2012 Texas Outdoor Recreation Plan

Recreation Grants Branch
State Parks Division

Life's better outside.
Office of the Governor

September 12, 2012

Rick Perry
Governor

Mr. Michael T. Reynolds
Regional Director, Midwest Region
National Park Service
601 Riverfront Drive
Omaha, Nebraska 68102

Dear Mr. Reynolds:

Texas holds a special place in the hearts and minds of its citizens. The sheer size of the state and its richly varied landscape and history are among the reasons that Texans feel an incredibly strong sense of connection to the land, water and wildlife. Currently, Texas leads the nation in total number of participants in wildlife-associated recreation. It is because of this special connection to nature that outdoor recreation and conservation efforts among Texans are a high priority.

As Texas is the second largest state in the nation and home to a population that has grown significantly over the last decade, policy makers and government officials must be prepared to address the increasing demands for unique outdoor recreation opportunities.

I am pleased to present the 2012 Texas Outdoor Recreation Plan (TORP). This letter certifies that ample opportunity for public participation has occurred in the development of the plan. Two web surveys were conducted in 2011 to garner public input on the outdoor recreational needs of Texans, generating nearly 4,000 responses. Results from the 2009 Hispanic Focus Group for State Parks, the 2002-2007 Texas State Parks On-site Visitor Survey and the Texas results from the 2009 National Survey on Recreation and the Environment conducted by the U.S. Forest Service are also included. Statewide public meetings were held in 2007 in order to review the scoring criteria for the Local Park Grant Programs. Three Urban Focus Group meetings were conducted in 2009, 2011 and again in 2012 to address program needs of our 16 cities and counties with populations of more than 500,000. A draft of the 2012 TORP was placed on the web for public comment followed by a briefing at the Texas Parks and Wildlife Department’s (TPWD) August 2012 meeting.

This plan creates awareness of current outdoor recreation and conservation needs, issues and areas of concern through input from citizens and outdoor recreation professionals. It guides us on how to best administer Texas’ apportionment of the Land and Water Conservation Fund. It creates a resource for current and future outdoor recreation and conservation initiatives and is aligned with TPWD’s Land and Water Resources Conservation and Recreation Plan.

Sincerely,

Rick Perry
Governor

RP:jhp
Acknowledgements

Thank you for the support and many hours of hard work that so many of you put in to complete this project.

Project Staff
Dana Lagarde  Recreation Grants Branch, State Parks Division
Roxane Eley  Recreation Grants Branch, State Parks Division
Tim Hogsett  Recreation Grants Branch, State Parks Division

Primary Authors
Andee Chamberlain  Support Services Program, Infrastructure Division
Chris Beckcom  Planning and Geospatial Resources, State Parks Division
Dana Lagarde  Recreation Grants Branch, State Parks Division
Garett Sansom  Volunteer Consultant, Epidemiology and Public Health Professional
Kelly Dziekan  Marketing and Consumer Research, Communications Division
Lana Marbach  Land Acquisition, Executive Administration
Lindsay Sansom  Recreation Grants Branch, State Parks Division
Nancy Herron  Outreach and Education, Communications Division
Roxane Eley  Recreation Grants Branch, State Parks Division
Scott Stover  Administration Program, Infrastructure Division
Tim Birdsong  Habitat Conservation Branch, Inland Fisheries Division

Other Contributors
Beth Sample  Creative Services, Communications Division
Cappy Smith  Aquatic Education, Communications Division
Chris Holmes  Interpretive Services Program, State Parks Division
Darlene Lewis  Recreation Grants Branch, State Parks Division
Dyanne Cortez  Information and Regulation, Inland Fisheries Division
Edward McKenna  Marketing Branch, Communications Division
Glenda Beasley  Marketing Branch, Communications Division
Jeannie Munoz  Project Management Office, Executive Division
Jennifer Estes  Planning and Geospatial Resources, State Parks Division
Larry Sieck  Project Management Office, Executive Division
Michelle Valek  Planning and Geospatial Resources, State Parks Division
Sonia Yeck  Creative Services, Communications Division
Ted Hollingsworth  Land Acquisition, Executive Administration
# TABLE OF CONTENTS

Letter from the Governor ............................................................................................................... i
Acknowledgements ..................................................................................................................... ii
Table of Contents ....................................................................................................................... iii
Executive Summary .................................................................................................................... viii
Chapter 1 – Texas Outdoor Recreation Plan Overview................................................................. 1.1
Chapter 2 – A Sense of Place: The Lone Star State ................................................................. 2.1
Chapter 3 – Texas Wetlands ................................................................................................. 3.1
Chapter 4 – Inventory of Outdoor Recreation Lands .............................................................. 4.1
Chapter 5 – Outdoor Recreation Demand ................................................................................ 5.1
Chapter 6 – The Economic Value and Impact of Outdoor Recreation ..................................... 6.1
Chapter 7 – The Value of Parks and Recreation in Physical, Mental and Social Well-Being .................................................................................................................. 7.1
Chapter 8 – Sustainable Park Design ..................................................................................... 8.1
Chapter 9 – Historical Progression of Texas Recreation Grants ............................................. 9.1
Chapter 10 – Open Project Selection Process ......................................................................... 10.1
Chapter 11 – Plan Recommendations .................................................................................... 11.1
Bibliography ............................................................................................................................... 1
Appendices
  A – Land and Water Conservation Fund Act ......................................................................... A.1
  B. – Legal Authority .............................................................................................................. B.1
  C – State Strategies met by the Texas Outdoor Recreation Plan ........................................ C.1
  D – List of Acronyms ............................................................................................................ D.1
  E – Survey Results ................................................................................................................. E.1
  F – The Texas Children in Nature Strategic Plan ................................................................. F.1
  G – Scoring Criteria ................................................................................................................ G.1
  H – Master Plan Guidelines ................................................................................................. H.1
  I – State Parks Funded with LWCF ..................................................................................... I. 1
LIST OF TABLES

2.1 – Ten States in the U.S. with the Largest Population Increase, 2000-2010 ............... 
2.2 – Population, Population Change, and Proportion of the Total Population by Race/Ethnicity for Metropolitan Central City Counties in Texas, 2000 and 2010...... 
4.1 – Data Structure Attributes .................................................................................. 
4.2 – Ecoregions and Recreation-Conservation Acres ................................................. 
4.3 – Top 10 County by Recreation-Conservation Acres .............................................. 
4.4 – Ten Most Populace Counties by Recreation-Conservation Acres/Capita ............... 
4.5 – Top 10 Counties by Recreation-Conservation Acres/Capita .................................. 
5.1 – Percent of Population Participating in Outdoor Recreation Activities in the U.S., 1982-2009 ................................................................................................ 
5.2 – Comparison of Top 10 Outdoor Recreation Activities for White/Non-Hispanics and Hispanics in Texas, 2006-2009 ................................................................ 
5.3 – Participation in Hunting, Fishing and Wildlife Watching in U.S. (Residents 16 and older) .................................................................................................. 
5.4 – Participation in Hunting, Fishing and Wildlife Watching in Texas (Residents and Non-Residents 16 and older) ........................................................................... 
5.5 – Percent of Population Participating in Recreational Boating in U.S. ......................... 
5.6 – Participation in Camping in U.S. and Texas .......................................................... 
5.7 – Total Number of Motor Homes and Travel Trailer Registrations in Texas, 2004-2011 ........................................................................................................ 
5.8 – Percent of U.S. and Texas Residents Participating in Viewing/Photographing Birds, 2000-2009 .................................................................................................. 
5.9 – Outdoor Recreation Provider Respondents by MSA ............................................. 
5.10 – Recreation Providers Rate the Usefulness of a System-Wide Plan ......................... 
5.11 – Recreation Providers Rate the Level of Difficulty with Funding ........................... 
5.12 – Recreation Providers Rate the Level of Difficulty with Management .................... 
5.13 – Recreation Providers Rate the Level of Difficulty with Meeting Public Needs ........ 
5.14 – Top 5 Facilities Needed Now in Local Parks by Recreation Providers ................. 
5.15 – Barriers that Limit Visitors to Parks, Percent as Perceived by Recreation Providers as More than a Minor Barrier ................................................................. 
5.16 – Support/Strongly Support Method of Financing Local Parks and Recreation ........ 
5.17 – Bond Election Results in Texas for Parks, Recreation and Open Space ............... 
5.18 – Top 3 Outstanding Qualities of Local Parks by Texas Citizens ............................ 

iv
LIST OF FIGURES

1.1 – Planning Process Components .................................................................
2.2 – Population Change in Texas Counties, 2000-2010 ....................................
2.3 – Texas Conservation Action Plan Ecoregions ............................................
2.4 – Drought Impact on Texas Surface Water (August 23, 2011) ....................
2.5 – Drought Impact on Texas Surface Water (March 20, 2012) ......................
4.1 – Recreation-Conservation Acres in Texas by Owning Entity .................
4.2 – Ecoregions of Texas ..............................................................................
4.3 – Outdoor Recreation-Conservation Acres by Ecoregion ...........................
4.4 – Outdoor Recreation-Conservation Acres/Capita .....................................
4.5 – Outdoor Recreation-Conservation Acres by County ..............................
4.6 – Total Recreation-Conservation Acres by County Population Size


5.2 – Total Texas Hunting, Fishing and Combination Licenses Sold, 1987-2010

5.3 – Total Texas Hunting, Fishing and Combination License Sales Revenue, 1987-2010

5.4 – Visits to National Parks, 1992-2011

5.5 – Type of Outdoor Recreation Provider Respondent

5.6 – Recreation Providers Rate the Level of Difficulty in the Administration of Land Protection

5.7 – Recreation Providers Rate the Level of Importance on the Types of Parks Needed Now

5.8 – Number of Visits Made in the Last 12 Months to Local and State Parks

5.9 – Reasons that Influenced Most Recent Visit to Texas State Parks

6.1 – Estimated Economic Impact of Park Related Expenditures by County Type

6.2 – 2006 Estimated Statewide Economic Impact on Personal Income of Texans by Visitors to Texas State Parks

6.3 – Typical Net Annual Impact of All Activities Associated with Local Public Parks on Business Activity in Texas

7.1 – Urban Heat Island Effect

7.2 – Overweight and Obesity (BMI) in Texas 1995-2010, Weight Classification by BMI

7.3 – Texas Diabetes Prevalence by Weight Status 1997-2007

7.4 – Total Projected Obesity Costs to Texas Businesses, 2009-2030

7.5 – How Investing in Parks and Recreation Benefits Society

9.1 – Total Recreation Grants Projects Distribution by County, 1962-2011

9.2 – Total Recreation Grants Projects by Decade

9.3 – Estimated Sales Tax Collections from Sporting Goods Appropriations to Texas State Parks and Local Park Grants

9.4 – Requested and Awarded Grant Funding by Biennium

9.5 – 2006-2011 LWCF National Apportionment

9.6 – Texas State Parks Receiving LWCF Grant Funds
Executive Summary

The 2012 Texas Outdoor Recreation Plan (TORP) fulfills an eligibility requirement allowing Texas to continue receiving its allotted appropriation through the Land and Water Conservation Fund (LWCF) program. Each state is required to produce a statewide comprehensive outdoor recreation plan (SCORP) at least once every five years. The Texas Parks & Wildlife Department (TPWD) is the state agency that holds the authority to represent and act for the state of Texas regarding the LWCF stateside assistance program.

The LWCF State and Local Assistance Program is the only federal source of funds partnering with states and local governments that is solely dedicated to protecting conservation and recreation lands for future generations of Americans.

According to the SCORP guidelines, the minimum requirements include:

1. Identify outdoor recreation issues of statewide importance
2. Evaluate demand of public outdoor recreation preferences
3. Evaluate the supply of outdoor recreation resources and facilities
4. Provide an implementation program that identifies the state’s strategies, priorities, and actions for the LWCF apportionment
5. Include a wetlands priority component consistent with Section 303 of the Emergency Wetlands Resources Act of 1986
6. Includes Governor approval

The TORP goals are to:

1. Assess current statewide outdoor recreation and conservation needs and areas of concern,
2. Act as a guide on how to best administer Texas’ apportionment of the LWCF
3. Create a resource for outdoor recreation and conservation initiatives, and
4. Align with the TPWD Land and Water Resources Conservation and Recreation Plan

A cross divisional planning team collaborated to fulfill the requirements and goals of the TORP. This was accomplished through extensive research, the development of the most extensive inventory of Texas public parklands in existence, the creation and distribution of two public surveys, an update to the open project selection process, an overview of the state’s wetland conservation priorities, the development of a sustainable park design guide, and periods of public comment throughout the process.

As the second largest state in the nation, and one of the fastest growing in population, Texas must strive to be in the forefront of addressing the many challenges that arise. As Texas continues to be a predominately urban society our children are becoming less connected to nature. Obesity and health care costs are on the rise across the state and water resources are being challenged. The country is also recovering from the biggest recession since the Great Depression creating budget challenges for public funds.
Texas has also recently suffered major losses from natural disaster. In 2011 Texas experienced the worst one year drought ever documented, having overwhelming economic, environmental, and social repercussions for the state. From Nov. 2010 to Oct. 2011, over 30,000 wildfires raged across Texas; burning almost 4 million acres and destroying over 3,000 homes. Nearly 10% of Texas urban forests or 5.6 million urban trees have died as a result of this drought, with an estimated net economic loss of roughly $280 million. (Texas Forest Service, 2012) Wildfires touched upon 30 state parks burning over 9,000 acres of parkland. TPWD saw nearly a 5% decline in fishing and boating license sales equating to approximately $2.79 million in lost revenue. (Miller, 2011) A reduction in state park attendance due to the drought and wildfires has also had serious budget ramifications.

Texas has grown at an alarming rate over the last ten years; at 20.6% versus the national average growth of 9.7%. (Murdoch, 2010) With a total population of over 25 million, Texas has three cities with over 1 million people, more than any other state in the nation. As a predominately urban society and as only 2.5% of land in Texas is open to the public for outdoor recreation; parks and green space are limited for the general population.

It has been found that children ages 8 -18 spend an average of 7.5 hours a day, over 50 hours per week, connected to a television, computer, video games and other electronic media (The Texas Partnership for Children in Nature, 2010).

Obesity rates in Texas have risen sharply in the last 20 years, with over 66% considered obese or overweight. Texas is near the top nationally in terms of the most obese and overweight, ranking in at 12th in 2011, putting Texans at increased risk for more than 20 major diseases. (Trust for America’s Health, 2011) According to the Texas Comptroller’s office, in 2009 alone, obesity cost Texas businesses $9.5 billion. If current obesity trends continue the projected cost will be over $30 billion by 2030.

Given these circumstances, policy makers and government officials must be prepared to address the increasing demands for providing citizens with “quality of life” services and must be able to meet these needs with fewer resources.

Communities are reducing flood and stormwater infrastructure costs by using meaningful park planning and green space as a way to buffer against storm surges and pollution. Acquiring and maintaining parkland is also a viable solution to reducing air pollution. In the United States, urban park trees remove over 75,000 tons of air pollution annually, with a value of $500 million. (Nowak, et al., 2010) Furthermore, urban park trees have the ability to reduce air temperatures and human exposure to ultra violet radiation.

