numbers of RV campers. Eisenhower State



Park staff think their visitors are attracted by nice restrooms and the security of controlled access. The Corps is also moving toward attended entrance gates. High quality facilities are more likely to attract "responsible" users and thus displace the less desirable rowdy crowds.

Cities are becoming aware of the effects of the presence or lack of high quality facilities. When the J.C. Penney Co. chose to relocate in Plano, Texas, the cities that failed to attract the company realized the benefits of Plano's quality park system. In region 22, Denison, Gainesville, and Bonham listed rehabilitation and improved facility quality as priorities. In Denison, an entrepreneur opened a commercial softball complex. Because the fields are of regulation size and good quality, they have attracted players away from the city leagues. As a consequence, the city loses revenue.

In some cases, cities have not budgeted enough funds to keep facilities maintained over the years. For others, use and age have simply taken their toll. At Lake Texoma, day users create the Corps' greatest maintenance and repair needs, yet these visitors do not pay fees.

Recommendations:

For recreation providers:

Educate decision-makers and the public on the values of parks and recreation opportunities.

Develop long-range capital improvements programs to fund replacement and upgrading of old facilities.

Implement a regular maintenance schedule to prevent early deterioration of facilities. Keep detailed records of inspections and repairs. Remove deteriorated equipment that may pose a danger to the public.

Include developing and upgrading quality parks in an overall economic development plan to attract business and tourism.

Create a trust fund for capital improvements, following the successful example of the city of Denison.

Support federal legislation allowing collection of entrance fees from day users of Corps parks.

Issue: Water Quality and Quantity

Since Lake Texoma was constructed in 1944, the U.S. Army Corps of Engineers has studied the lake for a variety of projects and proposed water reallocations. Initially, recreation was not included as a project purpose. Texoma has grown in popularity as a recreation attraction, and in 1986, the Corps added recreation as a project purpose, along with the original purposes of flood control, water supply, regulating river flow, navigation, and hydroelectric power.

Recreation interests and fish and wildlife advocates are concerned that certain proposals will impact the lake level, the in-stream river flows, the fisheries, and the wildlife habitat. The controversial Texoma-Lavon diversion project stirred up entities in both Texas and Oklahoma. The idea of diverting water from Lake Texoma for the municipal and industrial needs of cities in the Dallas area raises the question of how important Texoma's water level is to the recreation business.

Recreation providers are concerned over the precedent set by such a diversion. Concessionaires around the lake have voiced opposition. Even if this project has little effect on the lake level, a multitude of future diversions could have a noticeable impact.

The Red River Chloride Control Project would develop structural controls upstream from Lake Texoma to decrease the natural chloride pollution of the Red River. Some controls would include dams on tributary streams that could result in lower in-flows into Texoma. The improved water quality would likely create more pressure from irrigation interests upstream from Texoma. Coupled with evaporative losses, the lake level and in-stream flows are again threatened.

Probably the most sensitive water resource is the Red River downstream from Denison Dam. Altered flow regimes in the river could negatively affect recreational fishing in the tailrace and in the river downstream. Low and irregular releases might impact the wildlife and aquatic resources. (Also, see State Summary, "Rivers and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For the U.S. Army Corps of Engineers:

Evaluate projects and proposals according to the most recent principles and guidelines recommended by the U.S. Water Resources Council and adopted in the Federal Water Resources Planning Act; give preference to the travel cost and contingent value methods to provide better estimates of recreation and natural resources values.

Balance the benefits of water reallocations for water supply, hydroelectric power, and irrigation against the impacts on the natural and recreational resources.

Establish a flow regime from Denison Dam that will reduce fish kills, produce positive benefits for Red River aquatic resources, improve water quality for downstream municipal uses, and have a positive impact on recreational fishing in the tailrace.

For recreation providers on lakes:

Consider constructing facilities that can tolerate the usual fluctuations in lake levels.

For cities and districts served by Lake Texoma's water supply:

Stress water conservation to minimize the need for more diversions from surface acres used for recreation.

For the state of Texas:

Consider revising the Texas Water Plan to balance planning for impounded water with planning for flowing water, underground water, and wetlands; include designating rivers to remain in a natural condition.

Issue: Liability

Recreation providers in the region indicated that they feel park users are too quick to sue agencies for damages. Recreationists, or their families, seem unwilling to assume any risk for their choices to use park facilities. As a result, recreationists face the loss of existing and future opportunities. Users' tendency to sue has caused providers to shy away from certain facilities. Gainesville

has removed high diving boards from the swimming pool. The city of Sherman and Eisenhower State Park are removing see-saws and merry-go-rounds.

Taxpayers sometimes have to pay for both costly remedies and higher insurance costs. The high amount of damages awarded in some court cases has encouraged insurance companies to raise rates even for those entities who have not been sued. Some court-ordered solutions have placed many requirements on

recreation providers. (Also, see State Summary, "Liability and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For the Texas Legislature:

Enact further insurance and tort law reforms to limit liability of public and private recreation providers, and volunteers.

For recreation providers:

Institute comprehensive risk management plans and place one person in charge of safety programs, with authority to correct problems.

Train staff to identify and remedy negligent hazards.

Consider requiring user groups such as leagues and teams to carry their own accident insurance or to participate in self-insurance pools.

RESOURCES

Population Trends

The decline in the economy has had a major impact on the population in region 22. While the region grew 9.3 percent from 1980 to 1986, the projected population for 1995 indicates an ex-

pected loss (figure 1). Most of the growth in the early eighties took place in the Sherman-Denison metropolitan area.

The lack of jobs in the region forces some working-age residents to move elsewhere or commute to the Dallas-Fort Worth area. Recreation providers notice

a decline in children's participation and a shortage of parent volunteers in sports league programs.

Citizens over sixty-five are selecting the Lake Texoma area to reside after retirement. Their numbers will affect the kinds of facilities needed in the future.

Figure 1
Region 22 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|--------------------|
| Counties | = | 3 |
| Land area | = | 2,722 square miles |
| Elevation | = | 478' - 1,007' |
| Annual rainfall | = | 33.9 - 43.6 inches |
| January minimum temperature | = | 32 - 33°F |
| July maximum temperature | = | 94 - 96°F |
| Growing season | = | 226 - 228 days |

POPULATION 1986

| | |
|--------------|----------------|
| Total | 154,983 |
| Counties | |
| Grayson | 100,887 |
| Cooke | 29,356 |
| Fannin | 24,740 |

1995 PROJECTED POPULATION

| | |
|------------------------|----------------|
| Total | 154,610 |
| People per square mile | 56.8 |
| Ethnic composition: | |
| White | 93% |
| Black | 5% |
| Hispanic | 2% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

| | |
|-----------------------------------|----------|
| Parks and Recreation Areas | |
| Recreation land | = 44,844 |
| Developed recreation land | = 6,874 |

Baker Park (Sherman)
Bonham State Park
Caddo National Grasslands
Caddo Wildlife Management Area
Eisenhower Birthplace State Historical Park
Eisenhower State Park
Hagerman National Wildlife Refuge
Lake Texoma Corps Parks
Ray Roberts Lake State Park
Ray Roberts Lake Wildlife Management Area

| | |
|---------------|--------|
| Lakes | |
| Surface acres | 92,713 |

Surface Acres

| | |
|---------------------|---------------|
| Coffee Mill Lake | 650 |
| Lake Bonham | 1,020 |
| Lake Crockett | 350 |
| Lake Randall | 311 |
| Lake Texoma | 89,000 |
| Hubert H. Moss Lake | 1,125 |
| Ray Roberts Lake | 11,740 (Part) |

Streams

Bois d' Arc Creek
Coffee Mill Creek
Red River
Trinity River, Elm Fork

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

Their skills and available time represent volunteer labor resources which parks departments can tap, as Denison has done.

Resource Attractions

Lake Texoma with its eighty-nine thousand surface acres is the single greatest attraction in region 22. Two other significant sites shown on figure 1, Eisenhower State Park and Hagerman National Wildlife Refuge, are located on Lake Texoma. In all, thirty recreation areas offer facilities and access to Texoma on the Texas side alone.

The region is home to two more state parks, Eisenhower Birthplace State

Historical Park and Bonham State Park. Caddo National Grasslands offers primitive camping, fishing, and picnicking at its two lakes, Coffee Mill and Davy Crockett. Lake Bonham and Moss Lake help meet water-based needs in Fannin and Cooke counties.

Recreation Supply

Water resources and developed recreation land are region 22's most abundant assets (table 1). Compared to other regions in the state, the region's supply of developed recreation land ranks the highest in acres per thousand population (table A3). Surface acres suitable for boating, fishing, and skiing

rank second by the same relative measure. Linear yards of fishing access are the highest in the state and twice the yards per thousand of the next closest region. The developed land supports a plentiful supply of facilities. The region ranks above the statewide average for sixteen out of nineteen facilities or designated resources. One must realize, however, that residents share this apparent abundance of water and developed land with incoming visitors.

The region's supply of 293 total recreation land acres per thousand is above the statewide average of 209 (table A3). The greatest amount of recreation land is managed by the agencies with

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 22, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | TOTAL | | |
|--|-----------------------|------------------------------|-------------------|-------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------|-------------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Cops of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | | Other Local | COMMERCIAL |
| Number of Parks/Rec. Areas | 0 | 1 | 3 | 13 | 4 | 3 | 0 | 0 | 0 | 1 | 69 | 2 | 20 | 116 |
| Total Parkland Acres | 0 | 8320 | 1903 | 2728 | 1460 | 21152 | 0 | 0 | 0 | 156 | 2994 | 1284 | 4848 | 44844 |
| Developed Land Acres | 0 | 7 | 17 | 265 | 442 | 0 | 0 | 0 | 0 | 137 | 1970 | 1284 | 2753 | 6874 |
| Developable Land Acres Preserved or Unsuitable for Development (Acres) | 0 | 0 | 308 | 2031 | 1018 | 0 | 0 | 0 | 0 | 19 | 416 | 0 | 2070 | 5862 |
| | 0 | 8313 | 1578 | 432 | 0 | 21152 | 0 | 0 | 0 | 0 | 608 | 0 | 25 | 32108 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 1 | 0 | 34 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 27 |
| Boat Ramp Lanes, FW | 0 | 2 | 2 | 24 | 4 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 27 | 69 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 297 | 236 | 0 | 0 | 0 | 0 | 0 | 12 | 154 | 616 | 1315 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 25700 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4100 | 0 | 3900 | 33700 |
| Fishing Structures,FW Lin. Yd. | 0 | 7920 | 10 | 150 | 86 | 0 | 0 | 0 | 0 | 0 | 402 | 35 | 340 | 8943 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 9 | 18 | 54 |
| Hiking Trail Miles | 0 | 0 | 0 | 14 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 20 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| Lake Acres (BFS Suitable),FW | | | | | | | | | | | | | | 87889 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3000 | 3010 |
| Picnic Tables | 0 | 8 | 22 | 30 | 66 | 0 | 0 | 0 | 0 | 20 | 261 | 25 | 71 | 503 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 64 | 1 | 2 | 73 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 16 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 26 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 42900 | 2500 | 0 | 0 | 0 | 0 | 0 | 300 | 7500 | 107300 | 160500 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6199 | 0 | 0 | 6199 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

OUTDOOR RECREATION PARTICIPATION

wildlife management responsibilities: the Texas Parks and Wildlife Department, 47 percent, and the U. S. Fish and Wildlife Service, 19 percent (table 1).

Potential and Proposed Resources

Recreation planners have identified several sites already in public ownership that have potential for further development. More interpretive trails at Hagerman National Wildlife Refuge would offer much needed public education on conserving wildlife resources. The U.S. Forest Service plans to add camping and trail opportunities at Caddo National Grasslands. Public land around Lake Texoma, including that portion at Eisenhower State Park, still offers potential for more trails and other low impact recreation activities.

Lake Ray Roberts is projected to be full and usable for water-based activities in 1990. The Corps of Engineers constructed the reservoir and cost-shared on recreation facility development. While the developed parks will be located in region 4 to the south, region 22 will gain a supply of passive recreation land, water surface acres, water access, and public hunting land.

The city of Denison has plans to develop Waterloo Lake and Park. With funds from the Soil Conservation Service to rebuild the dam, the city hopes a high quality park will attract new and relocating businesses. Grayson County's Loy Lake will have greater potential when the new Highway 75 provides better access.

The section of the Katy Railroad connecting Sherman, Denison, and Bells was approved for abandonment. Nationwide, such abandonments are being converted to long distance trail corridors. If a buyer/manager would step forward, this corridor has great potential to be a tourist attraction as well as a local recreation trail opportunity.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

Popular Activities

Residents of region 22 are less active than Texans as a whole. For all the activities shown in figure 2, region 22 residents exceed the statewide percent participating (figure 4.1) in only five activities: freshwater swimming, fishing, and boating, horseback riding, and off-road vehicle riding. In occasions per capita, a measure of the frequency of participation, residents again show rates below the statewide average for most activities (table 2). Only freshwater swimming and fishing, camping, nature study, horseback riding, and off-road vehicle riding exceed the statewide rate. The high number of senior citizens offers some explanation for the lower partici-

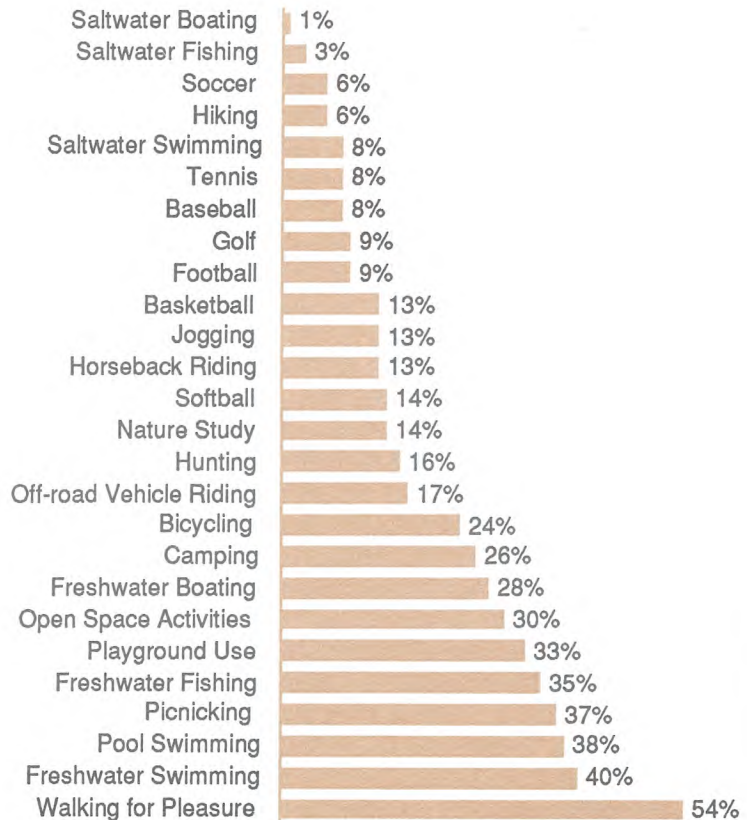
pation in sports activities in which children are traditionally active.

Recreation Travel Patterns

Participation coming into region 22 colors the recreation picture for resource-based activities (figures 3 and 4). Texans from outside the region will account for 71 percent of the resource-based participation in the region. Out of state visitors, not shown in figure 1, will add more pressures on the region's resources.

With abundant resources near home, residents stay within the region for 83 percent of their resource-based activities. Residents who travel to Oklahoma or other out of state locations are not accounted for in figure 3.

Figure 2
Region 22 Projected 1995 Percentage
of Population Participating



Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this figure and an explanation of research methods. See Appendix D for an explanation of terms.

Projected Participation

Tables 3 and 4 show the participation projected to occur in region 22 in 1990, 1995, and 2000. Walking, bicycling, camping, freshwater swimming and fishing will garner the greatest amounts of participation, each surpassing a million annual user occasions. For resource-based activities (table 3), the influence of visitors from the Dallas-Fort Worth area can be seen. Even though the population of region 22 is expected to remain relatively stable, the population growth in the Dallas-Fort Worth region will significantly push the participation up in region 22.

Table 4 shows participation that traditionally occurs close to home. The aging of the resident population will cause total participation to drop off in each projected year for seven activities. Participation in typical senior citizen activities, like walking and golf, will increase.



Posting appropriate signs warning of potential hazards can make resources safer for visitors and reduce managers' liability.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 22 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|---|----------------|---------------------------|
| | Residents of Region 22 | | |
| | Occurring In | | |
| | Region 22 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 1.2 | 1.3 | 1.3 |
| Boat Ramp Lanes, SW | * | * | 0.3 |
| Boating (Pleasure), FW | 0.5 | 0.5 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 1.2 | 1.8 | 1.7 |
| Fishing, FW | 2.5 | 2.7 | 2.4 |
| Fishing from Banks | 0.8 | 0.9 | 0.8 |
| Fishing from Boats | 1.1 | 1.2 | 1.1 |
| Fishing from Structures | 0.6 | 0.6 | 0.5 |
| Fishing, SW | * | * | 0.7 |
| Fishing from Boats | * | * | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | * | 0.3 |
| Hiking | 0.2 | 0.2 | 0.4 |
| Hunting | 0.9 | 1.2 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.4 | 1.5 | 1.5 |
| Nature Study | 0.9 | 1.0 | 0.9 |
| Picnicking | 1.4 | 1.6 | 1.9 |
| Swimming, FW | 2.5 | 2.6 | 2.1 |
| Swimming, SW | * | 0.2 | 1.2 |
| Baseball | 1.4 | | 1.5 |
| Basketball | 1.4 | | 1.6 |
| Bicycling | 8.2 | | 10.7 |
| Bicycling on Trails | 0.5 | | 0.7 |
| Football | 0.8 | | 0.8 |
| Golf | 1.1 | | 1.3 |
| Horseback Riding | 0.9 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 3.6 | | 5.4 |
| Jogging/Running on Trails | 1.1 | | 1.7 |
| Off-road Vehicle Riding | 1.8 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.4 | | 0.3 |
| Open Space Activities | 2.8 | | 3.2 |
| Playground Use | 3.8 | | 4.8 |
| Soccer | 1.0 | | 1.2 |
| Softball | 1.6 | | 1.8 |
| Swimming, Pool | 5.3 | | 6.4 |
| Tennis | 0.8 | | 1.3 |
| Walking (Pleasure/Exercise) | 14.3 | | 14.8 |
| Walking on Trails | 3.3 | | 3.5 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Asterisks indicate value is less than .1 occasion per capita. See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

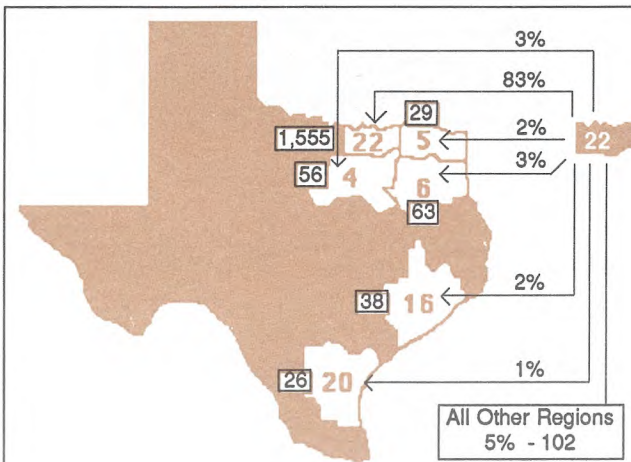


Figure 3
Destinations of Region 22 Residents
for Resource-based Activities

1,868 Annual User Occasions (000's)
Generated by Region 22 Residents, 1995

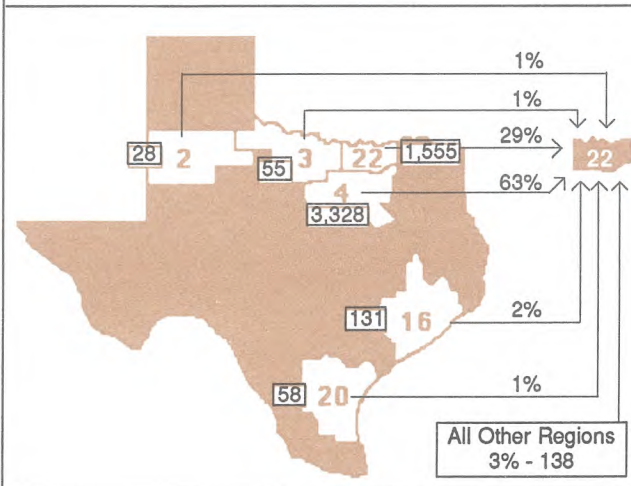


Figure 4
Origins of Participants Who Recreated
in Region 22 for Resource-based Activities

5,292 Annual User Occasions (000's)
Occurring in Region 22, 1995

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting.

Table 3
Projected Outdoor Recreation Participation in Region 22 by Region 22 Residents,
Texans from Outside Region 22, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 22 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|------|----------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | Regional Totals | | |
| | Residents of Region 22 | | | Texans from Outside Region 22 | | | 1990 | 1995 | 2000 |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 189 | 190 | 191 | 476 | 510 | 544 | 665 | 700 | 735 |
| Boating (Pleasure), FW | 71 | 71 | 71 | 244 | 259 | 274 | 315 | 330 | 345 |
| Camping | 180 | 182 | 184 | 772 | 827 | 882 | 952 | 1009 | 1066 |
| Fishing, FW | 391 | 394 | 397 | 839 | 903 | 967 | 1230 | 1297 | 1364 |
| Fishing from Banks | 128 | 129 | 130 | 274 | 294 | 315 | 401 | 423 | 445 |
| Fishing from Boats | 175 | 177 | 178 | 376 | 404 | 433 | 551 | 581 | 611 |
| Fishing from Structures | 88 | 89 | 90 | 190 | 204 | 218 | 278 | 293 | 308 |
| Hiking | 34 | 34 | 34 | 150 | 162 | 173 | 184 | 195 | 207 |
| Hunting | 131 | 132 | 132 | 119 | 129 | 138 | 250 | 260 | 270 |
| Lake Use (BFS Suitable), FW | 216 | 217 | 218 | 543 | 582 | 620 | 759 | 799 | 838 |
| Nature Study | 143 | 146 | 149 | 159 | 174 | 188 | 302 | 320 | 337 |
| Picnicking | 215 | 214 | 214 | 403 | 428 | 453 | 618 | 643 | 667 |
| Swimming, FW | 385 | 382 | 379 | 815 | 855 | 896 | 1200 | 1237 | 1275 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and these figures and an explanation of research methods. See Appendix D for an explanation of terms.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Regional needs are found for only eight of the eighteen facilities/resources shown on table 5. Compared to existing supply, the greatest need is for multi-use trails (walking, biking, jogging) and horseback riding trails. Additional campsites, designated freshwater swimming areas and boat ramps are needed to meet the demand coming from outside the region. With out-of-state visitation missing from this analysis, the need for resource-based

Table 4
Projected Outdoor Recreation Participation
in Region 22 by Residents of Region 22, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (in 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 211 | 210 | 209 |
| Basketball | 224 | 223 | 222 |
| Bicycling | 1276 | 1273 | 1270 |
| Bicycling on Trails | 79 | 78 | 78 |
| Football | 119 | 118 | 118 |
| Golf | 163 | 165 | 168 |
| Horseback Riding | 138 | 138 | 138 |
| Horseback Riding on Trails | 35 | 35 | 36 |
| Jogging/Running | 558 | 554 | 550 |
| Jogging/Running on Trails | 172 | 171 | 169 |
| Off-road Vehicle Riding | 285 | 285 | 285 |
| ORV Riding on Trails | 56 | 56 | 56 |
| Open Space Activities | 438 | 436 | 434 |
| Playground Use | 601 | 595 | 589 |
| Soccer | 149 | 149 | 148 |
| Softball | 250 | 247 | 245 |
| Swimming, Pool | 831 | 826 | 821 |
| Tennis | 117 | 117 | 116 |
| Walking (Pleasure/Exercise) | 2174 | 2211 | 2247 |
| Walking on Trails | 509 | 518 | 526 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 22, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 34 | * | * | * |
| Basketball Goals | 27 | * | * | * |
| Boat Ramp Lanes, FW | 69 | 4 | 8 | 12 |
| Campsites | 1315 | 458 | 564 | 671 |
| Fishing Structures, FW Lin.Yd. | 8943 | * | * | * |
| Golf Holes | 54 | * | * | * |
| Hiking Trail Miles | 20 | 5 | 6 | 8 |
| Horseback Riding Trail Miles | 2 | 3 | 3 | 3 |
| Lake Acres (BFS Suitable), FW | 87889 | * | * | * |
| Off-road Vehicle Riding Acres | 3010 | * | * | * |
| Picnic Tables | 503 | * | * | * |
| Playground Areas, Equipped | 73 | * | * | * |
| Soccer/Football Fields | 16 | 2 | 2 | 2 |
| Softball Fields | 26 | * | * | * |
| Swimming, FW Sq.Yd. (000) | 161 | 144 | 154 | 163 |
| Swimming, Pool Sq.Yd. (000) | 6 | * | * | * |
| Tennis Courts | 25 | 6 | 5 | 5 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 2 | 12 | 12 | 12 |
| Developed Land Acres | | 346 | 387 | 436 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Table 6
Ranking of Outdoor Recreation Facility/Resource Needs
in Region 22 Through 1995

| Need Rank | Facility/Resource |
|-----------|--|
| 1 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 2 | Swimming, FW Sq.Yd. |
| 3 | Campsites |
| 4 | Horseback Riding Trail Miles |
| 5 | Hiking Trail Miles |
| 6 | Soccer/Football Fields |
| 7 | Boat Ramp Lanes, FW |
| 8 | Tennis Courts |
| 9 | Basketball Goals |
| 10 | Swimming, Pool Sq. Yd. |
| 11 | Picnic Tables |
| 12 | Softball Fields |
| 13 | Playground Areas, Equipped |
| 14 | Baseball Fields |
| 15 | Golf Holes |
| 16 | Fishing Struc., FW Lin.Yd. |
| 17 | Lake Acres (BFS Suitable) |
| 18 | Off-Road Vehicle Riding Acres |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Note: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

facilities is likely to be even higher.

Table 6 shows the facility needs within the region ranked from most to least needed. The number one need, multi-use trails, confirms the perception of many recreation providers. Designated freshwater swimming areas are the second-ranked need. Inadequate distribution may create needs at the local level that differ from regional priorities. This may be especially true for off-road vehicle riding areas. One commercial site meets the regional need, yet it is located far away from many parts of the region.

As mentioned previously, upgrading and replacing older facilities are priorities for a number of providers in region 22. Both Sherman and

Gainesville have parts of town not served by existing parks. The Sherman Parks and Recreation Department would like the city to adopt a parkland dedication ordinance to meet future needs in developing areas. Bonham could use staff specifically assigned to parks and recreation responsibilities.

Providers' Responsibilities

Table 7 shows the suggested providers for the needed facilities from table 5. With only a limited number of regional needs, the burden doesn't fall heavily on any single entity.

The Corps is suggested to provide the greatest variety: all the designated freshwater swimming areas, four miles of trails for various activities, a share of

the campsites, and two boat ramp lanes. To add new facilities at existing reservoir projects, the Corps will need to fund them with user fees returned to the project.

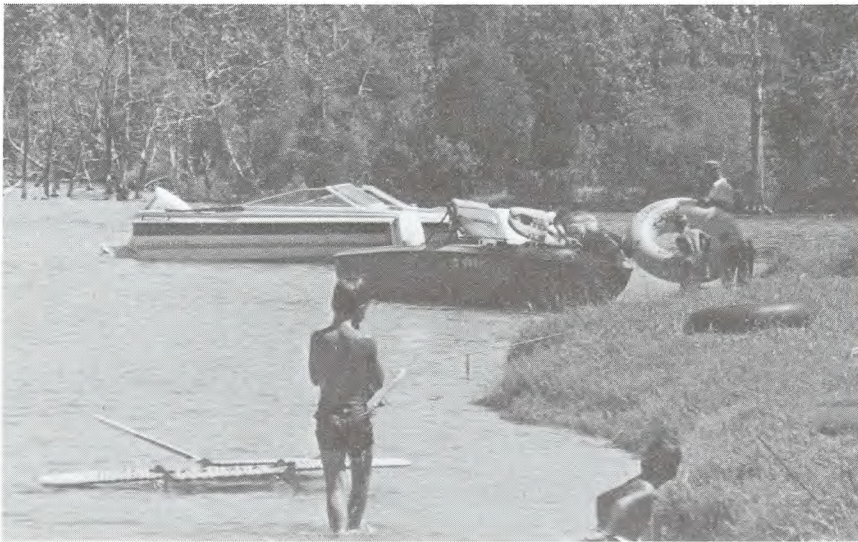
The U.S. Forest Service should supply campsites and trail miles at Caddo National Grasslands. The commercial sector should have responsibility for the largest portion of the needed campsites. Counties which now provide minimal opportunities should expand their role by supplying campsites and boat ramps. The U.S. Fish and Wildlife Service, the Texas Parks and Wildlife Department, and municipalities are suggested to meet needs for the few remaining facilities. The greatest role for cities is providing more multi-use trails.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs in Region 22, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Boat Ramp Lanes, FW | 8 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 2 | 0 | 0 |
| Campsites | 564 | 0 | 0 | 70 | 100 | 0 | 0 | 0 | 0 | 0 | 144 | 0 | 0 | 250 |
| Fishing Structures, FW Lin.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 6 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soccer/Football Fields | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 154 | 0 | 0 | 0 | 154 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd.(000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tennis Courts | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 12 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 |
| Developed Land Acres | 387 | 0 | 8 | 50 | 131 | 24 | 1 | 0 | 0 | 0 | 37 | 74 | 0 | 63 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



REGION 23

**CENTRAL
TEXAS**



Swimming and boating in crowded conditions may lead to visitor safety problems.

ISSUES AND RECOMMENDATIONS

Issue: Water Safety

Recreationists crowding onto Belton Lake and Stillhouse Hollow are creating unsafe conditions. According to reservoir managers, the congestion causes conflicts between ski boaters and fishermen. Some boaters ignore buoys designating no-wake areas. Boating accidents and drownings are often alcohol-related.

Many recreationists float on rivers without having the necessary skills or knowledge of the rivers. Flood waters from upstream can cause life-threatening situations to unwary floaters. (Also, see State Summary, "Managing Visitors and Recreational Use" under "Issues and Recommendations.")

Recommendations:

For providers of lakeside parks:

Promote visitor awareness of water safety and boating laws.

For recreation providers:

Consider offering courses in boater safety using official instruction materials from the Texas Parks and Wildlife Department.

Develop a marketing strategy to more equitably distribute use between Belton Lake and Stillhouse Hollow Reservoir.

For the Bell County Commissioners Court:

Consider designating certain areas of the lakes for single uses where such zoning would improve public safety and be consistent with the Texas Water Safety Act.

Issue: Park Redevelopment

Citizens sometimes prefer to see their favorite old parks fixed up before their governments spend money on new parks. In Temple, for example, a recreation assessment survey showed "maintenance and improvement of existing parks and facilities" at the top of a list of areas where the PARD should spend more money. The four largest cities in the region all report that rehabilitation of older facilities is a priority.

In some cases, cities have not budgeted enough funds to maintain parks over the years. For others, use and age have simply taken their toll. Both court-

ordered remedies and the fear of possible lawsuits have forced recreation providers to redesign potentially unsafe facilities. Playgrounds in particular require rehabilitation to incorporate the new safer designs. The U.S. Army Corps of Engineers is redoing roadway systems to discourage cruising, reduce conflicts between day and overnight users, and prevent unwary visitors from driving into the lakes.

Many parks in the region contain undeveloped acres suitable for development with recreation facilities. In those parks where existing facilities are used to capacity, there may be opportunities to add new facilities. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Assess and follow the desires of constituents in managing recreation resources.



Schedule regular maintenance to prevent early deterioration of facilities.

Develop a long-range capital improvements program to fund rehabilitation of old facilities and replacement of those with outdated designs.

Evaluate the suitability of existing park sites for further facility development. Consider the market potential for increased development

Issue: Public Recreation Land Shortage

Almost two-thirds of the regions in Texas have a greater supply of recreation land acres per thousand population than region 23 (table A3). The largest provider of public land, the U.S. Army Corps of Engineers, stands to lose some of its land in a push by the General Services Administration to dispose of "surplus" land. With the limited amount of public recreation land in the region, many regional residents feel disposing of any Corps of Engineers land would decrease recreation potential.

Recreationists say they have only uncertain access to the region's western counties, so desirable for hunting and fishing. The Texas Parks and Wildlife Department's acquisitions in 1984 and 1987 of two closed fishing camps on the Colorado River will help overcome the parkland shortage.

While residents in sparsely populated portions of the region often have access to natural resources on private property, they are less likely to live near urban-type facilities like courts, fields, multi-use trails, and playgrounds. (Also, see State Summary, Meeting Recreational Open Space Needs" under "Issues and Recommendations.")

Recommendations:

For appropriate state and federal agencies:

Continue programs to assist private landowners desiring to manage their land for hunting and fishing leases.

For the U.S. Army:

Better publicize hunting and fishing opportunities at Fort Hood that are available to the general public on a permit basis.

For county governments:

Provide developed parks for citizens, especially in unincorporated communities.

For recreation providers:

Evaluate any federal property identified as surplus to determine if it is suitable for use as a local park.