There is a well-documented scientific connection between access to outdoor recreation and positive physical health outcomes. Direct access to green space and parkland has been shown to correlate with improved cognitive function, increased self-esteem and better self-discipline, decreased levels of depression, lower stress levels, reduced cases of obesity, and an increased sense of community and belonging.
Promoting the most popular outdoor recreation activities and providing critical amenities can help increase participation rates and promote healthy lifestyles. For example, in addition to being identified as the top needed facility for both state and local parks in Texas; trail linkages are considered one of the key ways to provide access to parks and to encourage active lifestyles, which is vital to combating the obesity epidemic. A key finding in a review of more than 200 research studies by the American Heart Association in 2011 stated that every $1 spent on building biking trails and walking paths would save an estimated nearly $3 in medical expenses. (Trust for America’s Health, 2012)

Providing access to available facilities for structured or spontaneous activity and providing amenities enhancing park safety have been shown to significantly contribute to improved physical activity and reduced obesity levels among children and adults.

Access to green places can have a dramatic impact on a community. “For the last 99.95% of the last two million years, the human race has been living in nature and making our way by hunting and gathering; only in the last 10,000 years did we move into our first villages and develop agriculture (Kuo F. E., 2010).” Because of this, we have undergone rapid social evolution within a relatively short amount of time. Public health experts are only now discovering the multifaceted implications of living in increasingly urban environments. Just the presence of vegetation has been proven to have helped increase the sense of belonging. Studies have continually drawn the conclusion that regardless of social status, income, age, and other demographic predictors, the level of greenness corresponds to an increase in positive social ties and can lead to a more socially cohesive community.

Positive social ties can help reduce rates of criminal activity. Parks and recreation programs have long been a solution to crime prevention, especially for youth. “Since the 1800s, a consistent link has been made between youth’s opportunities to participate in recreation programs and the level of crime and delinquency.” (Witt & Caldwell, 2010). In Austin the Dove Springs neighborhood reported a 44% reduction in juvenile crime in 1998 following the opening of a recreation center and the introduction of a ‘Roving Leaders Program,’ sponsored by the Austin-Travis County MHMR.

In addition to improving quality of life, parks are significant generators of economic activity. Parks increase sales tax revenue, create jobs, attract new businesses, and increase personal income and property values. For example, the economic impact on sales for Goose Island State Park in Aransas County was estimated to be over $7 million with almost 200 jobs created in 2006. (Crompton & Culpepper, 2006). The total economic impact reported for local parks in the same year was a massive $5.51 billion in spending and 38,390 jobs created statewide. (The Perryman Group, 2006).

An increasing trend in bird and wildlife viewing has also benefited Texas. Nature tourists in south Texas partaking in bird or wildlife watching activities contribute over $300 million to the Rio Grande Valley economy per year. (Woosnam, Dudensing, Hanselka, & An, 2011)

According to recent surveys, Texans overwhelmingly agree that both state and local governments have a responsibility to provide public outdoor recreation lands and facilities;
however, park and recreation budgets are limited due to the recent national recession, record drought, and wildfires.

By engaging in a concerted strategic planning process, and supporting park acquisition, sustainable development, and outdoor recreation programs; we can promote healthy lifestyles and address environmental concerns while reducing costs and increasing revenue.

The below recommendations were developed based on the research and data collected through the 2012 TORP planning process. Six recommendations with action items were identified according to need and feasibility in promoting a more holistic planning process on both the state and local levels. Implementation of this plan will bring Texas closer to realizing the full potential of the economic, mental, physical, social, environmental and community benefits that parks and outdoor recreation provide.

**Plan Recommendations**

1. **Promote to general public and decision makers the total economic value of parks and recreation as it relates to attracting tourism, economic development and improving the quality of life.**
   
   **Action Item 1A:** Create a working group made up of federal, state, and local parks and recreation providers to support a system of parks and the benefits they provide.
   
   **Action Item 1B:** Take a more active leadership role in state, regional and local planning efforts to incorporate the benefits that parks and outdoor recreation programming can produce in the physical, mental, social, and economic well-being for the citizens of Texas.
   
   **Action Item 1C:** Engage the Texas Interagency Obesity Council to further incorporate parks and recreation as a solution to the obesity epidemic.
   
   **Action Item 1D:** Coordinate with local law enforcement to identify parks and recreation sites and develop programming to reduce neighborhood crime.
   
   **Action Item 1E:** Collaborate with other agencies, organizations and schools to engage youth in conservation and outdoor recreation programs.

2. **Seek sustainable funding and leverage resources to meet the expanding outdoor recreation and conservation needs of the growing, diverse and predominately urban population of Texas.
**Action Item 2A:** Capitalize on the research showing public support and a willingness-to-pay for land and water conservation and outdoor recreation.

**Action Item 2B:** Take on an expanded role in supporting funding initiatives concerning outdoor recreation and conservation.

**Action Item 2C:** Identify additional resources to implement the Texas Children in Nature Strategic Plan and the Community Outdoor Outreach Program.

**Action Item 2D:** Improve coordination to further leverage outside funding opportunities.

**Action Item 2E:** Seek additional grant opportunities for conservation and outdoor recreation opportunities.

3. **Respond to prominent outdoor recreation trends.**

   **Action Item 3A:** Promote trails, greenways and linkages to encourage active lifestyles.

   **Action Item 3B:** Inventory, prioritize and develop trail opportunities.

   **Action Item 3C:** Partner with the Texas Nature Tourism Council and other nature based recreation groups to identify creative ways of promoting nature and heritage tourism.

   **Action Item 3D:** Continue efforts to provide new acquisition and development of parklands near urban areas through the Open Project Selection Process for state and local grants.

   **Action Item 3E:** Provide new recreational opportunities for changing demographics.

4. **Manage access to public waters for recreation.**

   **Action Item 4A:** Create an inventory of boat ramps under the Texas Parks and Wildlife Department’s (TPWD) authority.

   **Action Item 4B:** Use a team approach involving all affected TPWD divisions in the decision making process on the best use of available resources for the improvement and development of boat access facilities.
5. **Maintain the commitment to periodically review the Open Project Selection Process (OPSP) and grant administration guidelines for state and local parks to ensure they adequately reflect current statewide outdoor recreation and conservation values and trends, and are effective and easy to understand.**

   **Action Item 5A:** Create a process on how to allocate the state and local share of LWCF grants.

   **Action Item 5B:** Continue to utilize the Urban Park Director’s Focus Group to strategize how best to address scoring criteria for Urban Local Park grants.

   **Action Item 5C:** Continue to hold statewide public meetings to address the local park OPSP.

   **Action Item 5D:** Work with other TPWD divisions on how to best evaluate the Local Park Grant Scoring Criteria regarding acquiring and conserving wetlands and sustainable park development.

   **Action Item 5E:** Utilize the 2012 Inventory of Outdoor Recreation and Conservation Lands to identify GIS data for grant funded projects in Texas.

6. **Efficiently manage land, water and facilities for sustainable public use.**

   **Action Item 6A:** Take an active role in state, regional, and local planning efforts for water conservation and protection.

   **Action Item 6B:** Promote sustainable park design and green infrastructure as an eco-friendly and cost effective alternative to non-sustainable construction.

   **Action Item 6C:** Provide technical guidance and assistance to local governments, developers and citizens for sustainable park design and green infrastructure.
Texas Outdoor Recreation Plan Overview

Introduction

As the second largest state in the nation, and one of the fastest growing in population, Texas must strive to be in the forefront of addressing the many challenges that arise. As Texas continues to be a predominately urban society our children are becoming less connected to nature. Obesity and health care costs are on the rise across the state and our water resources are being challenged from the worst drought on record. The country is also recovering from the biggest recession since the Great Depression creating budget challenges for public funds.

Texas has also recently suffered major losses from natural disaster. In 2011 Texas experienced the worst one year drought ever documented, which had overwhelming economic, environmental, and social repercussions for the state.

Given these challenges, policy makers and government officials must be prepared to address the increasing demands for providing citizens with basic services (such as clean water and opportunities for a healthy lifestyle) and must be able to meet these future needs with fewer resources.

The following are the TORP goals:

1. Assess current statewide outdoor recreation and conservation needs and areas of concern;
2. Act as a guide on how to best administer Texas' apportionment of the LWCF;
3. Create a resource for outdoor recreation and conservation initiatives, and
4. Align with the TPWD Land and Water Resources Conservation and Recreation Pan...

The Land and Water Conservation Fund

The LWCF Act of 1965 authorized the distribution of matching grants to states and local governments for statewide outdoor recreation planning, and to leverage public and private investment in public outdoor recreation through the acquisition and development of outdoor recreation areas and facilities. The program is intended to create and maintain a nationwide legacy of high quality recreation areas and facilities, and to stimulate non-federal investments in the protection and maintenance of recreation resources across the U. S. The LWCF State and Local Assistance Program is the only federal source of funds partnering with states and local governments that is solely dedicated to protecting conservation and recreation lands for future generations. Program funding is appropriated annually by Congress. Federal oil and gas leases on the Outer Continental Shelf are the primary source of funding for this program.
In order to remain eligible to receive assistance from the LWCF program, each state is required to produce a statewide comprehensive outdoor recreation plan (SCORP) at least once every five years (Appendix A). The Texas Parks & Wildlife Department (TPWD) is the state agency that holds the authority to represent and act for the state of Texas regarding the LWCF stateside assistance program (Appendix B).

According to the LWCF 2010 Annual Report, the goals of the State and Local Assistance Program are to:

- Meet state and locally identified public outdoor recreation resources needs to strengthen the health and vitality of the American People.
- Increase the number of protected state and local outdoor recreation resources and ensure their availability for public use in perpetuity.
- Encourage sound planning and long-term partnerships to expand the quantity and ensure the quality of needed state and local outdoor recreation resources.

Planning Process

The development of the 2012 TORP started with a review of the SCORP guidelines, previous TORP documents, and other national and state plans and documents. State strategies met through this document are identified in Appendix C.

A proposal for implementation was developed by the TPWD Recreation Grants Branch, Local Park Grants Program for internal executive review. After approval of the proposal by the Executive Office, the planning team was assembled. The team consisted of key staff from TPWD including: State Parks Division, Communications Division, Executive Administration Land Acquisition Office, Infrastructure Division, Inland Fisheries Division, and the Project Management Office. Figure 1.1 outlines the planning process by identifying each team component.
Project Management

Project management and integration of the document remained under the Recreation Grants Branch, Local Park Grants Program.

Outdoor Recreation Supply

The State Park Planning and Geospatial Resources area was tasked with updating the land and water inventory mandated in Chapter 11 of the Parks and Wildlife Code and as required in the SCORP guidelines. The process involved an intensive data collection period followed by analysis of current conservation and recreation lands available to Texas communities. Inventory results are summarized in Chapter 4.
Outdoor Recreation Demand

To ensure that ample opportunity for public participation has occurred in the development of the TORP, a variety of state and national survey studies were used to establish outdoor recreation trends in Texas. Results from the 2002-2007 Texas State Parks On-Site Visitor Survey, the TPWD 2009 Hispanic Focus Groups, and the Texas results from the 2009 NSRE conducted by the USFS are included in this analysis of outdoor recreation demand. In addition to these earlier studies, in 2011 TPWD also conducted two web surveys to garner public input on the outdoor recreational needs of Texans; generating nearly 4,000 responses. The results and limitations from these surveys are further analyzed in Chapter 5.

Wetlands

In fulfillment of the LWCF Act of 1965 and the Emergency Wetlands Resources Act (EWRA) requirements, TPWD and community partners developed the Texas Wetlands Conservation Plan or TWCP. The TWCP focuses on non-regulatory, voluntary approaches to wetlands conservation that are supported through stakeholder-driven planning and coordination at regional levels. Consistent with the intent of the TWCP, a number of self-directed, local conservation partnerships have instituted individualized conservation plans that identify the most appropriate priority wetlands conservation strategies and actions for each respective region. Chapter 3 on Texas Wetlands was prepared by the Inland Fisheries, Habitat Conservation Branch and has been added to the 2012 TORP to align wetland conservation priorities with resources available through the LWCF program.

Economic Impact

In the past 24 years, a variety of studies have been completed in Texas that demonstrate the value added to the local and state economies by the presence of parks and recreation facilities. The Recreation Grants Branch analyzed this research, summarized the economic impact, and identified some of the intrinsic economic values of outdoor recreation in Texas in Chapter 6.

Physical, Mental, and Social Well-being Values

There is strong evidence to support the positive relationship between improved physical, mental, and social well-being, and direct access to parklands and outdoor recreation programs. The Recreation Grants Branch analyzed this information and provides an overview of the environmental, physical health, mental health, and social / community benefits provided through experiencing nature in Chapter 7.
Sustainable Park Development

Using sustainable techniques in the design and construction of public parks and other outdoor recreation supports the broader TPWD mission of managing and conserving the natural and cultural resources of Texas for the use and enjoyment of present and future generations. Chapter 8, authored by the Infrastructure Division, provides a starting point for recreation providers to help identify specific solutions for implementing sustainable design elements into the creation, construction, and maintenance of outdoor recreation lands across the state.

Open Project Selection Process (OPSP)

Each year the LWCF apportionment is split between the State Park and the Local Park programs. As needs differ slightly for each program, separate project selection criteria have been developed respectively by the Executive Administration Land Acquisition Office and the Recreation Grants Branch. Scoring criteria were analyzed to insure that they support the priorities identified in the 2012 TORP. Additional information regarding the OPSP can be found in Chapter 10.

Document Review

All members of the 2012 TORP planning team, in addition to the Project Management Office and executive management had the opportunity to review the document for content. Furthermore, the draft was posted on the web for 30 days for public input. During the regularly scheduled TPWD Commission meeting on August 30, 2012, the draft was presented with the opportunity for additional public comment. The final review and approval in Texas is from the Governor’s Office, where the letter to the National Park Service (NPS) to submit the TORP is prepared. Any final revisions were incorporated, and the final version of the TORP was submitted to NPS.

Plan Limitations

During the planning process the team faced several challenges that need to be recognized. This endeavor started during a very difficult economic time for the United States. The 82nd Texas Legislature was looking at a $15-$27 billion shortfall for the 2012-2013 biennium. The result was a 21.5% budget cut for TPWD with a loss of over 200 positions. This included the suspension of all state grant funding and a 50% reduction in staff for the Local Park Grants Program.

In addition, record drought, devastating wildfires, and associated declines in park visitation and revenue created a time of critical need for our state parks. This equated to a limited budget for the 2012 TORP planning process, the loss of several key team members as part of the reduction in force, and a limitation of resources available.
A Sense of Place:  The Lone Star State

Introduction

Texas holds a special place in the hearts and minds of its citizens. The sheer size of the state and its richly varied landscape and history are among the reasons that Texans feel an incredibly strong sense of place and connection to the land, water, and wildlife. Texas leads the nation by total number of participants in wildlife-associated recreation (U.S. Fish and Wildlife Service, 2006). It is because of this special connection to nature that outdoor recreation and conservation efforts among Texans are a high priority.

As Texas is the second largest state in the nation, and one of the fastest growing in population; policy makers and government officials must be prepared to address the increasing demands for outdoor recreation opportunities.