Issue: Funding Problems

Federal, state, and local recreation providers continue to report the prospect of tight budgets. Both the federal budget deficits and the slow Texas economy affect the total amount of funds available for all government services. Administrators must justify spending on parks and recreation. Citizens' increased watchfulness over public spending causes agencies to be more fiscally responsible.

Federal policy allows for the return of a large portion of camping fees collected at Corps' parks back to the reservoir project budget where the money has been used for capital improvements. As budgets get tighter, such funds may go toward maintenance. Day users often create more maintenance needs than overnight users, but federal law does not allow the Corps to collect day use fees. (Also, see State Summary, "Financing Parks and Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Educate decision-makers and the public on the values of parks and recreation opportunities.

Consider developing revenue-generating facilities.

Seek donations of money, land, and labor from citizens and corporations.

Develop successful joint-use programs between educational institutions and cities or counties.

Support federal legislation allowing collection of fees from day users of Corps parks.

Issue: Liability

Recreation providers feel there is an increased willingness by users to sue for

damages. The high amount of awarded damages has caused insurance companies to raise rates. Even cities that have managed to escape lawsuits and costly settlements experience increased insurance payments.

Recreationists face the loss of existing and future opportunities. Facilities that might cause injuries are closed or removed. Providers sometimes opt not to add facilities for fear of lawsuits. The fear of landowner liability keeps many private property owners from allowing the public on their land either for free or for a fee. (Also, see State Summary, "Liability and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For the Texas Legislature:

Enact further insurance and tort law reforms to limit liability of public and private recreation providers and volunteers.

For recreation providers:

Institute comprehensive risk management plans and place one person in charge of safety programs, with authority to correct problems.

Train staff to identify and remedy negligent hazards.

Require user groups such as leagues and teams to carry their own accident insurance or to participate in self-insurance pools.

Issue: River Access and Trespass

The use of the region's rivers for float trips often upsets adjacent landowners. Private property owners report a number of violations of their property rights, including trespass, littering, vandalism of farm and ranch equipment, and theft. Illegal disturbance of archaeological sites also occurs. Limited law enforcement personnel cannot keep a constant patrol of the rivers. The more serious crimes, like robbery and destruction of property, are not perpetrated by recreationists, but the poor manners of many floaters contribute to the bad feelings landowners have toward even legitimate river users.

Many problems stem from the difficulty both users and landowners have in determining the legal rights of citizens to

Population Trends

Region 23 experiences growth caused by several factors. The presence of Fort Hood and Temple's veterans hospital makes the region attractive to military retirees. Interstate 35 encourages economic development along its corridor.

Like Texas, the growth rate of region 23 is slowing down. Between 1980 and 1986, the region grew 14.4 percent. Projections in figure 1 show the population increasing 8.4 percent from 1986 to 1995.

The demographic composition of the region has a big influence on recreation participation. The continuous influx of young adults stationed at Fort Hood creates a sustained population of active recreationists. While the rest of Texas experiences the aging of the baby boomers, region 23 will retain a youthful population.

Resource Attractions

Belton Lake and Stillhouse Hollow Reservoir offer the greatest variety of

mileages between access sites to clearly indicate private lands off limits to recreationists..

Insure adequate public access to existing recreation waters. Consider recreational easements to provide access points when acquisition is not necessary or desirable.

For appropriate state and local agencies, commercial interests, and private landowners:

Cooperate on a rivers assessment to identify the full range of values for each river; include in the assessment a clear determination of public and private land along rivers, legal rights to float, and public access.

For law enforcement agencies:

Increase efforts to enforce trespass laws.

For federal, state, and local governments:

When constructing bridges or river crossings, consider providing stream access areas with parking and sanitation facilities.

float the rivers. For rivers like the Lampasas, Leon, and San Saba that have seasonally low flows, the test for navigability may not be clear. Floaters who are legal on the surface of the water may have unreasonably long distances to float between legal put-in and take-out points. Where public river access is limited, problems with trespass are greater. Many river users are stationed at Fort Hood. Some soldiers come from other states where laws regarding private property and user rights along rivers are very different from those in Texas. (Also, see State Summary, "Rivers and Outdoor Recreation" under "Issues and Recommendations.")

Recommendations:

For recreation providers:

Work closely with landowners and law enforcement agencies to make recreation on and along the region's rivers occur in accordance with the law and with concern for others.

Educate river users on the rights and responsibilities of both landowners and recreationists.

Provide river users with information on access points, locations, and river

Figure 1
Region 23 Characteristics

GEOGRAPHY

| | | |
|-----------------------------|---|--------------------|
| Counties | = | 7 |
| Land area | = | 6,565 square miles |
| Elevation | = | 306' - 1,900' |
| Annual rainfall | = | 26.2 - 34.0 inches |
| January minimum temperature | = | 34 - 39°F |
| July maximum temperature | = | 87 - 96°F |
| Growing season | = | 223 - 258 days |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 21,447 acres |
| Developed recreation land | = | 3,966 acres |

Belton Lake Corps Parks
Colorado Bend State Park
Mother Neff State Park
Stillhouse Hollow Reservoir Corps Parks

Lakes

| | |
|---------------|--------|
| Surface acres | 19,845 |
|---------------|--------|

Surface Acres

| | |
|-----------------------------|--------|
| Belton Lake | 12,500 |
| Stillhouse Hollow Reservoir | 6,430 |

Streams

| | |
|--------------------------|-------------------|
| Bosque River, North Fork | Little River |
| Brazos River | San Gabriel River |
| Colorado River | San Saba River |
| Lampasas River | Salado Creek |
| Leon River | |

POPULATION 1986

Total 306,952

| | | | |
|----------|---------|----------|-------|
| Counties | | | |
| Bell | 188,977 | Hamilton | 7,864 |
| Coryell | 62,498 | San Saba | 5,481 |
| Milam | 23,350 | Mills | 4,622 |
| Lampasas | 14,160 | | |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 332,714 |
| People per square mile | 50.7 |
| Ethnic composition: | |
| White | 70% |
| Black | 17% |
| Hispanic | 12% |

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

resource-based recreation opportunities. The two lakes offer twenty Corps-operated parks which provide good shore access. Ninety-five percent of the region's surface acres are found at these two reservoirs (figure 1). Belton Lake, with almost twice the surface acres of Stillhouse Hollow and a slightly closer proximity to the major cities in the region, garners the lion's share of the visitation.

Mother Neff State Park, the oldest in the state park system, is still an attraction to visitors from both inside and outside the region. The park offers camping, picnicking, and hiking in the

wooded floodplain of the Leon River. Colorado Bend State Park, which opened in May, 1988, should prove to be a major draw to fishermen, hikers, and campers desiring a primitive experience.

The region has an abundance of hunting and fishing resources. Most river fishing occurs in the Colorado, Lampasas, and Leon rivers. All the counties in the region provide some hunting. Inexpensive public hunting opportunities at Fort Hood increase the popularity of hunting in Bell and Coryell counties. The western counties of Mills, Lampasas, San Saba, and Hamilton are known for their populations of deer.

Recreation Supply

Table 1 shows the supply of recreation opportunities in the region. Land acres are largely provided by the Corps (45 percent) and the state park system (26 percent). The commercial sector and the cities comprise the other significant providers.

With 68 total parkland acres per thousand population, region 23 falls far below the statewide average of 209 (table A3). Even though developed parkland acres per thousand is above the statewide average, eleven of the nineteen facilities or designated re-

Table 1
1986 Supply of Parks/Recreation Areas:
Land, Facilities, and Water in Region 23, by Administration

| Facility/Resource | FEDERAL | | | | STATE | | | | REG. | LOCAL | | TOTAL | | |
|---|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------|-------------|------------|
| | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | | Other Local | COMMERCIAL |
| Number of Parks/Rec. Areas | 0 | 0 | 0 | 20 | 2 | 0 | 0 | 0 | 0 | 2 | 102 | 1 | 32 | 159 |
| Total Parkland Acres | 0 | 0 | 0 | 9630 | 5587 | 0 | 0 | 0 | 0 | 2 | 2110 | 2 | 4116 | 21447 |
| Developed Land Acres | 0 | 0 | 0 | 1055 | 350 | 0 | 0 | 0 | 0 | 2 | 1723 | 1 | 835 | 3966 |
| Developable Land Acres | 0 | 0 | 0 | 2521 | 5138 | 0 | 0 | 0 | 0 | 0 | 342 | 1 | 2614 | 10616 |
| Preserved or Unsuitable for Development (Acres) | 0 | 0 | 0 | 6054 | 99 | 0 | 0 | 0 | 0 | 0 | 46 | 0 | 667 | 6866 |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | 0 | 0 | 44 |
| Basketball Goals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 0 | 29 |
| Boat Ramp Lanes, FW | 0 | 0 | 0 | 45 | 1 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 52 |
| Boat Ramp Lanes, SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Campsites | 0 | 0 | 0 | 360 | 21 | 0 | 0 | 0 | 0 | 0 | 64 | 0 | 515 | 960 |
| Fishing Bank Access,FW Lin.Yd. | 0 | 0 | 0 | 11760 | 0 | 0 | 0 | 0 | 0 | 0 | 1450 | 0 | 0 | 13210 |
| Fishing Structures,FW Lin. Yd. | 0 | 0 | 0 | 300 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 347 | 665 |
| Fishing Structures,SW Lin. Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 0 | 54 | 126 |
| Hiking Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Horseback Riding Trail Miles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lake Acres (BFS Suitable),FW | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 90 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 90 |
| Picnic Tables | 0 | 0 | 0 | 169 | 22 | 0 | 0 | 0 | 0 | 0 | 490 | 0 | 26 | 707 |
| Playground Areas, Equipped | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 77 | 0 | 4 | 83 |
| Soccer/Football Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 21 |
| Softball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 33 |
| Swimming, FW Sq.Yd. | 0 | 0 | 0 | 20500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1000 | 21500 |
| Swimming, SW Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10409 | 0 | 570 | 10979 |
| Tennis Courts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | 0 | 4 | 65 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 |

Source: TORIS, CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

sources fall below. The supplies of the three types of trails are some of the lowest in the state.

Potential and Proposed Resources

The newly opened Colorado Bend State Park offers the greatest potential to draw visitors into the region. The Texas Parks and Wildlife Department acquired the 5328-acre site on a stretch of the Colorado River that has long been famous for excellent bass fishing. Numerous caves, hill country scenery, and the beautiful falls will meet the needs of

nature viewers, hikers, and experienced cavers. The department has opened a portion of the site for interim use while staff members prepare a development plan.

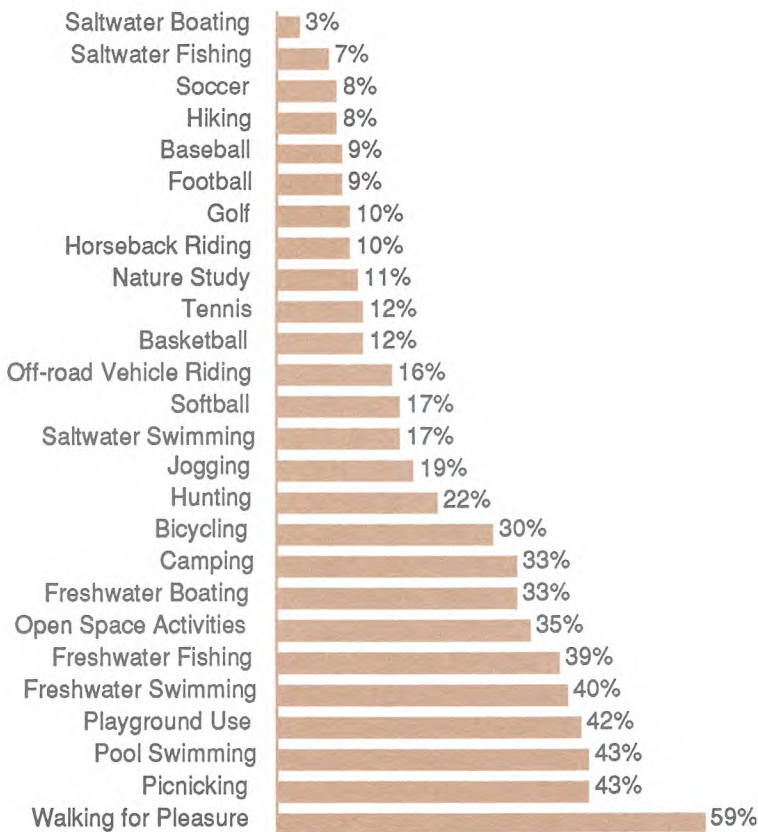
Four cities located along Nolan Creek have shown an interest in developing trails in the creek corridor. By connecting Killeen, Harker Heights, Nolanville, and Belton, such a greenbelt could be as long as twenty-six miles. The Corps owns undeveloped land around Stillhouse Hollow which has potential for trails or other low intensity

recreation activities.

The partial listing of recreational attractions and resources shown in figure 1, conservation information maintained by the Texas Natural Heritage Program of the Texas Parks and Wildlife Department, and other references, such as open space plans should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other development.

OUTDOOR RECREATION PARTICIPATION

Figure 2
Region 23 Projected 1995 Percentage
of Population Participating

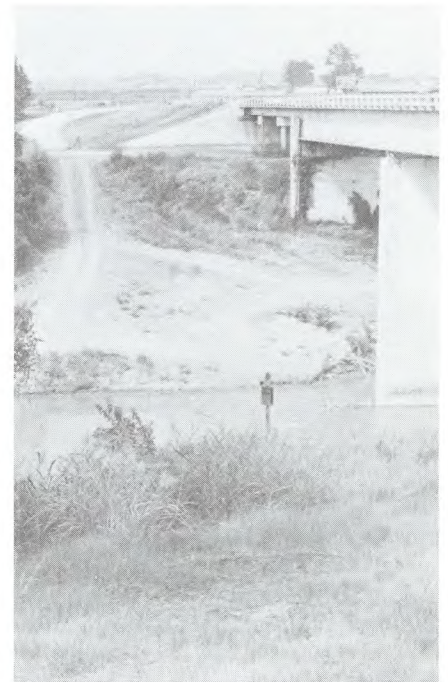


Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this figure and an explanation of research methods. See Appendix D for an explanation of terms.

Popular Activities

Figure 2 shows the percentage of region 23 residents that participate in each of the twenty-six activities studied. Region 23 residents exceed statewide averages (figure 4.1) in eleven of the activities, most notably camping, hunting, freshwater fishing, swimming, and boating.



Recreationists finding legal access at road crossings may have to float long distances to reach the next legal take-out.

Table 2 shows the number of user occasions per capita. By 1995, walking, bicycling, pool swimming, jogging, and playground use show the highest projected per capita participation. Per capita participation generated by region 23 residents will exceed statewide averages for ten of the twenty-six activities. Residents will go freshwater boating, camping, and freshwater swimming more often than citizens of all but two regions. Regional participation per capita will also be above average for freshwater fishing and off-road vehicle riding.

Recreation Travel Patterns

Belton Lake and Stillhouse Hollow Reservoir serve as recreation destinations for region 23 residents, but they fail to be a very significant draw for Texans from outside the region. For resource-based participation, the amount coming into the region accounts for 27 percent of the participation occurring in the region (figure 4). Sixty-six percent of the resource-based participation generated by region 23 residents is expected to stay inside the region (figure 3). When region 23 residents leave, they are most likely to visit adjacent regions and the coast.

Visitors from the Dallas-Fort Worth region will make up the greatest share of out of area participation (figure 4). Residents of adjacent regions will use the resources of region 23 in smaller amounts.

Projected Participation

Tables 3 and 4 show projected participation for 1990, 1995, and 2000. Walking, bicycling, pool swimming, jogging, and playground use will garner the greatest amounts of participation (table 4). Table 3 shows for each resource-based activity the relative influence of residents and Texans from outside the region. For hunting, the participation of non-residents outnumbers that of region residents and accounts for over half of the incoming participation in resource based activities. For all other resource-based activities, region 23 residents make up the great majority of participation.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 23 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|--|-------------------|------------------------------|
| | Residents of Region 23 | | |
| | Occurring In | | |
| | Region 23 Only | All 24 Regions | All Texans Statewide Avg. |
| Boat Ramp Lanes, FW | 1.4 | 1.8 | 1.3 |
| Boat Ramp Lanes, SW | * | * | 0.3 |
| Boating (Pleasure), FW | 0.8 | 1.0 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 0.9 | 2.1 | 1.7 |
| Fishing, FW | 2.2 | 3.0 | 2.4 |
| Fishing from Banks | 0.7 | 1.0 | 0.8 |
| Fishing from Boats | 1.0 | 1.4 | 1.1 |
| Fishing from Structures | 0.5 | 0.7 | 0.5 |
| Fishing, SW | * | 0.2 | 0.7 |
| Fishing from Boats | * | 0.1 | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | * | 0.3 |
| Hiking | 0.2 | 0.3 | 0.4 |
| Hunting | 1.5 | 1.8 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.6 | 2.1 | 1.5 |
| Nature Study | 0.5 | 0.7 | 0.9 |
| Picnicking | 1.5 | 1.9 | 1.9 |
| Swimming, FW | 2.0 | 2.7 | 2.1 |
| Swimming, SW | * | 0.5 | 1.2 |
| Baseball | 1.5 | | 1.5 |
| Basketball | 1.5 | | 1.6 |
| Bicycling | 10.1 | | 10.7 |
| Bicycling on Trails | 0.6 | | 0.7 |
| Football | 0.8 | | 0.8 |
| Golf | 1.1 | | 1.3 |
| Horseback Riding | 0.7 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 5.2 | | 5.4 |
| Jogging/Running on Trails | 1.6 | | 1.7 |
| Off-road Vehicle Riding | 1.8 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.3 | | 0.3 |
| Open Space Activities | 3.4 | | 3.2 |
| Playground Use | 5.1 | | 4.8 |
| Soccer | 1.3 | | 1.2 |
| Softball | 1.9 | | 1.8 |
| Swimming, Pool | 6.2 | | 6.4 |
| Tennis | 1.1 | | 1.3 |
| Walking (Pleasure/Exercise) | 14.6 | | 14.8 |
| Walking on Trails | 3.4 | | 3.5 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Asterisks indicate value is less than .1 occasion per capita. See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

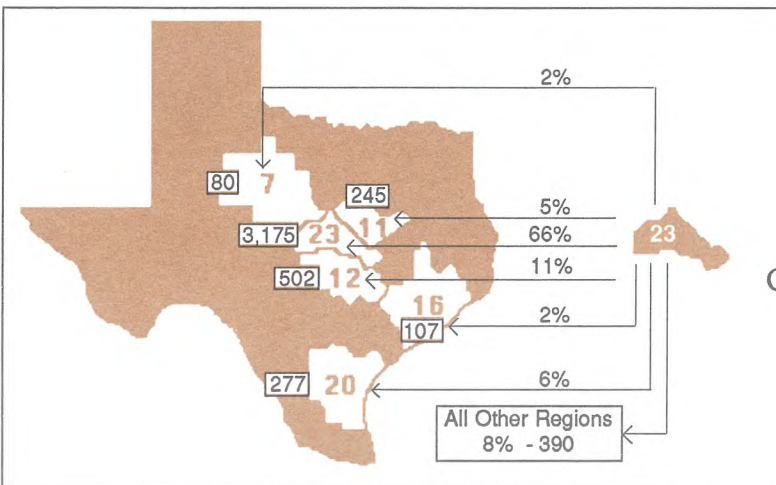


Figure 3
Destinations of Region 23 Residents
for Resource-based Activities

4,776 Annual User Occasions (000's)
Generated by Region 23 Residents, 1995

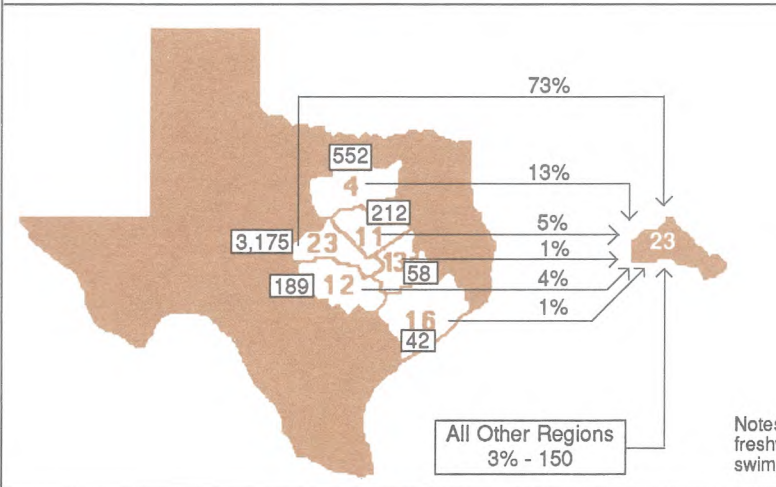


Figure 4
Origins of Participants Who Recreated
in Region 23 for Resource-based Activities

4,378 Annual User Occasions (000's)
Occurring in Region 23, 1995

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting.

Table 3
Projected Outdoor Recreation Participation in Region 23 by Region 23 Residents,
Texans from Outside Region 23, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 23 (in 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|------|-------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | Regional Totals | | |
| | Residents of Region 23 | | | Texans from Outside Region 23 | | | 1990 | 1995 | 2000 |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 442 | 465 | 487 | 87 | 92 | 98 | 529 | 557 | 585 |
| Boating (Pleasure), FW | 267 | 279 | 291 | 48 | 51 | 54 | 315 | 330 | 345 |
| Camping | 276 | 290 | 305 | 107 | 115 | 123 | 383 | 405 | 428 |
| Fishing, FW | 690 | 726 | 763 | 145 | 155 | 164 | 834 | 881 | 927 |
| Fishing from Banks | 225 | 237 | 249 | 47 | 50 | 54 | 272 | 287 | 303 |
| Fishing from Boats | 309 | 325 | 342 | 65 | 69 | 74 | 374 | 394 | 415 |
| Fishing from Structures | 156 | 164 | 172 | 33 | 35 | 37 | 189 | 199 | 210 |
| Hiking | 69 | 73 | 76 | 16 | 17 | 17 | 85 | 89 | 93 |
| Hunting | 461 | 484 | 508 | 626 | 667 | 709 | 1087 | 1152 | 1216 |
| Lake Use (BFS Suitable), FW | 505 | 530 | 555 | 99 | 105 | 112 | 604 | 635 | 667 |
| Nature Study | 151 | 162 | 172 | 19 | 21 | 23 | 171 | 183 | 195 |
| Picnicking | 469 | 489 | 509 | 76 | 81 | 86 | 546 | 570 | 595 |
| Swimming, FW | 645 | 672 | 699 | 91 | 96 | 101 | 736 | 768 | 800 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and these figures and an explanation of research methods. See Appendix D for an explanation of terms.

RESOURCE AND FACILITY NEEDS

Table 4
Projected Outdoor Recreation Participation
in Region 23 by Residents of Region 23, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (in 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 483 | 504 | 524 |
| Basketball | 479 | 502 | 526 |
| Bicycling | 3202 | 3351 | 3501 |
| Bicycling on Trails | 197 | 206 | 216 |
| Football | 265 | 278 | 290 |
| Golf | 358 | 380 | 401 |
| Horseback Riding | 210 | 218 | 227 |
| Horseback Riding on Trails | 54 | 56 | 58 |
| Jogging/Running | 1662 | 1730 | 1799 |
| Jogging/Running on Trails | 512 | 533 | 554 |
| Off-road Vehicle Riding | 565 | 590 | 615 |
| ORV Riding on Trails | 111 | 116 | 120 |
| Open Space Activities | 1076 | 1120 | 1163 |
| Playground Use | 1650 | 1712 | 1774 |
| Soccer | 420 | 437 | 455 |
| Softball | 613 | 637 | 660 |
| Swimming, Pool | 1983 | 2071 | 2160 |
| Tennis | 362 | 376 | 391 |
| Walking (Pleasure/Exercise) | 4572 | 4862 | 5154 |
| Walking on Trails | 1070 | 1138 | 1207 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Needed Facilities and Resources

Table 5 shows the region having needs for thirteen of the eighteen facilities/resources by 1995. Increases of more than 100 percent over existing supply are needed for basketball goals, soccer/football fields, designated freshwater swimming areas, and multi-use trails. With no horseback riding or hiking trail miles in the region, needs for those facilities are difficult to measure. Needed land acres shown at the bottom of table 5 represent only the acres required to develop the needed facilities.

Table 6 shows the regional facility needs ranked from most to least within the region. Rankings are based on a combination of two measures of need: the needed quantity relative to existing supply and the amount of projected user occasions that would go unserved if the needed facilities were not added. The highest-ranked need is for multi-use trails, followed by freshwater swimming areas and soccer/football fields.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 23, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 44 | * | * | * |
| Basketball Goals | 29 | 29 | 32 | 35 |
| Boat Ramp Lanes, FW | 52 | 6 | 9 | 12 |
| Campsites | 960 | * | * | * |
| Fishing Structures, FW Lin.Yd. | 665 | 419 | 479 | 540 |
| Golf Holes | 126 | * | * | * |
| Hiking Trail Miles | 0 | 12 | 12 | 13 |
| Horseback Riding Trail Miles | 0 | 8 | 8 | 8 |
| Lake Acres (BFS Suitable), FW | 14287 | * | * | * |
| Off-road Vehicle Riding Acres | 90 | 5 | 9 | 14 |
| Picnic Tables | 707 | * | * | * |
| Playground Areas, Equipped | 83 | 74 | 80 | 86 |
| Soccer/Football Fields | 21 | 21 | 23 | 25 |
| Softball Fields | 33 | 11 | 13 | 15 |
| Swimming, FW Sq.Yd. (000) | 22 | 165 | 173 | 181 |
| Swimming, Pool Sq.Yd. (000) | 11 | 2 | 2 | 3 |
| Tennis Courts | 65 | 30 | 34 | 38 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 3 | 27 | 29 | 31 |
| Developed Land Acres | | 594 | 635 | 686 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Table 6
Ranking of Outdoor Recreation Facility/Resource
Needs in Region 23 Through 1995

| Need Rank | Facility/Resource |
|-----------|--|
| 1 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 2 | Swimming, FW Sq.Yd. |
| 3 | Soccer/Football Fields |
| 4 | Playground Areas, Equipped |
| 5 | Basketball Goals |
| 6 | Hiking Trail Miles |
| 7 | Swimming, Pool Sq. Yd. |
| 8 | Softball Fields |
| 9 | Tennis Courts |
| 10 | Horseback Riding Trail Miles |
| 11 | Fishing Struc., FW Lin.Yd. |
| 12 | Boat Ramp Lanes, FW |
| 13 | Off-Road Vehicle Riding Acres |
| 14 | Baseball Fields |
| 15 | Campsites |
| 16 | Picnic Tables |
| 17 | Golf Holes |
| 18 | Lake Acres (BFS Suitable) |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Note: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.

Temple, Killeen, and Copperas Cove each reported population growth in areas of the city that currently have no parks. Staff anticipate the need for new sites to serve all parts of town. The cities along Nolan Creek feel greenbelt development is a priority for their citizens. Numerous cities in the region plan to emphasize rehabilitation and replacement of old facilities.

The addition of a park in a previously unserved area will generate needs for a package of facilities to accommodate park users. Colorado Bend State Park represents an example of such a resource.

Providers' Responsibilities

Table 7 shows suggested providers for the needed facilities from table 5. Municipalities are designated to supply the greatest share. Cities are the typical providers for sports fields, courts, playgrounds, and swimming pools, but counties should provide some of these facilities to their citizens in unincorporated

communities and small towns.

It is recommended that the Corps provide fishing structures, freshwater swimming areas, playgrounds, hiking, horseback riding, and multi-use trails, and off-road vehicle riding areas. The

Texas Parks and Wildlife Department should add boat ramps, hiking and multi-use trails, playgrounds, and freshwater swimming areas. The commercial sector should help with fishing structures, tennis courts, and boat ramps.



Citizens sometimes prefer rehabilitation of older parks and facilities over new park acquisition and development.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 23, by Administration

| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|--|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|--------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys. & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basketball Goals | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 25 | 0 | 0 |
| Boat Ramp Lanes, FW Campsites | 9 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 2 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fishing Structures, FW Lin.Yd. | 479 | 0 | 0 | 0 | 199 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 180 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 12 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 |
| Horseback Riding Trail Miles | 8 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| Off-road Vehicle Riding Acres | 9 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 80 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 4 | 70 | 0 | 0 |
| Soccer/Football Fields | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 20 | 0 | 0 |
| Softball Fields | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 173 | 0 | 0 | 0 | 133 | 5 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 |
| Swimming, Pool Sq.Yd.(000) | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| Tennis Courts | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 20 | 0 | 9 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 29 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 | 0 | 3 | 15 | 0 | 0 |
| Developed Land Acres | 635 | 0 | 0 | 0 | 159 | 84 | 0 | 0 | 0 | 0 | 103 | 286 | 0 | 3 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

**MIDDLE
RIO
GRANDE**



The Frio River, like most streams in this region, requires a balanced approach between recreational use and conservation needs.

ISSUES AND RECOMMENDATIONS

Issue: Resource Protection

The region has abundant, but fragile, natural resources including riverbeds, canyonlands, caves, and creeks. These are complemented by significant archeological and historical resources.

Region residents report that river use in the region is a controversial issue because there is no exact demarcation line between private property and public domain. Landowners indicate that trespassing on private property is a major problem. Trespassers often engage in poaching, pose safety threats to landowners, and destroy natural resources and private property. Landowners are especially concerned about the popularity of off-road vehicle (ORV) safaris occurring along rivers and have recommended that ORVs be banned altogether from the state. Trespassers also pose liability problems for landowners. Liability, in fact, has had a chilling effect on landowners even when legitimate groups, such as schools, request permission for field trips. The irony is that these field trips could be powerful tools to educate our youth on the environment and on private property rights.

Another problem identified by region residents is the use of highway rights-of-way as access points. Public

use of these areas is problematic because they are often used as recreation areas, and the Texas Department of Highways and Public Transportation (TDHPT) is not set up to manage them as a recreation provider. Litter by recreationists is one of the main problems and is compounded because trash receptacles are sometimes stolen, destroyed, or used by residents in the vicinity to dispose of their own household refuse. Unsafe conditions arise when users start fires for picnicking or camping, and there are no facilities for contained fires.

Riverside residents of the Frio River began a river clean-up program in 1988 to address litter and pollution problems. Region residents, including commercial recreation providers, feel that the number of river recreationists is increasing every year and that preventive litter and pollution measures should be instituted. The river clean-up showed that ranch equipment parts and household items such as mattresses and bedsprings were also a problem. (Also, see State Summary, "Rivers and Outdoor Recreation" under "Outdoor Recreation Issues and Recommendations.")

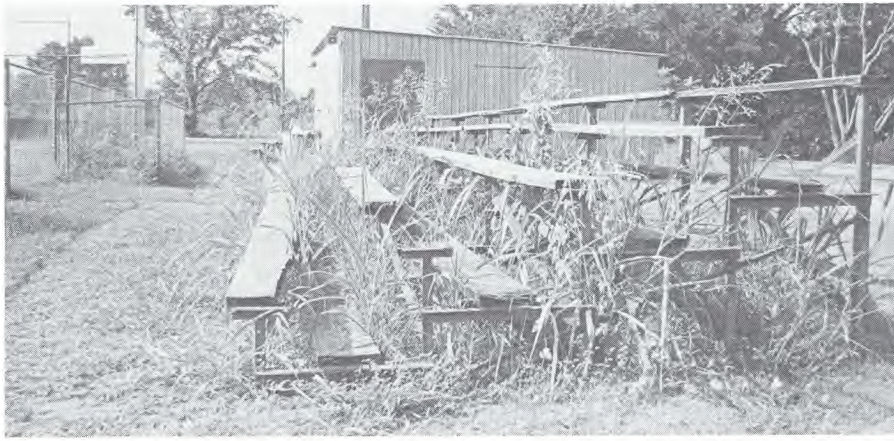
Better information on existing public access points and the rights of adjacent private property owners could discourage trespassing to reach public

waters. Landowners, however, are concerned that this will simply increase river use and that river recreationists will continue to stop and recreate on private lands between the public put-in and take-out points. A related concern is the maintenance of these access points. Even at current use levels, poorly maintained access points pose problems for adjacent landowners.

The delicate balance between recreational opportunities and resource conservation is especially evident in archeological resources. For example, the boating opportunities provided by Amistad Reservoir have also meant greater access to and vandalism of archeological resources. This greater accessibility makes resource protection more critical. Also, the rise in humidity resulting from the reservoir has a cumulative negative effect on the pictographs in the area. (Also, see State Summary, "Conserving

Natural Resources for Recreational Use" under "Outdoor Recreation Issues and Recommendations.")





Reduced maintenance results from funding cutbacks.

Recommendations:

For appropriate state and local agencies, commercial interests, and private landowners:

Cooperate on a rivers assessment to identify the full range of values for each river; include in the assessment a clear determination of public and private land along rivers, navigability, and public access.

For recreation providers:

Cooperate with one another to provide emergency landing points and hence prevent the need for emergencies on private lands not offering river access.

Educate river users on the rights and responsibilities of both landowners and recreationists.

Provide river users with information on public access points, locations, and river mileages between access sites.

For the Texas Legislature:

Clarify, strengthen or revise as necessary, laws relating to riparian private property rights and laws regarding public use of state waterways (rivers, lakes, wetlands, bays, and beaches).