<table>
<thead>
<tr>
<th>Table 2.1</th>
<th>Ten States in the United States with the Largest Numeric Population Increase 2000-2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2000 Population</td>
</tr>
<tr>
<td></td>
<td>2010 Population</td>
</tr>
<tr>
<td></td>
<td>Change 2000-2010 Numeric Percent</td>
</tr>
<tr>
<td>United States</td>
<td>281,421,906</td>
</tr>
<tr>
<td>Texas</td>
<td>25,145,561</td>
</tr>
<tr>
<td>California</td>
<td>4,293,741</td>
</tr>
<tr>
<td>Florida</td>
<td>2,818,932</td>
</tr>
<tr>
<td>Georgia</td>
<td>1,501,200</td>
</tr>
<tr>
<td>North Carolina</td>
<td>1,486,170</td>
</tr>
<tr>
<td>Arizona</td>
<td>1,261,385</td>
</tr>
<tr>
<td>Virginia</td>
<td>922,509</td>
</tr>
<tr>
<td>Washington</td>
<td>830,419</td>
</tr>
<tr>
<td>Colorado</td>
<td>727,935</td>
</tr>
<tr>
<td>Nevada</td>
<td>702,294</td>
</tr>
</tbody>
</table>

Source:  Hobby Center for the Study of Texas at Rice University, U.S. Census Bureau Population values as of April 1, 2000 and April 1, 2010.
As the population dynamics are shifting, leaders must plan for the future; taking into consideration the evolving needs from the continuing rural to urban migration, changing demographics, and intensified pressure on our land, water, and wildlife resources.

Given the fact that Texas lands are 94% privately owned, involving landowners and educating urban dwellers about conservation efforts will be vital to preserving the wild Texas beauty that is so dear to the heart of our Texas family (Dunlap, 2006).

Moving forward, land preservation and water conservation are listed among the top state priorities. Adventure is a part of the Texas tradition and we must preserve our natural heritage so that our children and grandchildren may have the joy of exploring and learning first-hand about the wilder side of life in the Lone Star State.

**People of Texas: Changing Demographics**

Results are out from the 2010 U.S. Census and according to the numbers, the great state of Texas is home to a fortunate 25,145,561 individuals. Based in the 2005 population projection scenarios generated by the Texas State Data Center, actual 2010 population numbers fall right in between the medium (0.5) to high (1.0) net migration projection scenarios; leading experts to anticipate a continued above average growth trend.

![Figure 2.1](image)

**Figure 2.1**

*Texas Population Projected Growth Estimates 2000-2040*

Source: (Texas State Data Center, 2008)
Texas has grown at an alarming rate over the last ten years, at 20.6% versus the national average growth of 9.7% (Murdoch, 2010). Given this dramatic increase in population since 2000, community demands for outdoor experiences are on the rise all across the state.

Not only is Texas increasing in sheer number, but there is also significant growth in diversity of people and cultures. With a total population of over 25 million, Texas has three cities with over 1 million people, more than any other state in the nation. These cities are increasingly diverse, and the face of Texas continues to change. Of significance is the growth of the Hispanic population in Texas in the last ten years. In 2000, 37% of Texans were Hispanic compared to 45% in 2010.

Demographers predict that by 2040, more than 53% of the Texas population will be Hispanic and 32% will be Anglo (Texas State Data Center, 2008). This trend can be seen just in the population shift that has occurred since 2000 for Metropolitan Central City Counties, where the Hispanic community has increased by 81.5%, while the Anglo community has decreased by 6.1% (Murdoch, 2010). Engaging diverse audiences will become even more important in the years to come.

<table>
<thead>
<tr>
<th>Race/Ethnicity *</th>
<th>Population</th>
<th>Population Change</th>
<th>Percent of Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2000</td>
<td>2010</td>
<td>Numeric</td>
</tr>
<tr>
<td>NH White</td>
<td>6,280,433</td>
<td>6,126,120</td>
<td>-154,313</td>
</tr>
<tr>
<td>Hispanic (All Races)</td>
<td>5,233,081</td>
<td>7,310,033</td>
<td>2,076,952</td>
</tr>
<tr>
<td>NH Black</td>
<td>1,825,667</td>
<td>2,184,001</td>
<td>358,334</td>
</tr>
<tr>
<td>NH Asian</td>
<td>427,495</td>
<td>636,526</td>
<td>209,031</td>
</tr>
<tr>
<td>NH Other</td>
<td>227,029</td>
<td>286,543</td>
<td>59,514</td>
</tr>
<tr>
<td>Total</td>
<td>13,993,705</td>
<td>16,543,223</td>
<td>2,549,518</td>
</tr>
</tbody>
</table>

* Hispanic includes persons of all races. All other race/ethnicity categories shown here are Non-Hispanic. Non-Hispanic Other includes personal identifying themselves a Non-Hispanic American Indian or Alaska Native, Non-Hispanic Native Hawaiian or Pacific Islander, Non-Hispanic Some Other Race, or Non-Hispanic and combination of two or more races.
Prepared by the Hobby Center for the Study of Texas at Rice University [http://HobbyCenter.Rice.edu](http://HobbyCenter.Rice.edu)
A century ago, most Texans lived in rural areas and were closer to nature. Today, the vast majority of the population lives in large cities.

As the urban population increases, so does the demand for improved access to outdoor recreational opportunities. Texans need preserved land where they can hike, bike, or just be. Direct experience with nature is vital to physical, emotional, and spiritual well-being and leads to a healthy understanding of our place in the world.

**Figure 2.2**
Population Change in Texas Counties, 2000-2010

---

**Rich Resources of Texas**

Texas is blessed with amazing biodiversity - home to nearly 800 species of fish, 425 species of butterflies, 634 species of birds, and over 4,600 species of native plants. With 12 distinct ecoregions covering approximately 268,500 square miles, Texas has an astounding array of climates, soils and habitats (Texas Parks and Wildlife, 2010). High
plains, wetlands, mountains, deserts, forests, and coastal marshes provide habitat for the fish and wildlife resources that help define the landscape.

From spring-fed rivers flowing past towering cypress trees to coastal bays and wetlands teeming with plants, fish and wildlife, Texas waters are a source of beauty and wonder, and an essential life-supporting resource for animals, plants, and humans alike.

With over 191,000 miles of rivers and streams, seven major estuaries and approximately 200 major springs, Texas is blessed with a bounty of aquatic resources (Texas Parks and Wildlife, 2010). The abundance and high quality of fishing opportunities within these waters is a major reason why Texas ranks second in the nation in the amount of money and number of days spent fishing (U.S. Fish and Wildlife Service, 2006).
Healthy ecosystems depend on careful and effective water management. The population of Texas is expanding rapidly, bringing incredible pressure to bear on all of the state’s natural resources, especially water.

**Conservation**

Today, Texas is facing unprecedented conservation challenges. Several species of birds and mammals have already vanished from Texas, and many more are in danger. Fortunately, Texans have long recognized the need for stewardship of the state’s land, water, fish, and wildlife and took action generations ago to protect the state’s natural heritage.

The first game and fish laws in Texas were passed in the late 19th century, and the first game warden began protecting the state’s resources in 1895. TPWD was formed in 1963 when the Texas Game and Fish Commission and the Texas State Parks Board were united into a single agency. For over a hundred years, Texas has worked to ensure that present and future generations continue to enjoy the state’s great natural and cultural heritage.

Involving Texans in outdoor recreation is a critical component of conservation. Numerous studies have confirmed that outdoor recreation leads to caring for natural resources. An informed and involved citizenry is vital to the conservation of healthy terrestrial and aquatic habitats.

TPWD currently operates 96 state parks and natural areas, 51 wildlife management areas and eight fish hatcheries, comprising 1.4 million acres that are managed in the public trust for recreation and conservation (Texas Parks and Wildlife, 2010). State parks and wildlife management areas offer a remarkable variety of opportunities to experience the outdoors. From the desert mountain sky islands of Big Bend Ranch State Park to the cypress swamps of Caddo Lake Wildlife Management Area, TPWD maintains and provides outdoor experiences ranging from peaceful to exhilarating and from suburban oases to backcountry wilderness.

**A Special Note on Water in Texas**

Water in Texas is sacred and while drought is not new to the arid state, in 2011 Texas experienced the worst one-year drought ever documented. That summer brought about the hottest experienced in recorded U.S. history, even beating out the 1934 record held...
by Oklahoma during the Dust Bowl days (Dolce & Erdman, 2011). This drought has had overwhelming economic, environmental, and social repercussions for Texas.

Estimates by the Texas AgriLife Extension Service put Texas agricultural losses for 2011 at $7.62 billion. A December economic analysis by BBVA Compass Bank found that indirect drought losses to the state’s agricultural industries could add another $3.5 billion to the toll (Combs, 2012).” Furthermore, there are untold thousands of dollars' worth of infrastructure damage across the state from things like broken pipes and cracked concrete from shifting water tables. The Texas Forest Service has estimated that nearly 10% of Texas urban forests or 5.6 million urban trees have died as a result of this drought.

Additionally, owing to the reduced lake levels, TPWD has seen nearly a 5% decline in fishing and boating license sales (approximately $2.79 million in lost revenue), leading to drastic cuts in the budget for conservation and state park operation (Miller, 2011). Reduction in fish and boating license sales in addition to reductions in state park attendance due to the drought and wildfires has had serious ramifications for TPWD, the primary state agency charged with preserving the natural heritage of Texas.
However, the worst, and most heart wrenching loss came in the form of the wildfires. In the 2011 fire season (Nov. 2010-Oct. 2011), 30,457 wildfires raged across Texas; burning almost 4 million acres and destroying 3,017 homes (Texas Forest Service, 2012). Wildfires touched upon 30 State Parks burning over 9,000 acres of parkland.

Moving forward, the Texas Water Development Board (TWDB) estimates that water demands will continue to rise, and will grow by 22% over the next forty years.

“The 2012 State Water Plan indicates that nearly 40% of the water supplies to be developed by 2060 will be the result of conservation and unconventional water sources (Combs, 2012).”
Good news arrived in the early spring, with rainfall over large portions of the state. This released major areas of Texas from the “extreme” and “exceptional” drought categories. And while more rain is needed, the rivers, lakes and aquifers are reviving.

Figure 2.5

Drought Impact on Texas Surface Water
March 20, 2012

Drought Severity Index
- Nothing
- D0 - Abnormally Dry
- D1 - Drought - Moderate
- D2 - Drought - Severe
- D3 - Drought - Extreme
- D4 - Drought - Exceptional

Sources
- NDMC
- USDA
- NOAA
- TCEQ Office of Water

Drought Monitor Data was developed by the National Drought Mitigation Center (NDMC) and the U.S. Department of Agriculture (USDA) and National Oceanic & Atmospheric Administration (NOAA).
Texas Wetlands

Introduction

In order to meet the requirements of the Emergency Wetlands Resources Act (Public Law 99-645, S. 303, 1986) and to maintain eligibility of the state to participate in the LWCF Program, the TORP is required to either (a.) include a Wetlands Component that identifies wetland conservation goals, strategies and priorities, or (b.) develop a State Wetlands Priority Plan that is consistent with the National Wetlands Priority Conservation Plan (NWPCP; USFWS, 1989). In fulfillment of these requirements, TPWD and partners developed the Texas Wetlands Conservation Plan (TWCP; TPWD, 1997). The TWCP focuses on non-regulatory, voluntary approaches to wetlands conservation supported through stakeholder-driven planning and coordination at regional scales.

Consistent with the intent of the TWCP, a number of self-directed, regional conservation partnerships (e.g., Bird Joint Ventures, Fish Habitat Partnerships, Estuary Programs) have developed strategic conservation plans that identify priority wetlands conservation strategies and actions. This chapter has been added to the TORP to facilitate implementation of these regional strategic conservation plans and the TWCP, and to align regional wetlands restoration and protection priorities in Texas with resources available through the LWCF Program.

Applications submitted to the Outdoor Recreation Grant program (which disperses LWCF grants) are given priority points if the project provides for the acquisition and preservation of a significant wetland area. Wetlands recognized in an acceptable, published planning document, such as the strategic wetlands conservation plans referenced in this chapter, may qualify for additional priority points.

Texas Wetlands: Regional Descriptions

Although wetlands comprise less than 5% of the total land area of the state, Texas has the fourth greatest wetland acreage in the conterminous United States (Dahl, 1990) and contains a diversity of wetland types, including swamps, bottomland hardwood forests, marshes, bogs, springs, resacas, cienegas, riparian areas, playa lakes, and saline lakes. The conservation strategies identified in the TWCP are designed to be uniquely focused on the specific wetland types and regions of the state. Please find the wide variety of diverse wetlands described below by region.
East Texas

East Texas contains a mosaic of wetland types including forested wetlands, shrub swamps, marshes, oxbow lakes, and bogs. Forested wetlands (Photo 1), the most common wetland type in East Texas, are dominated by bottomland hardwood trees that grow in creek and river floodplains. In floodplains, the ebb and flow of floodwater shapes the forest floor into ridges, swales, or flats. These elevational differences influence the duration of flooding or soil saturation, which, in turn, affect the type and abundance of plants that can grow. As a result, bottomland hardwood forests contain a diversity of trees, shrubs, herbaceous species, and vines that grow together in different vegetation assemblages depending on soil type, water depth, velocity, and flood duration.

![Photo 1. Bottomland hardwood forest in east Texas, © TPWD.](image)

Bottomland hardwood forests buffer water, one of our most precious resources, from human activities. Bottomlands anchor soil, prevent soil loss from scouring, and filter various pollutants from water (Wharton, 1980). Pesticides readily adhere to clay and organic particles, and floodplains are sinks for oil, nitrogen, phosphorus, sewage, fly ash, and other particulates.

Bottomlands are open, productive systems that receive supplements from soil and organic matter upstream (Wharton, 1980). Bottomland productivity supports abundant fauna in that system and is crucial to biological production in downstream estuarine systems.

Bottomland hardwood communities in Texas support over 180 species of woody plants, including bald cypress (Photo 2), water oak, willow oak, overcup oak, water hickory, green ash, pecan, possumhaw, buttonbush, planertree, and swamp privet.
Characteristic herbaceous species include smartweeds, arrowhead, sedges, cutgrass, arrow arum, lizard’s-tail, spiderlilies, and bladderworts. Animals found in forested wetlands include wood ducks, mallards, eastern wild turkeys, swamp rabbits, gray and fox squirrels, raccoons, river otters, beavers, red-eyed vireos, alligator snapping turtles, and cottonmouth water moccasins.

![Photo 2. Bald cypress knobs in a forested wetland in east Texas, © TPWD.](image)

Shrub swamps are dominated by water elm (also known as planertree), buttonbush, and swamp privet. These plants often grow in dense stands with sparse herbaceous understory. Standing water or saturated soils are typically present throughout the year.

Freshwater marshes (Photo 3) contain extensive stands of cutgrass, a perennial species, in deeper portions of the marsh. Other perennial plants occupying the adjacent shallower areas include several smartweed species, arrow arum, soft rush, spikerushes, arrowhead, maidencane, and plumegrass. Numerous submergent species are found in deeper open water pools. Cutgrass marshes are seldom dry.

Historically, during extreme, infrequent droughts, prolonged fires burned the organic peat soils of cutgrass marshes. These fires reduced or eliminated the dense herbaceous cover, which temporarily favored the growth of many annual plant species.
East Texas bogs, found in association with bottomland hardwood forests, occur when bowl-shaped terrain features restrict water drainage. These systems are usually wet year round because of continuous groundwater seepage. Acidic conditions and poor soil aeration support plant communities containing a variety of specialized species, including carnivorous plants such as sundews and pitcher plants (Photo 4). Other plants include red maple, wax myrtle, alder, bladderworts, orchids, ferns, and irises. Species composition is best maintained by periodic prescribed burns to control woody plants.
Texas Gulf Coast

The Gulf Coast contains a diversity of salt, brackish, intermediate, and fresh wetlands, including wet prairies, forested wetlands, barrier islands, tidal flats, estuarine bays, bayous, and rivers. Coastal prairies also contain rice fields, which can provide excellent wintering waterfowl habitat. Saline and brackish marshes (Photo 5) are most widely distributed south of Galveston Bay, while intermediate marshes are the most extensive marsh type east of Galveston Bay.