For the State Attorney General:

Prepare and distribute guidelines which clearly explain public rights and private property owners' rights in the recreational use of state waterways.

Issue: Tourism

About 74 percent of the recreational activity in the region is generated by Texans from outside the region. The primary activities attracting visitors to the region are swimming, camping, and hunting. Throughout the region, communities are trying to attract more visitors by diversifying the type of attractions offered and through more promotion. The results have been mixed.

Region residents indicate that the Del Rio area has been successful in diversifying its attractions and continues to gain organized events such as races and tournaments. It has also made attempts to attract Winter Texans. The Brackettville area has lost ground in the area of festivals and events. Organizational and scheduling conflicts with events in San Antonio have been cited as problems for this decline in special event activities.

Regional promotion of attractions is still one of the weak links in the region. When a community does not have outstanding resources, the next best thing is to join forces with surrounding communities and develop a promotional package. This applies especially to border communities because it is well known that a key attraction is the opportunity to visit border towns in Mexico. International festivals and events and improved amenities in border communities are beneficial to both countries. The U.S. side might be the greater beneficiary since it generally has more infrastructure. (Also, see State Summary, "Tourism and Outdoor Recreation" under "Outdoor Recreation Issues and Recommendations.")

Recommendations:

For chambers of commerce and other entities:

Work together in the development and promotion of attractions.

Seek cooperation with San Antonio in the development and promotion of festivals and events for the Brackettville and Uvalde areas.

Issue: Funding

The economic decline that has plagued the state has also been felt in this region. Recreation providers note that budget cutbacks have resulted in lower maintenance standards. The problem is compounded by the vandalism that some areas experience. Spray paint and destruction of restroom fixtures are some of the problems faced by recreation providers.

In some cases, intergovernmental cooperation at the local level might be the solution. Maverick County Lake is a case in point. Maverick County has problems maintaining that site because it lacks funds to provide more intensive maintenance and to hire park staff. The city of Eagle Pass has a parks department that has the potential to enter into a cooperative management agreement with Maverick County.

Lack of funds is also reflected in land acquisition and park development needs. This is especially true in rural communities. Some communities are unable to come up with 50 percent of the cost of a project to match it with a state grant. The problem is compounded by a lack of grantsmanship skills in small communities. Region residents suggested that the law be changed to require that at least 50 percent of the Local Park Fund (LPF) go to communities with a population below 40,000. (Also, see State Summary, "Financing Parks and Recreation" under "Outdoor Recreation Issues and Recommendations.")

Most of the recommendations made indicate that this region has a laissez-faire approach to government. In a major departure from this orientation, region residents recommended that the state program to assist local governments with park acquisition and development be expanded to include park maintenance and operation in small communities. It was also felt that the Texas Parks and Wildlife Department (TPWD) should do

more to inform local governments about the grant programs it administers and should provide technical assistance to small communities in the preparation of grant applications. A related suggestion was that recreation providers do more to cooperate among themselves. (Also, see State Summary, "Improving Outdoor Recreation Implementation Programs" under "Outdoor Recreation Issues and Recommendations.")

In connection with the state park system, region residents suggested that TPWD give priority to the development of existing sites instead of acquiring more land. A related recommendation was that urban areas receive priority when seeking state park sites.

Recommendations:

For the Texas Parks and Wildlife Department:

Continue to assess the input provided on the Land and Water Conservation

Fund (LWCF) and the LPF during the review of the project selection criteria.

Continue to act as a clearinghouse for information on federal, state, local government, and private grants and assistance.

Increase efforts to provide outdoor recreation technical assistance workshops to local levels of government.

For recreation providers:

Explore cooperative maintenance agreements.

Develop adopt-a-park programs to involve organizations and private citizens in recreation.

For the commercial sector:

Analyze recreational demand and take a leadership role in providing recreational opportunities in a timely manner.

Population Trends

The region is projected to have a population growth of 26 percent between 1986 and 1995 (figure 1). This is well above the state average of 14 percent, but the region will continue to be one of the least populous in the state. Val Verde and Maverick counties are the most populous counties in the region. Maverick County had the highest population growth, while Real, La Salle, Dimmit, and Edwards counties experienced population declines.

Resource Attractions

Amistad Reservoir and the recreation area, and Garner State Park, are among the major regional attractions. Alamo Village, the Fort Clark Historic

**Figure 1
Region 24 Characteristics**

GEOGRAPHY

| | | |
|-----------------------------|---|---------------------|
| Counties | = | 9 |
| Land area | = | 14,299 square miles |
| Elevation | = | 326' - 2,410' |
| Annual rainfall | = | 16.9 - 23.9 inches |
| January minimum temperature | = | 38 - 43°F |
| July maximum temperature | = | 94 - 100°F |
| Growing season | = | 236 - 300 days |

POPULATION 1986

Total 132,188

| | |
|-----------|--------|
| Counties | |
| Val Verde | 38,502 |
| Maverick | 34,882 |
| Uvalde | 24,297 |
| Zavala | 11,680 |
| Dimmit | 10,862 |
| La Salle | 5,231 |
| Kinney | 2,459 |
| Real | 2,255 |
| Edwards | 2,020 |

1995 PROJECTED POPULATION

| | |
|------------------------|---------|
| Total | 166,692 |
| People per square mile | 11.7 |
| Ethnic composition: | |
| White | 22% |
| Black | 1% |
| Hispanic | 77% |

MAJOR RECREATION ATTRACTIONS/RESOURCES

Parks and Recreation Areas

| | | |
|---------------------------|---|--------------|
| Recreation land | = | 52,798 acres |
| Developed recreation land | = | 2,787 acres |

- Amistad National Recreation Area
- Chaparral Wildlife Management Area
- Devils River State Natural Area
- Devils Sinkhole State Natural Area
- Garner State Park
- Kickapoo Cavern State Park
- Moore Park (Del Rio)
- Seminole Canyon State Historical Park
- Uvalde Crossing (Zavala County)

Lakes

| | |
|---------------|--------|
| Surface acres | 68,939 |
|---------------|--------|

Surface Acres

| | |
|-------------------|--------|
| Amistad Reservoir | 67,000 |
| Espantosa Lake | 350 |
| Lake Nueces | 32 |

Streams

- Devils River
- Frio River
- Leona River
- Llano River, South Fork
- Nueces River
- Nueces River, West Fork
- Pecos River
- Rio Grande
- Sabinal River
- San Felipe Creek

Sources: 1988-89 Texas Almanac; 1986 O-D Participation Survey, TORIS, Texas Lakes Inventory - CPS, CPB, Parks Division, TPWD; "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986" - Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University; and Texas Department of Health Population Data System, July, 1986.

the state average in the number of tennis courts and soccer/football fields. Also, no supply is shown for horseback riding trails and for hiking trails. The designated trail at Garner State Park was enumerated as a walking trail, instead of a hiking trail, because it is only about half a mile long.

The surface acres of water for recreation are provided primarily by Amistad Reservoir which totals sixty-seven thousand surface acres of water (figure 1). The region has 408 surface water acres per thousand population for boating, fishing, and skiing. This compares very favorably to the state average of sixty-seven lake surface acres for recreation. Of the twenty-four regions, the region is second in surface area suitable for swimming.

Recreational facilities are concentrated in urban areas, while facility deficits occur in some rural areas. Most of the recreational land is found in Val Verde, Dimmit, La Salle, and Kinney counties. Val Verde County has over 50 percent of the recreational land, which consists primarily of the newly acquired Devils River State Natural Area and Amistad Recreation Area. The Chaparral Wildlife Management Area comprises most of the recreational land in Dimmit and La Salle counties, while the Kickapoo Cavern State Park site comprises most of the recreational land in Kinney County.

Potential and Proposed Resources

The partial listing of recreational attractions and resources shown in Figure 1, conservation information maintained by the Texas Natural Heritage Program of the TPWD, and other references, such as open space plans, should all receive consideration as potential resources to guide the planning and provision of outdoor recreation opportunities and other developments.

The Leakey Chamber of Commerce has 14 acres for a park site. The chamber of commerce is exploring avenues to apply for a grant and seek donations to develop the site.

The city of Del Rio is working on a project to protect San Felipe Springs and to extend the greenbelt along San Felipe Creek. The project will require land acquisition or easement negotiations with private landowners. Some of the facilities under consideration are tennis and basketball courts. Regionwide, tennis courts have medium priority, but locally in Del Rio, tennis is one of the

highest recreational needs.

The county land below Amistad Dam has recreation potential.

The city of Uvalde is preparing a master plan for recreational development of the Leona River. One of the proposed projects is the development of a parkway along the Leona to connect the Civic Center to Memorial Park.

The Economic Development Committee of La Salle County is working on the development of a theme park in the Cotulla area.

The city of Eagle Pass has been working on the expansion of Fort Duncan Park, including the landscaping of the adjacent creek.

A historical site in the Camp Wood area is being researched for interpretation and public use.

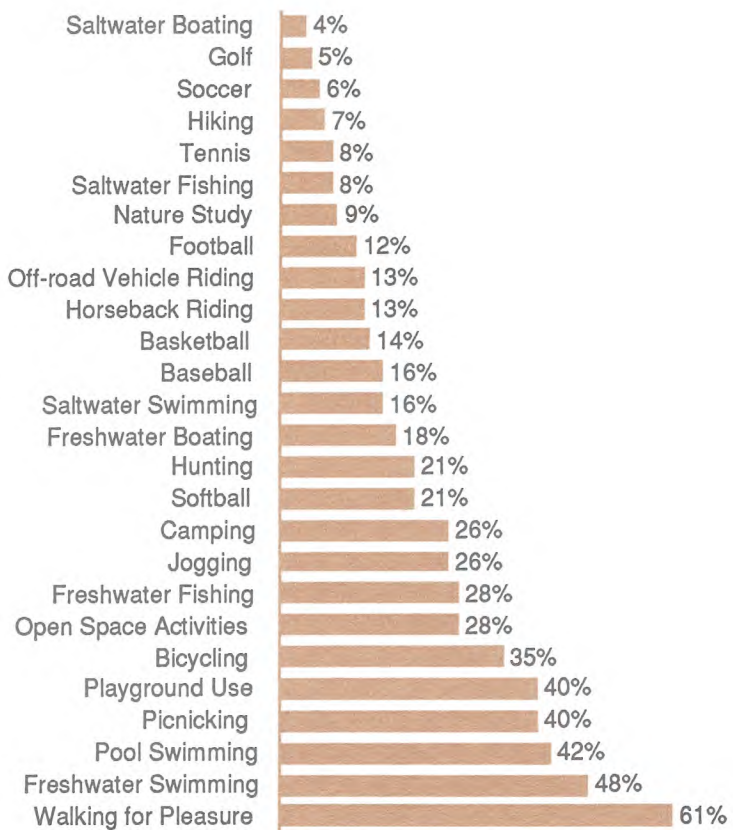
OUTDOOR RECREATION PARTICIPATION

Popular Activities

Figure 2 shows the percentage of the population participating in recreational activities. For example, over half of the region residents walk for pleasure and about half swim in freshwater resources.

Table 2 projects per capita participation statewide and for region residents both in the region and in all twenty-four regions. Activities that do not show per capita participation for all twenty-four regions on the table are considered ur-

Figure 2
Region 24 Projected 1995 Percentage
of Population Participating



Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this figure and an explanation of research methods. See Appendix D for an explanation of terms.

ban activities, meaning that these activities usually occur close to home and not outside the region of residence. State-wide per capita participation reflects all participation by all Texans within the state.

Swimming and fishing have the highest user occasions of the resource-based recreational activities. Of the urban activities, walking, cycling, and jogging are the highest. When only the participation occurring on trails is considered, the activities with the highest user occasions are swimming pool and playground use (table 2).

Recreation Travel Patterns

Recreationists are generally willing to travel longer distances and to undertake overnight trips for resource-based recreational resources. Figures 3 and 4 show the travel patterns in relationship to region 24. Seventy-nine percent of the region residents stay in the region to participate in these activities. The remaining 21 percent go elsewhere in Texas. Of those leaving the region, the highest percentage goes to the Coastal Bend (region 20).

Twenty-four percent of the recreation activity occurring in region 24 is generated by region residents. The remaining 76 percent is generated by Texas visitors from outside the region, indicating that the region is a destination region for recreational activities. The Alamo Area and the Houston region contribute 18 and 19 percent of the recreational activity in the region.

The activities most likely to entice region residents to travel to other regions are freshwater swimming and fishing. On the other hand, the activities enticing Texans to visit region 24 are swimming, camping, and hunting.

Projected Participation

Table 3 projects the demand that will be placed on region 24 rural recreational resources both by region residents and by Texans from outside the region. For example, in 1995, the most popular resource-based activities in region 24 will be swimming, camping, and hunting. It should be noted that demand generated by out-of-state visitors is not included.

Table 4 shows the same projections for those activities that usually occur close to home and involve region residents primarily.

Table 2
Projected 1995 Per Capita Outdoor Recreation Participation
Generated by Residents of Region 24 and Texans
(in Annual User Occasions)

| Activity/Facility Use | Projected Per Capita Participation Generated By | | |
|-----------------------------------|---|-----|------------------------------|
| | Residents of Region 24 | | |
| | Occurring In | | All Texans Statewide Avg. |
| Region 24 Only | All 24 Regions | | |
| Boat Ramp Lanes, FW | 0.8 | 1.1 | 1.3 |
| Boat Ramp Lanes, SW | * | 0.1 | 0.3 |
| Boating (Pleasure), FW | 0.3 | 0.5 | 0.6 |
| Boating (Pleasure), SW | * | * | 0.1 |
| Camping | 0.9 | 1.7 | 1.7 |
| Fishing, FW | 1.7 | 2.1 | 2.4 |
| Fishing from Banks | 0.6 | 0.7 | 0.8 |
| Fishing from Boats | 0.8 | 0.9 | 1.1 |
| Fishing from Structures | 0.4 | 0.5 | 0.5 |
| Fishing, SW | * | 0.3 | 0.7 |
| Fishing from Boats | * | 0.1 | 0.3 |
| Fishing from Shore | * | * | 0.1 |
| Fishing from Structures | * | 0.1 | 0.3 |
| Hiking | 0.2 | 0.3 | 0.4 |
| Hunting | 1.5 | 1.6 | 1.3 |
| Lake Use (BFS Suitable), FW | 1.0 | 1.2 | 1.5 |
| Nature Study | 0.5 | 0.6 | 0.9 |
| Picnicking | 1.6 | 1.8 | 1.9 |
| Swimming, FW | 3.0 | 3.1 | 2.1 |
| Swimming, SW | * | 0.5 | 1.2 |
| Baseball | 2.6 | | 1.5 |
| Basketball | 1.6 | | 1.6 |
| Bicycling | 12.4 | | 10.7 |
| Bicycling on Trails | 0.8 | | 0.7 |
| Football | 1.0 | | 0.8 |
| Golf | 0.6 | | 1.3 |
| Horseback Riding | 0.8 | | 0.7 |
| Horseback Riding on Trails | 0.2 | | 0.2 |
| Jogging/Running | 7.0 | | 5.4 |
| Jogging/Running on Trails | 2.2 | | 1.7 |
| Off-road Vehicle Riding | 1.3 | | 1.4 |
| Off-road Vehicle Riding on Trails | 0.3 | | 0.3 |
| Open Space Activities | 2.6 | | 3.2 |
| Playground Use | 5.0 | | 4.8 |
| Soccer | 1.0 | | 1.2 |
| Softball | 2.4 | | 1.8 |
| Swimming, Pool | 6.1 | | 6.4 |
| Tennis | 0.8 | | 1.3 |
| Walking (Pleasure/Exercise) | 15.2 | | 14.8 |
| Walking on Trails | 3.6 | | 3.5 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: Asterisks indicate value is less than .1 occasion per capita. See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

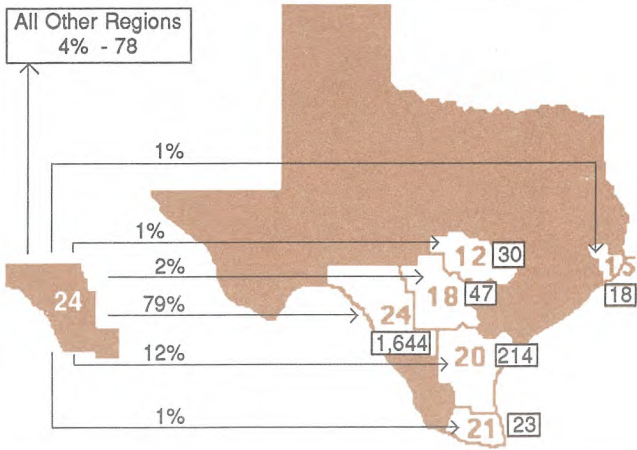


Figure 3
Destinations of Region 24 Residents
for Resource-based Activities

2,082 Annual User Occasions (000's)
Generated by Region 24 Residents, 1995

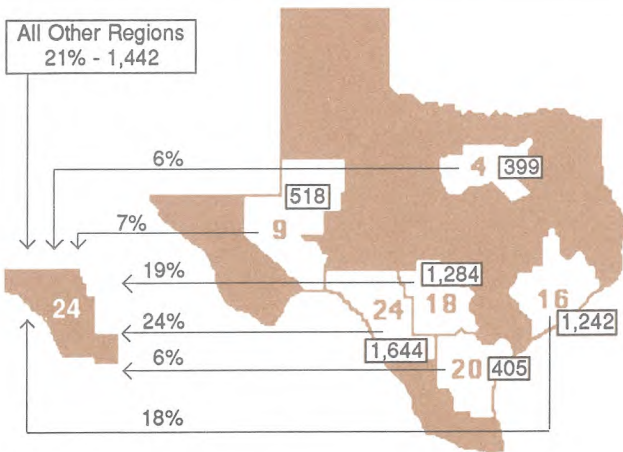


Figure 4
Origins of Participants Who Recreated
in Region 24 for Resource-based Activities

6,935 Annual User Occasions (000's)
Occurring in Region 24, 1995

Notes: Activities include camping, picnicking, hiking, nature study, freshwater swimming, freshwater fishing, freshwater boating, saltwater swimming, saltwater fishing, saltwater boating, and hunting.

Table 3
Projected Outdoor Recreation Participation in Region 24 by Region 24 Residents,
Texans from Outside Region 24, and Regional Totals, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation Occurring in Region 24 (In 000's Annual User Occasions) | | | | | | | | |
|-----------------------------|--|------|------|----------------------------------|------|------|-----------------|------|------|
| | Generated By | | | | | | Regional Totals | | |
| | Residents of Region 24 | | | Texans from Outside Region 24 | | | 1990 | 1995 | 2000 |
| | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 | 1990 | 1995 | 2000 |
| Boat Ramp Lanes, FW | 132 | 142 | 151 | 279 | 297 | 315 | 411 | 438 | 466 |
| Boating (Pleasure), FW | 51 | 54 | 58 | 136 | 144 | 152 | 187 | 198 | 210 |
| Camping | 142 | 153 | 165 | 1328 | 1431 | 1534 | 1470 | 1584 | 1698 |
| Fishing, FW | 271 | 290 | 310 | 507 | 541 | 576 | 777 | 831 | 886 |
| Fishing from Banks | 88 | 95 | 101 | 165 | 177 | 188 | 253 | 271 | 289 |
| Fishing from Boats | 121 | 130 | 139 | 227 | 242 | 258 | 348 | 372 | 397 |
| Fishing from Structures | 61 | 66 | 70 | 114 | 122 | 130 | 176 | 188 | 200 |
| Hiking | 36 | 39 | 42 | 155 | 166 | 176 | 191 | 204 | 218 |
| Hunting | 235 | 251 | 266 | 927 | 1000 | 1074 | 1162 | 1251 | 1340 |
| Lake Use (BFS Suitable), FW | 151 | 162 | 172 | 318 | 339 | 360 | 469 | 500 | 532 |
| Nature Study | 78 | 86 | 93 | 129 | 140 | 151 | 208 | 226 | 244 |
| Picnicking | 253 | 270 | 286 | 213 | 226 | 239 | 466 | 496 | 525 |
| Swimming, FW | 471 | 501 | 531 | 1549 | 1643 | 1737 | 2021 | 2144 | 2268 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

Notes: See Appendix B for key points to interpret this table and these figures and an explanation of research methods. See Appendix D for an explanation of terms.

Table 4
Projected Outdoor Recreation Participation
in Region 24 by Residents of Region 24, 1990, 1995, 2000

| Activity/Facility Use | Projected Participation (in 000's Annual User Occasions) | | |
|-----------------------------|---|------|------|
| | 1990 | 1995 | 2000 |
| Baseball | 408 | 438 | 469 |
| Basketball | 256 | 275 | 294 |
| Bicycling | 1927 | 2071 | 2216 |
| Bicycling on Trails | 119 | 128 | 137 |
| Football | 157 | 170 | 182 |
| Golf | 93 | 100 | 106 |
| Horseback Riding | 131 | 141 | 150 |
| Horseback Riding on Trails | 34 | 36 | 39 |
| Jogging/Running | 1100 | 1165 | 1232 |
| Jogging/Running on Trails | 339 | 359 | 379 |
| Off-road Vehicle Riding | 206 | 221 | 236 |
| ORV Riding on Trails | 40 | 43 | 46 |
| Open Space Activities | 406 | 431 | 457 |
| Playground Use | 776 | 827 | 879 |
| Soccer | 153 | 164 | 174 |
| Softball | 384 | 406 | 427 |
| Swimming, Pool | 953 | 1018 | 1083 |
| Tennis | 127 | 135 | 142 |
| Walking (Pleasure/Exercise) | 2336 | 2530 | 2725 |
| Walking on Trails | 547 | 592 | 638 |

Source: 1986 O-D Participation Survey, CPS, CPB, Parks Division, TPWD, 1987.

RESOURCE AND FACILITY NEEDS

Needed Facilities and Resources

Regionwide, projections through the year 2000 show no needs for golf, lake surface acres for recreation, areas for off-road vehicles, and picnic tables (table 5). Since these figures are regional aggregates, local need assessments should be conducted to determine community needs within the region. Table 6 is based on table 5 and ranks resource/facility needs to meet all projected in-state participation in this region.

Providers' Responsibilities

Table 7 suggests how to meet the recreational needs of the region by administration. Most of the recommended responsibilities are in line with the administrations' traditional role in the provision of outdoor recreation.

Table 5
Additional Outdoor Recreation Facilities/Resources
Needed in Region 24, 1990, 1995, 2000

| Facility/Resource | 1986 Facility Supply | Facilities Needed Above 1986 Supply | | |
|--|----------------------------|--|------------|------------|
| | | 1990 | 1995 | 2000 |
| Baseball Fields | 23 | 7 | 9 | 11 |
| Basketball Goals | 26 | 5 | 7 | 9 |
| Boat Ramp Lanes, FW | 30 | 25 | 28 | 32 |
| Campsites | 1375 | 1362 | 1575 | 1788 |
| Fishing Structures, FW Lin.Yd. | 236 | 943 | 1025 | 1108 |
| Golf Holes | 27 | * | * | * |
| Hiking Trail Miles | 0 | 26 | 28 | 29 |
| Horseback Riding Trail Miles | 0 | 5 | 5 | 6 |
| Lake Acres (BFS Suitable), FW | 63302 | * | * | * |
| Off-road Vehicle Riding Acres | 100 | * | * | * |
| Picnic Tables | 643 | * | * | * |
| Playground Areas, Equipped | 45 | 29 | 34 | 39 |
| Soccer/Football Fields | 5 | 15 | 17 | 18 |
| Softball Fields | 13 | 14 | 16 | 18 |
| Swimming, FW Sq.Yd. (000) | 349 | 137 | 167 | 197 |
| Swimming, Pool Sq.Yd. (000) | 5 | 1 | 2 | 2 |
| Tennis Courts | 17 | 16 | 18 | 20 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 13 | 4 | 5 | 7 |
| Developed Land Acres | | 478 | 517 | 554 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Table 6
Ranking of Outdoor Recreation Facility/Resource
Needs in Region 24 Through 1995

| Need Rank | Facility/Resource |
|-----------|--|
| 1 | Campsites |
| 2 | Soccer/Football Fields |
| 3 | Softball Fields |
| 4 | Fishing Struc., FW Lin.Yd. |
| 5 | Playground Areas, Equipped |
| 6 | Swimming, FW Sq.Yd. |
| 7 | Hiking Trail Miles |
| 8 | Boat Ramp Lanes, FW |
| 9 | Trail Miles, Multi-Use (Walk, Bike, Jog) |
| 10 | Tennis Courts |
| 11 | Swimming, Pool Sq. Yd. |
| 12 | Horseback Riding Trail Miles |
| 13 | Baseball Fields |
| 14 | Basketball Goals |
| 15 | Golf Holes |
| 16 | Off-Road Vehicle Riding Acres |
| 17 | Picnic Tables |
| 18 | Lake Acres (BFS Suitable) |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Note: See Appendix B for key points to interpret these tables and an explanation of research methods. See Appendix D for an explanation of terms.



Hunting, one of the top recreational activities in region 24, draws people from all over the state.

Table 7
Recommendations to Meet 1995 Outdoor Recreation Facility/Resource Needs
in Region 24, by Administration

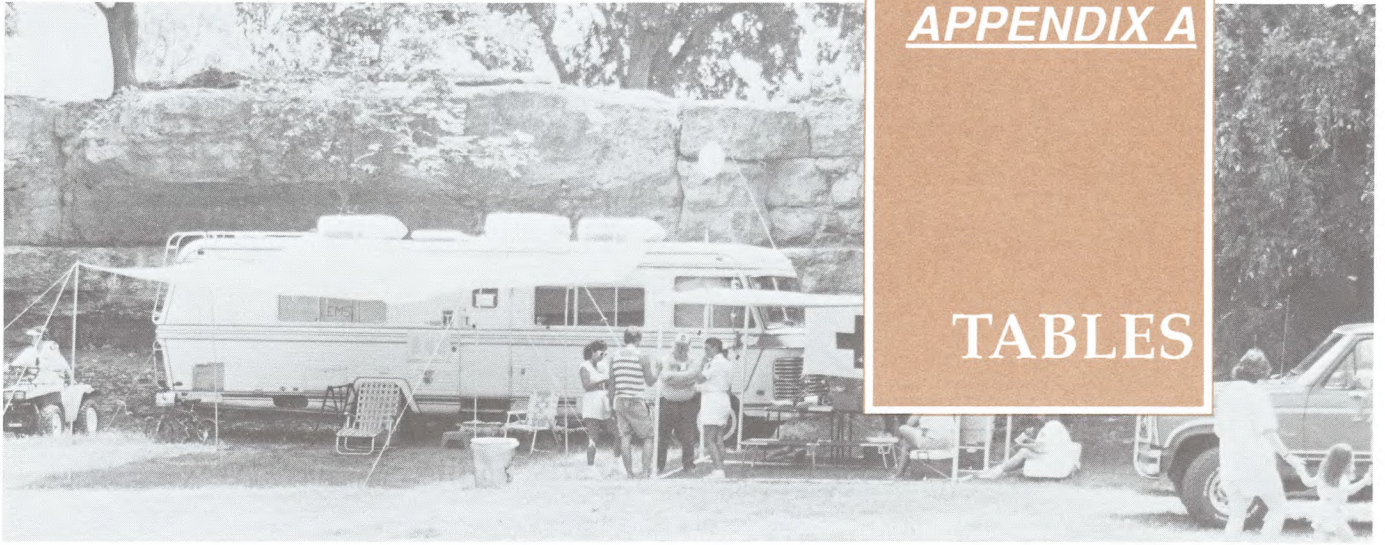
| Facility/Resource | Needs Through 1995 | FEDERAL | | | | STATE | | | | REG. | LOCAL | | | |
|---|--------------------|-----------------------|------------------------------|-------------------|--------------------|------------------------|---------------------------|-------------------------------|-------------|-------------------|----------|--------|-------------|------------|
| | | National Park Service | US Fish and Wildlife Service | US Forest Service | Corps of Engineers | TPWD State Park System | TPWD Wildlife Mgmt. Areas | Dept. of Hwys & Public Trans. | Other State | River Authorities | Counties | Cities | Other Local | COMMERCIAL |
| Baseball Fields | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 0 | 0 |
| Basketball Goals | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 |
| Boat Ramp Lanes, FW | 28 | 5 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 11 |
| Campsites | 1575 | 100 | 0 | 0 | 0 | 275 | 0 | 0 | 0 | 0 | 200 | 0 | 0 | 1000 |
| Fishing Structures, FW Lin.Yd. | 1025 | 130 | 0 | 0 | 0 | 200 | 0 | 0 | 0 | 0 | 100 | 200 | 0 | 395 |
| Golf Holes | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hiking Trail Miles | 28 | 7 | 0 | 0 | 0 | 11 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| Horseback Riding Trail Miles | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Off-road Vehicle Riding Acres | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Picnic Tables | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Playground Areas, Equipped | 34 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 28 | 0 | 0 |
| Soccer/Football Fields | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 10 | 0 | 0 |
| Softball Fields | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12 | 0 | 0 |
| Swimming, FW Sq.Yd.(000) | 167 | 117 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| Swimming, Pool Sq.Yd.(000) | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| Tennis Courts | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14 | 0 | 0 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 2 |
| Developed Land Acres | 939 | 149 | 0 | 0 | 0 | 161 | 40 | 0 | 0 | 0 | 110 | 161 | 0 | 318 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



APPENDIXES



APPENDIX A

TABLES

Festivals and events at recreational areas pose major safety and liability problems for the sponsor of the event and for the administrator of the site.

Table A1
Texas Population Projections for Planning Regions and MSAs

| <u>Planning Region / MSA</u> | <u>1990</u> | <u>1995</u> | <u>2000</u> | <u>Planning Region / MSA</u> | <u>1990</u> | <u>1995</u> | <u>2000</u> |
|--|------------------------|------------------------|------------------------|---|------------------------|------------------------|------------------------|
| 1 Panhandle Amarillo MSA | 415,519 203,273 | 432,054 215,126 | 448,807 227,021 | 14 Deep East Texas | 335,946 | 357,559 | 379,280 |
| 2 South Plains Lubbock MSA | 391,837 235,128 | 397,806 240,769 | 403,754 246,423 | 15 Southeast Texas Beaumont- Port Arthur MSA | 408,400 408,400 | 415,959 415,959 | 423,533 423,533 |
| 3 North Texas Wichita Falls MSA | 240,704 133,742 | 246,444 138,120 | 252,307 142,522 | 16 Gulf Coast Houston-Galveston- Brazoria CMSA | 4,260,442 4,055,847 | 4,660,979 4,447,193 | 5,061,680 4,838,683 |
| 4 North Central Texas Dallas- Ft. Worth CMSA | 3,894,628 3,659,607 | 4,190,900 3,936,868 | 4,487,528 4,214,327 | Houston PMSA | 3,620,357 | 3,988,288 | 4,356,345 |
| Dallas PMSA | 2,407,029 | 2,579,981 | 2,753,027 | Galveston- Texas City PMSA | 228,833 | 237,652 | 246,490 |
| Ft. Worth- Arlington PMSA | 1,252,578 | 1,356,887 | 1,461,300 | Brazoria MSA | 206,657 | 221,253 | 235,848 |
| 5 Northeast Texas Texarkana MSA | 264,344 83,287 | 273,091 85,663 | 281,921 88,053 | 17 Golden Crescent Victoria MSA | 185,379 79,832 | 192,661 83,821 | 199,980 87,819 |
| 6 East Texas Longview-Marshall MSA | 720,661 189,381 | 778,425 204,033 | 836,470 218,754 | 18 Alamo Region San Antonio MSA | 1,467,379 1,286,245 | 1,566,718 1,379,112 | 1,666,209 1,472,053 |
| Tyler MSA | 162,995 | 178,129 | 193,290 | 19 South Texas Laredo MSA | 188,035 135,623 | 213,127 155,360 | 238,232 175,089 |
| 7 West Central Texas Abilene MSA | 357,122 134,832 | 374,756 144,008 | 392,565 153,215 | 20 Coastal Bend Corpus Christi MSA | 567,824 391,190 | 606,536 421,072 | 645,274 450,970 |
| 8 Upper Rio Grande El Paso MSA | 613,161 589,574 | 662,122 637,810 | 711,094 686,065 | 21 Lower Rio Grande Valley Brownsville- Harlingen MSA | 675,257 270,524 | 745,974 294,450 | 816,704 318,384 |
| 9 Permian Basin Midland MSA | 443,570 122,480 | 488,448 139,616 | 533,481 156,784 | McAllen-Edinburg- Mission MSA | 384,888 | 431,263 | 477,652 |
| Odessa MSA | 152,482 | 170,902 | 189,339 | 22 Texoma Sherman-Dennison MSA | 153,166 98,130 | 154,610 99,858 | 156,058 101,596 |
| 10 Concho Valley San Angelo MSA | 156,865 105,691 | 167,615 114,206 | 178,463 122,747 | 23 Central Texas Killeen-Temple MSA | 315,594 257,420 | 332,714 273,572 | 349,918 289,770 |
| 11 Heart Of Texas Waco MSA | 296,368 192,909 | 306,359 199,915 | 316,387 206,936 | 24 Middle Rio Grande | 155,071 | 166,692 | 178,391 |
| 12 Capital Area Austin MSA | 877,293 732,129 | 966,027 810,204 | 1,054,940 888,320 | State Total | 17,641,350 | 18,985,328 | 20,331,851 |
| 13 Brazos Valley Bryan- College Station MSA | 256,785 148,434 | 287,752 170,845 | 318,875 193,300 | MSA Total | 14,214,043 | 15,387,874 | 16,562,645 |

MSA - Metropolitan Statistical Area - Free-standing metropolitan area surrounded by non-metropolitan counties

PMSA - Primary Metropolitan Statistical Area - A metropolitan area closely related to one or more others to form a CMSA

CMSA - Consolidated Metropolitan Statistical Area - A grouping of two or more PMSAs

Source: Texas Department of Health Population Data System; July, 1986.