The lower coast has only a narrow band of emergent marshes, but has a system of extensive bays, lagoons, and small near-shore ponds, which are critical freshwater sources to diving ducks that feed in saline and hypersaline lagoons. Rainfall along the coast varies from 65 cm on the lower coast to 139 cm on the upper coast (Texas Department of Water Resources, 1984). The existence and extent of specific plant species within these different wetland types depends on their tolerances to fluctuating salt concentrations and variability in water depth. Some overlap of species can be found within the different wetland types on the Gulf coast.

Submerged aquatic vegetation (primarily seagrasses, Photo 6) grows in permanently inundated areas ranging from highly saline to brackish waters, but thrives in shallow subtidal areas of less than six feet. Most submerged aquatic vegetation, including shoalgrass, widgeongrass, manatee grass, clover grass, and turtle grass, is found in the Lower Laguna Madre. Because submerged aquatic vegetation is found below the mean high-tide line, most areas are state-owned (Texas General Land Office, 1997).
Tidal flats are located in the intertidal zone and are consistently exposed and flooded by tides. Tidal flats, characterized by sand, silt, and clay, have minimal vegetation but are important feeding grounds for coastal shorebirds, fish, and many invertebrates including crabs, oysters, clams, shrimp, and mussels. Texas contains more tidal flats than any other state and houses 23% of the nation’s total (Texas General Land Office, 1997).

Salt marshes (average salinity 18 ppt) have the greatest tidal fluctuation of all marsh types. Soils have a lower organic content than fresher types located further inland (Chabreck, 1972). Salt marshes contain relatively few plant species and are characterized by Spartina alterniflora (smooth cordgrass), a species that depends on regular water fluctuations. Behind this zone may be saltgrass, needle rush, blackrush, saline marsh aster, saltwort, glasswort, and sea lavender.

Brackish marsh communities are transitional between saline and intermediate marshes (average salinity 8.2 ppt). They are still subject to daily tidal influence. Marsh soils have a higher organic content than salt marshes, and water levels are also higher. Brackish marshes contain numerous small bayous and lakes. Dominant species include marshhay cordgrass, saltgrass, saltmarsh bulrush, Olney bulrush, and widgeon grass (Chabreck et al., 1989).

Intermediate marshes (average salinity 3.3 ppt), somewhat tidally influenced, have greater plant diversity than saline or brackish marshes (Chabreck et al., 1989). Species found here include seashore paspalum, marshhay cordgrass, Olney bulrush, arrowheads, common reedgrass, coastal water-hyssop, bearded sprangletop, pondweeds, and naiad.
Fresh marshes support the greatest diversity in plant species of all marsh types. They are normally free from tidal influence, exhibit slow drainage, and have the highest soil organic content of coastal wetlands (Chabreck et al., 1989). Dominant vegetation includes maiden cane, giant cutgrass, American lotus, white water-lily, smartweed, marsh millet, arrowhead, seedbox, coontail, alligator weed, and many others.

Coastal prairies, often called “rice prairies” because of the current land use, generally extend from the coastal marshes to as much as 75 miles inland. The former tall grass prairies (Andropogon spp.) dotted with shallow, ephemeral prairie wetlands (called potholes) and meandering bayous, creeks, and rivers were replaced by agricultural fields, especially following World War II, in response to an increased market demand for rice and other crops (Stutzenbaker and Weller, 1989).

Those wetlands that were not drained or “land-leveled” for enhanced crop production were often drained to eliminate potential hazards for cattle or to improve grazing conditions during wet cycles (pers. comm. With David Curtis, 1997). Today’s rice and grain fields that are flooded during the fall and winter receive heavy waterfowl use, especially by pintails, mallards, geese, and many wading birds (Gulf Coast Joint Venture Management Board, 1990).

Texas coastal wetlands are an important wintering and migration area for North American waterfowl. Other birds of special concern, such as the bald eagle, peregrine falcon, brown pelican, and whooping crane, all depend on Texas marshes and estuaries, as do otter, alligator, swamp rabbit, furbearers, and amphibians. Texas coastal marshes and estuaries provide productive nurseries/spawning areas and habitat for seafood species and other marine organisms.

South Texas

South Texas freshwater or brackish wetlands include small, isolated depressions, or potholes, and resacas, which are relic meanderings of the Rio Grande River. Coastal potholes, formed when clay soils exposed by wind action trap and hold water, often supply the only fresh water for resident wildlife in an area generally devoid of creeks and rivers. Potholes depend on rainfall or underground water sources. High evaporation rates and temperatures may cause potholes to retain water only temporarily or seasonally. The potholes are primarily located in the counties of Cameron, Hidalgo, and Willacy of the Lower Rio Grande Valley and in the sand plains of South Texas, near the coast in Kennedy, Kleberg, and Willacy counties (Witten and Zemites, 1989). Potholes are also found north of Corpus Christi but tend to be smaller, shallower, and more ephemeral (pers. comm. with David Curtis, 1997).

The vegetation composition of potholes depends upon the amount of water available. Non-permanent wetlands contain both wetland and upland species. Common wetland vegetation includes duckweed, saltmarsh spikerush, common cattail, and smartweed. Upland vegetation associated with coastal potholes includes live oak, wax myrtle, plantain, silverleaf sunflower, and panic grass. Many animal species depend on wetland

South Texas freshwater or brackish wetlands include small, isolated depressions, or potholes, and resacas, which are relic meanderings of the Rio Grande River. Coastal potholes, formed when clay soils exposed by wind action trap and hold water, often supply the only fresh water for resident wildlife in an area generally devoid of creeks and rivers. Potholes depend on rainfall or underground water sources. High evaporation rates and temperatures may cause potholes to retain water only temporarily or seasonally. The potholes are primarily located in the counties of Cameron, Hidalgo, and Willacy of the Lower Rio Grande Valley and in the sand plains of South Texas, near the coast in Kennedy, Kleberg, and Willacy counties (Witten and Zemites, 1989). Potholes are also found north of Corpus Christi but tend to be smaller, shallower, and more ephemeral (pers. comm. with David Curtis, 1997).

The vegetation composition of potholes depends upon the amount of water available. Non-permanent wetlands contain both wetland and upland species. Common wetland vegetation includes duckweed, saltmarsh spikerush, common cattail, and smartweed. Upland vegetation associated with coastal potholes includes live oak, wax myrtle, plantain, silverleaf sunflower, and panic grass. Many animal species depend on wetland
vegetation for cover, and for nesting and resting. Coastal potholes are wintering grounds for waterfowl, shorebirds, songbirds, waders, and several species of mammals, fish, and invertebrates. Coastal brushland potholes may also be prime habitat for threatened and endangered species such as the ocelot and jaguarundi.

In the lower Rio Grande Valley, oxbows or resacas are common. Resacas are former streambeds that are subject to repeated drying and flooding, thus forming long quiet ponds. Vegetation associated with resacas includes retama and huisache.

Resacas thrive on periodic inundation from river flooding. However, levees, floodways, and reservoirs, along with irrigation diversion, have virtually eliminated flood flows to resacas, which are no longer scoured and flushed. Siltation has become a major problem within the resacas due to the absence of scouring and the increase in urban runoff, shoreline erosion, and general degradation of water quality (Ramirez, 1986).

**Texas Panhandle**

The High Plains and Rolling Plains of the Panhandle support wetlands predominantly in playa lakes and saline lakes (High Plains), and in water-table influenced basins and riparian habitats (Rolling Plains). Playas (Photo 7) are ephemeral wetlands characterized by Randall or Ness clays, and are very similar to coastal potholes, but have a different geologic origin. Saline lakes are generally larger than playas, are very saline, and are influenced by groundwater. A few playas and playa-like basins with connections to groundwater occur in the Rolling Plains.

Riparian wetlands include vegetation along main channels of creeks and rivers and associated wet meadow, perched water table lakes, and beaver pond habitats. Riparian wetlands in the Panhandle are characterized by Plains cottonwood, netleaf hackberry, buttonbush, native plum, western dogwood, and persimmon. Salt cedar and Russian olive have both been introduced in the last fifty years and have changed the character and successional characteristics of these riparian systems (Brinson et al., 1981).

Photo 7. The Texas sunset illuminates playa lakes in the panhandle, © TPWD.
The playa lakes region of the United States includes portions of Colorado, Kansas, New Mexico, Oklahoma, and northwestern Texas. Texas alone has over 19,000 playas (Guthery et al., 1981). Playas, surrounded by vast acreages of winter wheat, corn and other grain crops, are the migrating, wintering and breeding area for several million ducks, geese, and other migratory birds. The area historically has also wintered a large portion of the Shortgrass Prairie Canada goose population. Hundreds of thousands of mallards, pintails and other ducks terminate their southward migration in this checkerboard of water havens and grainfields.

Other wildlife species in the Panhandle, a region of limited habitat availability, rely heavily upon the habitat associated with the playa basins. Several threatened and endangered species use wetland habitat in the playa lakes region, including the bald eagle. Many neotropical (summer) migrant birds use playas as well, including the long-billed curlew, American avocet, killdeer, mountain plover, lark bunting, and American kestrel.

Because playa lakes are fed by rainwater, many may be dry for extended periods of time. The unpredictable and dynamic nature of the playa is natural and necessary to maintain primary productivity and biodiversity. The 86 plant species living in playas have adapted to this rapidly changing environment. The most common plants found in the playa lakes include spikerush, curly dock, bulrush, cattail, pink and willow smartweed, pondweed, wollyleaf bursage, and barnyard grass. Woody species in riparian habitats include Plains cottonwood, buttonbush, netleaf hackberry, native plum, western dogwood, and persimmon.

Central Texas

Central Texas wetlands, including seeps, springs, and freshwater streams and their associated riparian systems, are found throughout the limestone formations of the Edwards Plateau.

Riparian systems and associated woodland areas are the most widespread wetland type found in Texas (Photo 8), as they are found in the Rolling Plains of the Panhandle to the South Texas brushlands to the forests of East Texas. The riparian zone of a river, stream or other water body is the land adjacent to that water that is, at least periodically, influenced by flooding. Aridity, topographic relief, and presence of depositional soils most strongly influence the extent of high water tables and associated riparian ecosystems. In the eastern and central United States, riparian zones are called bottomlands and floodplain forests, while in the west they are recognized as bosque or streambank vegetation (Johnson and McCormick, 1979). Riparian areas provide protective pathways of migration for birds, deer and small mammals, as well as habitat for many animal species. Vegetation found along Central Texas streams includes bald cypress, pecan, possumhaw, smartweed, sugarberry, boxelder, buttonbush, and black willow.
Central Texas contains numerous springs, which typically flow into freshwater streams. Springs are fed by groundwater that travels through a natural opening in the rock or soil. In comparison to streams fed by surface water, spring-fed streams have a more constant supply of water, which supports vegetation such as marsh purslane, water pennywort, and cattail (Brune, 1981). Spring systems are highly vulnerable to water pollution and over-utilization by nearby cities and agricultural projects. Many springs no longer flow because aquifer waters have been over-utilized. Edwards Plateau and the Trans-Pecos springs support threatened and endangered species whose numbers will continue to decline with reductions in stream flow.

**Trans-Pecos**

The Trans-Pecos Region, located in far western Texas within the Rio Grande and Pecos River basins, is dominated by Chihuahuan Desert salt basins and flats, desert scrub, desert and semi-desert grasslands, and very locally by evergreen woodlands and montane forests. Wetlands occur within each of these ecosystems.

Although Trans-Pecos wetlands probably account for less than 2% of the total regional land surface, they are highly significant to the region’s wildlife diversity. Desert wetlands shelter endemic desert fishes, reptiles, and invertebrates and are especially important to the region’s diverse bird life.

Desert basin salt flats, which are remnants of ancient lakes, contain water seasonally or permanently, depending on annual rainfall. Vegetation may include algal mats or plants (mostly grasses) adapted to saline conditions (Brown, 1982).
Perennial riparian corridors have narrow bands of woodland vegetation, many of which have been invaded by salt cedar (Tamarix), an exotic shrub. Stream water quality varies from saline to fresh and crystal-clear to heavily mineralized, or it may be laden with sediments, pollutants, or sewage (Brown, 1982).

The region still shelters many headspring areas varying from fresh to slightly saline. At one time, headsprings were associated with desert marshes, called cienegas (Photo 9), which are dominated by grasses, sedges, and rushes. Most cienegas today, however, have been lost by water mining, water diversion, or overgrazing.

Cienegas still occur throughout the Trans-Pecos in areas with abundant soil moisture, for example, in mid-elevation and montane areas in the Davis Mountains sub-region. Cienegas that occur where soil is lacking or very shallow are called seeps or hanging gardens, which are dominated by columbine, poison ivy, ferns, and orchids (Hendrickson and Minckley, 1984).

Photo 9. Desert cienega at Balmorhea State Park, © TPWD.

**Texas Wetlands: Status and Trends**

Data and information on the status and trends of Texas wetland resources are primarily limited to project-scale assessment and mapping projects that, although valuable, are limited in their ability to support a statewide evaluation of wetland resources or to provide landscape-scale considerations in project planning and design. Regional and statewide habitat mapping efforts are underway in Texas (e.g., Texas Ecological Systems Classification Project, [http://www.tpwd.state.tx.us/landwater/land/maps/gis/tescp/index.phtml](http://www.tpwd.state.tx.us/landwater/land/maps/gis/tescp/index.phtml)), which will enhance the ability of conservation practitioners to assess habitats at range-wide or landscape scales. Until those tools and datasets become available, the most current and detailed information available on the status and trends of wetlands resources are
reported at the national scale through periodic assessments conducted by the U.S. Fish and Wildlife Service.

Under the provisions of the Emergency Wetlands Resources Act, the U.S. Fish and Wildlife Service is required to assess and report on the status and trends of the Nation’s wetland resources at 10-year intervals, with the most recent report published in 2011: *Status and Trends of Wetlands in the Conterminous United States 2004 to 2009*. This series of reports is intended to help guide decisions by providing resource professionals and policy-makers information on wetland-related issues, such as, the need for potential changes to incentive and disincentive policies, measures to conserve wetlands, funding priorities for wetlands protection, restoration and enhancement, and landscape-scale planning to address emerging issues that have the potential to negatively affect wetland resources (e.g., climate change, sea-level rise, urbanization).

The 2011 report measured trends by the examination of remotely sensed imagery for 5,042 randomly selected sample plots located throughout the conterminous United States. This imagery, in combination with field verification provided a scientific basis for analysis of the extent of wetlands and changes that had occurred over the four and half year time span of the study. Excerpts from the national report on the status and trends of important wetland habitat types found in Texas are provided below. Although results are presented by wetland habitat type for the entire conterminous United States and are not able to be summarized for Texas alone, the issues that threaten wetlands are somewhat consistent nationwide, providing an indication of the status of Texas wetlands.


**Trends in Estuarine Emergent (Salt Marsh) Wetland**

The largest acreage change in the saltwater system was an estimated loss of more than 111,500 acres (45,140 ha) of estuarine emergent wetland. This rate of loss was three times greater than estuarine emergent losses from 1998 to 2004 and continued a long-term trend in the decline of estuarine emergent wetland areas.

An estimated 99% of the losses of estuarine emergent wetlands between 2004 and 2009 were attributed to effects from coastal storms, land subsidence, and sea level rise or other ocean processes with the vast majority of these losses located in the northern Gulf of Mexico along the coastline of Louisiana and Texas.

Factors responsible for the loss of estuarine emergent wetland in the northern Gulf included land subsidence (sinking of the land), compaction of sediments, and extraction of subsurface fluids (such as oil, gas, and water). In portions of coastal Louisiana and Texas, oil, gas, and groundwater extractions have been recognized as factors that contributed to subsidence and relative sea level rise (Galloway *et al.* 1999; Morton *et al.*
Throughout the northern Gulf coastal region, marine and estuarine wetlands have been adversely impacted by the cumulative effects of energy development, coastal storms, and development in the upper portions of the watershed.

The construction of levees and canals also weaken the sustainability of the landscape and have contributed to coastal wetlands loss (GAO 2007). These actions have reduced freshwater and sediment, which are crucial for maintaining estuarine wetland elevation as a mechanism to overcome rising sea levels. In these areas and elsewhere, wetlands have been vulnerable to salt water intrusion and marsh disintegration as development has interfered with natural hydrological processes that transport sediment and the freshwater necessary to sustain the structure, function, and extent of wetland ecosystems (Kling and Sanchirico 2009). The interconnection between fresh and saltwater systems has become more apparent as impacts to freshwater wetlands have compounded the effects of sea level rise and the ability of wetlands in coastal watersheds to adapt.

Since the mid-1980s, there has been recognition that the majority of losses to these tidal wetlands have resulted from coastal erosion and inundation by salt water. This situation has been exacerbated by a series of hurricanes in the Gulf of Mexico that damaged property and natural resources in proximity to coastal areas. Attempts to re-nourish tidal wetlands have been implemented following several hurricane events from 2005 to 2008. There also has been considerable work in the northern Gulf of Mexico to shield near-shore areas that were damaged as a result of hurricanes or relative rise in sea level.

**Estuarine Shrub Wetlands**

Overall, estuarine shrubs had a small net gain in area (0.1 %), as losses to upland were outdistanced by gains. Area gains in estuarine shrubs came from both palustrine wetlands (1,789 acres or 724 ha), presumably from salt water inundation of low lying freshwater wetland; and from agricultural lands and unspecified other uplands (2,314 acres or 937 ha collectively). There were an estimated 1,370 acres (555 ha) of estuarine shrub wetlands lost to upland between 2004 and 2009. Eighty-three percent of those losses were attributed to urbanization and related development. Human induced impacts to mangrove wetlands included proliferation of invasive species, cutting/removal, coastal development resulting in drainage, filling or changes to shoreline structure.

Long-term trends in area of estuarine shrub wetland has remained fairly constant since the 1980s, despite long-term stressors including invasion by exotic species such as Brazilian pepper (*Schinus terebinthifolius*) and a high vulnerability to change due to natural causes such as coastal storms, drought, frost, fire, sea level changes, and stress due to increased salinity. Climax stands of mangrove forest are uncommon in the conterminous United States as they survive within a very limited geographic range and
have been vulnerable to physical damage from high winds that accompany coastal storms.

**Marine and Estuarine Non-Vegetated Wetlands**

Over the time-span of this study, the area of intertidal non-vegetated wetland increased by an estimated 2.2% (26,800 acres or 10,850 ha). All of these changes occurred along the south Atlantic and Gulf coastlines and were attributed to storm events that transported sediments, over-washed barrier islands, or scoured shorelines and other near-shore features along the coast. Intertidal non-vegetated wetlands (shores and flats) have exhibited marked change and instability and, despite an increase in acreage, are most likely to sustain additional changes from ongoing and future coastal processes. Seaward events such as storms, tidal-surge causing erosion and deposition, in addition to saltwater intrusion and inundation have contributed to the modification of these coastal wetland types and extent (Steadman and Dahl 2008).

The effects on non-vegetated wetland types have often been overshadowed by losses to vegetated wetland areas, but these wetlands provide crucial habitats for a variety of coastal bird species, including pelicans, cormorants, gulls, terns, and roughly 50 species of sandpipers, plovers, and their allies known as shorebirds. (Harrington and Corven [no date]) have described shorebird guilds, enumerating species and habitat types.) Some of these bird populations are at risk because of their dependence on narrow ribbons of marine and estuarine tidal habitats that are subjected to rapid and unpredictable changes resulting from coastal storms, habitat alteration by man, and other changes in marine ecosystems that can affect the availability of marine invertebrates (a food resource), water temperature, nutrients, and phytoplankton. Rising sea levels are expected to continue to inundate or fragment low-lying coastal areas including sandy beaches, barrier islands, and mudflats that support sea and shorebirds dependent on marine waters (North American Bird Conservation Initiative [NABCI] 2010).

Most recently, tidal beaches, shoals, bars, and barrier islands along the northern Gulf of Mexico were exposed to the impacts from the *Deepwater Horizon* oil spill. Although data on any wetland losses resulting from that event are not included in these results, the incident served to highlight the ecological and economic importance of these marine and estuarine resources.

**Freshwater Emergent Marshes**

The acreage of freshwater emergent marsh increased by an estimated 1.0% between 2004 and 2009. There was a net gain of an estimated 267,800 acres (108,400 ha). These gains resulted principally from wetland reestablishment or creation on upland agricultural lands and lands of other unspecified land use (primarily idle or set-aside lands with no discernible land use type). There were an estimated 367,000 acres (148,600 ha) of freshwater marsh gain from these two upland land use categories and these findings coincided with estimates that more than 59% of wetland gains occurred
on agricultural lands between 1997 and 2007 (USDA 2010). Although freshwater marshes sustained some losses to urban and rural development (collectively 17,200 acres or 7,000 ha) and silviculture operations (28,500 acres or 11,500 ha), the increases noted above resulted in a net gain in acreage. Some of the gains in wetland emergent also came from areas previously classified as forested wetlands. If forested wetlands were clear cut but the hydrology remained, they were reclassified as emergent wetland. An estimated 421,000 acres of forested wetland were changed to emergent wetlands between 2004 and 2009.

**Freshwater Shrub Wetlands**

Freshwater shrubs increased in area by an estimated 180,100 acres (72,900 ha). This net gain came primarily from freshwater emergent wetlands. Shrub wetlands were composed of true shrub species as well as tree saplings less than 20 ft. tall (6 m). Many wetlands classified as shrub were located in areas of active silviculture management. Consequently, wetland shrub areas that contained tree species have been subject to substantial change corresponding to managed forest harvest rotations as seen in longer term trend information.

There was relatively little natural succession of shrub wetlands leading to mature forested wetland as originally envisioned by Cowardin *et al.* (1979). Small pine trees as part of managed pine plantations matured to become larger pine trees in areas that retained wetland hydrological characteristics. These areas become economically mature and are used for their wood products before they become ecologically mature (deMaynadier and Hunter 1995). An estimated 142,600 acres (57,730 ha) of freshwater shrub wetland were lost (drained or filled) to become upland silviculture between 2004 and 2009.

**Freshwater Forested Wetlands**

Between 2004 and 2009, forested wetlands declined by an estimated 633,100 acres (256,320 ha). Forested wetlands experienced the largest change in area of any wetland type and reversed a trend where area had increased in the previous two eras of monitoring. Urban and rural development accounted for 26% or an estimated 102,400 acres (41,460 ha) of the forested wetlands losses to uplands. This area represented irreversible losses as wetlands have been filled, drained or otherwise developed for buildings or other support infrastructure. Historically, once these areas have been developed there is very little opportunity for wetland reestablishment and even less chance of successfully restoring mature forested wetlands.

An estimated 149,500 acres (60,500 ha) of forested wetland were lost to silviculture. Although the tree removal process itself did not constitute wetland loss, a number of activities related to the timber removal resulted in more permanent changes. Some activities associated with forest plantations involved intensive site preparations and timber stand management practices that altered or eliminated site hydrology. Many of the forested plantations in the southeastern United States are even-aged stands
dominated by a single species of conifer, typically loblolly pine (*Pinus taeda*), (Miller et al. 2003). It has been estimated that loblolly-shortleaf pine forests cover 55 million acres in the southern states (Smith et al. 2009). By design, these plantations had relatively low diversity (deMaynadier and Hunter 1995) and specific management practices included clear cutting, stump and woody debris removal, ditching, drainage, and bedding. Specific actions that were deleterious to wetlands included construction of forest roads required to access cut timber sites (deMaynadier and Hunter 1995; Harms et al. 1998); installation of drainage ditches through a wetland (Sharitz and Greshan 1998; Wear and Greis 2002); bedding of sites; subsurface drainage; and levee construction, filling, and channelization.

## Emerging Wetland Conservation Issues


### Climate Change

The analysis of climate change related impacts to natural resources and the potential responses to those impacts has become a priority for Federal agencies to address (U.S. Department of the Interior 2009). Due in part to their limited capacity for adaptation, wetlands have been considered among the ecosystems most vulnerable to climate change (Bates et al. 2008). Because wetlands support a number of trust species and have been linked to water quality and other environmental values, their susceptibility to climatic changes are important to a number of federal and state agencies.

Direct and indirect environmental changes and related impacts resulting from climatic changes have been recognized and widely accepted by the scientific community (Twilley 2001; Field et al. 2007; Nicholls et al. 2007). The USEPA (2010e) identified erosion, water quality, salt water intrusion and changes in salinity, species composition, and wetland distribution as likely conditions exacerbated by climate and sea level changes. Some of these changes have the potential to influence all wetland types and biota. For example, increases in water temperatures as a result of climate change will alter fundamental ecological processes and the geographic distribution of aquatic species (Poff et al. 2002). Similarly, predicted changes in temperature and rainfall will likely reduce habitats vital for waterfowl species and many other wetland birds (NABCI 2010).

Deciphering how and if those changes manifest themselves on the landscape presents challenges for recognizing and following wetland ecosystem adaptations or modifications. This has been further complicated by several factors including decadal or cyclical change, and human induced changes to wetlands and surface waters that mask climate change effects on the landscape (e.g., increased level of farming of drier, shallow wetland basins). In addition, some important changes to species health or
distribution may go unrecognized by landscape or land use level survey techniques (e.g., disappearance of cold water fish species from their current geographic range).

Recognition of the increased or decreased occurrence and duration of water retention, depth, vegetation patterns, stress responses and community structure may require a refined suite of observables not yet fully understood. There has been acknowledgment that a major challenge of addressing climate change effects on wetlands involves identifying and addressing uncertainty in understanding how that change will affect ecological systems (USFWS 2010).

Wetlands are water dependent and many of the benefits they provide to fish and wildlife species (vegetation for food or cover, nesting and resting habitat, breeding grounds and water) are dependent on precipitation, and other surface and groundwater sources. Changes in climatic conditions that affect water conditions (wetter, drier, more saline, etc.) will have a substantial impact on species that utilize wetlands and other ecological services wetlands provide, or make efforts to reestablish wetlands more challenging. Climate change also may influence wetland habitats indirectly such as altered fire regimes, changes in farming techniques and duration, or changes in population concentrations and development patterns.

Researchers have pointed to some types of wetlands that may be particularly vulnerable to the effects of climate change (Guntenspergen et al. 2002; Johnson et al. 2005; Kirwan et al. 2010). Winter (2000) indicated that the wetlands most vulnerable to climate change are those dependent primarily on precipitation for their water supply. These habitats are generally isolated either by lack of hydrological connectivity or by the uniqueness of community assemblage and structure. This makes adjustment to climate change in these areas unlikely and these wetlands face more immediate threats with little chance for adaptation.

In coastal regions such changes may include variations in ocean and air temperatures, acidification, increases or decreases in freshwater runoff (Kling and Sanchirico 2009), changes in species distribution and diversity, erosion of coastal sediments and beaches, inundation of coastal wetlands, increasing salinity of some brackish or freshwater systems, and increased storm frequency and intensity. Sea level rise is expected to have a large, sustained impact on future coastal evolution (Beavers 2002).

Changes in Sea Level and Coastal Processes

There is strong scientific consensus that climate change is accelerating sea level rise and affecting coastal regions, however, many researchers point to the uncertainties associated with predicting the response that increased sea level will have given other coastal processes and interactions (National Academy of Sciences 2008; Lavoie 2009). Sea level rise directly threatens coastal infrastructure through inundation, increased erosion, more frequent storm-surge flooding, and loss of habitat through drowned wetlands (NOAA Congressional Budget Hearing 2009).
Coastal habitats will likely be increasingly stressed by climate change impacts that have resulted from sea level rise and coastal storms of increasing frequency and intensity (Field et al. 2007). The difficulty in linking sea level rise to coastal change stems from shoreline changes not solely the result of sea level rise (Lavoie 2009). Natural and physical processes that act on the coast (e.g., storms, waves, currents, sand sources, sinks, relative sea level), as well as human actions that affect coastal processes in both the saltwater and freshwater systems, (e.g., development, dredging, dams, coastal engineering and modification), all have contributed to coastal changes.

In the conterminous United States, the Gulf of Mexico and mid-Atlantic coasts have experienced the highest rates of relative sea level rise and recent wetland loss (NABCI 2010). Stedman and Dahl (2008) found that in addition to the wetland losses already recognized, climate change models project additional wetland degradation in coastal areas as sea level continues to rise throughout this century. This trend has presented long-term challenges to managing and monitoring wetlands that abut the coast in coming decades.

Inundation of coastal wetlands by rising sea levels threatens wetland plants; particularly those not able to adjust to higher salinities or increased wave or tidal energy. For many of these systems to persist, a continued input of suspended sediment from inflowing streams and rivers is required for soil accretion (Poff et al. 2002). Migration or movement of coastal wetlands may offset some losses. The construction of levees and flood protection infrastructure may put some wetlands at additional risk by restricting water flow, sediment, and nutrient inputs.

Coastal development, urbanization, and infrastructure to support tourism throughout the coastal watersheds have an increased cumulative effect on the loss and modification of freshwater and estuarine wetland habitats. With continued growth and development, more shorelines have been cleared and stabilized, shallow waters dredged for navigation channels and marinas, wetlands filled and channelized, and land surfaces paved for buildings and parking lots (Riggs and Ames 2003).

Data from this study and others show that beach erosion due to sea level rise has increased along certain shorelines. This has constrained coastal plants to narrow stretches of beach and resulted in a breakdown of the succession processes that have been important for dune building, sediment binding, and reduction of erosion (Feagin et al. 2005).

Rising sea levels and coastal storms are expected to contribute to the loss of beaches and barrier islands (Hanemann et al. 2003). Increased human activities have diminished major sand sources, resulting in either the total loss or a more transitory nature of some beaches as they erode at increased rates (Riggs and Ames 2003). Modifications to some coastal features such as barrier islands include construction of barrier dune ridges, planting of stabilizing vegetation, and urban development that can curtail or even eliminate the natural processes that help maintain these systems (Smith et al. 2008). Because of the position on the landscape, these wetlands are the first to interface with
the coastal marine environment (Day et al. 2008) and bear the brunt of tides, wave action, and any increased inundation that cause erosion, movement and scouring of intertidal sediments. These stressors have resulted in changes to tidal non-vegetated wetlands corresponding to the location of coastal storms, erosion, translocation and re-deposition of sediments and have been reflected in the data reported here.

Intuitively, the locations most vulnerable to sea level rise have the lowest regional coastal slopes (Beavers 2002) and possess physiographic characteristics that make them susceptible to sea water intrusion, erosion, or inundation. Tidal non-vegetated wetlands (beaches, sand bars, shoals, sand and mud flats, and small barrier islands) have been especially susceptible to increases in sea level and other climatic changes, such as warming sea temperatures and increasing coastal storm frequency and intensity.