Notes: See Appendix B for keys to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Table A2
1986 Texas Population Estimates for Cities and Places

| Region 1 | | | | Region 2 | | Region 3 | |
|--------------------------|-------------------|---------------------------|-------------------|---------------------------|-------------------|---------------------------|-------------------|
| <u>City / Place Name</u> | <u>Population</u> | <u>City / Place Name</u> | <u>Population</u> | <u>City / Place Name</u> | <u>Population</u> | <u>City / Place Name</u> | <u>Population</u> |
| Amarillo | 168,554 | Cactus | 964 | Lubbock | 189,236 | Wichita Falls | 100,452 |
| Pampa | 21,296 | Hart | 937 | Plainview | 21,258 | Vernon | 13,247 |
| Borger | 16,095 | Vega | 906 | Levelland | 14,576 | Burkburnett | 11,389 |
| Hereford | 14,942 | Skellytown | 840 | Brownfield | 10,410 | Graham | 9,015 |
| Dumas | 12,675 | Lefors | 805 | Slaton | 7,184 | Iowa Park | 6,673 |
| Canyon | 12,335 | Kress | 741 | Littlefield | 6,322 | Bowie | 5,765 |
| Perryton | 8,650 | Silverton | 703 | Denver City | 5,193 | Jacksboro | 3,882 |
| Dalhart | 6,375 | Miami | 700 | Muleshoe | 4,750 | Olney | 3,819 |
| Childress | 5,162 | Groom | 653 | Post | 4,022 | Electra | 3,751 |
| Dimmitt | 4,632 | Higgins | 648 | Floydada | 3,431 | Quanah | 3,686 |
| Tulia | 4,567 | Lake Tanglewood | 618 | Abernathy | 2,783 | Seymour | 3,522 |
| Friona | 3,572 | Happy | 593 | Tahoka | 2,648 | Nocona | 3,058 |
| Spearman | 3,378 | Quitaque | 539 | Idalou | 2,478 | Henrietta | 3,024 |
| Laughlin AFB | 3,329 | Turkey | 521 | Morton | 2,367 | Archer City | 1,913 |
| Canadian | 3,085 | Follett | 469 | Ralls | 2,201 | Paducah | 1,878 |
| Memphis | 2,701 | Texline | 439 | Shallowater | 2,176 | Holliday | 1,500 |
| Shamrock | 2,597 | Darrouzett | 415 | Hale Center | 2,138 | Crowell | 1,306 |
| Wellington | 2,424 | Texhoma | 364 | Reese AFB | 2,056 | Roman Forest | 1,179 |
| Fritch | 2,366 | Hedley | 333 | Wolfforth | 2,045 | Chillicothe | 997 |
| Stinnett | 2,362 | Channing | 284 | Crosbyton | 2,030 | Petrolia | 780 |
| Panhandle | 2,140 | Nazareth | 277 | Lockney | 1,980 | Newcastle | 649 |
| Clarendon | 2,114 | Mobeetie | 265 | Olton | 1,968 | Lakeside City | 637 |
| Sunray | 2,037 | Sanford | 255 | Plains | 1,606 | Bryson | 569 |
| Stratford | 1,879 | Adrian | 223 | Sundown | 1,603 | Byers | 542 |
| Phillips | 1,752 | Lakeview | 211 | Petersburg | 1,524 | Windthorst | 448 |
| Wheeler | 1,486 | Estelline | 204 | Earth | 1,332 | Megargel | 431 |
| Bovina | 1,353 | Dodson | 147 | Spur | 1,304 | Scotland | 417 |
| Farwell | 1,217 | Howardwick | 144 | Lorenzo | 1,261 | Bellevue | 359 |
| Gruver | 1,189 | | | Anton | 1,202 | Pleasant Valley | 351 |
| White Deer | 1,189 | City / Place Total | 334,872 | O'Donnell | 993 | Jolly | 176 |
| Booker | 1,108 | All Others | 57,812 | Sudan | 934 | | |
| McLean | 1,060 | Regional Total | 392,684 | Matador | 878 | City / Place Total | 185,415 |
| Claude | 1,053 | | | Amherst | 806 | All Others | 37,333 |
| | | | | New Deal | 712 | Regional Total | 222,748 |
| | | | | Lake Ransom Canyon | 606 | | |
| | | | | Meadow | 601 | | |
| | | | | Ropesville | 502 | | |
| | | | | Smyer | 484 | | |
| | | | | Wilson | 483 | | |
| | | | | Whiteface | 428 | | |
| | | | | Dickens | 331 | | |
| | | | | Edmonson | 278 | | |
| | | | | Roaring Springs | 267 | | |
| | | | | Wellman | 258 | | |
| | | | | Dean | 227 | | |
| | | | | New Home | 217 | | |
| | | | | Springlake | 187 | | |
| | | | | City / Place Total | 312,276 | | |
| | | | | All Others | 60,288 | | |
| | | | | Regional Total | 372,564 | | |

| Region 4 | | | | Region 5 | | | |
|----------------------|------------|------------------------|------------|---------------------------|------------------|---------------------------|----------------|
| City / Place Name | Population | City / Place Name | Population | City / Place Name | Population | City / Place Name | Population |
| Dallas | 1,057,860 | Lake Dallas | 4,631 | Maypearl | 804 | Texarkana | 33,003 |
| Fort Worth | 470,440 | Bridgeport | 4,469 | Godley | 793 | Paris | 26,709 |
| Arlington | 222,967 | Alvarado | 4,334 | Milford | 792 | Sulphur Springs | 14,587 |
| Garland | 174,211 | Southlake | 4,201 | Melissa | 775 | Mount Pleasant | 11,833 |
| Irving | 136,149 | Cockrell Hill | 3,930 | Briaroaks | 771 | Atlanta | 6,356 |
| Plano | 107,326 | Edgecliff | 3,640 | Eastvale | 733 | New Boston | 4,807 |
| Grand Prairie | 89,429 | Forney | 3,617 | Strawn | 727 | Clarksville | 4,643 |
| Richardson | 89,030 | Keene | 3,596 | Bartonville | 716 | Wake Village | 4,410 |
| Mesquite | 86,764 | Sachse | 3,366 | Krugerville | 702 | Daingerfield | 2,999 |
| Denton | 71,846 | Hutchins | 3,363 | Rio Vista | 692 | Hooks | 2,614 |
| Carrollton | 57,782 | Heath | 3,256 | Campbell | 673 | Nash | 2,473 |
| North Richland Hills | 43,407 | Pantego | 3,170 | Frost | 644 | Linden | 2,443 |
| Hurst | 40,102 | Kennedale | 3,156 | Lipan | 635 | Hughes Springs | 2,279 |
| Lewisville | 37,424 | Pilot Point | 3,117 | Lowry Crossing | 620 | Cooper | 2,211 |
| Haltom City | 36,403 | Corinth | 3,011 | Oak Point | 615 | De Kalb | 2,161 |
| Duncanville | 35,314 | Farmersville | 2,972 | Tolar | 614 | Mount Vernon | 2,072 |
| Euless | 31,290 | Red Oak | 2,931 | McLendon-Chisholm | 598 | Lone Star | 1,996 |
| Bedford | 28,764 | Blue Mound | 2,867 | Anneta | 597 | Queen City | 1,840 |
| Farmers Branch | 28,166 | Wilmer | 2,848 | Rhome | 589 | Naples | 1,760 |
| Greenville | 26,259 | Dublin | 2,824 | Millsap | 584 | Blossom | 1,706 |
| University Park | 25,888 | Ferris | 2,731 | Runaway Bay | 582 | Bogata | 1,562 |
| Corsicana | 24,412 | Briar | 2,390 | Blue Ridge | 565 | Maud | 1,096 |
| Cleburne | 24,283 | Royse City | 2,315 | Graford | 556 | Omaha | 858 |
| De Soto | 21,334 | Springtown | 2,292 | Gordon | 549 | Talco | 758 |
| McKinney | 21,140 | Glen Rose | 2,287 | Lone Oak | 549 | Deport | 755 |
| The Colony | 21,054 | Hickory Creek | 2,276 | Newark | 546 | Detroit | 754 |
| Lancaster | 18,889 | Joshua | 2,084 | Josephine | 537 | Roxton | 739 |
| Waxahachie | 18,565 | Celina | 1,952 | Rice | 533 | Cumby | 723 |
| Benbrook | 18,341 | Ovilla | 1,951 | Weston | 526 | Avinger | 667 |
| White Settlement | 17,835 | Lucas | 1,897 | Hebron | 524 | Como | 664 |
| Balch Springs | 17,783 | Mabank | 1,893 | Ponder | 514 | Avery | 462 |
| Burleson | 17,185 | Wolfe City | 1,835 | New Hope | 481 | Oak Grove | 449 |
| Grapevine | 16,786 | Sunnyvale | 1,760 | Aurora | 479 | Annona | 440 |
| Mineral Wells | 16,760 | Kerens | 1,751 | Cross Roads | 467 | Bloomburg | 406 |
| Terrell | 16,492 | Willow Park | 1,730 | Bardwell | 441 | Winfield | 349 |
| Weatherford | 16,431 | Little Elm | 1,632 | Hudson Oaks | 431 | Tira | 286 |
| Forest Hill | 15,738 | Murphy | 1,626 | Westminster | 409 | Leary | 257 |
| Watauga | 15,216 | Argyle | 1,624 | Goodlow | 405 | Domino | 256 |
| Ennis | 14,991 | Justin | 1,604 | Union Grove | 385 | Pecan Gap | 242 |
| Stephenville | 13,789 | Aubrey | 1,597 | Anneta North | 384 | Douglassville | 215 |
| Allen | 13,301 | Italy | 1,558 | Haslet | 383 | Toco | 187 |
| Mansfield | 12,477 | Palmer | 1,528 | Cool | 377 | Marietta | 163 |
| Rowlett | 12,301 | Roanoke | 1,524 | Altoga | 359 | Sun Valley | 87 |
| Highland Park | 10,296 | Trophy Club | 1,520 | Oak Ridge | 347 | Miller's Cove | 67 |
| Richland Hills | 9,916 | Parker | 1,516 | Lake Bridgeport | 340 | Monticello | 48 |
| Rockwall | 9,856 | Dalworthington Gardens | 1,509 | Fate | 326 | | |
| Cedar Hill | 9,469 | Krum | 1,503 | Angus | 301 | City / Place Total | 145,392 |
| Commerce | 9,130 | Aledo | 1,472 | Navarro | 300 | All Others | 101,764 |
| Colleyville | 8,950 | Grandview | 1,470 | Westlake | 298 | Regional Total | 247,156 |
| Seagoville | 8,691 | Glenn Heights | 1,452 | Richland | 297 | | |
| Flower Mound | 8,432 | Crandall | 1,352 | Retreat | 296 | | |
| River Oaks | 8,400 | Kemp | 1,350 | Lakewood Village | 273 | | |
| Azle | 8,202 | Caddo Mills | 1,302 | Garrett | 270 | | |
| Crowley | 8,137 | Quinlan | 1,273 | Lavon | 247 | | |
| Keller | 7,711 | Double Oak | 1,262 | Barry | 230 | | |
| Saginaw | 7,505 | Shady Shores | 1,225 | Emhouse | 227 | | |
| Addison | 7,278 | Anna | 1,190 | Northlake | 220 | | |
| Everman | 6,969 | Boyd | 1,185 | Mingus | 216 | | |
| Coppell | 6,361 | Chico | 1,142 | Alma | 211 | | |
| Kaufman | 6,049 | Alvord | 1,069 | Neylandville | 210 | | |
| Lake Worth | 5,488 | West Tawakoni | 996 | Anneta South | 181 | | |
| Highland Village | 5,290 | Combine | 929 | Buckingham | 173 | | |
| Decatur | 5,282 | Blooming Grove | 902 | Corral City | 136 | | |
| Sanger | 5,029 | Prosper | 896 | Powell | 121 | | |
| Sansom Park Village | 4,995 | Westover Hills | 861 | Lincoln Park | 62 | | |
| Frisco | 4,975 | Seven Points | 832 | Mustang | 20 | | |
| Westworth | 4,962 | Venus | 830 | | | | |
| Princeton | 4,937 | Copper Canyon | 829 | City / Place Total | 3,653,555 | | |
| Granbury | 4,902 | Celeste | 819 | All Others | 284,010 | | |
| Midlothian | 4,801 | Dawson | 818 | Regional Total | 3,937,565 | | |
| Wylie | 4,722 | | | | | | |

Table A2, continued

| Region 10 | | Region 11 | | Region 12 | | Region 13 | |
|---------------------------|----------------|---------------------------|----------------|---------------------------|----------------|---------------------------|----------------|
| City / Place Name | Population | City / Place Name | Population | City / Place Name | Population | City / Place Name | Population |
| San Angelo | 85,055 | Waco | 110,200 | Austin | 504,202 | Bryan | 64,535 |
| Brady | 5,965 | Woodway | 8,387 | San Marcos | 35,021 | College Station | 52,530 |
| Sonora | 3,734 | Bellmead | 8,274 | Round Rock | 21,364 | Brenham | 13,014 |
| Big Lake | 3,703 | Hillsboro | 8,066 | Georgetown | 14,485 | Navasota | 6,577 |
| Ozona | 3,643 | Mexia | 8,064 | Taylor | 13,821 | Hearne | 5,847 |
| Junction | 2,731 | Robinson | 6,933 | Lockhart | 10,013 | Madisonville | 4,062 |
| Eldorado | 2,186 | Marlin | 6,735 | Elgin | 6,687 | Caldwell | 3,565 |
| Mason | 2,014 | Hewitt | 6,729 | Cedar Park | 6,348 | Somerville | 2,248 |
| Menard | 1,662 | McGregor | 4,887 | Luling | 5,608 | Buffalo | 2,016 |
| Robert Lee | 1,332 | Groesbeck | 4,267 | Bastrop | 5,403 | Calvert | 1,763 |
| Sterling City | 1,189 | Fairfield | 4,067 | Marble Falls | 4,897 | Franklin | 1,463 |
| Eden | 1,150 | Teague | 3,818 | Smithville | 4,717 | Bremond | 1,033 |
| Bronte | 1,044 | Clifton | 3,047 | Giddings | 4,680 | Centerville | 973 |
| Mertzon | 971 | Lacy-Lakeview | 3,041 | Burnet | 4,540 | Jewett | 852 |
| Paint Rock | 252 | West | 2,618 | Kyle | 4,384 | Oakwood | 772 |
| Melvin | 179 | Mart | 2,434 | La Grange | 4,194 | Normangee | 759 |
| | | Beverly Hills | 2,337 | Llano | 4,049 | Snook | 498 |
| City / Place Total | 116,810 | Northcrest | 2,207 | Leander | 3,811 | Burton | 378 |
| All Others | 26,044 | Rosebud | 1,924 | West Lake Hills | 3,042 | Midway | 330 |
| Regional Total | 142,854 | Hubbard | 1,819 | Schulenburg | 2,635 | Marquez | 298 |
| | | Whitney | 1,809 | Kingsland | 2,554 | Leona | 206 |
| | | Itasca | 1,710 | Bartlett | 1,902 | | |
| | | Moody | 1,472 | Granger | 1,498 | City / Place Total | 163,719 |
| | | Meridian | 1,359 | Lago Vista | 1,400 | All Others | 65,354 |
| | | Wortham | 1,320 | Manor | 1,377 | Regional Total | 229,073 |
| | | Valley Mills | 1,270 | Blanco | 1,360 | | |
| | | Coolidge | 975 | Rollingwood | 1,355 | | |
| | | Lott | 830 | Lexington | 1,350 | | |
| | | Lorena | 771 | Pflugerville | 1,290 | | |
| | | Riesel | 739 | Martindale | 1,190 | | |
| | | Crawford | 677 | Jonestown | 1,130 | | |
| | | Walnut Springs | 633 | Buda | 1,127 | | |
| | | Thornton | 617 | Hutto | 1,113 | | |
| | | Kosse | 573 | Bertram | 1,092 | | |
| | | Morgan | 507 | Johnson City | 1,089 | | |
| | | Hallsburg | 505 | Flatonina | 1,084 | | |
| | | Streetman | 453 | Florence | 1,022 | | |
| | | Iredell | 413 | Dripping Springs | 1,010 | | |
| | | Blum | 409 | Sunset Valley | 969 | | |
| | | Mount Calm | 407 | Lakeway | 883 | | |
| | | Abbott | 383 | Granite Shoals | 839 | | |
| | | Cranfills Gap | 364 | Thrall | 750 | | |
| | | Golinda | 326 | Hays | 544 | | |
| | | Malone | 324 | Uhland | 420 | | |
| | | Tehuacana | 321 | Fayetteville | 378 | | |
| | | Gholson | 305 | San Leanna | 350 | | |
| | | Covington | 285 | Carmine | 245 | | |
| | | Leroy | 278 | Round Top | 80 | | |
| | | Penelope | 277 | | | | |
| | | Bynum | 257 | City / Place Total | 693,302 | | |
| | | Ross | 211 | All Others | 176,323 | | |
| | | Aquilla | 137 | Regional Total | 869,625 | | |
| | | Mertens | 135 | | | | |
| | | Kirvin | 117 | | | | |
| | | | | | | | |
| | | City / Place Total | 221,023 | | | | |
| | | All Others | 67,861 | | | | |
| | | Regional Total | 288,884 | | | | |

Table A2, continued

| Region 14 | | Region 15 | | Region 16 | | | |
|-------------------|------------|---------------------------|----------------|-----------------------|------------|---------------------------|------------------|
| City / Place Name | Population | City / Place Name | Population | City / Place Name | Population | City / Place Name | Population |
| Lufkin | 31,439 | Beaumont | 116,148 | Houston | 1,893,113 | Jones Creek | 2,886 |
| Nacogdoches | 30,800 | Port Arthur | 59,734 | Pasadena | 130,550 | Webster | 2,739 |
| Crockett | 8,047 | Orange | 22,905 | Baytown | 67,388 | Brookshire | 2,618 |
| Jasper | 7,162 | Nederland | 16,877 | Galveston | 63,778 | Winnie | 2,545 |
| Livingston | 6,100 | Groves | 16,670 | Texas City | 43,974 | Sheldon | 2,516 |
| Center | 5,792 | Port Neches | 13,964 | Missouri City | 33,321 | Shenandoah | 2,386 |
| Diboll | 5,684 | Vidor | 12,485 | Huntsville | 31,538 | Willis | 2,179 |
| Trinity | 3,235 | Bridge City | 9,431 | Deer Park | 28,142 | Weimar | 2,134 |
| Woodville | 3,037 | Silsbee | 7,457 | Rosenberg | 24,293 | Needville | 1,946 |
| San Augustine | 3,015 | West Orange | 4,417 | Conroe | 23,814 | Mont Belvieu | 1,839 |
| Hudson | 2,548 | Lumberton | 2,888 | Lake Jackson | 21,210 | San Leon | 1,829 |
| Corrigan | 2,143 | Pinehurst | 2,877 | Cloverleaf | 20,467 | Anahuac | 1,771 |
| Shepherd | 1,978 | Kountze | 2,663 | Channelview | 20,402 | East Bernard | 1,737 |
| Kirbyville | 1,941 | Sour Lake | 1,761 | Bay City | 19,845 | Crosby | 1,677 |
| Huntington | 1,837 | Griffing Park | 1,639 | La Porte | 19,768 | Markham | 1,652 |
| Grapeland | 1,691 | China | 1,377 | Alvin | 19,621 | Oyster Creek | 1,637 |
| Evadale | 1,662 | Bevil Oaks | 1,332 | Kingwood | 19,511 | Brookside Village | 1,564 |
| Fuller Springs | 1,647 | Rose City | 650 | League City | 19,462 | Stowell | 1,536 |
| Newton | 1,557 | Pine Forest | 648 | Sugar Land | 19,433 | Waller | 1,526 |
| Groveton | 1,548 | Nome | 545 | Friendswood | 18,126 | Panorama Village | 1,498 |
| Hemphill | 1,392 | Rose Hill Acres | 440 | Bellaire | 16,355 | Danbury | 1,471 |
| Deweyville | 1,197 | Grayburg | 191 | La Marque | 16,284 | Shoreacres | 1,466 |
| Garrison | 1,157 | | | Pearland | 16,142 | Southside Place | 1,428 |
| Pineland | 1,153 | City / Place Total | 297,099 | South Houston | 15,462 | Kemah | 1,370 |
| Timpson | 1,121 | All Others | 71,837 | Angleton | 15,291 | Wallis | 1,365 |
| Tenaha | 1,026 | Regional Total | 368,936 | Aldine | 14,643 | Ames | 1,298 |
| Joaquin | 969 | | | Freeport | 14,309 | Daisetta | 1,281 |
| Zavalla | 787 | | | West University Place | 13,141 | Van Vleck | 1,278 |
| Coldspring | 722 | | | Richmond | 12,144 | Patton | 1,265 |
| Lovelady | 568 | | | Galena Park | 11,287 | Magnolia | 1,189 |
| Colmesneil | 559 | | | El Campo | 10,718 | New Waverly | 1,044 |
| Cushing | 558 | | | Jacinto City | 10,400 | Beach City | 992 |
| Appleby | 505 | | | The Woodlands | 10,188 | Arcola | 960 |
| Kennard | 475 | | | Clute | 10,073 | Splendora | 925 |
| Onalaska | 469 | | | Santa Fe | 9,749 | Kenefick | 872 |
| Goodrich | 422 | | | Wharton | 9,056 | Cut And Shoot | 859 |
| Chireno | 409 | | | Humble | 8,751 | Woodbranch | 852 |
| Pointblank | 385 | | | Liberty | 8,630 | Hardin | 848 |
| Seven Oaks | 367 | | | Dickinson | 8,013 | Crystal Beach | 819 |
| Burke | 356 | | | Katy | 7,516 | Hillcrest | 808 |
| Latexo | 345 | | | Highlands | 7,444 | Clear Lake Shores | 799 |
| Chester | 341 | | | Hitchcock | 7,104 | Fulshear | 778 |
| Huxley | 337 | | | Cleveland | 6,357 | Simonton | 772 |
| Bronson | 261 | | | Stafford | 6,117 | Kendleton | 761 |
| Oakhurst | 260 | | | Dayton | 5,773 | Chateau Woods | 756 |
| Browndell | 231 | | | Palacios | 5,685 | Hilshire Village | 676 |
| Broaddus | 228 | | | Seabrook | 5,536 | Liverpool | 663 |
| | | | | Bacliff | 5,229 | Cove | 661 |
| | | | | Nassau Bay | 5,199 | Iowa Colony | 657 |
| | | | | Sealy | 4,948 | Surfside Beach | 613 |
| | | | | Jersey Village | 4,863 | San Felipe | 610 |
| | | | | Hunters Creek Village | 4,856 | Plum Grove | 581 |
| | | | | Tomball | 4,790 | Orchard | 542 |
| | | | | West Columbia | 4,440 | Devers | 528 |
| | | | | Taylor Lake Village | 4,429 | Beasley | 515 |
| | | | | Bunker Hill Village | 4,274 | Pleak | 511 |
| | | | | Eagle Lake | 4,202 | Morgan's Point | 498 |
| | | | | Hempstead | 4,108 | Woodloch | 450 |
| | | | | Sweeny | 3,877 | Stagecoach | 437 |
| | | | | Columbus | 3,874 | Riverside | 403 |
| | | | | Manvel | 3,805 | Pattison | 401 |
| | | | | Barrett | 3,732 | Jamaica Beach | 392 |
| | | | | El Lago | 3,732 | Baileys Prairie | 390 |
| | | | | Prairie View | 3,730 | Thompsons | 318 |
| | | | | Spring Valley | 3,684 | Montgomery | 313 |
| | | | | Piney Point Village | 3,571 | North Cleveland | 281 |
| | | | | Lomax | 3,554 | Bonney | 95 |
| | | | | Brazoria | 3,361 | Quintana | 34 |
| | | | | Bellville | 3,212 | | |
| | | | | Oak Ridge North | 3,178 | City / Place Total | 2,997,450 |
| | | | | Hedwig Village | 2,921 | All Others | 819,998 |
| | | | | Richwood | 2,917 | Regional Total | 3,817,448 |
| | | | | | | | |

Table A2, continued

| Region 22 | | Region 23 | | Region 24 | |
|---------------------------|----------------|---------------------------|----------------|---------------------------|----------------|
| City / Place Name | Population | City / Place Name | Population | City / Place Name | Population |
| Sherman | 34,555 | Killeen | 59,222 | Del Rio | 32,459 |
| Denison | 26,858 | Temple | 50,383 | Eagle Pass | 24,097 |
| Gainesville | 14,963 | Fort Hood | 32,411 | Uvalde | 16,813 |
| Bonham | 7,211 | Copperas Cove | 21,897 | Crystal City | 8,363 |
| Whitesboro | 3,422 | Belton | 13,411 | Carrizo Springs | 7,146 |
| Howe | 2,537 | Harker Heights | 7,628 | Cotulla | 3,843 |
| Van Alstyne | 2,085 | Lampasas | 7,007 | Sabinal | 1,936 |
| Honey Grove | 1,932 | Gatesville | 6,884 | Brackettville | 1,819 |
| Whitewright | 1,919 | Rockdale | 5,881 | Asherton | 1,508 |
| Leonard | 1,467 | Cameron | 5,791 | Rocksprings | 1,338 |
| Muenster | 1,423 | Hamilton | 2,917 | La Pryor | 1,260 |
| Pottsboro | 1,038 | San Saba | 2,524 | Big Wells | 865 |
| Bells | 945 | Goldthwaite | 1,791 | Camp Wood | 682 |
| Collinsville | 926 | Nolanville | 1,719 | Encinal | 645 |
| Tom Bean | 926 | Troy | 1,611 | Leakey | 438 |
| Gunter | 892 | Rogers | 1,501 | Spofford | 86 |
| Savoy | 858 | Montague Village | 1,407 | | |
| Ladonia | 786 | Thorndale | 1,344 | City / Place Total | 103,298 |
| Trenton | 736 | Morgan's Point Resort | 1,300 | All Others | 28,890 |
| Lindsay | 603 | Hico | 1,285 | Regional Total | 132,188 |
| Valley View | 588 | Salado | 1,188 | | |
| Tioga | 580 | Holland | 998 | | |
| Ector | 560 | Fort Gates | 845 | | |
| Luella | 447 | Lometa | 723 | | |
| Sadler | 377 | Milano | 488 | | |
| Southmayd | 349 | Oglesby | 475 | | |
| Callisburg | 308 | Evant | 434 | | |
| Dodd City | 282 | Buckholts | 377 | | |
| Windom | 279 | Richland Springs | 355 | | |
| Dorchester | 233 | Mullin | 241 | | |
| Bailey | 184 | | | | |
| | | City / Place Total | 234,038 | | |
| City / Place Total | 110,269 | All Others | 72,914 | | |
| All Others | 44,714 | Regional Total | 306,952 | | |
| Regional Total | 154,983 | | | | |

Source: "Estimates of the Total Populations of Counties and Places in Texas for July 1, 1986," Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University, December 1, 1987.

Notes: See Appendix B for keys to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Table A3
1986 Supply of Parks / Recreation Areas:
Land, Facilities, and Water per Thousand for 1990 Population

| Facility / Resource | Planning Region | | | | | | | | |
|--|-----------------|--------|----------|---------|---------|---------|----------|----------|----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Number of Parks/Rec. Areas | 0.736 | 0.538 | 0.806 | 0.373 | 0.469 | 0.476 | 0.608 | 0.287 | 0.471 |
| Total Parkland Acres | 350.515 | 52.953 | 169.538 | 32.755 | 267.926 | 101.567 | 58.085 | 2432.459 | 23.704 |
| Baseball Fields | 0.162 | 0.232 | 0.266 | 0.080 | 0.148 | 0.137 | 0.207 | 0.082 | 0.189 |
| Basketball Goals | 0.213 | 0.158 | 0.213 | 0.120 | 0.081 | 0.076 | 0.104 | 0.186 | 0.090 |
| Boat Ramp Lanes, FW | 0.116 | 0.071 | 0.191 | 0.109 | 0.340 | 0.329 | 0.316 | 0.002 | 0.029 |
| Boat Ramp Lanes, SW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Campsites | 4.356 | 1.102 | 3.195 | 1.385 | 5.879 | 5.752 | 5.474 | 3.281 | 2.144 |
| Fishing Bank Access,FW Lin.Yd. | 25.770 | 0.383 | 99.708 | 32.702 | 47.968 | 44.681 | 44.943 | 18.103 | 3.224 |
| Fishing Structures,FW Lin.Yd. | 2.496 | 14.575 | 8.513 | 2.097 | 7.259 | 4.302 | 6.197 | 0.109 | 0.135 |
| Fishing Structures,SW Lin.Yd. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Golf Holes | 0.736 | 0.666 | 0.449 | 0.171 | 0.102 | 0.162 | 0.479 | 0.088 | 0.539 |
| Hiking Trail Miles | 0.021 | 0.019 | 0.008 | 0.006 | 0.032 | 0.033 | 0.000 | 0.363 | 0.000 |
| Horseback Riding Trail Miles | 0.045 | 0.000 | 0.002 | 0.008 | 0.000 | 0.000 | 0.000 | 0.229 | 0.000 |
| Lake Acres (BFS Suitable), FW | 43.475 | 4.630 | 156.940 | 42.558 | 102.952 | 170.481 | 124.775 | 0.041 | 31.362 |
| Off-road Vehicle Riding Acres | 4.272 | 0.051 | 0.000 | 0.744 | 0.049 | 0.100 | 0.000 | 2.986 | 0.000 |
| Picnic Tables | 3.299 | 2.142 | 3.331 | 2.297 | 2.892 | 2.094 | 2.997 | 1.270 | 2.647 |
| Playground Areas, Equipped | 0.431 | 0.286 | 0.374 | 0.235 | 0.163 | 0.191 | 0.291 | 0.215 | 0.320 |
| Soccer/Football Fields | 0.201 | 0.116 | 0.069 | 0.145 | 0.017 | 0.062 | 0.053 | 0.070 | 0.068 |
| Softball Fields | 0.109 | 0.096 | 0.218 | 0.123 | 0.080 | 0.074 | 0.085 | 0.041 | 0.144 |
| Swimming, FW Sq.Yd. | 402.773 | 20.595 | 1515.430 | 100.048 | 360.856 | 375.607 | 5226.379 | 3.914 | 1938.364 |
| Swimming, SW Sq.Yd. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Swimming, Pool Sq.Yd. | 45.541 | 45.187 | 58.271 | 23.144 | 34.009 | 21.257 | 49.496 | 23.699 | 67.917 |
| Tennis Courts | 0.294 | 0.337 | 0.269 | 0.225 | 0.123 | 0.152 | 0.213 | 0.114 | 0.255 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0.032 | 0.014 | 0.035 | 0.030 | 0.022 | 0.035 | 0.022 | 0.020 | 0.016 |

Table A3 / continued
1986 Supply of Parks / Recreation Areas:
Land, Facilities, and Water per Thousand for 1990 Population

| Facility / Resource | Planning Region | | | | | | | | |
|--|-----------------|---------|---------|---------|----------|----------|---------|---------|--------|
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Number of Parks/Rec. Areas | 0.880 | 0.614 | 0.564 | 0.401 | 0.807 | 0.384 | 0.273 | 0.534 | 0.298 |
| Total Parkland Acres | 133.095 | 160.823 | 59.417 | 64.449 | 1728.383 | 395.863 | 74.461 | 289.752 | 31.288 |
| Baseball Fields | 0.240 | 0.086 | 0.127 | 0.129 | 0.155 | 0.087 | 0.075 | 0.240 | 0.069 |
| Basketball Goals | 0.118 | 0.116 | 0.085 | 0.218 | 0.104 | 0.102 | 0.137 | 0.115 | 0.143 |
| Boat Ramp Lanes, FW | 0.529 | 0.341 | 0.191 | 0.160 | 0.923 | 0.015 | 0.021 | 0.135 | 0.050 |
| Boat Ramp Lanes, SW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.039 | 0.032 | 0.151 | 0.000 |
| Campsites | 6.490 | 6.644 | 3.853 | 3.587 | 20.944 | 1.530 | 1.360 | 4.170 | 3.007 |
| Fishing Bank Access,FW Lin.Yd. | 126.797 | 91.828 | 22.484 | 18.848 | 51.675 | 3.448 | 9.160 | 18.449 | 18.592 |
| Fishing Structures,FW Lin.Yd. | 2.964 | 7.788 | 6.820 | 3.143 | 17.646 | 0.000 | 0.293 | 7.056 | 0.980 |
| Fishing Structures,SW Lin.Yd. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 73.572 | 17.182 | 22.322 | 0.000 |
| Golf Holes | 0.861 | 0.395 | 0.205 | 0.140 | 0.429 | 0.198 | 0.101 | 0.291 | 0.153 |
| Hiking Trail Miles | 0.000 | 0.020 | 0.076 | 0.008 | 0.286 | 0.006 | 0.028 | 0.011 | 0.018 |
| Horseback Riding Trail Miles | 0.000 | 0.020 | 0.021 | 0.034 | 0.060 | 0.000 | 0.003 | 0.000 | 0.044 |
| Lake Acres (BFS Suitable), FW | 197.687 | 137.833 | 56.443 | 53.329 | 902.844 | 3.767 | 8.444 | 54.026 | 10.711 |
| Off-road Vehicle Riding Acres | 3.187 | 0.084 | 0.006 | 1.266 | 0.039 | 0.037 | 0.105 | 0.000 | 0.041 |
| Picnic Tables | 5.693 | 3.141 | 3.139 | 2.706 | 2.479 | 1.322 | 1.649 | 5.765 | 2.430 |
| Playground Areas, Equipped | 0.357 | 0.297 | 0.239 | 0.261 | 0.196 | 0.203 | 0.153 | 0.254 | 0.154 |
| Soccer/Football Fields | 0.079 | 0.085 | 0.054 | 0.120 | 0.042 | 0.042 | 0.056 | 0.022 | 0.076 |
| Softball Fields | 0.114 | 0.089 | 0.110 | 0.097 | 0.054 | 0.079 | 0.066 | 0.170 | 0.076 |
| Swimming, FW Sq.Yd. | 343.990 | 983.095 | 516.179 | 179.138 | 1183.521 | 0.000 | 14.247 | 709.304 | 59.362 |
| Swimming, SW Sq.Yd. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1278.159 | 185.169 | 117.381 | 0.000 |
| Swimming, Pool Sq.Yd. | 66.924 | 54.550 | 59.105 | 31.832 | 29.966 | 26.114 | 13.219 | 39.287 | 27.954 |
| Tennis Courts | 0.105 | 0.238 | 0.209 | 0.171 | 0.176 | 0.192 | 0.114 | 0.101 | 0.179 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0.057 | 0.030 | 0.054 | 0.026 | 0.065 | 0.035 | 0.044 | 0.030 | 0.025 |

Table A3 / continued
1986 Supply of Parks / Recreation Areas:
Land, Facilities, and Water per Thousand for 1990 Population

| Facility / Resource | Planning Region | | | | | | Statewide |
|--|-----------------|----------|---------|----------|--------|----------|-----------|
| | 19 | 20 | 21 | 22 | 23 | 24 | |
| Number of Parks/Rec. Areas | 0.569 | 0.696 | 0.696 | 0.757 | 0.504 | 0.767 | 0.433 |
| Total Parkland Acres | 15.741 | 352.982 | 108.420 | 292.783 | 67.959 | 340.480 | 209.373 |
| Baseball Fields | 0.087 | 0.098 | 0.084 | 0.220 | 0.140 | 0.148 | 0.106 |
| Basketball Goals | 0.236 | 0.129 | 0.140 | 0.176 | 0.090 | 0.168 | 0.131 |
| Boat Ramp Lanes, FW | 0.133 | 0.067 | 0.006 | 0.450 | 0.165 | 0.193 | 0.120 |
| Boat Ramp Lanes, SW | 0.000 | 0.148 | 0.041 | 0.000 | 0.000 | 0.000 | 0.017 |
| Campsites | 10.806 | 6.923 | 46.345 | 8.585 | 3.042 | 8.867 | 4.867 |
| Fishing Bank Access,FW Lin.Yd. | 0.319 | 2.853 | 13.965 | 220.023 | 41.858 | 1.290 | 25.739 |
| Fishing Structures,FW Lin.Yd. | 2.845 | 2.240 | 0.092 | 58.388 | 2.107 | 1.522 | 3.147 |
| Fishing Structures,SW Lin.Yd. | 0.000 | 73.320 | 16.879 | 0.000 | 0.000 | 0.000 | 9.093 |
| Golf Holes | 0.191 | 0.206 | 0.342 | 0.353 | 0.399 | 0.174 | 0.224 |
| Hiking Trail Miles | 0.000 | 0.004 | 0.000 | 0.132 | 0.000 | 0.000 | 0.036 |
| Horseback Riding Trail Miles | 0.000 | 0.000 | 0.000 | 0.013 | 0.000 | 0.000 | 0.018 |
| Lake Acres (BFS Suitable), FW | 279.584 | 53.622 | 4.887 | 573.816 | 45.270 | 408.211 | 67.194 |
| Off-road Vehicle Riding Acres | 0.054 | 0.035 | 0.074 | 19.652 | 0.285 | 0.645 | 0.639 |
| Picnic Tables | 3.045 | 2.700 | 4.661 | 3.285 | 2.239 | 4.143 | 2.418 |
| Playground Areas, Equipped | 0.191 | 0.377 | 0.280 | 0.477 | 0.263 | 0.290 | 0.226 |
| Soccer/Football Fields | 0.002 | 0.047 | 0.050 | 0.101 | 0.067 | 0.032 | 0.083 |
| Softball Fields | 0.034 | 0.096 | 0.045 | 0.168 | 0.103 | 0.084 | 0.091 |
| Swimming, FW Sq.Yd. | 352.168 | 65.601 | 2.221 | 1047.883 | 68.126 | 2248.809 | 350.389 |
| Swimming, SW Sq.Yd. | 0.000 | 4419.008 | 148.240 | 0.000 | 0.000 | 0.000 | 223.451 |
| Swimming, Pool Sq.Yd. | 31.861 | 31.394 | 32.620 | 40.472 | 34.788 | 31.386 | 28.760 |
| Tennis Courts | 0.179 | 0.118 | 0.153 | 0.163 | 0.204 | 0.110 | 0.177 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0.031 | 0.030 | 0.046 | 0.010 | 0.011 | 0.087 | 0.035 |

Source: CPS, CPB, Parks Division, TPWD, 1989.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Table A4
Additional Outdoor Recreation Facilities/Resources Needed
per Thousand Population, 1990, by Planning Region

| Facility / Resource | Planning Region | | | | | | | | |
|--|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Baseball Fields | 0.000 | 0.000 | 0.000 | 0.006 | 0.000 | 0.000 | 0.000 | 0.055 | 0.000 |
| Basketball Goals | 0.000 | 0.082 | 0.000 | 0.055 | 0.072 | 0.054 | 0.084 | 0.064 | 0.077 |
| Boat Ramp Lanes, FW | 0.034 | 0.010 | 0.087 | 0.000 | 0.000 | 0.000 | 0.000 | 0.039 | 0.014 |
| Boat Ramp Lanes, SW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Campsites | 0.000 | 0.401 | 0.204 | 0.000 | 0.000 | 0.000 | 0.000 | 2.892 | 0.000 |
| Fishing Structures, FW Lin.Yd. | 0.344 | 0.000 | 0.000 | 0.081 | 0.000 | 2.126 | 0.865 | 1.280 | 0.733 |
| Fishing Structures, SW Lin.Yd. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Golf Holes | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.020 | 0.000 |
| Hiking Trail Miles | 0.063 | 0.010 | 0.012 | 0.016 | 0.004 | 0.004 | 0.048 | 0.000 | 0.029 |
| Horseback Riding Trail Miles | 0.000 | 0.023 | 0.029 | 0.021 | 0.042 | 0.025 | 0.025 | 0.000 | 0.034 |
| Lake Acres (BFS Suitable), FW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.925 | 0.000 |
| Off-road Vehicle Riding Acres | 0.000 | 0.194 | 0.208 | 0.000 | 0.303 | 0.179 | 0.272 | 0.000 | 0.255 |
| Picnic Tables | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Playground Areas, Equipped | 0.048 | 0.191 | 0.042 | 0.239 | 0.219 | 0.207 | 0.165 | 0.300 | 0.142 |
| Soccer/Football Fields | 0.000 | 0.069 | 0.046 | 0.026 | 0.072 | 0.042 | 0.050 | 0.099 | 0.056 |
| Softball Fields | 0.029 | 0.036 | 0.000 | 0.000 | 0.045 | 0.046 | 0.039 | 0.093 | 0.000 |
| Swimming, FW Sq.Yd. (000) | 0.103 | 0.204 | 0.000 | 0.264 | 0.491 | 0.621 | 0.000 | 0.137 | 0.000 |
| Swimming, SW Sq.Yd. (000) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Swimming, Pool Sq.Yd. (000) | 0.000 | 0.000 | 0.000 | 0.017 | 0.000 | 0.016 | 0.000 | 0.018 | 0.000 |
| Tennis Courts | 0.036 | 0.000 | 0.008 | 0.159 | 0.057 | 0.129 | 0.101 | 0.184 | 0.014 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0.060 | 0.082 | 0.058 | 0.068 | 0.064 | 0.050 | 0.067 | 0.093 | 0.072 |

| Facility / Resource | Planning Region | | | | | | | | |
|--|-----------------|-------|-------|-------|-------|-------|-------|--------|-------|
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Baseball Fields | 0.000 | 0.037 | 0.000 | 0.031 | 0.000 | 0.051 | 0.049 | 0.000 | 0.013 |
| Basketball Goals | 0.102 | 0.067 | 0.119 | 0.004 | 0.071 | 0.095 | 0.087 | 0.070 | 0.040 |
| Boat Ramp Lanes, FW | 0.000 | 0.000 | 0.104 | 0.113 | 0.000 | 0.054 | 0.054 | 0.124 | 0.091 |
| Boat Ramp Lanes, SW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.017 | 0.038 | 0.022 | 0.000 |
| Campsites | 0.319 | 3.040 | 1.401 | 2.473 | 0.000 | 0.000 | 0.111 | 1.969 | 0.372 |
| Fishing Structures, FW Lin.Yd. | 9.620 | 0.000 | 0.000 | 3.287 | 2.337 | 1.195 | 1.389 | 0.000 | 1.730 |
| Fishing Structures, SW Lin.Yd. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 19.096 | 0.000 |
| Golf Holes | 0.000 | 0.000 | 0.000 | 0.008 | 0.000 | 0.000 | 0.081 | 0.000 | 0.005 |
| Hiking Trail Miles | 0.038 | 0.044 | 0.017 | 0.027 | 0.000 | 0.051 | 0.008 | 0.022 | 0.050 |
| Horseback Riding Trail Miles | 0.032 | 0.007 | 0.005 | 0.000 | 0.000 | 0.027 | 0.022 | 0.022 | 0.000 |
| Lake Acres (BFS Suitable), FW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Off-road Vehicle Riding Acres | 0.000 | 0.118 | 0.237 | 0.000 | 0.354 | 0.260 | 0.104 | 0.270 | 0.135 |
| Picnic Tables | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Playground Areas, Equipped | 0.032 | 0.071 | 0.221 | 0.226 | 0.125 | 0.294 | 0.335 | 0.135 | 0.280 |
| Soccer/Football Fields | 0.070 | 0.054 | 0.073 | 0.074 | 0.045 | 0.056 | 0.060 | 0.070 | 0.059 |
| Softball Fields | 0.006 | 0.040 | 0.023 | 0.051 | 0.057 | 0.051 | 0.065 | 0.000 | 0.078 |
| Swimming, FW Sq.Yd. (000) | 0.808 | 0.158 | 0.693 | 0.802 | 0.780 | 0.206 | 0.222 | 0.000 | 0.638 |
| Swimming, SW Sq.Yd. (000) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.385 | 0.781 | 0.000 |
| Swimming, Pool Sq.Yd. (000) | 0.000 | 0.000 | 0.000 | 0.013 | 0.000 | 0.011 | 0.033 | 0.000 | 0.016 |
| Tennis Courts | 0.280 | 0.027 | 0.193 | 0.144 | 0.006 | 0.137 | 0.324 | 0.162 | 0.133 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0.032 | 0.064 | 0.057 | 0.078 | 0.018 | 0.069 | 0.061 | 0.065 | 0.080 |

Table A4 / *continued*
Additional Outdoor Recreation Facilities/Resources Needed
per Thousand Population, 1990, by Planning Region

| Facility / Resource | Planning Region | | | | | | Statewide |
|--|-----------------|-------|-------|-------|-------|-------|-----------|
| | 19 | 20 | 21 | 22 | 23 | 24 | |
| Baseball Fields | 0.112 | 0.067 | 0.058 | 0.000 | 0.000 | 0.045 | 0.024 |
| Basketball Goals | 0.032 | 0.058 | 0.073 | 0.000 | 0.092 | 0.032 | 0.067 |
| Boat Ramp Lanes, FW | 0.064 | 0.077 | 0.065 | 0.026 | 0.019 | 0.161 | 0.042 |
| Boat Ramp Lanes, SW | 0.000 | 0.086 | 0.070 | 0.000 | 0.000 | 0.000 | 0.015 |
| Campsites | 0.000 | 0.000 | 0.000 | 2.990 | 0.000 | 8.783 | 0.453 |
| Fishing Structures, FW Lin.Yd. | 2.191 | 0.734 | 1.762 | 0.000 | 1.328 | 6.081 | 1.070 |
| Fishing Structures, SW Lin.Yd. | 0.000 | 0.000 | 7.893 | 0.000 | 0.000 | 0.000 | 0.503 |
| Golf Holes | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.021 |
| Hiking Trail Miles | 0.016 | 0.056 | 0.030 | 0.033 | 0.038 | 0.168 | 0.023 |
| Horseback Riding Trail Miles | 0.037 | 0.026 | 0.016 | 0.020 | 0.025 | 0.032 | 0.018 |
| Lake Acres (BFS Suitable), FW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.032 |
| Off-road Vehicle Riding Acres | 0.149 | 0.113 | 0.107 | 0.000 | 0.016 | 0.000 | 0.106 |
| Picnic Tables | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Playground Areas, Equipped | 0.324 | 0.132 | 0.243 | 0.000 | 0.234 | 0.187 | 0.241 |
| Soccer/Football Fields | 0.133 | 0.079 | 0.102 | 0.013 | 0.067 | 0.097 | 0.055 |
| Softball Fields | 0.165 | 0.044 | 0.116 | 0.000 | 0.035 | 0.090 | 0.044 |
| Swimming, FW Sq.Yd. (000) | 0.000 | 0.252 | 0.151 | 0.940 | 0.524 | 0.884 | 0.324 |
| Swimming, SW Sq.Yd. (000) | 0.000 | 1.081 | 2.606 | 0.000 | 0.000 | 0.000 | 0.477 |
| Swimming, Pool Sq.Yd. (000) | 0.007 | 0.006 | 0.004 | 0.000 | 0.005 | 0.008 | 0.015 |
| Tennis Courts | 0.000 | 0.255 | 0.081 | 0.039 | 0.095 | 0.103 | 0.174 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0.080 | 0.074 | 0.065 | 0.078 | 0.086 | 0.026 | 0.066 |

Source: CPS, CPB, Parks Division, TPWD, 1989.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Table A4
Additional Outdoor Recreation Facilities/Resources Needed
per Thousand Population, 1995, by Planning Region

| Facility / Resource | Planning Region | | | | | | | | |
|--|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Baseball Fields | 0.000 | 0.000 | 0.000 | 0.011 | 0.000 | 0.000 | 0.000 | 0.060 | 0.000 |
| Basketball Goals | 0.000 | 0.080 | 0.000 | 0.062 | 0.073 | 0.059 | 0.088 | 0.074 | 0.086 |
| Boat Ramp Lanes, FW | 0.037 | 0.010 | 0.093 | 0.000 | 0.000 | 0.000 | 0.011 | 0.039 | 0.016 |
| Boat Ramp Lanes, SW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Campsites | 0.000 | 0.427 | 0.333 | 0.000 | 0.209 | 0.143 | 0.000 | 3.153 | 0.000 |
| Fishing Structures, FW Lin.Yd. | 0.421 | 0.000 | 0.000 | 0.231 | 0.000 | 2.450 | 1.235 | 1.284 | 0.733 |
| Fishing Structures, SW Lin.Yd. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Golf Holes | 0.000 | 0.000 | 0.000 | 0.007 | 0.000 | 0.000 | 0.000 | 0.027 | 0.000 |
| Hiking Trail Miles | 0.065 | 0.010 | 0.016 | 0.016 | 0.007 | 0.006 | 0.048 | 0.000 | 0.029 |
| Horseback Riding Trail Miles | 0.000 | 0.023 | 0.028 | 0.021 | 0.040 | 0.024 | 0.024 | 0.000 | 0.035 |
| Lake Acres (BFS Suitable), FW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.926 | 0.000 |
| Offroad Vehicle Riding Acres | 0.000 | 0.194 | 0.207 | 0.000 | 0.300 | 0.185 | 0.270 | 0.000 | 0.252 |
| Picnic Tables | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.056 | 0.000 |
| Playground Areas, Equipped | 0.062 | 0.194 | 0.049 | 0.246 | 0.223 | 0.216 | 0.176 | 0.311 | 0.170 |
| Soccer/Football Fields | 0.002 | 0.068 | 0.045 | 0.028 | 0.073 | 0.042 | 0.053 | 0.104 | 0.063 |
| Softball Fields | 0.032 | 0.035 | 0.000 | 0.004 | 0.048 | 0.050 | 0.043 | 0.094 | 0.000 |
| Swimming, FW Sq.Yd. (000) | 0.112 | 0.202 | 0.000 | 0.262 | 0.505 | 0.634 | 0.000 | 0.136 | 0.000 |
| Swimming, SW Sq.Yd. (000) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Swimming, Pool Sq.Yd. (000) | 0.000 | 0.000 | 0.000 | 0.018 | 0.001 | 0.017 | 0.000 | 0.019 | 0.000 |
| Tennis Courts | 0.044 | 0.000 | 0.012 | 0.173 | 0.059 | 0.137 | 0.109 | 0.190 | 0.037 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0.060 | 0.083 | 0.061 | 0.070 | 0.066 | 0.053 | 0.067 | 0.094 | 0.074 |

| Facility / Resource | Planning Region | | | | | | | | |
|--|-----------------|-------|-------|-------|-------|-------|-------|--------|-------|
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Baseball Fields | 0.000 | 0.039 | 0.000 | 0.042 | 0.000 | 0.050 | 0.056 | 0.000 | 0.017 |
| Basketball Goals | 0.107 | 0.072 | 0.122 | 0.024 | 0.076 | 0.096 | 0.099 | 0.073 | 0.047 |
| Boat Ramp Lanes, FW | 0.012 | 0.000 | 0.118 | 0.122 | 0.000 | 0.055 | 0.056 | 0.135 | 0.094 |
| Boat Ramp Lanes, SW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.017 | 0.041 | 0.031 | 0.000 |
| Campsites | 0.764 | 3.545 | 1.658 | 2.711 | 0.000 | 0.000 | 0.209 | 2.294 | 0.585 |
| Fishing Structures, FW Lin.Yd. | 9.844 | 0.062 | 0.000 | 3.496 | 3.532 | 1.209 | 1.405 | 0.000 | 1.790 |
| Fishing Structures, SW Lin.Yd. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 21.271 | 0.000 |
| Golf Holes | 0.000 | 0.000 | 0.000 | 0.021 | 0.000 | 0.000 | 0.092 | 0.000 | 0.018 |
| Hiking Trail Miles | 0.036 | 0.046 | 0.023 | 0.024 | 0.000 | 0.053 | 0.011 | 0.026 | 0.052 |
| Horseback Riding Trail Miles | 0.036 | 0.007 | 0.006 | 0.003 | 0.000 | 0.026 | 0.022 | 0.026 | 0.000 |
| Lake Acres (BFS Suitable), FW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Offroad Vehicle Riding Acres | 0.000 | 0.121 | 0.233 | 0.000 | 0.352 | 0.255 | 0.111 | 0.265 | 0.136 |
| Picnic Tables | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 | 0.000 | 0.000 | 0.000 | 0.000 |
| Playground Areas, Equipped | 0.054 | 0.078 | 0.231 | 0.250 | 0.134 | 0.288 | 0.340 | 0.140 | 0.284 |
| Soccer/Football Fields | 0.066 | 0.055 | 0.075 | 0.076 | 0.042 | 0.055 | 0.065 | 0.073 | 0.062 |
| Softball Fields | 0.012 | 0.039 | 0.027 | 0.056 | 0.059 | 0.050 | 0.068 | 0.000 | 0.080 |
| Swimming, FW Sq.Yd. (000) | 0.824 | 0.198 | 0.698 | 0.787 | 0.829 | 0.204 | 0.218 | 0.011 | 0.635 |
| Swimming, SW Sq.Yd. (000) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.366 | 0.788 | 0.000 |
| Swimming, Pool Sq.Yd. (000) | 0.000 | 0.000 | 0.000 | 0.016 | 0.002 | 0.011 | 0.034 | 0.000 | 0.018 |
| Tennis Courts | 0.286 | 0.033 | 0.205 | 0.156 | 0.014 | 0.135 | 0.331 | 0.161 | 0.140 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0.036 | 0.065 | 0.061 | 0.080 | 0.020 | 0.067 | 0.065 | 0.067 | 0.082 |

Table A4 / *continued*
Additional Outdoor Recreation Facilities/Resources Needed
per Thousand Population, 1995, by Planning Region

| Facility / Resource | Planning Region | | | | | | Statewide |
|--|-----------------|-------|-------|-------|-------|-------|-----------|
| | 19 | 20 | 21 | 22 | 23 | 24 | |
| Baseball Fields | 0.122 | 0.073 | 0.066 | 0.000 | 0.000 | 0.054 | 0.029 |
| Basketball Goals | 0.056 | 0.066 | 0.084 | 0.000 | 0.096 | 0.042 | 0.074 |
| Boat Ramp Lanes, FW | 0.075 | 0.081 | 0.064 | 0.052 | 0.027 | 0.168 | 0.045 |
| Boat Ramp Lanes, SW | 0.000 | 0.097 | 0.071 | 0.000 | 0.000 | 0.000 | 0.017 |
| Campsites | 0.000 | 0.382 | 0.000 | 3.648 | 0.000 | 9.449 | 0.569 |
| Fishing Structures, FW Lin.Yd. | 2.454 | 0.885 | 1.751 | 0.000 | 1.440 | 6.149 | 1.179 |
| Fishing Structures, SW Lin.Yd. | 0.000 | 0.000 | 9.152 | 0.000 | 0.000 | 0.000 | 0.575 |
| Golf Holes | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.027 |
| Hiking Trail Miles | 0.014 | 0.056 | 0.029 | 0.039 | 0.036 | 0.168 | 0.024 |
| Horseback Riding Trail Miles | 0.038 | 0.026 | 0.016 | 0.019 | 0.024 | 0.030 | 0.018 |
| Lake Acres (BFS Suitable), FW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.032 |
| Offroad Vehicle Riding Acres | 0.155 | 0.114 | 0.113 | 0.000 | 0.027 | 0.000 | 0.108 |
| Picnic Tables | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.002 |
| Playground Areas, Equipped | 0.347 | 0.148 | 0.265 | 0.000 | 0.240 | 0.204 | 0.251 |
| Soccer/Football Fields | 0.131 | 0.082 | 0.106 | 0.013 | 0.069 | 0.102 | 0.058 |
| Softball Fields | 0.169 | 0.048 | 0.119 | 0.000 | 0.039 | 0.096 | 0.047 |
| Swimming, FW Sq.Yd. (000) | 0.000 | 0.252 | 0.150 | 0.993 | 0.521 | 1.001 | 0.327 |
| Swimming, SW Sq.Yd. (000) | 0.000 | 1.321 | 2.563 | 0.000 | 0.000 | 0.000 | 0.486 |
| Swimming, Pool Sq.Yd. (000) | 0.011 | 0.008 | 0.007 | 0.000 | 0.007 | 0.010 | 0.016 |
| Tennis Courts | 0.005 | 0.260 | 0.094 | 0.032 | 0.102 | 0.108 | 0.184 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0.084 | 0.076 | 0.070 | 0.078 | 0.087 | 0.030 | 0.068 |

Source: CPS, CPB, Parks Division, TPWD, 1989.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.

Table A4
Additional Outdoor Recreation Facilities/Resources Needed
per Thousand Population, 2000, by Planning Region

| Facility / Resource | Planning Region | | | | | | | | |
|--|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Baseball Fields | 0.000 | 0.000 | 0.000 | 0.015 | 0.000 | 0.000 | 0.000 | 0.065 | 0.000 |
| Basketball Goals | 0.000 | 0.082 | 0.000 | 0.067 | 0.078 | 0.065 | 0.092 | 0.083 | 0.094 |
| Boat Ramp Lanes, FW | 0.040 | 0.012 | 0.099 | 0.004 | 0.000 | 0.000 | 0.028 | 0.039 | 0.019 |
| Boat Ramp Lanes, SW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Campsites | 0.000 | 0.453 | 0.456 | 0.000 | 0.518 | 0.478 | 0.089 | 3.378 | 0.000 |
| Fishing Structures, FW Lin.Yd. | 0.492 | 0.000 | 0.000 | 0.361 | 0.000 | 2.728 | 1.577 | 1.285 | 0.731 |
| Fishing Structures, SW Lin.Yd. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Golf Holes | 0.000 | 0.000 | 0.000 | 0.020 | 0.004 | 0.000 | 0.000 | 0.035 | 0.000 |
| Hiking Trail Miles | 0.065 | 0.012 | 0.016 | 0.017 | 0.007 | 0.010 | 0.048 | 0.000 | 0.028 |
| Horseback Riding Trail Miles | 0.000 | 0.022 | 0.028 | 0.021 | 0.039 | 0.025 | 0.025 | 0.000 | 0.034 |
| Lake Acres (BFS Suitable), FW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.925 | 0.000 |
| Offroad Vehicle Riding Acres | 0.000 | 0.193 | 0.202 | 0.000 | 0.302 | 0.191 | 0.267 | 0.000 | 0.249 |
| Picnic Tables | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.129 | 0.000 |
| Playground Areas, Equipped | 0.076 | 0.193 | 0.052 | 0.252 | 0.223 | 0.224 | 0.186 | 0.322 | 0.193 |
| Soccer/Football Fields | 0.004 | 0.067 | 0.044 | 0.030 | 0.074 | 0.043 | 0.056 | 0.107 | 0.067 |
| Softball Fields | 0.033 | 0.035 | 0.000 | 0.008 | 0.046 | 0.055 | 0.043 | 0.096 | 0.000 |
| Swimming, FW Sq.Yd. (000) | 0.121 | 0.199 | 0.000 | 0.261 | 0.519 | 0.645 | 0.000 | 0.135 | 0.000 |
| Swimming, SW Sq.Yd. (000) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Swimming, Pool Sq.Yd. (000) | 0.000 | 0.000 | 0.000 | 0.019 | 0.002 | 0.018 | 0.000 | 0.021 | 0.000 |
| Tennis Courts | 0.051 | 0.000 | 0.016 | 0.185 | 0.060 | 0.146 | 0.117 | 0.195 | 0.054 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0.062 | 0.082 | 0.059 | 0.072 | 0.067 | 0.055 | 0.069 | 0.096 | 0.075 |

| Facility / Resource | Planning Region | | | | | | | | |
|--|-----------------|-------|-------|-------|-------|-------|-------|--------|-------|
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Baseball Fields | 0.000 | 0.041 | 0.000 | 0.053 | 0.000 | 0.050 | 0.062 | 0.000 | 0.020 |
| Basketball Goals | 0.112 | 0.073 | 0.125 | 0.041 | 0.082 | 0.094 | 0.109 | 0.075 | 0.053 |
| Boat Ramp Lanes, FW | 0.045 | 0.019 | 0.129 | 0.132 | 0.026 | 0.057 | 0.057 | 0.145 | 0.097 |
| Boat Ramp Lanes, SW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.019 | 0.042 | 0.040 | 0.000 |
| Campsites | 1.160 | 4.020 | 1.873 | 2.901 | 0.000 | 0.000 | 0.292 | 2.595 | 0.773 |
| Fishing Structures, FW Lin.Yd. | 10.041 | 0.471 | 0.000 | 3.666 | 4.590 | 1.223 | 1.419 | 0.000 | 1.844 |
| Fishing Structures, SW Lin.Yd. | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.247 | 23.287 | 0.000 |
| Golf Holes | 0.000 | 0.000 | 0.012 | 0.034 | 0.000 | 0.000 | 0.101 | 0.000 | 0.029 |
| Hiking Trail Miles | 0.039 | 0.047 | 0.027 | 0.025 | 0.000 | 0.057 | 0.012 | 0.025 | 0.053 |
| Horseback Riding Trail Miles | 0.034 | 0.006 | 0.008 | 0.006 | 0.000 | 0.026 | 0.022 | 0.025 | 0.000 |
| Lake Acres (BFS Suitable), FW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Offroad Vehicle Riding Acres | 0.000 | 0.120 | 0.229 | 0.000 | 0.351 | 0.253 | 0.117 | 0.265 | 0.137 |
| Picnic Tables | 0.000 | 0.000 | 0.000 | 0.000 | 0.134 | 0.000 | 0.000 | 0.000 | 0.000 |
| Playground Areas, Equipped | 0.073 | 0.082 | 0.238 | 0.270 | 0.142 | 0.283 | 0.344 | 0.140 | 0.287 |
| Soccer/Football Fields | 0.067 | 0.054 | 0.076 | 0.075 | 0.042 | 0.054 | 0.070 | 0.070 | 0.065 |
| Softball Fields | 0.017 | 0.041 | 0.029 | 0.063 | 0.061 | 0.047 | 0.071 | 0.000 | 0.082 |
| Swimming, FW Sq.Yd. (000) | 0.838 | 0.236 | 0.702 | 0.775 | 0.872 | 0.202 | 0.215 | 0.038 | 0.632 |
| Swimming, SW Sq.Yd. (000) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.349 | 0.794 | 0.000 |
| Swimming, Pool Sq.Yd. (000) | 0.000 | 0.000 | 0.000 | 0.019 | 0.003 | 0.011 | 0.034 | 0.000 | 0.019 |
| Tennis Courts | 0.291 | 0.041 | 0.215 | 0.166 | 0.024 | 0.132 | 0.337 | 0.165 | 0.147 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0.039 | 0.066 | 0.065 | 0.082 | 0.024 | 0.068 | 0.068 | 0.065 | 0.083 |

Table A4 / *continued*
Additional Outdoor Recreation Facilities/Resources Needed
per Thousand Population, 2000, by Planning Region

| Facility / Resource | Planning Region | | | | | | Statewide |
|--|-----------------|-------|--------|-------|-------|--------|-----------|
| | 19 | 20 | 21 | 22 | 23 | 24 | |
| Baseball Fields | 0.126 | 0.076 | 0.071 | 0.000 | 0.000 | 0.062 | 0.033 |
| Basketball Goals | 0.076 | 0.073 | 0.094 | 0.000 | 0.100 | 0.050 | 0.081 |
| Boat Ramp Lanes, FW | 0.088 | 0.085 | 0.065 | 0.077 | 0.034 | 0.179 | 0.049 |
| Boat Ramp Lanes, SW | 0.000 | 0.107 | 0.073 | 0.000 | 0.000 | 0.000 | 0.018 |
| Campsites | 0.000 | 0.811 | 0.000 | 4.300 | 0.000 | 10.023 | 0.685 |
| Fishing Structures, FW Lin.Yd. | 2.661 | 1.020 | 1.741 | 0.000 | 1.543 | 6.211 | 1.280 |
| Fishing Structures, SW Lin.Yd. | 0.000 | 0.000 | 10.193 | 0.000 | 0.000 | 0.000 | 0.700 |
| Golf Holes | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.034 |
| Hiking Trail Miles | 0.013 | 0.057 | 0.029 | 0.051 | 0.037 | 0.163 | 0.025 |
| Horseback Riding Trail Miles | 0.038 | 0.026 | 0.016 | 0.019 | 0.023 | 0.034 | 0.018 |
| Lake Acres (BFS Suitable), FW | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.032 |
| Offroad Vehicle Riding Acres | 0.160 | 0.113 | 0.118 | 0.000 | 0.040 | 0.000 | 0.109 |
| Picnic Tables | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.007 |
| Playground Areas, Equipped | 0.361 | 0.164 | 0.284 | 0.000 | 0.246 | 0.219 | 0.259 |
| Soccer/Football Fields | 0.134 | 0.084 | 0.109 | 0.013 | 0.071 | 0.101 | 0.061 |
| Softball Fields | 0.168 | 0.051 | 0.121 | 0.000 | 0.043 | 0.101 | 0.050 |
| Swimming, FW Sq.Yd. (000) | 0.000 | 0.252 | 0.148 | 1.045 | 0.519 | 1.102 | 0.329 |
| Swimming, SW Sq.Yd. (000) | 0.000 | 1.533 | 2.527 | 0.000 | 0.000 | 0.000 | 0.494 |
| Swimming, Pool Sq.Yd. (000) | 0.014 | 0.009 | 0.010 | 0.000 | 0.008 | 0.011 | 0.017 |
| Tennis Courts | 0.021 | 0.265 | 0.103 | 0.032 | 0.109 | 0.112 | 0.193 |
| Trail Miles, Multi-use (Walk, Bike, Jog) | 0.088 | 0.077 | 0.073 | 0.077 | 0.089 | 0.039 | 0.071 |

Source: CPS, CPB, Parks Division, TPWD, 1989.

Notes: See Appendix B for key points to interpret this table and an explanation of research methods. See Appendix D for an explanation of terms.



APPENDIX B

PLANNING AND RESEARCH METHODS

The Texas Outdoor Recreation Inventory System (TORIS) includes data on commercial as well as public recreational facilities.