Mangroves and other forested ecosystems directly adjacent to saltwater coastlines also have been prone to change because of their narrow environmental requirements and geographic and climatic limitations along tidal fringe environments. Their susceptibility to physical–structural damage and the reduced ability of some shorelines to withstand coastal storms put these forested wetland communities at risk.

More frequent or longer lasting droughts and reduced freshwater inflows may increase the incidence of extreme salt concentrations in coastal ecosystems, resulting in a decline of mangroves (Krauss et al. 2008) and other maritime woody species. Along portions of the west coast of Florida, saltwater intrusion has already replaced forested habitats with salt marsh or more salt tolerant species—a more subtle ecological shift than the drowning of coastal vegetation by rising sea levels associated with saltwater inundation (Williams et al. 1999). In the future, mangrove forests may be diminished in both stature and extent (Doyle 1997) as their extent, stability, and ecological integrity are threatened by increased wave action, coastal storm events, changes in water temperature, depth, and duration of tidal inundation.

**Texas Wetlands: Conservation Strategies and Priorities**

**Texas Conservation Action Plan**
http://www.tpwd.state.tx.us/landwater/land/tcap/

The Texas Conservation Action Plan (TCAP), also known as the Texas Wildlife Action Plan or Texas Comprehensive Wildlife Conservation Strategy, identifies fish and wildlife species and their habitats (including wetland habitats) of greatest conservation need, describes major stressors affecting these species and habitats, and recommends specific conservation actions. Recommended actions identified in the TCAP were developed with stakeholder input obtained through ecoregional planning workshops.
Ecoregional Conservation Plans Developed by The Nature Conservancy
http://east.tnc.org/
http://www.conservationgateway.org/content/planning-nature-conservancy

Ecoregional Conservation Plans developed by The Nature Conservancy (TNC) and partners include portfolios of conservation areas important to the protection of biodiversity. Preservation of areas identified in Ecoregional Conservation Plans necessitate a broad array of conservation actions ranging from land and water stewardship and protection (where elements currently occur) to more permanent protection tools, such as conservation easements and land acquisition.

North American Waterfowl Management Plan
http://www.fws.gov/birdhabitat/NAWMP/

In 1985, waterfowl populations had plummeted to record lows. Historical data indicated that since the first settlers arrived, 53% of the original 221 million wetland acres found in the contiguous United States had been destroyed. The picture was the same across Canada, where a large percentage of the United States’ wintering waterfowl nest.

Waterfowl were then and are now the most prominent and economically important group of migratory birds of the North American continent. By 1985, approximately 3.2 million people were spending nearly $1 billion annually to hunt waterfowl. By 1985, interest in waterfowl and other migratory birds had grown in other arenas as well. About 18.6 million people observed, photographed, and otherwise appreciated waterfowl and spent $2 billion for the pleasure of doing it.

Recognizing the importance of waterfowl and wetlands to North Americans and the need for international cooperation to help in the recovery of a shared resource, the U.S. and Canadian governments developed a strategy to restore waterfowl populations through habitat protection, restoration, and enhancement. The strategy was documented in the North American Waterfowl Management Plan (Plan) signed in 1986 by the Canadian Minister of the Environment and the U.S. Secretary of the Interior, the foundation partnership upon which hundreds of others would be built.

The Plan is innovative because its perspective is international in scope, but its implementation functions are based at the regional level. Its success is dependent upon the strength of partnerships, called "joint ventures," involving federal, state, provincial, tribal, and local governments, businesses, conservation organizations, and individual citizens. Joint ventures develop implementation plans focusing on areas of concern identified in the Plan.

Partners' conservation projects not only advance waterfowl conservation, but make substantial contributions toward the conservation of all wetland-associated species. There are 21 joint ventures actively working to implement the Plan. The five listed below have a geographic scope and mission focused on conservation of wetlands and associated species in Texas.
Gulf Coast Joint Venture
http://www.gcjv.org/

The Gulf Coast Joint Venture (GCJV) is a partnership among federal and state agencies, non-profit organizations, and private landowners dedicated to the conservation of priority bird habitats along the U.S. Gulf of Mexico coast. The GCJV is divided geographically into five Initiative Areas, three of which are geographically focused within Texas (Laguna Madre Initiative Area, Texas Mid-Coast Initiative Area, and Chenier Plain Initiative Area). Specific conservation goals, objectives, and strategies have been developed for each of these Initiative Areas, along with portfolios of proposed priority conservation projects.

Lower Mississippi Valley Joint Venture
http://www.lmvjv.org/

The Lower Mississippi Valley Joint Venture (LMVJV) is a self-directed, non-regulatory private, state, federal conservation partnership that exists for the purpose of implementing the goals and objectives of national and international bird conservation plans within the Lower Mississippi Valley region. The LMVJV is focused on the protection, restoration, and management of those species of North American avifauna and their habitats encompassed by the North American Bird Conservation Initiative. The geographic scope of the LMVJV consists of the Mississippi Alluvial Valley and the West Gulf Coastal Plain, an area that includes eastern Texas. The LMVJV has developed a number of documents that identify wetlands priorities in the region (e.g., Western Gulf Coastal Plain Shorebird Conservation Plan).

Oaks and Prairies Joint Venture
http://www.opjv.org/

The Oaks and Prairies Joint Venture (OPJV) is a regional, self-directed partnership of government and non-governmental organizations, corporations and individuals that works across administrative boundaries to deliver science-based avian conservation within the Edwards Plateau, in addition to the Oaks and Prairies ecoregions. The OPJV Concept Plan identifies the process that is implemented by the OPJV to identify specific conservation goals and priorities in the region.

Playa Lakes Joint Venture
http://www.pljv.org/

The Playa Lakes Joint Venture (PLJV) is a non-profit partnership of federal and state wildlife agencies, conservation groups, private industry, and landowners dedicated to conserving bird habitats in the Southern Great Plains, including rivers and streams, playas, saline lakes, and other wetlands. The PLJV has developed a number of decision support tools that identify priorities for habitat conservation in the region, including Area
Implementation Plans for the Shortgrass Prairie and Central Mixed-Grass Prairie Bird Conservation Regions of Texas.

**Rio Grande Joint Venture**
[http://www.rgjv.org/](http://www.rgjv.org/)

The Rio Grande Joint Venture (RGJV) is a regional, self-directed partnership that delivers science-based bird and habitat conservation in the Chihuahuan Desert (located in the Trans-Pecos region of Texas and north-central Mexico) and the Tamaulipan Brushlands (located in south Texas and northeastern Mexico).

**National Fish Habitat Action Plan**

Determined to reverse the declines of America's fish habitats, a diverse group of partners known as the National Fish Habitat Partnership joined together to develop and implement a nationwide strategy to protect, restore, and enhance aquatic habitats. This nationwide plan, the National Fish Habitat Action Plan, is being implemented through voluntary, locally-driven partnerships known as Fish Habitat Partnerships, two of which have a geographic scope and mission that encompasses wetland habitats in Texas.

**Southeast Aquatic Resources Partnership**
[http://southeastaquatics.net/](http://southeastaquatics.net/)

The Southeast Aquatic Resources Partnership (SARP) is a regional collaboration of natural resource and science agencies, conservation organizations, and private interests developed to strengthen the management and conservation of aquatic resources in the southeastern United States (from Texas to Virginia). The SARP supports and facilitates on-the-ground and in-the-water science-based action to improve and protect aquatic habitats and resources. The SARP has developed a strategic plan known as the Southeast Aquatic Habitat Plan that identifies priority conservation strategies and actions in the region. The SARP also promotes a set of regional conservation focus areas, one of which is concentrated on the restoration and preservation of aquatic habitats in the Edwards Plateau Ecoregion of Texas.

**Desert Fish Habitat Partnership**
[http://www.nature.nps.gov/water/DFH_partnership.cfm](http://www.nature.nps.gov/water/DFH_partnership.cfm)

The Desert Fish Habitat Partnership (DFHP) conserves native desert fish by protecting, restoring, and enhancing their habitats in cooperation with state and tribal fish and wildlife agencies, federal resource agencies, research and private organizations, and engaged individuals. The DFHP Strategic Plan identifies priority conservation strategies and actions to preserve aquatic habitats within the desert ecosystems of the western United States, including the Trans-Pecos region of Texas.
Coastal Bend Bays Plan
http://www.cbbep.org/

The Coastal Bend Bays Plan (Plan) developed by the Coastal Bend Bays and Estuaries Program provides a regional framework for conservation action in a 12-county area of Texas known as the Coastal Bend. The Coastal Bend includes three of the seven Texas estuaries – Aransas, Corpus Christi, and upper Laguna Madre. The Plan focuses on conservation of open water, submerged habitat, emergent wetland and upland environments critical to the preservation of natural resources in the region. The Plan identifies regional conservation goals and calls for efforts to identify habitat types that are most at risk and to work with landowners and local and state governments on ways to preserve sufficient, functional acreage of those habitats. The Plan identifies specific conservation tools necessary to attain this goal, including the use of conservation easements, tax abatements, or land acquisition.

Galveston Bay Plan
http://www.gbep.state.tx.us/
http://gbic.tamug.edu/GBPlan/GBPlan.html

The Galveston Bay Plan developed by the Galveston Bay Estuary Program includes a Habitat Protection Action Plan (Plan). The Plan advocates an ecosystem approach to conservation that supports the maintenance of natural physical processes (e.g., sediment flows) and that ensures the existence of an optimal variety and distribution of habitats. Specific goals of the Plan include protection of existing wetlands through acquisition.

Gulf of Mexico Ecosystem Restoration Strategy
http://epa.gov/gulfcoasttaskforce/

The Gulf of Mexico Ecosystem Restoration Strategy (Strategy) developed by the Gulf Coast Ecosystem Restoration Task Force (Task Force) is intended to drive action and guide the long-term collaboration that will be necessary to reverse widespread environmental degradation of the Gulf of Mexico and ensure a healthy environment and economic future. The Strategy builds on ongoing work and priorities of states, local communities, federal partners, academics, and nongovernmental organizations. The restoration framework outlined in the Strategy consists of four overarching goals that will guide collective actions at the local, state and federal levels: (1) restore and conserve habitat; (2) restore water quality; (3) replenish and protect living coastal and marine resources; and (4) enhance community resilience. In support of the four goals, the Task Force has identified specific actions that must be taken to reach the intended outcomes, including habitat protection through the expansion of state, federal, and private conservation areas.
The Mission-Aransas National Estuarine Research Reserve (Reserve) is a 185,708-acre contiguous complex of private, federal, and state-owned lands and waters that includes high-quality freshwater wetlands, riparian habitats, salt marshes, and seagrass meadows. Located along the Texas Coastal Bend, these unique and diverse estuarine habitats support a host of endangered and threatened species including the endangered whooping crane. The Reserve Management Plan identifies priority acquisition and boundary expansion opportunities, including acquisition of additional high-quality wetlands that will protect the integrity of the Reserve and be used to further promote conservation of Texas coastal resources.

In response to the Deepwater Horizon Oil Spill, non-governmental organizations and academic partners in Texas developed a document titled Texas Gulf Coast Restoration Priorities (Document). The Document identifies coastal wetlands and marshes as priority habitats, and identifies priority areas for wetland restoration and protection.

The Texas Wetlands Conservation Plan focuses on non-regulatory, voluntary approaches to wetlands conservation that enhance the ability of landowners to use existing incentive programs and other land use options through outreach and technical assistance; develop and encourage land management options that provide an economic incentive for conserving existing wetlands or restoring former ones; and ensure coordination of regional wetlands conservation efforts. Chapters 5-10 of the TWCP identify specific regional and statewide issues of concern and recommended conservation actions to address those issues.

The U.S. Fish and Wildlife Service is responsible for preparing the National Wetlands Priority Conservation Plan (NWPCP), authorized by the 1986 Emergency Wetlands Resources Act (EWRA). The NWPCP’s ongoing program provides decision-making guidance on acquiring important, scarce, and vulnerable wetlands and establishing other non-acquisition protection measure priorities. Section 301 of the EWRA requires the Secretary of the Interior to establish, periodically review, and revise a National Wetlands Priority Conservation Plan that identifies federal and state acquisition priorities for various types of wetlands and wetland interests. The NWPCP is an ongoing program and continues to provide guidance for making decisions regarding wetland acquisition.
The NWPCP applies only to wetlands that would be acquired by federal agencies and states using LWCF appropriations.

**Texas Land and Water Resources Conservation and Recreation Plan**
http://www.tpwd.state.tx.us/publications/nonpwdpubs/land_and_water_plan/

The Texas Land and Water Resources Conservation and Recreation Plan (LWCRCP) serves as the strategic plan of TPWD. The goals and objectives identified in the Plan are intended to promote stewardship on public and private lands and waters; protect unique natural and cultural resources; encourage partnerships with all stakeholders; and utilize science as the backbone of decision-making. To enhance coordination and cooperation with partners on the implementation of the Plan, TPWD initiated the development of 12 planning regions known as Texas Conservation and Recreation Forums. The Forums are used to identify local conservation needs and priorities and help guide the collective conservation actions of TPWD and partners.
Inventory of Outdoor Recreation Lands

Introduction

Texas houses an amazing diversity in unique ecological settings. In addition to the various wetlands, there are a whole host of beautiful and ecologically valuable places across the state. The state is divided up into 12 distinctly different Level III ecoregions and 56 Level IV ecoregions, as defined by the U.S. EPA ecoregion framework. TPWD uses the Level III ecoregions as a planning tool when planning for natural resource management. By creating, maintaining, and promoting parkland, recreation providers can help conserve the rich and varied natural resources of Texas. This chapter summarizes results of an inventory of all municipal, county, state, federal, and non-profit, or otherwise publicly-owned conservation and recreation lands in Texas. The inventory fulfills a requirement by Chapter 11 of the Parks and Wildlife Code as well as a requirement by the LWCF SCORP guidelines. The following sections will outline the methodology utilized to obtain the best available data, explain the detailed data structure and storage methods employed, and will offer the analytical results from the geospatial analysis.

Methodology

Data Compilation and Creation

Prior to undertaking this massive endeavor there was not a single existing data source that contained all of the required information or was determined to meet the quality and coverage of the inventory requirement. In order to gain the best level of detail for conservation and recreation lands across the states, a number of approaches were employed.