This appendix discusses the plan development process and the methods used to collect and analyze the data used in the 1990 TORP - **Assessment and Policy Plan**. The documentation of methodology gives an overview for understanding

the tables and figures found in the TORP. Persons wishing further explanation of these methodologies, or copies of questionnaires or reports available, should contact the staff of the Consumer Planning Section, Comprehensive Planning Branch.

PLAN DEVELOPMENT PROCESS

Development of the 1990 TORP occurred over a planning cycle lasting over five years, beginning before the 1985 TORP was published. Figure B1 shows the sequence of elements in the 1990 TORP development process, which will be the framework for the discussion in this section.

Evaluation and Concept Development

Before development of the 1990 TORP, the staff evaluated the strengths and weaknesses of the 1985 TORP. The public input process for the 1985 TORP provided one means for plan users and potential users to comment on the planning process and the resulting document. Regional coordination, described later, provided another channel for plan users to give feedback on the 1985 TORP and to suggest improvements for the 1990 TORP. Input was obtained from such varied users as federal agencies planning major development projects, local governments applying for grant assistance, cities using the TORP as a local planning tool, private interests, and others.

Though figure B1 shows evaluation as the first step in the plan development process, evaluation continues throughout the five-year cycle. Public meetings held late in the cycle produced comments on the 1990 TORP. Where possible, recommended changes were incorporated into the 1990 plan. The input related to elements that could not be altered for the 1990 plan will be considered when creating the concepts for the 1995 TORP.

Some of the major concepts (element 2) begun with the 1985 TORP were well received and thus continued: a single volume Assessment and Policy Plan, twenty-four regional assessments, and regional coordination. Several significant plan development concepts have changed from the 1985 plan to the 1990 plan. Data on participation in outdoor activities were collected in a manner that allows projected participation to be distributed to expected destination regions. Two new inventory collection forms were developed to improve the collection of recreation resources supply data. The reporting of supply and recommendations for facility providers now in-

cludes a more detailed breakout of agencies and entities. Increased interest in the economic value of recreation resulted in a new economic impact assessment of state parks.

Data Collection and Analysis

The TORP development process relies heavily on empirical data (figure B1, element 3). The current methodology used to project needs for facilities/resources requires data on the inventory of recreation resources, on the outdoor recreation participation patterns of citizens, and on the amount of recreation participation that can be satisfied by each type of facility. Over the five-year planning cycle, the staff conducted updates on each of these data bases.

Several other areas were identified for new or updated research efforts: economic impact of state parks, expenditures on recreation equipment, and opinions of citizens on recreation priorities, needs, funding, and resource issues. Each of the major projects is discussed in greater detail in the second section of this appendix, "Data Collection/Research."

Regional Coordination

The process called regional coordination is on-going and began during the preparation of the 1985 TORP. The desire to increase the plan's sensitivity to regional resources, issues, and needs inspired the regional coordination concept. The state was divided into four geographic regions, which are aggregates of the twenty-four state planning regions (figure B2). One Consumer Planning Section planner was assigned to work the state planning regions in each geographic region throughout the 1990 TORP development cycle.

Through some 160 semi-structured

interviews with resource managers, officials, and private interests, the staff developed qualitative assessments of each region's unique recreation characteristics and concerns. The interviews focussed on several major topics:

1. Recreation activity trends, management trends, and new resources
2. Needs for land, water, and facilities
3. Issues, problems, and recommendations
4. Sites with recreation potential

5. Evaluation of the previous TORP's usefulness

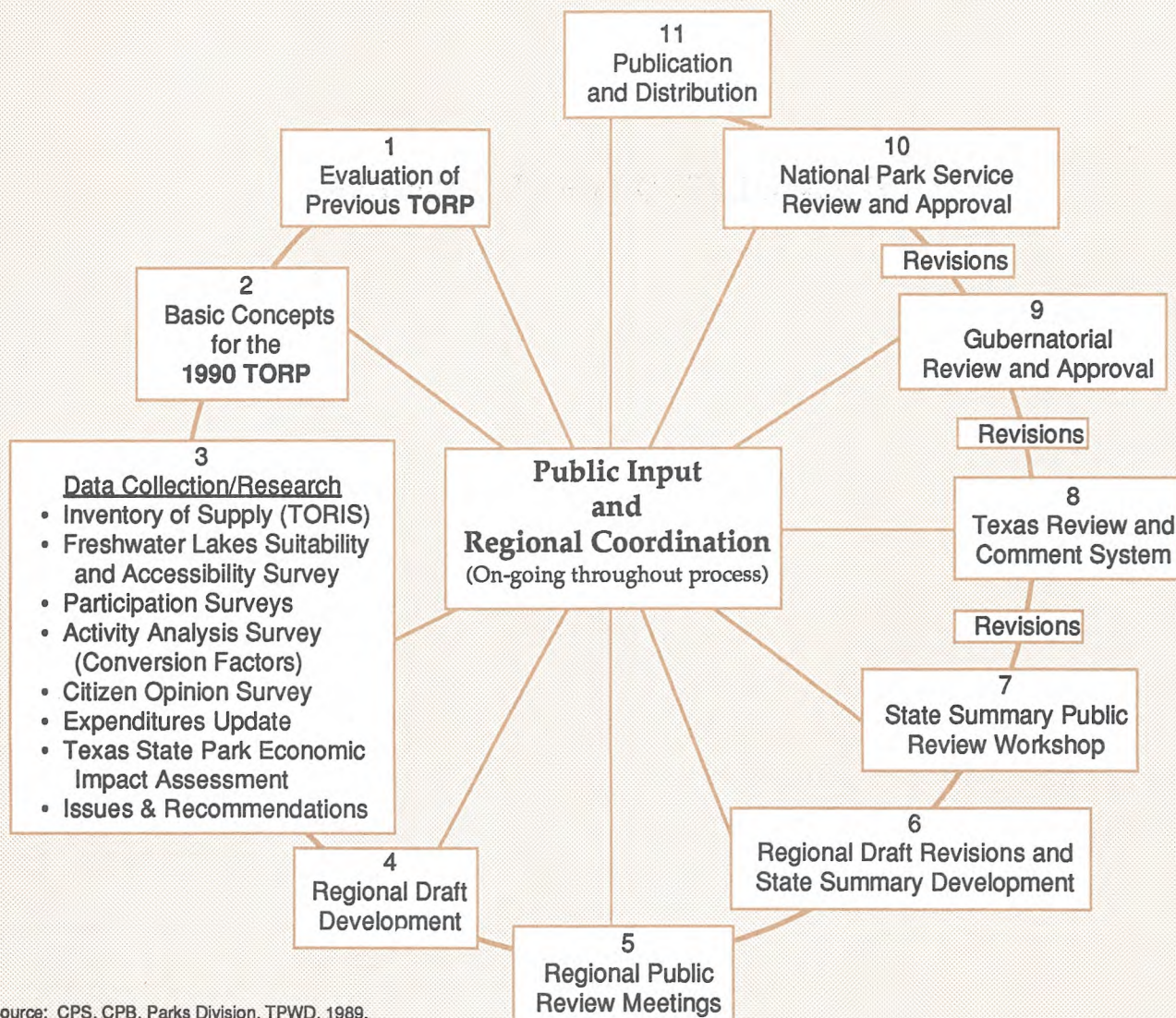
6. Perception of the appropriate state role in outdoor recreation

The interviews also provided an opportunity for the recreation manager or official to learn about available grant funds, technical assistance, or data bases which might help the manager in recreation planning in his/her jurisdiction.

Drafts and Reviews

Elements 4 - 10 in figure B1 include a series of draft developments and draft reviews. First, planning staff synthe-

Figure B1
1990 TORP Development Process



Source: CPS, CPB, Parks Division, TPWD, 1989.

sized qualitative and quantitative data to produce the twenty-four regional assessments (element 4). Over two thousand copies of the regional drafts were distributed for public review and comment. Federal, state, regional, and local recreation resource management agencies, various public officials, recreation and conservation organizations, private interest groups, and other entities or individuals with interests in outdoor recreation in Texas received copies. Written comments were welcomed and invitations were extended to provide verbal comments at a series of twenty-six public review meetings.

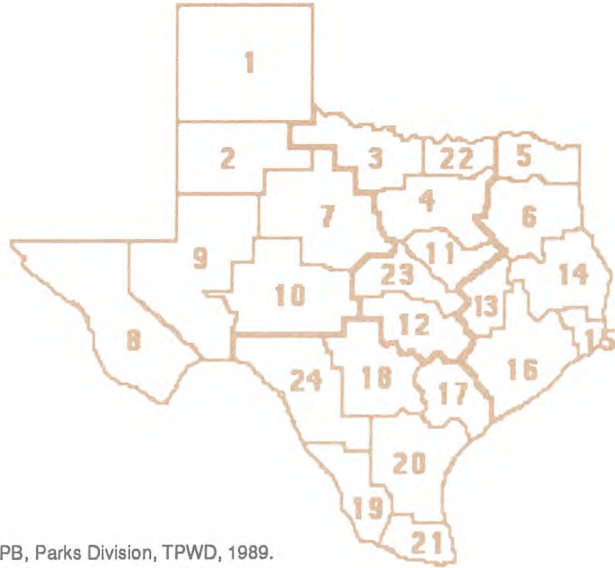
The twenty-six meetings were held across the state in October 1988 (element 5). One meeting, co-hosted by a regional council of governments (COG) or a local government, was held in each of twenty-two planning regions. Two meetings each were held in regions 4 and 8. Locations of the meetings are shown in figure B3. A total of 950 individuals attended the twenty-six meetings representing the following:

| | |
|---------------------------------------|-----|
| Cities | 18% |
| Counties | 8% |
| Special districts | 3% |
| State agencies | 17% |
| Federal agencies | 8% |
| Private organizations and individuals | 36% |
| Commercial providers | 3% |
| Other | 7% |

Regional drafts were revised based on input received through the public review meetings. The state summary section of the 1990 TORP was developed by the planning staff concurrently with revisions to the regional drafts (figure B1, element 6). This revised draft of the entire Policy and Assessment Plan was then distributed for review and comment to some twenty-two hundred agencies and individuals, including all the participants of the twenty-six regional review meetings. Invitations were extended to all draft recipients to attend a statewide public review workshop (element 7). The primary purpose of the statewide workshop was to receive input on the State Summary portion of the 1990 TORP, particularly issues and recommendations.

After revisions, the complete Policy and Assessment Plan (state and regional summaries) went through the official Texas Review and Comment System

Figure B2
Planners' TORP Assignments, by State Planning Region



Source: CPS, CPB, Parks Division, TPWD, 1989.

(TRACS), element 8. Coordinated by the Governor's Office, the TRACS process allows state and local entities one more opportunity to comment on the TORP before it is submitted for state and federal approvals. The twenty-four COGs serve as the regional review agencies to coordinate with public officials at the local level. Revisions to the Policy and Assessment Plan can occur as a result of the TRACS review.

Approvals

After revisions based on comments from the TRACS review, the 1990 TORP was submitted to the Governor's Office (element 9) for certification that there was ample opportunity for public participation in the development of the plan, approval, and transmittal to the National Park Service. NPS must review and approve the plan (element 10) prior to publication and distribution (element 11).

Figure B3
1990 TORP Regional Public Review Meetings, October 1988



Source: CPS, CPB, Parks Division, TPWD, 1989.

Texas Outdoor Recreation Inventory System

The supply of outdoor recreation sites and facilities for the TORP is monitored through the Texas Outdoor Recreation Inventory System (TORIS). These data are also used for TORP implementation activities which include providing data to consultants, public recreation providers, commercial enterprises, and other entities in support of projects such as marketing research, environmental impact studies, comparative analyses of recreational resources, etc.

The scope of the system covers outdoor recreational areas open to the general public either free or for a fee. Federal, state, local, and commercial recreational resources are included. School recreational facilities are not included unless the school and a recreation provider have a cooperative agreement for the use of the facilities. Private recreational facilities such as swimming pools and tennis courts in private residences, hotels, and apartment complexes are not included. All indoor recreational facilities are also excluded.

The information is reported to the Texas Parks and Wildlife Department (TPWD) on a voluntary basis by recreation providers. Portions of the data on the system are updated on a continuing basis. Periodic statewide updates are conducted at least once in each five-year planning cycle, the last in 1986. Parkland acreage for the state park system administered by TPWD was last updated in January 1989, and acreage for TPWD's wildlife management areas, in October 1987.

Data on the TORIS is mailed to resource/facility administrators for review and update. Public entities that do not have data on the TORIS are contacted at least once during the planning cycle to determine if they have jurisdiction over recreational resources. Information on new commercial recreational resources is usually obtained from secondary sources, placed on the TORI inventory forms by the TPWD staff, and then mailed to administrators for verification.

The response rate to update the inventory is generally better among the public sector. The commercial sector response rate was improved during this

planning cycle because the Texas Association of Campground Owners (TACO) assisted with the inventory update. TPWD will continue to work with similar organizations to improve the response rate in future updates.

The data collection instrument to inventory parkland and facilities was revised for use during the 1990 TORP planning cycle. The purpose of the revision was to redefine some data items, to produce a form easier for respondents to complete, and to improve the overall quality of data collected. Some of these revisions affect data comparability between this plan and previous plans. An overview of the most significant revisions follows:

Basketball goals are the unit of measure now rather than full courts for the basketball supply.

Picnic tables in picnicking areas are now reported separately from those in camping areas. This eliminated double-counting problems in reporting picnic tables.

The number of playgrounds and the number of pieces of playground equipment are now enumerated, rather than the number of acres devoted to playgrounds previously reported.

A separate form was developed to collect the information on trails.

The trails data base is a component of the TORIS. The parks inventory form indicates whether the park site has trails. If trails exist, a trails form is completed for each trail associated with the park.

The trails data collected under the old inventory form were trail length or trail area acreage and the uses of the trail or trail area. Additional information collected on the new form includes type of terrain, physical surroundings, vegetation, volume of use, facilities, type of surface, and associated water resources. The purpose of this detailed information is to have adequate data for the implementation of a Texas Trails System as permitted by state legislation in 1982.

The TORIS lake inventory is based on the Fisheries Division freshwater body data base as of August, 1987. In

the TORP, only lakes open to the public, either free or for a fee, are included. Major reservoirs that were not included in the inventory because they are still under construction are Cooper (region 5), Wallisville (region 16), Richland Creek (regions 4 and 11), and Stacy (regions 7 and 10).

Freshwater Lakes Suitability and Accessibility Survey

Suitable lake acres for boating, boat fishing, and water-skiing (Regional Analyses, table 1) were determined from a survey conducted in August, 1987. Fisheries Division biologists in each of the thirteen inland fisheries districts were mailed a list of the lakes in their respective districts. They were asked to:

1. Update the existing lake suitability percentages for the three activities;
2. Estimate percentages of shoreline suitable for bank fishing and shoreline accessible to the public; and
3. Note any recreational use restrictions for each lake, such as speed limits, motor restrictions, seasons, etc.

Suitable surface acres for boating, boat fishing, and water-skiing for each region (table B1) were computed as follows:

1. Sum surface acres by region without regard to suitability (sums shown in table B1, column 2).
2. Multiply each individual lake's suitability factors for the three activities times the lake's surface acres (not shown on table B1).
3. Sum suitable surface acres by activity for each region (not shown on table B1).
4. Divide the regional suitable acres total for each activity by the regional surface acre total to get suitability proportions by region for each activity (table B1, columns 3-5).
5. Multiply suitability proportions (column 3-5) times participation weighting factors (columns 6-8) to get weighted suitability proportions by activity and region (columns 9-11).

(Note: Participation weighting factors are used to weight suitability proportions by the proportions of participation occurring in each region.)

6. Sum the weighted suitability proportions for the three activities (columns 9-11) to obtain a weighted, combined proportion for each region (column 12).

7. Multiply total surface acres for each region (column 2) by the combined suitability proportions (column 12) to get suitable surface acres (column 13).

to estimate the percentage of the population participating in each of twenty-six activities in a year, to estimate the frequency of annual participation occasions, and to determine travel patterns among the twenty-four state planning regions for eleven resource-based activities. To allow for projected participation to be allocated to destination regions, respondents were contacted where they live (their origins) and asked how much they participated and where they went to participate (destinations).

The sample was designed to collect and report data for the twenty-four state planning regions. It was not cost-effective to collect samples large enough for each activity to have statistically significant mean days (occasions). The total sample size of 25,339 statewide was divided among the regions to give each

region about the same number of statistically significant activities. The sample sizes needed for mean days for each activity to be statistically significant in each region were based on the mean days per participant and the proportion participating from the 1980 Participation Survey. Sample sizes were increased slightly for those regions expected to generate large amounts of participation impacting destination regions (based on travel patterns in the 1968-69 Origin-Destination Survey). Increased sample sizes occurred primarily for regions 4, 16, and 18.

The sampling frame was a random sample of Texas driver's license holders and Department of Public Safety identification card holders. The latter were included to help overcome the bias toward driving Texans (more likely to be male,

Participation Surveys

The purposes of the 1986 Origin-Destination Participation Survey were

Table B1
1987 Suitable Surface Acres of Freshwater Lakes
for Boating, Boat Fishing, and Water-skiing (BFS)

| (1) | (2) | (3) | (4) | (5) | (6) (7) (8) | | | (9) (10) (11) | | | (12) | (13) |
|---------------|------------------|----------------------------|--------------|--------------|--|-------|-------|---|-------|-------|---------------------------------|------------------|
| Region | Surface Acres | Suitability Proportion (B) | (F) | (S) | Participation Weight Factors (B) (F) (S) | | | Weighted Suitability Proportion (B) (F) (S) | | | Combined Suitability Proportion | Suitable Acres |
| 1 | 22,585 | 0.767 | 0.863 | 0.759 | 0.366 | 0.371 | 0.262 | 0.281 | 0.320 | 0.199 | 0.800 | 18,065 |
| 2 | 2,673 | 0.620 | 0.868 | 0.496 | 0.366 | 0.371 | 0.262 | 0.227 | 0.322 | 0.130 | 0.679 | 1,814 |
| 3 | 57,867 | 0.643 | 0.869 | 0.363 | 0.366 | 0.371 | 0.262 | 0.235 | 0.322 | 0.095 | 0.653 | 37,776 |
| 4 | 220,841 | 0.673 | 0.944 | 0.582 | 0.376 | 0.372 | 0.251 | 0.253 | 0.351 | 0.146 | 0.751 | 165,749 |
| 5 | 43,741 | 0.578 | 0.809 | 0.413 | 0.376 | 0.372 | 0.251 | 0.217 | 0.301 | 0.104 | 0.622 | 27,215 |
| 6 | 170,989 | 0.687 | 0.901 | 0.499 | 0.376 | 0.372 | 0.251 | 0.258 | 0.335 | 0.125 | 0.719 | 122,859 |
| 7 | 57,041 | 0.748 | 0.957 | 0.582 | 0.366 | 0.371 | 0.262 | 0.274 | 0.355 | 0.152 | 0.781 | 44,560 |
| 8 | 55 | 0.455 | 0.455 | 0.455 | 0.391 | 0.413 | 0.196 | 0.178 | 0.188 | 0.089 | 0.455 | 25 |
| 9 | 18,763 | 0.837 | 0.825 | 0.493 | 0.366 | 0.371 | 0.262 | 0.306 | 0.306 | 0.129 | 0.741 | 13,911 |
| 10 | 35,997 | 0.879 | 0.893 | 0.796 | 0.366 | 0.371 | 0.262 | 0.322 | 0.331 | 0.209 | 0.861 | 31,010 |
| 11 | 53,885 | 0.732 | 0.867 | 0.638 | 0.376 | 0.372 | 0.251 | 0.275 | 0.323 | 0.160 | 0.758 | 40,849 |
| 12 | 62,906 | 0.789 | 0.874 | 0.675 | 0.392 | 0.340 | 0.268 | 0.309 | 0.297 | 0.181 | 0.787 | 49,517 |
| 13 | 17,430 | 0.804 | 0.882 | 0.618 | 0.376 | 0.372 | 0.251 | 0.302 | 0.328 | 0.155 | 0.786 | 13,694 |
| 14 | 397,571 | 0.774 | 0.946 | 0.478 | 0.376 | 0.372 | 0.251 | 0.291 | 0.352 | 0.120 | 0.763 | 303,307 |
| 15 | 6,886 | 0.100 | 0.500 | 0.000 | 0.376 | 0.372 | 0.251 | 0.038 | 0.186 | 0.000 | 0.223 | 1,539 |
| 16 | 52,422 | 0.697 | 0.765 | 0.557 | 0.376 | 0.372 | 0.251 | 0.262 | 0.284 | 0.140 | 0.686 | 35,976 |
| 17 | 15,269 | 0.594 | 0.802 | 0.562 | 0.392 | 0.340 | 0.268 | 0.233 | 0.273 | 0.151 | 0.656 | 10,015 |
| 18 | 21,017 | 0.815 | 0.763 | 0.631 | 0.392 | 0.340 | 0.268 | 0.319 | 0.259 | 0.169 | 0.748 | 15,718 |
| 19 | 79,956 | 0.794 | 0.802 | 0.275 | 0.392 | 0.340 | 0.268 | 0.311 | 0.273 | 0.074 | 0.658 | 52,571 |
| 20 | 48,703 | 0.537 | 0.797 | 0.537 | 0.392 | 0.340 | 0.268 | 0.210 | 0.271 | 0.144 | 0.625 | 30,448 |
| 21 | 16,756 | 0.176 | 0.238 | 0.176 | 0.392 | 0.340 | 0.268 | 0.069 | 0.081 | 0.047 | 0.197 | 3,300 |
| 22 | 104,453 | 0.869 | 0.977 | 0.602 | 0.376 | 0.372 | 0.251 | 0.327 | 0.363 | 0.151 | 0.841 | 87,889 |
| 23 | 18,965 | 0.668 | 0.834 | 0.766 | 0.376 | 0.372 | 0.251 | 0.251 | 0.310 | 0.192 | 0.753 | 14,287 |
| 24 | 68,939 | 0.968 | 0.971 | 0.778 | 0.392 | 0.340 | 0.268 | 0.379 | 0.330 | 0.209 | 0.918 | 63,302 |
| Totals | 1,595,710 | 0.736 | 0.895 | 0.535 | . | . | . | . | . | . | 0.743 | 1,185,395 |

Source: 1987 Freshwater Lake Suitability and Accessibility Survey; CPS, CPB, Parks Division and Fisheries Division; TPWD, 1988.

white, and higher income than their non-driving counterparts). The survey was first mailed in May, 1986. Recipients who did not reply were sent up to two follow-up surveys. The schedule of mailings and survey procedures followed the recommendations in Don Dillman's **Mail and Telephone Surveys: The Total Design Method**. The return rate was 56 percent of those who received the survey. The 16 percent of undeliverable surveys was removed from the sample size. There were 11,835 usable questionnaires.

Respondents were asked to report their participation in twenty-six activities in calendar year 1985. They were asked if they participated in the last year and how many days (occasions) they participated. Instructions to respondents asked them to include only their participation in Texas, away from home, and at a place open to the public.

Data were also collected on the participation of up to four children in the household below the age of sixteen (driving age). Children increased the sample size by 6,688, yielding a total of 18,509.

Respondents reported destinations for eleven resource-based activities. The questionnaire allowed for reporting up to three Texas destinations, asking respondents to list in descending order the sites where they spent the most days.

The 1988 School Participation Survey was conducted to assess the impact of participation at school grounds. Analysis of the 1986 Origin-Destination Participation Survey data showed a few of the activities with unexpectedly high participation. Previous participation surveys had specifically asked respondents to exclude participation in school activities. The purpose of the 1988 School Participation Survey was to estimate participation on school grounds and determine if any adjustments to the 1986 participation data were needed.

The sampling frame for the school participation survey was again a random sample of driver's license and identification card holders. The 2,000-person sample was divided equally into two groups - a control group and a treatment group. The control group received a questionnaire worded exactly like the original Origin-Destination Survey but only covering those activities suspected to include large amounts of school participation. The treatment group received a questionnaire on the same activities but the instructions asked respondents to exclude participation on school grounds. As in the Origin-Destination Survey, data

were collected on children in the household in both the control and treatment groups.

The response rate was 68 percent of those who received the survey. The 16 percent undeliverable was eliminated from the original sample size. Data were analyzed for 1,135 usable surveys.

For each activity, the amount of annual participation occasions for the control group was compared with that of the treatment group. The results were used to reduce the amount of participation in four activities when estimating public facility needs.

Conversion Factors

A conversion factor is the average number of participation occasions which can be provided by one unit of a specified outdoor recreation facility per year. Conversion factors are used to convert participation into facilities and are developed for the various outdoor recreation facilities and resources used in the TORP. They are specific to each of these facilities and take into account the current participation patterns and preferences of outdoor recreationists in Texas.

The formula used to calculate the conversion factors (Figure B4) takes into account seasonal (monthly) variations in participation, weekday versus weekend

participation, and the time of day that participation occurs. The formula estimates the average number of annual activity occasions that are typically provided by a single unit of a recreation facility or resource.

A major research project, referred to as the **Activity Analysis Survey** was conducted in 1986 as a follow-up study to the 1986 Origin-Destination Participation Survey to update the various conversion factors. The 1986 Origin-Destination Participation Survey, explained above, examined the percent of Texans that annually participate in various outdoor recreation activities, and the number of days a year. A provision was made in this survey for respondents to indicate if they would be willing to complete a follow-up questionnaire mailed to their residence. Those who indicated a willingness to complete another questionnaire formed the sampling pool for the follow-up Activity Analysis Survey. Slightly over 80 percent of the respondents to the initial survey indicated that they would be willing to complete a follow-up questionnaire.

The purpose of the Activity Analysis Survey was to examine what times of the year, week, and day people participate in various outdoor recreation activities, and the average duration of a typical activity occasion. The results of this survey were used to update the conversion factors. Because the purpose of this study was to examine participation patterns of each activity, only those in the sampling pool who participated in outdoor recreation activities were eligible to be randomly selected to receive this follow-up survey.

Twenty-six different outdoor recreation activities were analyzed. Individuals could have indicated that they participated in any number and mix of the twenty-six activities. Because of this variety of participation, twenty-six different one-page questionnaires were developed specific to each activity. These could be assembled in any combination. Each individual could thus receive a questionnaire or questionnaires asking about activities that they participated in at least once in the previous year.

Each survey was mailed with a personalized letter that explained the nature of the study, thanked the individual for responding to the previous questionnaire, and reminded them that they had indicated a willingness to complete a follow-up survey. A second mailing was

Figure B4 Conversion Factor Formula

$$CF = \{ WD (J) P + WE (P) \} EF$$

CF = Average number of participation occasions which can be provided by one unit of a specified outdoor recreation facility per year, given the current participation patterns and preferences of outdoor recreationists.

WD = Number of weekday days during peak use months of facility utilization.

WE = Number of weekend days during peak use months of facility utilization.

J = Number of activity occasions occurring on an average peak weekday + number of activity occasions occurring on an average peak weekend day.

P = Number of activity occasion opportunities provided by a unit of facility during a peak use day.

EF = Total annual participation occasions + participation occasions occurring during peak use months.

Source: CPS, CPB, Parks Division, TPWD, 1989.

sent to those who did not respond three weeks after the initial mailing. The two mailings combined resulted in a 68 percent return rate.

The results of the Activity Analysis Survey provided data to reestimate many of the variables used to calculate facility conversion factors. To determine the peak participation months for each activity, the monthly distribution of annual occasions of participation statewide was estimated.

Ratios of participation on weekends and holidays versus weekdays were calculated as were peak use times of the day and average duration of each activity occasion. These ratios can be multiplied by the annual statewide occasions to estimate the total participation during a given time period. Other questions on the survey provided adjustments for the amount of participation in each activity that actually occurred at a facility open to the public. For example, respondents reported what percent of their participation in walking occurred on a trail. (See "Participation Projection Methodology" in this Appendix for further discussion of the applications of these results.)

Figure B5 lists the conversion factor for each facility. Most facility conversion factors were calculated on a statewide basis. However, facilities for activities where participation is affected by climate (e.g., water-based activities, camping, and picnicking) were estimated for each of four travel regions. (See "Methodologies for Needs, Ranked Facility Needs, Priority Classes, and Recommendations to Meet Needs" in this appendix for an explanation of how conversion factors are integrated with projected participation to determine needs.)

Recreation Issues in Texas: A Citizen Survey

The Citizen Opinion Survey was a mail survey conducted in August, 1986 to solicit the opinions and perceptions of Texans about park, recreation, and environmental issues. The survey asked about the importance of parks and recreation, who should provide these opportunities, what facilities and resources are needed, and how park improvements should be financed. Other sections to discover perceptions

about Texas state parks and statewide environmental concerns were also included.

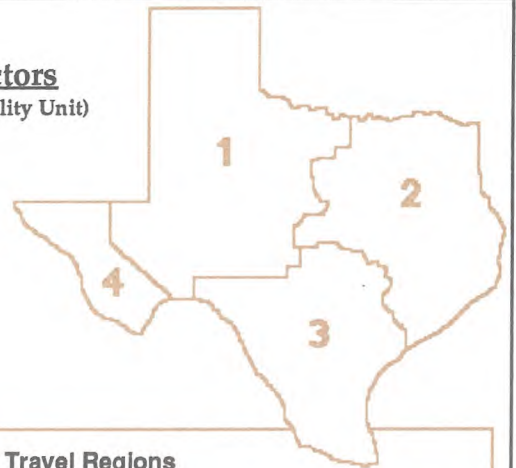
The sample for this survey was drawn randomly from a pool of Texans who had previously responded to the 1986 Origin-Destination Participation Survey. A provision was made in the participation survey for respondents to indicate whether they would be willing to complete a follow-up questionnaire if mailed to their residence. Of the 11,835 returned questionnaires, 8,668 indicated that they would be willing to complete a follow-up and thus became the sample source for the Citizen Opinion Survey.

The Citizen Opinion Survey was mailed in August 1986 to 1,098 residents of Texas randomly selected from the sample source explained above. A six-page questionnaire was used as the data collection instrument, and all questions generated categorical data. The first mailout was followed by two additional mailings to those who did not respond to the initial attempt(s). Personalized, hand signed introduction letters and self-addressed, prepaid envelopes accompanied each questionnaire.

Figure B5
1990 TORP Conversion Factors
(In Annual Participation Occasions Per Facility Unit)

| <u>Facility/Resource</u> | <u>Statewide Conversion Factor</u> |
|---|------------------------------------|
| Baseball Field | 13,703 |
| Basketball Goal | 8,283 |
| Boat Ramp Lane, SW | 9,785 |
| Campsite | 537 |
| Fishing Structure, SW Lin. Yd. | 43 |
| Football Field | 12,659 |
| Golf Hole | 8,333 |
| Hiking Trail Mile | 7,402 |
| Horseback Riding Trail Mile | 6,999 |
| Off-road Vehicle Riding Acre | 1,162 |
| Playground Area, Equipped | 10,499 |
| Soccer Field | 19,119 |
| Soccer/Football Field | 15,889 |
| Softball Field | 13,998 |
| Swimming, Pool Sq. Yd. | 157 |
| Swimming, SW Sq. Yd. | 1.73 |
| Tennis Court | 3,826 |
| Trail Mile, Multi-use (Walk, Bike, Jog) | 57,662 |

Regional Conversion Factors



| <u>Facility/Resource</u> | <u>Travel Regions</u> | | | |
|-------------------------------|--------------------------------|--|--|---------------------|
| | <u>Reg.1</u> (1,2,3,7,9,10) | <u>Reg.2</u> (4,5,6,11,13,14, 15,16,22,23) | <u>Reg.3</u> (12,17,18,19, 20,21,24) | <u>Reg.4</u> (8) |
| Boat Ramp Lane, FW | 7,421 | 9,068 | 7,516 | 7,444 |
| Fishing Structure, FW Lin.Yd. | 145 | 174 | 149 | 121 |
| Lake Acre, BFS Suitable | 295 | 430 | 352 | 363 |
| Picnic Table | 1,410 | 1,575 | 1,743 | 1,665 |
| Swimming, FW Sq.Yd. | 3.78 | 3.94 | 4.16 | 3.93 |

Source: 1986 Activity Analysis Survey, CPS, CPB, Parks Division, TPWD, 1987.

Of the 1,098 questionnaires originally mailed, eighteen were returned as undeliverable or deceased to produce a net sample size of 1,080. A total of 847 respondents returned the questionnaire for a response rate of 78 percent. A complete analysis of the results of this survey can be found in the report, **Recreation Issues in Texas: A Citizen Survey**. Copies of this report are available from the Comprehensive Planning Branch, Parks Division, Texas Parks and Wildlife Department.

Outdoor Clothing and Equipment Expenditures Update

Outdoor sporting goods expenditures (State Summary, table 6.1) were based on the **1981 Outdoor Sporting Goods Expenditures in Texas** study and updated material from the National Sporting Goods Association (NSGA) survey, **The Sporting Goods Market in 1988** (data for 1987). West south central (Texas, Arkansas, Louisiana, Oklahoma) regional sales figures for fourteen major equipment categories for 1987 were computed from national sales data and converted to sales per household for the region. (Household population estimates for 1987 were supplied by the Bureau of the Census.) Regional sales per household were then multiplied times the 1987 estimated household population in Texas to obtain estimated 1987 sales figures for Texas for the fourteen categories of goods. Texas sales data for boating were obtained from the National Marine Manufacturers Association.