The first attempt for geospatial data collection was made by contacting the largest regional planning entities, including the different Council of Governments (COGs) and referencing the previous statewide inventory. While most regional planning entities did not have the requested data, existing regional and statewide data sets were used to the extent possible. These sources included:

- StratMap (https://www.tnris.org/StratMap)
- North Central Texas Council of Governments (NCTCOG, http://gis.nctcoq.org/)
- Houston-Galveston Area Council (H-GAC, http://www.h-gac.com/rdg/)
- Ark-Tex Council of Governments (ATCOG, http://www.atcog.org/)
- Central Texas Council of Governments (CTCOG, http://www.ctcog.org/)
- Coastal Bend Council of Governments (CBCOG, http://cbbcog98.org/)
As the vast majority of COGs did not have the appropriate level of geospatial data, it was necessary to make direct contact on other levels of governance. TPWD initiated direct contact with the following entities:

- Texas Cities over 10,000 in population (243 contacts)
- Texas Counties over 15,000 in population (142 contacts)
- Texas River Authorities (12 contacts)
- Texas Council of Governments (23 contacts)
- Non-Governmental Entities (conservation organizations, 37 contacts)

Federal agency web resources were utilized to download boundary data for their respective properties or, in the case of the U.S. Army Corps of Engineers, contacted directly. For city, county, and utility districts a combination of sources were used to perform data compilation. These included city websites, city park master plan documents, utility district websites, the TPWD website, chambers of commerce websites, county appraisal district data, fishing guide sites, etc. Many indirect sources contained only suggestive or partially correct information depicting the location, configuration, or size of a property. In these instances multiple references were combined to create a best fit for the boundary definition of the property. GIS analysts placed heavy reliance on multiple sources and dates of aerial imagery available to place and configure unsupplied, erroneous, or incomplete boundaries, thus creating the most complete statewide inventory of publically accessible recreation and conservation lands ever compiled in Texas.
Data Structure

The inventory data is a polygon data set maintained in the Texas State Mapping System (TSMS) projection. This is an official state projection using a Lambert Conic Conformal projection in meters based on the North American Datum 1983 (NAD83). Attributes for each feature include the following:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner</td>
<td>Name of the Governmental or Non-Governmental entity that owns the property</td>
</tr>
<tr>
<td>Owner Type</td>
<td>Type of entity, limited to Federal, State, County, City/municipal, River Authority, Utility District, Private, Other, and Unknown</td>
</tr>
<tr>
<td>Owner Classification</td>
<td>Designation assigned by owner, i.e. Neighborhood Park, Community Park, etc.</td>
</tr>
<tr>
<td>Owner Property Name</td>
<td>Property name assigned by owner</td>
</tr>
<tr>
<td>Manager</td>
<td>Name of entity that manages the property</td>
</tr>
<tr>
<td>Manager Type</td>
<td>Type of entity, limited to Federal, State, County, City/municipal, River Authority, Utility District, Private, Other, and Unknown</td>
</tr>
<tr>
<td>Manager Property Name</td>
<td>Property name assigned by manager</td>
</tr>
<tr>
<td>Manager Property Name Alternate</td>
<td>Secondary name for property</td>
</tr>
<tr>
<td>Acres Calculated</td>
<td>Area, in acres, calculated by GIS software</td>
</tr>
<tr>
<td>Data Source Name</td>
<td>Name or listing of sources supplying or contributing to the data</td>
</tr>
<tr>
<td>Data Source ID</td>
<td>Number assigned by XXXX (PGR) to each data source</td>
</tr>
<tr>
<td>Data Editor</td>
<td>Name of the data editor and date of data entry into the database</td>
</tr>
</tbody>
</table>

Data Storage

The inventory is a geographic data set. The data consists of an ArcGIS 10 Polygon Feature Class in an enterprise geodatabase mounted on a Microsoft SQL Server relational database management system.
To obtain a digital copy of this extensive data set please contact the following TPWD branch:

Texas Parks and Wildlife Department  
State Parks Division  
Planning and Geospatial Resources  
4200 Smith School Road  
Austin TX  78744  
(512) 389-4661

Inventory of Recreation and Conservation Lands in Texas

Given the sheer physical diversity of the state, each of the 12 ecoregions has a little something different to offer the public in terms of recreation and conservation opportunities. In an attempt to quantify these opportunities, TPWD performed an extensive inventory of the recreation and conservation lands that have public access. By contacting recreation providers ranging from the federal government to small municipalities to non-profits, TPWD was able to establish a solid baseline analysis of the geographic properties of publically-accessible recreation and conservation lands across Texas. Moving forward, the data will be made available by request, thus improving future planning efforts across the state. There are several spatial analysis tools available to quantify the acreage and location of parklands and recreation facilities. Owing to the current level of detail within the collected data, the inventory was analyzed in the context of spatial location and ownership. Ownership was classified by the categories established during data collection while location was related to political subdivision, primarily state, county, and Level III ecoregions. This section will attempt to provide an overview of the available recreation and conservation lands in Texas and will start with an examination of Texas as a whole and will then move into an analysis of ecoregions, followed by county-level results.

Statewide

The 2011 Statewide Inventory offers a detailed perspective into the extensive recreation and conservation network. Out of the entire state, this updated inventory reveals that recreation and conservation lands that are open to the public make up 2.5% of Texas lands. Examination on a statewide basis reveals that the majority of land owned under the purpose of recreation and conservation management is held by the U.S. federal government, an overwhelming 68.4% of recreation and conservation land in Texas. Second to this is state ownership at 21.7%. While, beyond the state level all
other ownership types fall into the single digits. Figure 4.1 offers a summary of recreation and conservation acreage by ownership type.

![Pie chart showing recreation/conservation acres in Texas by owning entity offering public access.](image)

**Figure 4.1**  
Recreation/Conservation Acres in Texas by Owning Entity Offering Public Access

- **Federal**: 65.0%
- **State**: 20.9%
- **City/Municipal**: 9.2%
- **Non-Profit**: 2.9%
- **River Authority**: 0.8%
- **Other**: 0.3%
- **County**: 0.9%
Ecoregions

Twelve unique ecoregions cover the state and are depicted below in Figure 4.2. In order to gather an appropriate picture for the amount of recreation and conservation land in each ecoregion, values were calculated for the acreage and percent and this analysis can be seen below in Table 4.2. However, no distinction has been made regarding the actual status or condition of any recreation-conservation parcel as it relates to native or natural conditions. Many parcels are urban in nature and/or heavily developed for active recreation facilities. Thus, these figures, while based upon existing properties and mapped ecoregions, may not depict a true sense of conserved lands in each ecoregion. That being said, barring standardization in future data collecting endeavors, these results represent the best available data in the state. The following adaptation presents a brief description of each ecoregion, along with information on acreage of recreation and conservation lands.

![Figure 4.2 Ecoregions of Texas](image)

Omernik Level 3 Ecoregions
<table>
<thead>
<tr>
<th>Level III Ecoregion</th>
<th>Ecoregion acres *</th>
<th>Recreation-Conservation acres **</th>
<th>Percent in Recreation-Conservation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona/New Mexico Mountains</td>
<td>51,960</td>
<td>50,571</td>
<td>97.33%</td>
</tr>
<tr>
<td>Chihuahuan Deserts</td>
<td>22,537,951</td>
<td>1,456,806</td>
<td>6.46%</td>
</tr>
<tr>
<td>South Central Plains</td>
<td>15,671,654</td>
<td>924,593</td>
<td>5.90%</td>
</tr>
<tr>
<td>Western Gulf Coast Plain</td>
<td>14,991,385</td>
<td>798,268</td>
<td>5.32%</td>
</tr>
<tr>
<td>Texas Blackland Prairies</td>
<td>10,681,313</td>
<td>168,699</td>
<td>1.58%</td>
</tr>
<tr>
<td>Cross Timbers</td>
<td>12,781,734</td>
<td>190,938</td>
<td>1.49%</td>
</tr>
<tr>
<td>Edwards Plateau</td>
<td>18,449,346</td>
<td>201,594</td>
<td>1.09%</td>
</tr>
<tr>
<td>East Central Texas Plains</td>
<td>13,487,753</td>
<td>129,295</td>
<td>0.96%</td>
</tr>
<tr>
<td>Southwestern Tablelands</td>
<td>14,890,927</td>
<td>129,585</td>
<td>0.87%</td>
</tr>
<tr>
<td>High Plains</td>
<td>20,934,612</td>
<td>119,661</td>
<td>0.57%</td>
</tr>
<tr>
<td>Southern Texas Plains</td>
<td>13,179,176</td>
<td>59,836</td>
<td>0.45%</td>
</tr>
<tr>
<td>Central Great Plains</td>
<td>11,533,378</td>
<td>32,068</td>
<td>0.28%</td>
</tr>
</tbody>
</table>

* Acres contained in this table depict surface acres in Texas, not the entire ecoregion within North America.
** Represents only land acres. Surface water acres are not included.

[Adapted from Griffith, Bryce, Omernik, & Rogers, 2007. Ecoregions of Texas. Texas Commission on Environmental Quality, Austin. 134 pp.]

Arizona/New Mexico Mountains (Ecoregion 23)

The Arizona/New Mexico Mountains are distinguished from neighboring mountainous ecoregions by lower elevations and an associated vegetation indicative of drier, warmer environments, due in part to the region’s more southerly location. Chaparral is common at lower elevations; pinyon-juniper, and oak woodlands are found at lower and middle elevations; and the higher elevations are mostly covered with open to dense ponderosa pine forests. Forests of spruce, fir, and Douglas-fir are common in the Southern Rockies and the Wasatch and Uinta Mountains, but they are found only in limited areas at the highest elevations in this region. Only a small portion of this ecoregion occurs in Texas. The Guadalupe Mountains on the Texas-New Mexico border comprise the southernmost peaks of the Arizona/New Mexico Mountains ecoregion. The portion of
this ecoregion that occurs in Texas may be small, but 97.33% of the entire region is comprised of recreation or conservation land, amounting to 50,571 acres.

**Chihuahuan Deserts (Ecoregion 24)**

This desert ecoregion extends from the Madrean Archipelago in southeastern Arizona to the Edwards Plateau in south-central Texas. It is the northern portion of the southernmost desert in North America that extends more than 500 miles south into Mexico. In much of the U.S. portion, the physiography of the region is generally a continuation of basin and range terrain (excluding the Stockton Plateau) that is typical of the Mojave Basin and Range and the Central Basin and Range ecoregions to the west and north, although the pattern of alternating mountains and valleys is not as pronounced as it is in the neighboring ecoregions. The mountain ranges are a geologic mix of faulted limestone reefs, volcanoes and associated basalt and tuff extrusive rocks, and rhyolitic intrusions. Outside the major river drainages, such as the Rio Grande and Pecos River, the landscape is largely internally drained. Vegetative cover is predominantly semi-desert grassland and arid shrubland, except for high elevation islands of oak, juniper, and pinyon pine woodland. The extent of desert shrubland is increasing across lowlands and mountain foothills due to gradual desertification caused in part by historical grazing pressure. The recreation-conservation properties in the Chihuahuan Desert ecoregion amount to 6.46% of the entire region. This region contains the largest amount of recreation-conservation land in Texas at 1,456,806 acres. This region houses both Big Bend National Park and Big Bend State Park, which account for a large portion of the conserved land.

**High Plains (Ecoregion 25)**

The High Plains ecoregion is higher and drier than the Central Great Plains to the east. Much of the High Plains is expressed as smooth to slightly irregular plains with a high percentage of cropland. The potential natural vegetation in this region is grama-buffalo grass. The northern boundary of this ecological region is also the approximate northern limit of winter wheat and sorghum and the southern limit of spring wheat. The ecoregion includes the plains area of the Llano Estacado. Thousands of playa lakes (seasonal depressional wetlands) occur in this area, many serving as recharge areas for the important Ogallala Aquifer. These playa lakes are also essential for waterfowl during their yearly migration along the Central Flyway of North America. Oil and gas production occurs in many parts of the region. Only 0.57% of this region is classified as recreation or conservation lands, amounting to 119,661 acres in total.

**Southwestern Tablelands (Ecoregion 26)**

The Southwestern Tablelands flank the High Plains with red hued canyons, mesas, badlands, and dissected river breaks. Unlike most adjacent Great Plains ecological regions, little of the Southwestern Tablelands are in cropland. Much of this region is in sub-humid grassland and semiarid rangeland. The potential natural vegetation in this region is grama-buffalo grass with some mesquite-buffalo grass in the southeast,
juniper-scrub oak-midgrass savanna on escarpment bluffs, and shinnery (midgrass prairie with low oak brush) along parts of the Canadian River. Soils in this region include Alfisols, Inceptisols, Entisols, and Mollisols. This ecoregion houses slightly more than its High Plains neighbor, with 129,585 recreation-conservation acres, accounting for only 0.87% of the total area.

**Central Great Plains (Ecoregion 27)**

The Central Great Plains are slightly lower, receive more precipitation, and are more irregular than the High Plains to the west. The ecological region was once grassland, a mixed or transitional prairie from the tallgrass in the east to shortgrass farther west. Scattered low trees and shrubs occur in the south. Most of the ecoregion is now cropland. The eastern boundary of the region marks the eastern limits of the major winter wheat growing area of the United States. Soils in this region are generally deep with shallow soils on ridges and breaks. Not surprisingly, as most of this ecoregion is covered by cropland, the Central Great Plains holds the smallest ratio of recreation-conservation lands, with only 0.28% or 32,068 out of 11,533,378 total acres.

**Cross Timbers (Ecoregion 29)**

The Cross Timbers ecoregion is a transitional area between the once prairie, now winter wheat growing regions to the west, and the forested low mountains or hills of eastern Oklahoma and Texas. The region stretches from southern Kansas into central Texas, and contains irregular plains with some low hills and tablelands. It is a mosaic of forest, woodland, savanna, and prairie. The Cross Timbers ecoregion is not as arable or as suitable for growing corn and soybeans as the Central Irregular Plains to the northeast. The transitional natural vegetation of little bluestem grassland with scattered blackjack oak and post oak trees is used mostly for rangeland and pastureland, with some areas of woody plant invasion and closed forest. Oil production has been a major activity in this region for over eighty years. The Cross Timbers ecoregion houses 190,938 recreation-conservation acres out of 12,781,734, which is a ratio of 1.49%.

**Edwards Plateau (Ecoregion 30)**

This ecoregion is largely a dissected limestone plateau that is hillier to the south and east where it is easily distinguished from bordering ecological regions by a sharp fault line. The region contains a sparse network of perennial streams. Due to karst
topography (related to dissolution of limestone substrate) and resulting underground drainage, streams are relatively clear and cool in temperature compared to those of surrounding areas. Soils in this region are mostly Mollisols with shallow and moderately deep soils on plateaus and hills, and deeper soils on plains and valley floors. Covered by juniper-oak savanna and mesquite-oak savanna, most of the region is used for grazing beef cattle, sheep, goats, exotic game mammals, and wildlife. Hunting leases are a major source of income. Combined with topographic gradients, fire was once an important factor controlling vegetation patterns on the Edwards Plateau. It is a region of many endemic vascular plants. With its rapid seed dispersal, low palatability to browsers, and in the absence of fire, Ashe juniper has increased in some areas, reducing the extent of grassy savannas. Following the Cross Timbers in terms of percentage, 1.09% of the Edwards Plateau region is classified as recreation-conservation land. While the ratio may be smaller than the Cross Timbers region, the actual acreage is larger, with 201,594 acres out of 18,449,346 being put aside for recreation or conservation purposes.

Southern Texas Plains (Ecoregion 31)

These rolling to moderately dissected plains were once covered in many areas with grassland and savanna vegetation that varied during wet and dry cycles. Following long continued grazing and fire suppression, thorny brush, such as mesquite, is now the predominant vegetation type. Ceniza and blackbrush occur on caliche soils. Also known as the Tamualipan Thornscrub, or the “brush country” as it is called locally, the region has its greatest extent in Mexico. The subhumid to dry region contains a diverse mosaic of soils, mostly clay, clay loam, and sandy clay loam surface textures, and ranging from alkaline to slightly acid. The ecoregion also contains a high and distinct diversity of plant and animal life. It is generally lower in elevation with warmer winters than the Chihuahuan Deserts to the northwest. Oil and natural gas production activities are widespread. The Southern Texas Plains hold the second smallest percentage of recreation-conservation land, with only 0.45% being classified as such. This percentage amounts to 59,836 acres out of 13,179,176.