Texas State Park Economic Impact Assessment

With public budgets and outlays increasingly scrutinized, public parks and recreation providers are finding it necessary to justify public spending for parks, facilities, and programs. Estimating the economic impacts of park sites (usually purchases by park visitors) is a direct way to show that public funds spent on public parks and recreation often produce favorable economic returns. Results of economic impact assessments can also help guide existing park development and maintenance

funds efficiently toward investments that would create the most favorable net returns.

The Parks Division of the Texas Parks and Wildlife Department manages over 100 recreational, historical, and natural sites throughout the state that attract over 20 million visitors annually. A research project to determine the economic impact of state park visitor expenditures made while at, or traveling to, these sites was conducted in 1987.

On-site park staff conducted interviews with park visitors at ninety-two selected Parks Division sites. These included fifty-eight state parks, thirty-one state historical parks, and three state natural areas. Other sites were not included in the study because they were either operated by concession contract or had no full time staff. A total of 44,117 visitor interviews were collected for analysis.

Staff at each site administered questionnaires to two different, randomly selected groups of visitors per day for one full calendar year (1987). Interviews were conducted over an entire year to capture seasonal variations in visitor expenditures.

To assess visitor expenditures, each respondent was asked how many dollars the group had spent (and/or expected to spend) from the time they left their home to visit the park until they returned back home. If they were on a multi-destination trip, they were asked to report expenditures incurred from the time they left their previous stop until they arrived at their next stop. In an effort to produce conservative economic estimates, only out-of-pocket expenses were included. Equipment and supplies brought from home were not included.

Park visitors were asked to allocate their trip expenditures to five, all-inclusive economic sectors: TRANSPORTATION (auto supplies, gas, and commercial travel); FOOD; PUBLIC FEES (entrance/camping fees and licenses purchased during the trip); LODGING (included private camping fees); and OTHER (merchandise and supplies). Asking visitors to allocate their expenditures provided more accu-

rate information than asking for one lump sum. This also permitted an examination of the effects of visitor expenditures on various sectors of the economy.

In addition, visitors were asked to determine which of their purchases were made adjacent to, and in, the park (to estimate economic impacts locally), and en route within Texas. These estimates helped determine the total economic impact of state park visitors in Texas.

Other questions determined whether the particular state park was the primary destination of the trip; how many people were in the group; and how many days a respondent was staying at the park. To have a comparable unit for analysis, each group's expenditures were transformed into a per person per day average expenditure (or per night, if overnight visitor).

Local economic impacts were derived by expanding the adjacent/in-park per person per day expenditures by the site's total annual visitation. En route economic impacts were derived by expanding the en route per person per day figures by a portion of the site's total annual visitors to reflect those that called that site their primary destination. Expenditures incurred while traveling to a site that is not the primary destination of the trip cannot be attributed to that site. These figures were then summed to produce an estimate of each site's direct economic impact to the state's economy.

The total economic impact of state park visitor expenditures generated by these direct expenditures was estimated by utilizing statewide economic multipliers. These statewide multipliers are furnished in the **Texas Input-Output Model, 1979** developed by the Texas Department of Water Resources. For the general results of this analysis see chapter 6, "The Economic Impact and Value of Outdoor Recreation in Texas". For more detailed analysis a technical report, **The 1987 Annual Economic Impact of Texas State Park Visitors on Gross Business Receipts in Texas** is available upon request.

Supply Analysis

The recreational resources and facilities included in this plan as supply are outdoor resources/facilities which are open to the general public either free or for a fee. The quality of facilities is not analyzed, but dysfunctional facilities are not reported. For a complete discussion on the scope and management of supply data, see "Texas Outdoor Recreation Inventory System." This section covers key points in understanding supply data for tables 1 in the regional summaries and 3.1 in the State Summary.

Administration differs from ownership and refers to the entity that actually manages a recreational resource or facility. **Administrative** categories as column headings on these tables are self-explanatory with two exceptions. **Other State** includes state agencies, such as the Texas Forest Service, and colleges and universities with recreational land open to the general public. **Other Local** includes special districts, such as utility districts, and civic organizations such as Lions Clubs and Optimists Clubs.

A discussion follows of the row headings that might deserve further explanation. Facilities/resources are discussed in the order they appear on the table, except for fields, courts, and trails, which are explained as a group.

Developed land has man-made improvements such as buildings, recreational facilities, designated trails, etc. Excludes maintained open space.

Developable land is maintained open space and land without man-made improvements but suitable for future development. Excludes land dedicated as open space in perpetuity.

Preserved or unsuitable for development is undeveloped land unsuitable for future development either because of its physiography or because it has been dedicated as open space.

Supply units for **baseball, softball, and soccer/football fields** include adjustments to account for multi-use fields. **Basketball goals and tennis courts** also include an adjustment to account for multi-use courts. Fields and courts reported as multi-use are converted to

single-purpose fields based on the number of games that can be played for each activity. For example, if a multi-use field can accommodate two soccer games simultaneously or one softball game, the field (1) is divided by the total number of games that can be played (3) and the quotient (.33) is multiplied by the number of games for each activity. Hence, soccer/football is assigned .66 fields and softball .33 fields.

FW refers to freshwater resources and **SW** to saltwater.

Campsites include single campsites and single-equivalent group campsites. Primitive camping areas which have no improvements are excluded. Tent sites with improvements such as water, grills, or tables are included. Trailer, mobile camper, or pickup camper sites and screen shelters are included. Screened shelters should not have fewer than two screened walls; otherwise they are considered cabins.

Lake Acres (BFS suitable) refers to surface acres of freshwater suitable for boating, fishing from a boat, and water-skiing. TPWD field biologists develop suitability estimates for these activities because the entire surface acreage of water body is seldom all suitable for these activities. The methodology to develop suitability estimates is discussed in the section, "Freshwater Lakes Suitability and Accessibility Survey."

Picnic tables include single picnic tables and single-equivalent group tables. Group picnic tables are converted to single tables by dividing the group table length by eight feet. This assumes that single picnic tables have a maximum length of eight feet. Picnic tables in campsites are excluded.

Playground areas, equipped refers to areas with playground equipment. Open space designated as a playground but without playground equipment is not included.

Swimming, (FW or SW) Sq. Yd. refers to designated and undesignated areas which are suitable for swimming. Only those associated with parks and recreation areas are included.

Trails with more than one use reported were allocated to four categories based on the characteristics of each trail. This methodology is based on the as-

sumption that certain uses are "dominant." For example, if a trail allows horses and hikers, it is thought to be predominantly a horse trail. Both safety and preferences of users were considered.

Hiking trails are trails two miles or longer in length, have rural or backcountry surroundings, do not have paved surfaces, and do not allow horses, bicycles, or motorized uses.

Horseback riding trails are two miles or longer in length and do not allow motorized uses.

Off-road Vehicle Riding Acres are those public areas which allow one or more motorized uses (motorcycles, three-wheelers, or any other off-road vehicles) plus trails one mile or longer that allow motorized use and are not paved. Since the majority of off-road opportunities were reported in acreage, trails allowing motorized uses were converted to acres using a land conversion of ten acres per one mile of trail.

Multi-use Trails are all the remaining trails. They are allocated to this category if one or more of three uses (walk, bike, jog) are allowed. While these are typically the short, urban variety, the category also includes short walking trails (under two miles) in rural settings, long trails located in urban surroundings, and any trails that are paved. Trails allowing mountain bicycles were treated the same as those for narrow-tired bicycles in the supply tables: both kinds of bike trails are shown as multi-use.

Participation Projection Methodology

The information in this section explains the methodology used to project and report participation data in the 1990 TORP. The discussion pertains to tables 2, 3, and 4, and figures 2, 3, and 4 in the regional summaries, and figure 4.1 and tables 4.1, 4.2, 4.3, 4.4, 4.5, and 4.6 in the State Summary, chapter 4. Definitions of the terms used in these tables and figures are found in "Appendix D: Glossary."

The 1986 Origin-Destination Outdoor Recreation Participation Survey provided the necessary data to project annual statewide and regional (twenty-four planning regions) participation in twenty-six outdoor recreation activities. Twenty-four separate random samples (one per planning region) were drawn from Texas driver's license and identification records. The completed returned surveys essentially represent twenty-four separate regional data sets.

Participation projections for each of the twenty-six activities were developed independently for each planning region for the years 1990, 1995, and 2000. Population projections developed by the Texas Department of Health in 1986 were used to expand the recreation participation survey data to the regional and state levels. These population projections were used because the projections were broken into finer cohort categories than other state population projections available at the time. The total statewide participation is the sum of the twenty-four regional projection totals.

Observed differences in outdoor recreation participation behavior among the planning regions and various cohort groups, notably age, sex, and race, influenced the decision to project the survey data by cohorts. Because many of the regions had very small sample sizes of one or more races, it was decided to expand the data by sex and age cohorts. Five age cohorts were chosen after discussion with faculty from Texas A&M University to reflect life-cycle participation patterns. The age cohorts were: 0-9, 10-19, 20-29, 30-44, and over 44 years of age. With the two sex cohorts, each region's data was distributed among the ten (five age and two sex) cohorts.

Annual participation fractions were calculated regionally for each cohort. The participation fraction is the percent of individuals in each region who indicated that they participate annually (at least once) in a given activity. The regional participation percentages (weighted by cohorts) for each activity are found in figure 2 in the regional summaries; statewide percentages are shown in figure 4.1, chapter 4.

The participation rates are the mean number of occasions of each activity engaged in by participants. Because of the skewed nature of the data, the number of occasions per participant was transferred into its log form (geometric), means calculated, and then antilogged. This transformation produced a more

normal distribution of the data that appeared more reliable for projection purposes. Because the number of participants in various activities in some of the regional cohorts was small, the occasions per participant means were calculated on a statewide basis for each cohort. An exception was that two sets of participation rates for the saltwater activities were calculated. This was done because the participation rates of individuals who live near the Gulf Coast was significantly higher than others. One set of cohort participation rates was calculated by aggregating the data collected in the five planning regions that border the coast and used to project participation in those regions. The other set was calculated by aggregating data collected in the other nineteen planning regions and applied similarly.

The number of participation occasions for each activity in each region was calculated using a linear projection method for each cohort. This was accomplished by multiplying the participation fraction of each regional cohort by the participation rate and the population projected to be in each cohort. These were summed regionally to produce estimates of participation generated by each region. Table 2 of the Regional Analyses presents these figures relative to regional population as annual per capita participation in each activity. Statewide totals by activity are found in Table 4.1 and regional totals in tables 4.3 and 4.4.

The linear projection method was used because reliable recreation participation trend data currently were not available. This assumes that outdoor recreation participation patterns will not change in the near future and as individuals age they will behave recreationally like those of that age do now rather than retain their current participation patterns. This method also does not account for additional participation (latent demand) that may be stimulated by new facilities that are built between the time of this analysis and the projection years.

Individuals are apt to travel from their homes to engage in certain activities. The 1986 Origin-Destination Participation Survey asked individuals to report their destinations for eleven of the twenty-six activities included in the survey. Previous data identified those eleven activities as the ones that incurred the greatest travel or participation. Participation in these activities was distrib-

uted to the planning region where it occurred rather than where it originated. Participation at destination regions is shown by activity in tables 3 and 4, Regional Summaries, and by region totals in tables 4.5 and 4.6, chapter 4.

A few inconsistencies in the data collected had to be addressed prior to projecting participation for some of the activities. In the 1986 Origin-Destination Participation Survey, those fishing by boat were asked to respond under the fishing activity but it was noticed that many were double-counting by calling these occasions both fishing and boating. Therefore, anytime an individual had the same number of reported occasions of fishing and boating at the same destination, it was decided to call the activity fishing, and the boating occasions were suppressed.

A few activities had unexpectedly high participation rates. The cause was suspected to be the inclusion by respondents of participation on school grounds, especially during school hours. Results of the 1988 School Participation Survey (see "Participation Surveys") verified that this was probably the reason for these high participation rates. Subsequently, participation projections for four activities, basketball (.695), football (.626), playground use (.863), and tennis (.907) were reduced by multiplying the projected participation by the proportions in parentheses to discount participation on school grounds.

Methodologies for Needs, Ranked Facility Needs, Priority Classes, and Recommendations to Meet Needs

Needs for park facilities and resources are determined by comparing the projected participation in various outdoor recreation activities with the existing supply of park facilities and resources. For some activities, adjustments were applied to total projected participation to reflect the portion of participation that uses a facility. These adjustment factors are shown in table B2. The reduced participation was used to estimate needs for facilities.

To estimate needs for multi-use facilities (boat ramps for boating and fishing, lake acres for boating and fishing, and multi-use trails for walking, bicycling, and jogging), participation in the several activities (and on facilities) was summed.

Facility and resource needs (Regional Analyses, table 5) were computed by dividing participation for each year

(1990, 1995, and 2000) for each activity/facility from tables 3 and 4 by the appropriate conversion factor (figure B5) to get gross needs. Gross needs were then compared to the 1986 regional recreation facility supply. If gross needs were less than, or equal to, the supply, there were no needs. If gross needs exceeded supply, existing facilities were subtracted from gross needs to get net needs.

To compute "Developed Land Acres," needs for each facility for a given year were multiplied times the appropriate land conversion factor (table B3) to get developed acres required. These were then summed across all facility types for each year to get the total developed land acres.

Statewide needs for facilities, resources, and developed land acres (State Summary, table 5.1) were obtained by summing these for the twenty-four regions.

Ranked facility needs for 1995 (Regional Analyses, table 6) show each facility's ranking within the region. Ranked facility needs were determined by the following method:

1. For each facility, the ratio of 1995 gross needs to the 1986 supply was computed for each region. These ratios were then ranked from highest to lowest within each region, the largest ratio ranked first.
2. Next, deficit user occasions were calculated for each facility for each region by multiplying net needs (Regional Analyses, table 5) times the facility conversion factor (figure B5). Deficit user occasions were then ranked from highest to lowest within each region with the largest number of deficit occasions ranked first, etc.

3. The final ranking for each facility within each region was determined by summing the facility rankings from the two methods by region and then re-ranking within each region with the lowest sum ranked first, etc.

Regional needs priority classes for 1995 (State Summary, figure 5.2) were determined as follows:

1. For each region, multiply the 1986 facility supply times the conversion factor (figure B5) for each of the facilities shown on table 5 (Regional Analyses) to obtain capacity in user occasions. Sum for all facilities combined.
2. Sum 1995 projected participation (Regional Summaries, tables 3 and 4) for all facilities for each region to get regional combined total participation.

Table B2
1990 TORP Participation Adjustment Factors
for Facility/Resource Use

| Activity | Facility/Resource Use | Adjustment | |
|-----------------------------|-----------------------|------------|--------|
| | | Proportion | Source |
| Bicycling | On trails | .06161 | (1) |
| Boating (Pleasure), FW | Using a boat ramp | .76863 | (1) |
| Boating (Pleasure), FW | Using a lake | .87695 | (2) |
| Boating (Pleasure), SW | Using a boat ramp | .68639 | (1) |
| Fishing, FW | From banks | .3262 | (3) |
| Fishing, FW | From boats | .4478 | (1) |
| Fishing, FW | From structures | .2260 | (2) |
| Fishing, FW (From boats) | Using a boat ramp | .76863 | (1) |
| Fishing, FW (From boats) | Using a lake | .87695 | (2) |
| Fishing, SW | From boats | .4372 | (1) |
| Fishing, SW | From shore | .1598 | (3) |
| Fishing, SW | From structures | .4030 | (2) |
| Fishing, SW (From boats) | Using a boat ramp | .68639 | (1) |
| Horseback Riding | On trails | .2566 | (1) |
| Jogging/Running | On trails | .3080 | (1) |
| Off-road Vehicle Riding | On trails | .1959 | (1) |
| Walking (Pleasure/Exercise) | On trails | .2341 | (1) |

Sources:

- (1) 1986 Activity Analysis Survey, CPS, CPB, Parks Division, TPWD, 1987.
- (2) 1980 Recreational Participation Survey, CPS, CPB, Parks Division, TPWD, 1983.
- (3) Remainder after removing proportions from boats and structures.

Table B3
1990 TORP
Land Conversion Factors

| Facility/Resource | Acres Per Unit |
|---|-----------------------|
| Baseball Field | 3.0 |
| Basketball Goal | 0.1 |
| Boat Ramp Lane, FW or SW | 0.6 |
| Campsite | 0.25 |
| Fishing Structure, FW or SW Lin.Yd. | 0.002 |
| Golf Hole | 10.0 |
| Hiking Trail Mile | 8.0 |
| Horseback Riding Trail Mile | 8.0 |
| Off-road Vehicle Riding Acre | (same as needs acres) |
| Picnic Table | 0.1 |
| Playground Area, Equipped | 0.2 |
| Soccer/Football Field | 3.8 |
| Softball Field | 3.0 |
| Swimming, FW or SW Sq.Yd. | 0.00042 |
| Swimming, Pool Sq.Yd. | 0.001317 |
| Tennis Court (Doubles Size) | 0.2 |
| Trail Mile, Multi-use (Walk, Bike, Jog) | 8.0 |

Source: CPS, CPB, Parks Division, TPWD, 1988.

3. Compare each region's total capacity with its total projected participation. Subtract projected participation from capacity. If capacity is larger, a surplus exists. If projected participation exceeds capacity, there is a deficit.

4. Divide the surplus or deficit by the projected 1995 regional population to obtain surplus or deficit user occasions per capita.

5. Rank regions in order of priority with the greatest per capita deficit ranked first, and so on.

Recommendations to meet 1995 facility needs (Regional Analyses, table 7) are recommended needs to be provided by federal, state, regional, and local governmental agencies and the commercial sector. The recommendations were based on the following criteria:

1. Current responsibilities and policies of the agencies in providing recreation, including what they have traditionally provided and any legal restrictions that may apply.
2. Jurisdiction and role of the agency, i.e., local governments should meet

local needs, regional agencies should provide for regional and local needs, federal and state governments should furnish regional and statewide needs, and the commercial sector should provide facilities with profit potential.

3. Ability of the agency to provide the facilities, considering available land, kinds and types of facilities needed, funding, etc.

Statewide recommendations (State Summary, table 2.3) are the sums of recommended needs for 1995 for all twenty-four regions.

APPENDIX C

OUTDOOR RECREATION PLANNING GUIDELINES

Facilities provided by country clubs, such as this swimming pool, make an important contribution to the community's supply of recreational facilities.

The Texas Parks and Wildlife Department encourages local recreation planning, as it is most sensitive to local recreation needs, issues, and opportunities. This appendix suggests to government agencies and commercial enterprises two methods for local level recreation planning.

The first, more desirable method, provides planning guidelines. These are presented in table C1 as questions in

order of importance. All planning agencies should review the list, although few have the resources to act on all the items. The Comprehensive Planning Branch (CPB) staff is available for technical advice for local planning. The second method for assessing local level recreation needs, the Recreation Capacity Analysis (table C2), is based on regional data contained in the 1990 TORP.

RECREATION CAPACITY ANALYSIS

The entire process of estimating outdoor recreation needs is referred to as a "needs analysis." One step in this process is the calculation of a "facility capacity analysis." This analysis determines the number of facility units or resources needed to meet projected recreation participation in a geographic area. The analysis may be applied to any urban area, city quadrant, census tract, neighborhood, county, river basin, special district, lake study area, etc., with a population greater than 2,500.

There are several steps in developing a capacity analysis:

STEP ONE: POPULATION. Project future population levels for the geographic area of interest for the years for which needs are to be estimated.

STEP TWO: PARTICIPATION. Estimate annual participation for each outdoor recreational activity for the target planning year.

STEP THREE: FACILITY CAPACITY. Divide the estimated annual participation by the 1990 TORP conversion factor to determine the total facilities needed to support expected participation for the geographic project area.

STEP FOUR: CURRENT SUPPLY COMPARED WITH CAPACITY NEEDS. Compare the total facilities needed to support estimated annual participation with existing inventory. The difference between the two tells you how many more facilities are needed, if any.

STEPS FIVE AND SIX: PRIORITY FACILITY NEEDS AND LAND NEEDS. Determine the top priority facility needs based on deficit opportunity occasions and calculate the amount of land required to supply the facilities determined in Step 4.

Use recreation surveys of local public participation and preferences and inventories of local recreation resources for steps 2 and 4. If this information is not available, regional participation data from the 1990 TORP may be used. Inventory data, and advice on how to apply TORP data to local projects, is available upon request from the CPB.

SAMPLE RECREATION CAPACITY ANALYSIS

This section describes how to develop a 1995 local capacity analysis (table C2) with 1990 TORP participation information. It can be used for any planning area with a population estimate exceeding 2,500.

1 Step one in the analysis is to enter the name of the study area, the 1990 TORP region number, and the 1995 population estimate for the region where the area is located (Regional Analysis figure 1). Record the 1995 population estimate for the study area on the form. Compute the ratio of the 1995 population of the study area to the 1995 population of the TORP region (line (1) divided by line (2)) and record this value in line (3).

2 Step two is to compute the recreation participation for the study area. Enter 1995 regional total participation for each facility or resource in column (4). These figures can be found in tables 3 and 4 of the appropriate regional analysis. Regional totals include participation by residents and other Texans visiting the region (table 3) and by residents only (table 4). Valid local annual participation data or forecasts can be used in place of TORP data if accurate and up-to-date. Areas servicing many out-of-state visitors should add valid tourist participation data to reflect any additional demand placed on local facilities.

The TORP regional participation figures are in thousands of user occasions. Convert these figures to participation totals for the study area by multiplying each figure times the population ratio (line (3)) times 1000. Enter the resulting figures in column (5).

3 Step three is to calculate the total study area facility capacity for each activity. Divide the participation total for each facility in column (5) by the conversion factor in column (6). Record the facility capacity in column (7). For activities for which participation figures are not provided in the TORP, or if rates are unavailable from local sources, the analysis of local needs can begin with

column (7), "Facility Capacity." Enter the estimated number of facilities needed and provide the appropriate documentation (i.e., public opinion surveys, unfulfilled demand, utilization rates, etc.).

4 The fourth step compares total facilities needed with the facilities available. To do this, compile an accurate inventory of all outdoor recreation facilities in the study area. Include all public recreation facilities, commercial and quasi-public recreation facilities open to the public, and school recreation facilities open to the public. School facilities normally are only available half time to the public and their inventory may be reduced by half for the analysis. However, actual availability should be represented and may be greater or less than half. After compiling the inventory, enter the total number of equivalent facilities available for each activity on the form in column (8). Calculate new facilities needed by subtracting column (8) from column (7). Record the facility needs in column (9).

5 Step five ranks the new facilities needed in priority order according to deficit opportunity occasions (see Appendix D, Glossary). This is done by multiplying column (6) by column (9). Record results under column (10). Based on these deficit opportunity occasions, rank the facility priority from highest to lowest in column (11).

6 The final step in the recreation capacity analysis estimates land acre requirements for needed facilities. This is done by multiplying the land acreage per facility, column (12), by the needs shown in column (9) for each facility, and recording results in column (13). Sum the land acre requirements on line (14) near the bottom of the table. Multiply line (14) by 1.43, line (15), to estimate the developed and buffer acres required and record the result on line (16). Then enter the available supply of prime undeveloped recreation land on line (17). The difference between items (16) and (17) is shown on line (18) and is

the estimated recreation land and buffer to be acquired to meet the facilities land needs for the area at the given participation and population projections.

The capacity analysis procedure described above works best for areas exceeding 2,500 in population. It does not apply well to populations of less than 2,500, since these may show deficits of less than one facility for many recreation activities. In this case, adding new recreation facilities may not be advisable. An alternative solution may be to improve utilization of existing facilities.

Because of this, small communities (populations less than 2,500) should refer to the TPWD publication, **Outdoor Recreational Areas and Facilities For Texas Communities of 2,500 or Less, 1985**, to obtain guidance on meeting their recreation needs.

The capacity analysis table (C2) lists only the more popular recreation facilities. Blank lines are provided for more facility types (i.e. volleyball courts, archery targets, croquet courts, horseshoe pits, skateboard ramps, etc.). Communities are encouraged to consider the recreational pursuits and facility needs of all citizens with varying degrees of interests and abilities.

The recreation capacity analysis provides an overview of the needs in the entire planning area. If land and facility needs identified by the capacity analysis are thought to be inaccurate, then additional analyses should be performed to determine the cause. One reason might be that the supply inventory is overstated or the spatial distribution of recreation land and facilities results in a surplus in one portion of the study area overshadowing needs in another portion. Another could be significantly different rates of per capita, non-resident, or out-of-state tourist participation. Local participation rates, if obtainable, should be compared with the TORP, and if appropriate, used in place of TORP data.

This method only provides an indicator of the recreation needs and priorities of the area, and may not reflect the social values and preferences of each and every community. It is recommended that the public be given the opportunity to react to the capacity analysis findings before making final decisions to acquire or develop new recreation resources.

**Table C1
GENERAL GUIDELINES FOR OUTDOOR RECREATION PLANNING**

Data Elements

Has representative citizen input been solicited by such means as citizen surveys, discussions, and meetings with key community leaders, interaction and polling of special interest, neighborhood, and park user groups?

Have the physical and social parameters of the planning project/market area been determined? What are the geographical boundaries of the planning area?

Have population estimates been obtained for the years for which project area needs are to be estimated?

Have secondary sources of information, such as other local parks and open space plans, regional plans, the state plan, and the nationwide outdoor recreation plan, been reviewed?

Existing Supply

Has an accurate outdoor recreation inventory of all public, school, and commercial parks, recreation areas, lakes, and facilities in the project area been obtained and mapped?

Has the spatial distribution of existing facilities throughout the project area been carefully considered?

Could any of the needs for new lands or facilities be met by more efficient recreation programming, cooperative public/private ventures, or improved marketing of existing recreation opportunities?

Could recreational needs be met by upgrading existing poor quality areas and facilities?

Could any of the needs for new land or facilities be met by existing undeveloped park and recreation land owned by other public agencies, such as other city departments, schools, or other agencies holding public lands or easements?

Could any of the needs for new land or facilities be met by commercial and quasi-public recreation interests such as the YMCA, Boys Club, country clubs, etc.?

Assessing Demand and Needs

What are current participation patterns at existing recreation areas? What percentage of the population participates in various activities?

Have estimates of future non-resident (tourist) demand been made?

Have the socio-economic characteristics of the project area been considered?

Have the needs for open space been considered?

Has the master plan been developed as an integral part of the community comprehensive planning process?

Does the master plan indicate where new areas and facilities are needed, how many should be provided, and when they should be provided?

For what year are recreation needs to be estimated?

Have both active and passive recreational needs been considered?

Have the needs of the disabled, aged, and other special interest groups been considered?

Meeting Needs

Could any new areas be obtained through easements or leases?

Has public accessibility to new recreation areas by foot, vehicle, and mass transportation been considered?

Are joint or cooperative ventures possible, such as joint city/school land purchases?

Could combinations of public and private investment or programming be used to provide various opportunities, such as city programming at private facilities or public purchase of land and private development and operation of facilities?

Have various methods of fee simple purchase such as bond issues, tax levies, or general appropriations been considered?

Could a portion of the cost of providing new areas be met through donations and volunteerism?

Could user fees and charges be instituted to make facilities self-supporting?

Effects of the Project

Will any new areas or facilities improve the spatial distribution of parks and facilities in all geographic sectors of the project area?

Will new areas and developments be compatible with existing land uses and zoning ordinances?

Will new areas and activities, when viewed with existing opportunities, provide a well-balanced mixture of recreation opportunities for all socio-economic groups in the area?

Are there resources of regional, state-wide, or national significance and has the city/state/regional partnership in the protection and development of these resources been considered?

Will unique natural areas, wildlife habitat, floodplains, drainage areas, wetlands, streams, historical sites, estuaries, or other resources be protected?

Will any new areas or developments adversely affect commercial and quasi-public recreation enterprises?

Will any new areas or facilities increase access to recreational waters?

Will any new surface acres of suitable recreation water in or near urban areas be provided?

Will any new areas or facilities increase use of shorelines, beaches, floodplains, wetlands, islands, rivers, streams, and mined-over lands?

Will any new areas or facilities provide new opportunities?

Will new and existing facilities provide a better balance of active and passive recreation?

Have operation and maintenance costs of new areas and facilities been considered?

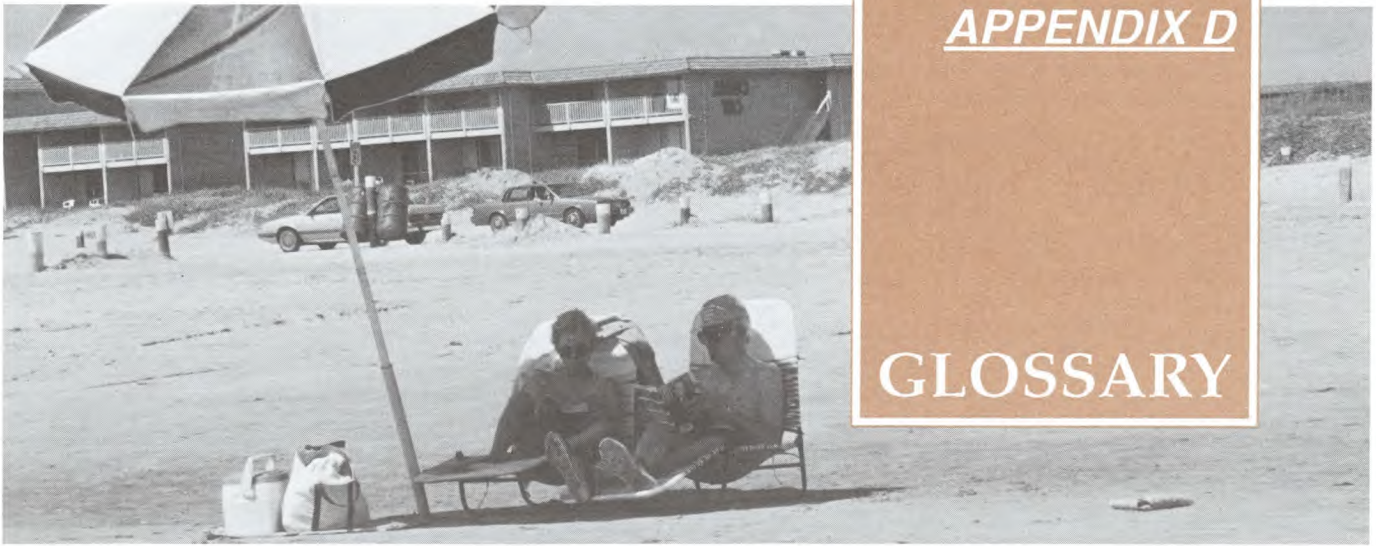
SOURCE: CPB, Parks Division, TPWD, 1989.

**Table C2:
OUTDOOR RECREATION CAPACITY ANALYSIS**

Name of area: _____ (1) 1995 Population of Area: _____ Source: _____
 Located in TORP Region: _____ (2) 1995 Population of TORP Region: _____ Source: REGIONAL ANALYSIS FIGURE 1
 (3) Ratio of Area Population to Region Population (1) ÷ (2) _____

| Recreation Facility Unit | (4) 1995 Regional Participation (000's)= (3)x(4)x1,000 | (5) Area Participation | (6) Conversion Factor | (7) Facility Capacity (5) ÷ (6) | (8) Facilities Available ^o | (9) New Facilities Needed** (7)-(8) | (10) Deficit Opportunity Occasions (6)x(9) | (11) Facility Priority | (12) Land Acreage Per Facility Unit | (13) Land Acres Required (9)x(12) |
|--------------------------------------|---|------------------------|-----------------------|---------------------------------|---------------------------------------|-------------------------------------|--|------------------------|-------------------------------------|-----------------------------------|
| Baseball Fields | | | 13,703 | | | | | | 3.0 | |
| Basketball Goals | | | 8,283 | | | | | | 0.1 | |
| BFS Boat Ramp Lanes, FW* | | | ++ | | | | | | 0.6 | |
| BFS Boat Ramp Lanes, SW* | | | 9,785 | | | | | | 0.6 | |
| Campsites* | | | 537 | | | | | | 0.25 | |
| Fishing Structures, FW Lin. Yds.* | | | ++ | | | | | | 0.002 | |
| Fishing Structures, SW Lin. Yds.* | | | 43 | | | | | | 0.002 | |
| Football Fields | | | 12,659 | | | | | | 3.8 | |
| Golf Holes* | | | 8,333 | | | | | | 10.0 | |
| Hiking Tr. Mi.* | | | 7,402 | | | | | | 8.0 | |
| Horseback Riding Tr. Mi.* | | | 6,999 | | | | | | 8.0 | |
| Lake Acres, BFS Suitable* | | | ++ | | | | | | --- | |
| ORV Riding Acres* | | | 1,162 | | | | | | 1.0 | |
| Picnic Tables | | | ++ | | | | | | 0.1 | |
| Playground Areas, Equipped + | | | 10,499 | | | | | | 0.2 | |
| Soccer Fields | | | 19,119 | | | | | | 3.8 | |
| Softball Fields | | | 13,998 | | | | | | 3.0 | |
| Swimming, FW Sq. Yds.* | | | ++ | | | | | | 0.00042 | |
| Swimming, SW Sq. Yds.* | | | 1.73 | | | | | | 0.00042 | |
| Swimming Pool, Sq. Yds. | | | 157 | | | | | | 0.001317 | |
| Tennis Courts | | | 3,826 | | | | | | 0.2 | |
| Trail Miles (Sum of Walk, Bike, Jog) | | | 57,662 | | | | | | 8.0 | |
| Other Facilities (List as needed)* | | | | | | | | | | |

Source: CPB, Parks Division, TPWD, 1989.
 Notes: = Col. 4 Obtain data from Regional Analysis, tables 3 and 4.
 = Where facilities available exceed facilities needed, enter 0.
 + When determining playground areas, only consider the actual number of acres developed with play equipment.
 ++ Refer to Appendix B Fig. B5 for appropriate regional conversion factors.
 o Includes school, private, and government facilities available to the general public.
 * Not used in grant application review unless proposed in grant.
 (14) Estimated Land Acres Required for Facility Development(sum of column 13) _____
 (15) Expansion Factor to Allow for Buffer _____ 1.43
 (16) Total Land Acres Required (14)x(15) _____
 (17) Available Supply of Prime Undeveloped Recreation Land _____
 (18) Estimated Recreation Land and Buffer to Acquire (16) - (17) _____



APPENDIX D

GLOSSARY

Texas beaches are one of the state's most popular resources.

ACCESSIBLE GULF FRONTAGE. That part of the gulf shorefront that can be reached via public road, by driving along the shore in a two-wheel-drive vehicle, or by walking no more than one mile along the shore from a point which can be reached by a two-wheel-drive vehicle.

ACTIVITY OCCASION. See **USER OCCASION**.

ACTIVITY, PRIMARY. The recreational activity providing the motivating reason for recreating, going to a park, or stopping while on a trip. The primary activity may vary from recreationist to recreationist within a group, or it may be the same for all members of a group. See also **ACTIVITY, SECONDARY** and **ACTIVITY PACKAGE**.

ACTIVITY, RECREATIONAL. An individual pursuit for leisure which tends to refresh or relax, entertain or amuse, and invigorate or recharge the mind and body.

ACTIVITY, SECONDARY. Any recreational activity undertaken in addition to the primary activity while recreating, going to a park, or stopping while on a trip.

ACTIVITY PACKAGE. A set of related recreational activities which may occur at the same site or on the same trip. Most parks provide facilities for two or more activities. For example, picnicking may be the primary activity while recreationists might also pursue such secondary activities as swimming, baseball, horseback riding, nature study, or boating. See also **ACTIVITY, PRIMARY** and **ACTIVITY, SECONDARY**.

ADMINISTRATION. Refers to the entity that manages a particular recreational resource or facility. Since the administration of a recreational resource/facility is not necessarily the same as the owner, data in this plan are presented based on administration. See **SUPPLY, OUTDOOR RECREATION** for general administrative categories and see **GOVERNMENT, LEVELS OF** for the administrative categories under the public sector.

ARCHEOLOGICAL SITE/AREA. Site or area containing buildings, structures, or artifacts identified as important in understanding the life and culture of ancient peoples.

AVAILABLE SURFACE ACRES OF SALTWATER BAY. Approximate total surface acres of saltwater bays located along the Texas Gulf Coast which provide opportunities for boating, fishing, or water-skiing.

BASEBALL FIELD. A field with a raised pitcher's mound and baselines of 90, 80, 70, or 60 feet.

BASEBALL PARTICIPATION. Participation in informal play, practice, or organized league hardball by Texas residents in Texas, away from the recreationist's home, and at a place open to the public.

BASKETBALL GOALS. Facility supply for basketball is enumerated by counting the number of goals so that both full and half courts are counted as providing this recreational opportunity.

BASKETBALL PARTICIPATION. Participation in informal play, practice, or organized league basketball, on outdoor courts only, by Texas residents in Texas, away from the recreationist's home, and at a place open to the public. Participation estimated to occur on school grounds, whether during or after school hours, was excluded in the 1990 **TORP** participation projections used to determine needs for public facilities.

BICYCLE ROUTE (DESIGNATED). Any bikeway designated by signs and/or maps and sharing its traffic right-of-way with motor vehicles.

BICYCLING PARTICIPATION.

Participation in bicycling for pleasure or exercise by Texas residents in Texas, away from the recreationist's home, and at a place open to the public. Includes street and road riding and use of off-street trails.

Bicycling on Trails. Only that portion of participation in bicycling for pleasure or exercise that occurs on bicycle or multi-use trails open to the public.

BOAT RAMP. A facility for launching and retrieving boats; generally, a sloping, road-like structure constructed of asphalt, concrete, gravel, or dirt leading down into the water. Areas for parking automobiles and boat trailers are normally associated with the facility.

BOAT RAMP LANE. A subdivision of a boat ramp; one lane provides access for one boat at a time. If a ramp is not physically partitioned by curbs or other barriers, the number of lanes is estimated by the number of boats which can be launched or retrieved safely, side-by-side, at one time on the same ramp.

BOAT RAMP LANE USE

(FRESHWATER). The portion of freshwater pleasure boating participation that uses a boat ramp combined with the portion of freshwater fishing participation that uses a boat ramp.

BOAT RAMP LANE USE

(SALTWATER). The portion of saltwater pleasure boating participation that uses a boat ramp combined with the portion of saltwater fishing participation that uses a boat ramp.

BOATING PARTICIPATION

(FRESHWATER). Participation in pleasure boating/water-skiing on lakes, reservoirs, rivers, and streams in all kinds of boats (motor, sail, human-powered, etc.) by Texas residents in Texas, away from the recreationist's home, and at a water resource open to the public. **Excludes** the use of a boat for fishing.

BOATING PARTICIPATION

(SALTWATER). Participation in pleasure boating/water-skiing on bays, the Gulf of Mexico, and other saltwater bodies, in all kinds of boats (motor, sail, charter craft, etc.) by Texas residents in Texas. **Excludes** the use of a boat for fishing.

CAMPING PARTICIPATION.

Participation in camping involves staying overnight in any kind of camping shelter (tent, camper, RV, screened shelter, etc.) by Texas residents in Texas, away from the recreationist's home, and at a place open to the public (including commercial enterprises). Also includes backpack camping. Does not include staying in lodges or cabins.

CAMPSITE. Refers to any space or area designated and used for camping, except sites used primarily for picnicking. There are many types of camping sites. With the exception of "primitive site," all the campsite types defined below are included in the campsite supply of the plan.

Primitive Site. Designated camping area with no support facilities. Not included in campsite supply in this plan.

Tent Site. A leveled area which includes one or more of the following support facilities: tables, grill, trash can, and/or water. The site is normally used by campers using tents or other similar portable materials for shelter.

Trailer, Mobile Camper, or Pickup Camper Site. A designated site having a complement of amenities similar to a tent site, or any site having a sewer connection, used by persons with travel trailers (includes tent foldout trailers), motorized camping vehicles, and pickup campers.

Screened Shelter. Permanent or semipermanent campsite structure with a roof and two or more partially screened walls, the remainder of which is fully enclosed (structures with fewer than two screens are considered cabins); the height of the screens may vary. Most shelters are insect resistant and provide some degree of privacy for a single family or single group of campers.

Group Campsite. A cluster of single unit campsites in one location designated for use by large groups for tent or trailer camping.

Group Screened Shelter. A permanent or semi-permanent structure designed to accommodate two or more families or groups of campers. The definition of a screened shelter applies otherwise.

CANOE LAUNCH. Area specifically designated for the launching or retrieval of canoes, kayaks, or rafts.

CANOEING PARTICIPATION.

Participation in canoeing is included under **BOATING PARTICIPATION** (Freshwater or Saltwater).

CAPACITY. The environmental, physical, or social limits of resource capability to withstand recreation use.

COMMERCIAL. See Commercial under **SUPPLY, OUTDOOR RECREATION.**

CONVERSION FACTOR. The average number of participation occasions provided by one unit of an outdoor recreation facility per year, given the current participation patterns and preferences of outdoor recreationists. Used to compare supply with participation to determine needs.

COUNCILS OF GOVERNMENTS.

Those organizations established under Article 1011m, V.A.C.S., as regional planning commissions. Regional councils are voluntary associations of local governments composed of at least two-thirds voting majority of local elected officials. These organizations are primarily engaged in regional planning and the promotion of intergovernmental cooperation among member local governments. In Texas, regional councils are referred to as "regional councils," "planning councils," "councils of governments or COGs," "development councils," and "associations of governments." Also see **STATE PLANNING REGIONS.**

DATA BASE. A collection of data organized, and usually automated, for rapid manipulation and retrieval.

DEFICIT OPPORTUNITY

OCCASIONS. Participation in user occasions in excess of supply opportunity occasions (Also see **USER OCCASION**).

DEMAND, DESTINATION. See **DESTINATION.**

DEMAND, EXPRESSED OUTDOOR RECREATION. A schedule of the quantities of outdoor resources or facilities that will be utilized (in terms of participation occasions) over a one year period, given a projected population and estimated participation rates for that year. Expressed demand is used interchangeably with participation in this plan.

DEMAND, LATENT OUTDOOR RECREATION. Outdoor recreation participation that is not now taking place but could, or should, if some change in household or outdoor recreation supply characteristics occurred that facilitated participation.

DEMAND, ORIGIN. See ORIGIN.

DEMAND, REAL OUTDOOR RECREATION. The sum of expressed and latent outdoor recreation demand.

DESTINATION. The place to which the recreationist is journeying to participate in a recreational activity. May be a park, water resource, commercial recreation site, etc. See ORIGIN.

DESTINATION REGION. The state planning region to which the recreationist is journeying to participate in a recreation activity.

DEVELOPABLE LAND.
See PARKLAND.

DEVELOPED LAND. See PARKLAND.

ECONOMIC IMPACT, OUTDOOR RECREATION. The effect on an economy resulting from expenditures made to participate in an outdoor recreation experience or activity.

ECONOMIC VALUE, OUTDOOR RECREATION. The benefit of a park or recreation opportunity to society. The sum of all affected individuals' benefits. Differs from economic impact in that economic value includes consumer surplus benefits. The economic value of a park site can be estimated by utilizing the contingent value method or the travel cost method.

FACILITIES, RECREATION. Structures or equipment designed, constructed, and required for participation in recreational activities.

FACILITIES, SUPPORT (SUPPORT UNITS). Equipment and resources used by recreationists but which are not absolutely necessary to participate in a recreational activity. Examples include bleachers, water fountains, lockers, parking, bath houses, maintenance buildings, etc.

FISHING BANK ACCESS. Areas associated with designated recreation areas where accessibility to and water depth of water bodies and streams offer fishing opportunities from the shore.

FISHING PARTICIPATION (FRESHWATER). Participation in the taking or attempted taking of fish for recreational purposes, by Texas residents in Texas, in lakes, reservoirs, rivers or streams open to the public. Does not include commercial fishing or fishing in personal stock tanks or impoundments. The sum of freshwater fishing from structures, boats, and banks.

Fishing from Banks (Freshwater). Only that portion of freshwater fishing participation that occurs from the banks of rivers or reservoirs.

Fishing from Boats (Freshwater). Only that portion of freshwater fishing participation that occurs from boats of any kind.

Fishing from Structures (Freshwater). Only that portion of freshwater fishing participation that occurs from fishing piers, barges, marinas, jetties, or any other type of structure designed for fishing.

FISHING PARTICIPATION (SALTWATER). Participation in the taking or attempted taking of fish for recreational purposes, by Texas residents in Texas, in bays, the Gulf of Mexico, or other coastal saltwater bodies. Includes fishing in the mouths of rivers where the salinity supports saltwater species but does not include inland reservoirs even where salinity is high enough to support such species. Does not include commercial fishing. The sum of saltwater fishing from structures, boats, and shores.

Fishing from Boats (Saltwater). Only that portion of saltwater fishing participation that occurs from boats of any kind (personal and charter).

Fishing from Shore (Saltwater). Only that portion of saltwater fishing participation that occurs from the shores of bays or the Gulf of Mexico. Includes wade fishing. Does not include the use of a fishing structure.

Fishing from Structures (Saltwater). Only that portion of saltwater fishing participation that occurs from fishing piers, barges, marinas, jetties, or any other type of structure designed for fishing.

FISHING STRUCTURES. Structures supported above water, such as piers; walls built into the water, such as jetties and breakwaters; and floating structures, such as barges, which provide fishing opportunities.

FOOTBALL FIELD. Facility designed and designated for football play. Does not have to be used exclusively for football to be considered.

FOOTBALL PARTICIPATION. Participation in informal play, practice, or organized league football by Texas residents in Texas, away from the recreationist's home, and at a place open to the public. Includes touch, flag, and equipped play. Participation estimated to occur on school grounds, whether during or after school hours, was excluded in the 1990 TORP participation projections used to determine needs for public facilities.

FRESHWATER. Describes recreation activities and facilities that occur in any public inland water resource (rivers, streams, ponds, reservoirs, etc.). Includes inland waters with high salt content or those which may have poor water quality. Does not include swimming pool opportunities.

GOAL. Long range aim established during the recreation planning process. The goal of the TSORPP is to provide adequate recreational opportunities in Texas. See also OBJECTIVE.

GOLF (HOLES). Only par three and regular courses are enumerated for computing needs. Miniature courses and driving ranges are not included. Private courses not open to the general public are also excluded.

GOLF PARTICIPATION. Participation in golf of any kind by Texas residents in Texas, away from the recreationist's home, and at a place open to the public.

GOVERNMENT, LEVELS OF.

Federal. Of or pertaining to the national level of government which includes the following agencies associated with outdoor recreation: National Park Service, U.S. Fish and Wildlife Service, U.S. Forest Service, U. S. Army Corps of Engineers, and the military.

State. Of or pertaining to the state level of government. Tables in this plan itemize the Texas Parks and Wildlife Department and the Texas Department of Highways and Public Transportation under "State." The category "Other State" includes the Texas Forest Service and universities.

Regional. An administrative category in this plan that includes only river authorities.

River Authority. A river authority is a state entity and not a level of government. These are conservation districts formed under Article 16, Section 59 of the Texas Constitution, whose primary functions include water supply and distribution, flood control, and water quality control. In addition, they are given authority to control navigation, generate hydroelectric or thermal power, provide park and recreational facilities, and make general river basin improvements.

Local. Of or pertaining to the local level of government which includes counties, cities, and districts other than river authorities. The category "Other Local" as used in this plan includes civic/social organizations, recreational associations, and districts other than river authorities.

GREENBELT. A natural or relatively undeveloped area near or surrounding an urban area which remains undeveloped through restrictions on building. Greenbelts typically provide a buffer between differing land uses, preserve the natural features of an area, or provide recreation space. Greenbelts tend to be linear and are thus ideal sites for trail development.

HIKING PARTICIPATION.

Participation in day hiking or overnight backpacking trips by Texas residents in Texas, away from the recreationist's home, and at a place open to the public. Assumed to involve a specific destination and be a more rigorous outing than walking for pleasure.

HORSEBACK RIDING

PARTICIPATION. Participation in horseback riding for recreational purposes by Texas residents in Texas, away from the recreationist's home, and at a place open to the public. Includes riding in public road rights-of-way, on trails, or in designated public and commercial riding areas.

Horseback Riding on Trails. Only that portion of horseback riding participation that occurs on trails open to the public.

HUNTING PARTICIPATION.

Participation in the taking or attempted taking of wild game (of any species) for sport, personal consumption, or both, by Texas residents in Texas, on either public or private lands.

INVENTORY. See TEXAS OUTDOOR RECREATION INVENTORY SYSTEM.

JOGGING/RUNNING

PARTICIPATION. Participation in jogging or running by Texas residents in Texas, away from the recreationist's home, and at an outdoor place open to the public. Includes jogging/running on sidewalks, along streets or roads, on designated or undesignated public trails, or at any other public place.

Jogging/Running on Trails. Only that portion of participation in jogging/running that occurs on designated trails open to the public.

LAKE ACRES, SUITABLE (FOR BOATING, BOAT FISHING, AND WATER-SKIING.) Those portions of the water bodies in the state which can support boating, boat fishing, and water-skiing. Unsuitable waters are those which are too shallow, too small in area, too polluted, have excessive debris, or are otherwise unsafe.

LAKE USE (BFS SUITABLE). The sum of participation in freshwater pleasure boating, water-skiing, and boat fishing on public lakes (reservoirs) by Texas residents in Texas.

LAND AND WATER

CONSERVATION FUND. The Land and Water Conservation Fund Act of 1965 (Public Law 88-578) established a fund to increase outdoor recreation opportunities for the American people. The program provides for acquisition of lands for federally administered recreation planning and for state and local land acquisition and development. The fund is administered in Texas by the National Park Service (formerly the Heritage Conservation and Recreation Service) of the Department of the Interior and by the Texas Parks and Wildlife Department. To receive grants from the fund, the state must develop a statewide comprehensive outdoor recreation plan and update and refine the plan on a continuing basis.

LOCAL. See GOVERNMENT, LEVELS OF.

LOCAL PARK FUND. See TEXAS LOCAL PARKS, RECREATION, AND OPEN SPACE FUND.

MOTORCYCLING PARTICIPATION. See OFF-ROAD VEHICLE RIDING PARTICIPATION.

MULTI-USE COURTS/FIELDS. Courts or fields designed or used for more than one game or sport.

NATURAL AREA. An area containing an example of an aquatic or terrestrial ecosystem that has essentially retained or recovered its pre-European settlement conditions, has retained its natural character such that it will quickly recover to pre-European conditions with proper management, or is a least disturbed example of a natural ecosystem. Exemplifies both typical and unusual ecosystems with their associated biotic and abiotic features.

NATURE STUDY PARTICIPATION. Participation in birdwatching, viewing or studying nature (scenery, plants, etc.), wildlife observation, photographing nature, or similar activities by Texas residents in Texas, away from the recreationist's home, and at a place open to the public.

NEEDS OR FACILITY NEEDS.

The supply of land, water, or facilities specified in this plan to meet that portion of participation exceeding current supply levels.

NON-RESIDENT DEMAND.

Demand by persons residing in Texas, but outside the planning region under consideration, for recreational facilities within the region.

OBJECTIVE. Planned short-range accomplishments, means, or steps in the recreation planning process to achieve long-range goals. In the TSORPP, objectives must be reached to achieve goals. See also GOAL.

OFF-ROAD VEHICLE RIDING

PARTICIPATION. Participation in riding motorcycles, three-wheelers, four-wheelers, or other ORVs by Texas residents in Texas, away from the recreationist's home, and at a place open to the public.

OPEN SPACE. Land, water, and atmosphere, private or public, predominately natural and undeveloped.

OPEN SPACE PARTICIPATION.

Using open space, undeveloped land, for such activities as kite flying, sunbathing, frisbee throwing, exploring, etc. by Texas residents in Texas, away from the recreationist's home, and at a place open to the public.

OPEN SPACE, RECREATIONAL.

Undeveloped land and/or water areas devoted to recreational activities that require only minimal facilities which are compatible with conserving open space for designated purposes.

ORIGIN. The point from which the recreationist begins his recreation trip or outing; assumed to be the recreationist's residence. See DESTINATION.

ORIGIN REGION. The state planning region from which the recreationist begins his recreation trip or outing; assumed to be the region in which the recreationist resides.

OUTDOOR RECREATION. Recreation activities which are participated in outdoors. See also ACTIVITY, RECREATIONAL.

PARKLAND. Land designated for recreational use.

Developable Land. Maintained open space and land without man-made improvements but suitable for future development. Excludes land dedicated as open space in perpetuity.

Developed Land. Land with man-made improvements such as buildings, recreational facilities, designated trails, etc. Excludes maintained open space.

Preserved or Unsuitable for Development. Undeveloped land unsuitable for future development either because of its physiography or because it has been dedicated as open space.

PARTICIPANT. An individual actively engaged in a recreation activity in Texas, away from home, and at a place open to the public.

PARTICIPATION. A quantity of activity user occasions engaged in by recreation participants. In this plan, projected participation was estimated from past occasions of participation reported by survey respondents (also called expressed demand).

PEAK USE SEASON. Period of time during which a recreational resource or facility receives the largest volume use.

PICNIC TABLES. Tables used for picnicking. In this plan, picnic tables in camping areas are not part of supply because these tables primarily support camping activities, as opposed to day-use picnicking activities.

Group picnic tables. A picnic table longer than eight feet which usually accommodates a group larger than a single family size group. For this plan, group tables are converted to single tables by dividing the length by eight feet.

Single picnic tables. A picnic table six to eight feet in length designed to accommodate a single family size group.

PICNICKING PARTICIPATION.

Participation in the preparing and eating of food outdoors by Texas residents in Texas, away from the recreationist's home, and at a place open to the public. Excludes preparing and eating meals while camping.

PLAYGROUND AREA. Areas developed with play equipment such as merry-go-rounds, swings, jungle gyms, and see-saws. Open spaces without playground equipment for unstructured play are not enumerated as playgrounds in this plan.

PLAYGROUND USE

PARTICIPATION. Participation at playgrounds (with or without play equipment such as swings, slides, etc.) by Texas residents in Texas, away from the recreationist's home, and at a place open to the public. Participation estimated to occur on school grounds, whether during or after school hours, was excluded in the 1990 TORP participation projections used to determine needs for public facilities.

POCKET PARK. Small campground or rest area located along a land trail or a river/stream designated as a canoe trail. Designated to provide access to the river or trail and to provide camping for recreationists using the river or trail. Also a term for a small park located in an urban area.

PRESERVED OR UNSUITABLE FOR DEVELOPMENT. See PARKLAND.

PRIMARY SUPPLIER. Entity whose primary responsibilities consist of providing resources and programs for public recreation.

PROVIDERS' RESPONSIBILITIES. Recommendations for meeting 1995 facility and resource needs (specified in the 1990 TORP) by the various government agencies and the commercial sector.

PUBLIC ACCESS POINT. The place where ingress and egress is provided to a particular recreation resource for use by the general public, such as a public boat ramp providing access to a river or lake.

RECREATION PROGRAM. Planned or prearranged scheduling for the use of recreation resources, such as "Learn-to-Swim" programs; organized leagues for softball, football, etc., or cultural events.

REGIONAL. See GOVERNMENT, LEVELS OF.

REGIONAL ATTRACTIONS.

Recreational resources or events with greater than local appeal, and of such quality that recreationists will travel long distances to visit them.

RESOURCE PROTECTION. Any measure taken to prevent the degradation or depletion of fish, wildlife, or plant populations, air quality, water resources, natural land areas, or cultural and historical sites or features.

RESOURCE, RECREATION. Land, atmosphere, facilities, or water available for recreational use.

SALTWATER. Describes recreation activities and facilities that occur in saline or brackish coastal waters. In this plan, does not include inland water resources even where salt content is high.

SECONDARY SUPPLIER. Entity who may directly provide recreation resources or programs, but as a by-product, or as a supplementary responsibility, to the primary goal of the entity.

SOCCER FIELD. A facility designed and designated for soccer play. Does not have to be used exclusively for soccer to be considered.

SOCCER PARTICIPATION.

Participation in informal play, practice, or organized league soccer by Texas residents in Texas, away from the recreationist's home, and at an outdoor place open to the public.

SOFTBALL FIELD. A field with 60-foot baselines and no raised pitcher's mound.

SOFTBALL PARTICIPATION.

Participation in informal play, practice, or organized league softball by Texas residents in Texas, away from the recreationist's home, and at a place open to the public.

SPATIAL DISTRIBUTION. The geographic distribution of the types and numbers of recreation areas and facilities in relation to the user populations in an urban area, among the urban areas of a planning region, in the rural areas of a region, or in the entire planning region.

STATE. See GOVERNMENT, LEVELS OF.

STATE PLANNING REGIONS.

The twenty-four multi-county areas delineated by the governor under the provisions of Article 1011m, V.A.C.S. The 1990 TORP uses these same regions for planning and analysis purposes. The boundaries of these regions also coincide with the boundaries for the councils of governments. All 254 counties in Texas are included in the twenty-four state planning regions and are analyzed in this 1990 plan, but a few counties are not members of a council of governments.

STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN (SCORP).

The plan that states are required to develop and update every five years as an eligibility requirement under the Land and Water Conservation Fund (LWCF). In Texas, this plan is the **Texas Outdoor Recreation Plan (TORP)**. See also **LAND AND WATER CONSERVATION FUND**.

SUPPLY, OUTDOOR RECREATION.

Outdoor resources or facilities made available for recreation use, categorized as follows:

Commercial supply. Privately owned or administered outdoor recreation resources or facilities operated for a profit and made available to the general public for a fee. Examples include campgrounds, golf courses, and guest ranches. Resources and facilities defined as commercial supply are included in the inventory data presented in this plan.

Private supply. Privately owned and administered outdoor recreation resources or facilities restricted to use by private individuals, groups, organizations. These resources and facilities are not available for use by the general public. Examples include backyard swimming pools and tennis courts, country club facilities, homeowners' or restricted subdivision facilities, sportsmen's clubs, hotel/motel recreational resources, yacht clubs, and many

others. Resources defined as private supply are not included in the inventory data presented in this plan.

Public supply. Outdoor recreation resources or facilities made available to the general public by governmental entities. All levels of government are included: federal, state, county, and municipal. Resources and facilities defined as public supply are included in the inventory data presented in this plan.

Quasi-public supply. Outdoor recreation resources and facilities made available by an institution or administrative entity which is neither a public agency or a private entrepreneur, but in-between, having characteristics of both types of administration. Most often this level of administration has no governmental responsibilities and is usually considered a non-profit organization. Civic organizations such as Lions and Optimists clubs are examples. Recreational resources developed or administered by these entities which are open to the general public either free or for a fee are included in this plan. Resources available to members only are not included.

SURFACE ACRE. Unit of measurement ascribed to water resources in the 1990 TORP.

SWIMMING PARTICIPATION

(FRESHWATER). Participation in swimming and water play in freshwater resources such as lakes, reservoirs, rivers, and streams by Texas residents in Texas, and at a water resource open to the public. Does not include swimming in a man-made swimming pool or in a privately owned impoundment.

SWIMMING PARTICIPATION

(SALTWATER). Participation in swimming and water play in saltwater bays, the Gulf of Mexico, or other coastal saltwater bodies by Texas residents in Texas. Includes beach activities like sunbathing and collecting shells.

SWIMMING PARTICIPATION

(OUTDOOR POOLS). Participation in swimming and water play in man-made outdoor swimming pools by Texas residents in Texas, away from the recreationist's home, and at a place open to the public.

SWIMMING SUPPLY. Two types of supply for swimming are presented in this plan: swimming pools and swimming areas associated with resources.

Square Yards of Pools. Water surface area of outdoor swimming pools. Excludes wading pools.

Square Yards of Swimming. Water surface area suitable for swimming whether designated or undesignated. Designated swimming areas are those marked and controlled for swimming only. Undesignated swimming areas are not controlled for swimming only, but are reported suitable for swimming.

Swimming Pool. Outdoor pool available to the general public. Excludes wading pools.

Wading Pool. Small, shallow outdoor pool available to the general public. Excludes swimming pools.

TENNIS COURT. Full-sized regulation outdoor doubles courts are counted.

TENNIS PARTICIPATION. Participation in informal play, practice, or organized league tennis by Texas residents in Texas, away from the recreationist's home, and at an outdoor place open to the public. Participation estimated to occur on school grounds, whether during or after school hours, was excluded in the 1990 TORP participation projections used to determine needs for public facilities.

TEXAS LOCAL PARKS, RECREATION, AND OPEN SPACE FUND. A state fund created by Section 154.603 (b)(2) of the State Tax Code. The fund receives monies from one cent of the 25.5 cent state tax on each pack of cigarettes sold in Texas. Monies from the fund are appropriated by the legislature to TPWD for the purposes of Chapter 24, Parks and Wildlife Code. This authorizes use of fund monies to acquire and develop units of the state park system and to assist local political subdivisions to provide parks, recreation, and open space areas.

TEXAS OUTDOOR RECREATION INVENTORY OF PARKS, RECREATION AREAS, AND RECREATION FACILITIES. See TEXAS OUTDOOR RECREATION INVENTORY SYSTEM.

TEXAS OUTDOOR RECREATION INVENTORY SYSTEM (TORIS). A statewide information system to monitor the availability of outdoor recreation resources. It enumerates recreation areas and facilities in Texas that are open to the general public either free or for a fee. Major components of the system are the data collection instruments designed to accommodate changes and updates, an automated data base management system, and the administrators of outdoor recreation resources/facilities who update the data voluntarily for TPWD.

TEXAS STATEWIDE OUTDOOR RECREATION PLANNING PROCESS (TSORPP). The statewide comprehensive planning process to address outdoor recreation issues and problems in Texas. The TSORPP is comprised of five synergetic planning subprocesses: information updating, plan development, plan validation/plan adoption, plan implementation, and plan evaluation.

TRAIL ACTIVITY. Any of the recreational pursuits which occur in a linear fashion (walking, bicycling, jogging, hiking, horseback riding, off-road vehicle riding). The activity may occur on a designated trail, but in this plan, it is considered a trail activity even when it occurs on a street, road, etc.

TRAIL (DESIGNATED). Any path, passage, route, etc., specifically designated, developed, and managed for trail activities. Measured in linear miles.

Backpacking Trail (Designated). Designated for trips of more than one day duration, on which the participant hikes and carries all supplies necessary for at least one overnight stay. Normally found in more remote, wilderness types of terrain than walking trails. In this plan, supply and needs for backpacking trails are included under Hiking Trails.

Bicycle Trail (Designated). Designed and constructed for bicycling. The course may be designed on an existing roadway, but there must be an independent right-of-way. In this plan, supply and needs for bicycle trails are included under Multi-use Trails. See also BICYCLE ROUTE.

Canoe Trail (Designated). Designated section of river for canoeing, kayaking, or rafting with canoe launches at access points, and rest areas and primitive campgrounds at set intervals. A canoe trail is managed to protect the natural and scenic values of the resource. No supply or needs for canoe trails are shown in this plan.

Disabled Trail (Designated or Adapted for). Any trail having adaptations for disabled persons or a trail constructed specifically for their use. No supply or needs for disabled trails are shown in this plan.

Hiking Trail (Designated). Designated primarily for use by hiking enthusiasts. Hiking trails are generally longer and require more strenuous physical exertion than walking trails. In this plan, hiking trails found on supply tables are at least two miles long, have rural or backcountry surroundings, do not allow horses, bicycles, or motorized uses, and are not paved. Includes backpacking trails.

Horseback Riding Trail (Designated). Designed and designated for the activity of horseback riding. Generally, these trails can accommodate two or more horses abreast and have some overhead clearance (approximately fifteen feet). Riding arenas, race tracks (unless part of a trail), etc. are excluded. For safety reasons, horseback riding trails are generally not shared with other trail users. In this plan, horseback riding trails found in supply tables are at least two miles long and do not allow motorized uses. Hiking may be allowed.

Jogging Trail (Designated). Designed for use by joggers. The surface should be suitable for jogging. In this plan, supply and needs for jogging trails are included under Multi-Use Trails.

Motorcycling Trail (Designated). Designated for use by off-road motorcyclists. Normally a motorcycle trail is not wide enough to accommodate four-wheel vehicles. In this plan, supply and needs for motorcycling trails are included under Off-road Vehicle Riding Acres.

Multi-use Trail (Designated).

Specifically designed to accommodate two or more trail activities such as walking, hiking, nature study, bicycling, jogging, and horseback riding. In this plan, the multi-use trails on supply tables include those allowing one or more of four uses (walking, bicycling, jogging, and nature study) but not meeting the criteria for hiking, horseback riding, or motorized uses.

Nature Study or Interpretive Trail (Designated).

A nature trail is routed through essentially natural environments to provide access for witnessing, studying, feeling, or appreciating natural features of the area. An interpretive trail is a course which seeks to reveal meanings, insights, or relationships in a natural environment or historic setting by means of signs, objects, or other interpretive media to enhance appreciation of the resources. In this plan, nature study and interpretive trails are not shown separately; on supply tables, trails designed for nature study or interpretation are mostly found under Multi-use Trails but may also be found under hiking or horseback riding.

Off-road Vehicle Riding Acres (Designated).

Areas designated for any off-road motorized use (motorcycles, three-wheelers, four-wheelers, etc.). In this plan, the supply of motorized trails over one mile long has been converted to acres.

Walking Trail (Designated).

Primarily for use by those walking for pleasure or exercise. Walking trails are generally shorter than hiking trails. In this plan, supply and needs for walking trails are found under Multi-use Trails.

TRAIL FACILITIES (LENGTH IN MILES).

Only designated trails are included in supply tables. The TORI enumerates each trail by name, length, and types of activities allowed.

TRANSFER OF DEVELOPMENT RIGHTS.

A development control technique in which owners of land that is deemed unsuitable for full development are allowed to sell all or some "development rights" to the owner of another property that can support additional development. Used to obtain open space and parkland, protect natural resources,

direct higher densities to areas with maximum services, limit building height, and preserve neighborhood integrity.

UNIT. A fixed measurement of a given recreational facility by type, resource, or area.

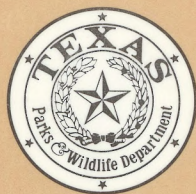
USER OCCASION. A unit of measure of participation in recreational activities. One user occasion results if any part of a day is devoted to a recreational activity by a single recreationist at a single site.

WALKING (PLEASURE/EXERCISE)

PARTICIPATION. Participation in walking for pleasure or exercise by Texas residents in Texas, away from the recreationist's home, and at a place open to the public. Includes walking on sidewalks, along streets or roads, on designated or undesignated public trails, or at any other public place.

Walking (Pleasure/Exercise) on

Trails. Only that portion of participation in walking for pleasure or exercise that occurs on designated trails open to the public.



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