Texas Blackland Prairies (Ecoregion 32)

The Texas Blackland Prairies form a disjunct ecological region, distinguished from surrounding regions by fine-textured, clayey soils and predominantly prairie potential natural vegetation. The predominance of Vertisols in this area is related to soil formation in Cretaceous shale, chalk, and marl parent materials. Unlike tallgrass prairie soils that are mostly Mollisols in states to the north, this region contains Vertisols, Alfisols, and Mollisols. Dominant grasses
included little bluestem, big bluestem, yellow Indiangrass, and switchgrass. This region now contains a higher percentage of cropland than adjacent regions; pasture and forage production for livestock is common. Large areas of the region are being converted to urban and industrial uses. The Texas Blackland Prairies hold 168,699 acres of recreation-conservation lands, which amounts to 1.58% of the whole region.

East Central Texas Plains (Ecoregion 33)

Also called the Post Oak Savanna or the Claypan Area, this region of irregular plains was originally covered by post oak savanna vegetation, in contrast to the more open prairie-type regions to the north, south, and west, and the pine forests to the east. Soils are variable among the parallel ridges and valleys, but tend to be acidic, with sands and sandy loams on the uplands and clay to clay loams in low-lying areas. Many areas have a dense, underlying clay pan affecting water movement and available moisture for plant growth. The bulk of this region is now used for pasture and range. However, the region houses 129,295 acres or 0.96% of recreation-conservation lands.

Western Gulf Coastal Plain (Ecoregion 34)

The Western Gulf Coastal Plain is a relatively flat strip of land, generally 50 to 90 miles wide, adjacent to the Gulf of Mexico. The principal distinguishing characteristics of this ecoregion is its relatively flat topography and mainly grassland potential natural vegetation. Inland from this region the plains are older, more irregular, and have mostly forest or savanna-type vegetation potentials. Largely because of these characteristics, a higher percentage of the land is in cropland than in bordering ecological regions. Rice, grain sorghum, cotton, and soybeans are the principal crops. Urban and industrial land uses have expanded greatly in recent decades, and oil and gas production is common. However, there are still a large proportion of lands set aside for recreation-conservation purposes, currently 798,268 acres or 5.32% of the total region.

South Central Plains (Ecoregion 35)

Locally termed the “piney woods”, this region of mostly irregular plains represents the western edge of the southern coniferous forest belt. Once blanketed by a mix of pine and hardwood forests, much of the region is now in loblolly and shortleaf pine plantations. Soils are mostly acidic sands and sandy loams. Covering parts of Louisiana, Arkansas, east Texas, and Oklahoma, only about one sixth of the region is in cropland, primarily within the Red River floodplain, while about two thirds of the region is in
forests and woodland. Lumber, pulpwood, oil, and gas production are major economic activities. The South Central Plains ecoregion houses the 2nd largest recreation-conservation acreage at 924,593, which represents 5.9% of the whole region.

Figure 4.3 represents the number of acres per ecoregion.
County-level Analysis

To assist local governments in meaningful community planning, county data was examined through multiple approaches, including representative acreage and service to populations (per capita). Figure 4.4 characterizes the distribution of acres per capita by county.

Figure 4.4
Recreation-Conservation Acres Per Capita

Data Source: Planning & Geospatial Resources

Figure 4.5 represents recreation-conservation land by county, which does not take into consideration population. As can be seen in the map below, 20 out of 254 counties...
reported zero recreation-conservation. This can be attributed to several different causes; either there are not enough people to require outdoor space, or the recreation providers did not report any owned lands in their respective counties.

Table 4.3 represents the top ten counties for recreation-conservation lands in terms of actual acreage. As can be seen by the table below, the counties with the largest amounts of acreage are oftentimes those with lower population levels.
Table 4.3
Top Ten Counties by Recreation-Conservation Acres

<table>
<thead>
<tr>
<th>County Name</th>
<th>County Acres</th>
<th>County Population</th>
<th>Recreation-Conservation Acres</th>
<th>2010 Population Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brewster</td>
<td>3,949,581</td>
<td>9,232</td>
<td>939,349</td>
<td>172</td>
</tr>
<tr>
<td>Presidio</td>
<td>2,458,488</td>
<td>7,818</td>
<td>321,067</td>
<td>183</td>
</tr>
<tr>
<td>Cameron</td>
<td>790,520</td>
<td>406,220</td>
<td>123,163</td>
<td>13</td>
</tr>
<tr>
<td>Brazoria</td>
<td>1,062,963</td>
<td>313,166</td>
<td>104,319</td>
<td>15</td>
</tr>
<tr>
<td>Val Verde</td>
<td>2,061,067</td>
<td>48,879</td>
<td>101,363</td>
<td>65</td>
</tr>
<tr>
<td>Jefferson</td>
<td>786,701</td>
<td>252,273</td>
<td>97,408</td>
<td>19</td>
</tr>
<tr>
<td>Sabine</td>
<td>367,356</td>
<td>10,834</td>
<td>93,441</td>
<td>160</td>
</tr>
<tr>
<td>Houston</td>
<td>788,530</td>
<td>23,732</td>
<td>92,831</td>
<td>105</td>
</tr>
<tr>
<td>Kenedy</td>
<td>1,290,300</td>
<td>416</td>
<td>90,180</td>
<td>252</td>
</tr>
<tr>
<td>Dallam</td>
<td>966,944</td>
<td>6,703</td>
<td>78,375</td>
<td>191</td>
</tr>
</tbody>
</table>

As can be seen in Table 4.4, the per capita rate of recreation-conservation lands is significantly lower owing to fiscal, spatial, political, and other constraints.

Table 4.4
Ten Most Populace Counties by Recreation-Conservation Acres Per Capita

<table>
<thead>
<tr>
<th>County Name</th>
<th>County Acres</th>
<th>County Population</th>
<th>Recreation-Conservation Acres</th>
<th>Per Capita Acres</th>
<th>2010 Population Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harris</td>
<td>1,133,239</td>
<td>4,092,459</td>
<td>66,646</td>
<td>0.02</td>
<td>1</td>
</tr>
<tr>
<td>Dallas</td>
<td>578,268</td>
<td>2,368,139</td>
<td>33,420</td>
<td>0.01</td>
<td>2</td>
</tr>
<tr>
<td>Tarrant</td>
<td>573,242</td>
<td>1,809,034</td>
<td>28,008</td>
<td>0.02</td>
<td>3</td>
</tr>
<tr>
<td>Bexar</td>
<td>801,952</td>
<td>1,714,773</td>
<td>27,960</td>
<td>0.02</td>
<td>4</td>
</tr>
<tr>
<td>Travis</td>
<td>653,260</td>
<td>1,024,266</td>
<td>66,083</td>
<td>0.06</td>
<td>5</td>
</tr>
<tr>
<td>El Paso</td>
<td>646,607</td>
<td>800,647</td>
<td>30,585</td>
<td>0.04</td>
<td>6</td>
</tr>
<tr>
<td>Collin</td>
<td>565,441</td>
<td>782,341</td>
<td>27,309</td>
<td>0.03</td>
<td>7</td>
</tr>
<tr>
<td>Hidalgo</td>
<td>1,015,707</td>
<td>774,769</td>
<td>32,136</td>
<td>0.04</td>
<td>8</td>
</tr>
<tr>
<td>Denton</td>
<td>611,467</td>
<td>662,614</td>
<td>39,156</td>
<td>0.06</td>
<td>9</td>
</tr>
<tr>
<td>Fort Bend</td>
<td>564,888</td>
<td>585,375</td>
<td>14,102</td>
<td>0.02</td>
<td>10</td>
</tr>
</tbody>
</table>
In contrast to the previous table, Table 4.5 shows the top ten counties with the highest per capita ratio of recreation-conservation lands, where the majority of counties have extremely low population rates.

<table>
<thead>
<tr>
<th>County Name</th>
<th>County Acres</th>
<th>County Population</th>
<th>Recreation-Conservation Acres</th>
<th>Per Capita Acres</th>
<th>2010 Population Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenedy</td>
<td>1,290,300</td>
<td>416</td>
<td>90,180</td>
<td>216.78</td>
<td>252</td>
</tr>
<tr>
<td>Brewster</td>
<td>3,949,581</td>
<td>9,232</td>
<td>939,349</td>
<td>101.75</td>
<td>172</td>
</tr>
<tr>
<td>Presidio</td>
<td>2,458,488</td>
<td>7,818</td>
<td>321,067</td>
<td>41.07</td>
<td>183</td>
</tr>
<tr>
<td>Culberson</td>
<td>2,430,579</td>
<td>2,398</td>
<td>72,179</td>
<td>30.10</td>
<td>232</td>
</tr>
<tr>
<td>Terrell</td>
<td>1,503,614</td>
<td>984</td>
<td>19,943</td>
<td>20.27</td>
<td>247</td>
</tr>
<tr>
<td>Cottle</td>
<td>575,865</td>
<td>1,505</td>
<td>28,247</td>
<td>18.77</td>
<td>241</td>
</tr>
<tr>
<td>Jeff Davis</td>
<td>1,442,454</td>
<td>2,342</td>
<td>36,115</td>
<td>15.42</td>
<td>233</td>
</tr>
<tr>
<td>McMullen</td>
<td>743,918</td>
<td>707</td>
<td>10,489</td>
<td>14.84</td>
<td>250</td>
</tr>
<tr>
<td>Dallam</td>
<td>966,944</td>
<td>6,703</td>
<td>78,375</td>
<td>11.69</td>
<td>191</td>
</tr>
<tr>
<td>Briscoe</td>
<td>576,985</td>
<td>1,637</td>
<td>14,169</td>
<td>8.66</td>
<td>239</td>
</tr>
</tbody>
</table>

**Conclusion**

In summary, the Texas population has grown at a tremendous rate. The urban metropolises have a much lower per capita allocation of recreation and conservation acreage than counties with smaller populations. This trend is not surprising, given land costs and development pressures. Moving forward, state and local officials will need to plan ahead to provide equitable access to conservation and recreation lands, particularly in urban areas.

The urban counties, with populations greater than 500,000, include:

- Bexar County
- Collin County
- Dallas County
- Denton County
- El Paso County
- Fort Bend County
- Harris County
- Hidalgo County
- Tarrant County
- Travis County

The ten counties with populations greater than 500,000 account for 58% of the state’s population, but only offer 8.4% of the recreation-conservation lands available for public use.
These counties account for 58% of the state’s population, but only offer 8.4% of the recreation-conservation lands available for public use. Further, the opportunities to acquire additional lands are hampered by the lack of available quantity and quality of land, and the cost for acquisition and development in the urban setting. Figure 4.6 illustrates the per capita distribution of recreation-conservation lands in Texas.

While this statewide inventory is the most complete data set to date; improvements in data standardization, as it relates to park classification (community, neighborhood, regional, etc…), would be useful in increasing the value of this inventory for future planning and analysis purposes. Furthermore, there are limitations to this data set. While the majority of owning entities responded with some type of property information, there were a small percentage of non-responders that were not included in this compilation. Also, particularly as it relates to smaller municipalities, many did not have the data in a digital geospatial format. ArcGIS and its corresponding capability to produce accurate geospatial data still have a cost prohibitive element for many recreation providers. Moving forward, TPWD plans to give the data freely to any recreation providers that request it, in order to increase planning efforts across the state.
Outdoor Recreation Demand

To ensure that ample opportunity for public participation has occurred in the development of the TORP, a variety of state and national survey studies were used to establish outdoor recreation trends in Texas. Results from the 2002-2007 Texas State Parks On-Site Visitor Survey, the TPWD 2009 Hispanic Focus Groups, and the Texas results from the 2009 NSRE conducted by the USFS are included in this analysis of outdoor recreation demand. In addition to these earlier studies, in 2011 TPWD also conducted two web surveys to garner public input on the outdoor recreational needs of Texans; generating nearly 4,000 responses.

In order to better evaluate areas for state priority the NSRE, the USFWS Survey of Hunting, Fishing and Wildlife-Associated Recreation, and the Outdoor Foundation’s Outdoor Recreation Participation study, were utilized to get an overarching picture of how outdoor recreation participation differs on the national level versus the state level. Due to differing methodologies, these studies are not directly comparable; however, they each lend a hand to highlight overall trends important to outdoor recreation providers. The following sections highlight the predominant trends identified in these studies, as well as trends in camping, fishing, hunting, and boating based on TPWD’s visitation estimates and license sales.

Outdoor Recreation Participation in Texas and the United States

The USFS conducts a national survey approximately every five years to assess outdoor recreation participation patterns of persons 16 years and older in the U.S. The NSRE, conducted since 1960, evaluates participation for about 80 outdoor recreation activities. This research provides the opportunity to view long-term trends in outdoor recreation activity participation because the survey data was collected in a consistent way over those years. A report completed in 2009 by the USFS compares long-term trends from the 1980s until recent time (2009) shown in Table 5.1.
Table 5.1
Percent of Population Participating in Outdoor Recreation Activities in the U.S., 1982-2009

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk for Pleasure</td>
<td>53.0%</td>
<td>68.8%</td>
<td>82.4%</td>
<td>84.1%</td>
</tr>
<tr>
<td>View/Photograph Birds</td>
<td>12.0%</td>
<td>27.0%</td>
<td>31.8%</td>
<td>34.9%</td>
</tr>
<tr>
<td>Attend Outdoor Sports Events</td>
<td>40.0%</td>
<td>49.0%</td>
<td>50.8%</td>
<td>52.4%</td>
</tr>
<tr>
<td>Day Hiking</td>
<td>14.0%</td>
<td>26.6%</td>
<td>32.4%</td>
<td>32.6%</td>
</tr>
<tr>
<td>Visit Nature Centers</td>
<td>50.0%</td>
<td>55.1%</td>
<td>56.7%</td>
<td>55.1%</td>
</tr>
<tr>
<td>Swimming in lakes, streams</td>
<td>32.0%</td>
<td>43.4%</td>
<td>41.4%</td>
<td>40.7%</td>
</tr>
<tr>
<td>Sightseeing</td>
<td>46.0%</td>
<td>58.4%</td>
<td>50.8%</td>
<td>50.5%</td>
</tr>
<tr>
<td>Bicycling</td>
<td>32.0%</td>
<td>38.7%</td>
<td>39.6%</td>
<td>39.2%</td>
</tr>
<tr>
<td>Running or Jogging</td>
<td>26.0%</td>
<td>28.2%</td>
<td>32.9%</td>
<td>34.5%</td>
</tr>
<tr>
<td>Picnicking</td>
<td>48.0%</td>
<td>55.7%</td>
<td>54.9%</td>
<td>50.9%</td>
</tr>
<tr>
<td>Boating</td>
<td>28.0%</td>
<td>37.8%</td>
<td>36.3%</td>
<td>35.6%</td>
</tr>
<tr>
<td>Drive off-road</td>
<td>11.0%</td>
<td>17.8%</td>
<td>17.4%</td>
<td>20.0%</td>
</tr>
<tr>
<td>Developed Camping</td>
<td>17.0%</td>
<td>23.1%</td>
<td>26.4%</td>
<td>24.1%</td>
</tr>
<tr>
<td>Motor boating</td>
<td>19.0%</td>
<td>29.6%</td>
<td>24.3%</td>
<td>23.3%</td>
</tr>
<tr>
<td>Outdoor Team Sports</td>
<td>24.0%</td>
<td>29.1%</td>
<td>22.9%</td>
<td>26.9%</td>
</tr>
<tr>
<td>Fishing</td>
<td>34.0%</td>
<td>35.0%</td>
<td>34.2%</td>
<td>33.8%</td>
</tr>
<tr>
<td>Primitive Camping</td>
<td>10.0%</td>
<td>15.6%</td>
<td>15.9%</td>
<td>14.2%</td>
</tr>
<tr>
<td>Canoeing or Kayaking</td>
<td>8.0%</td>
<td>9.5%</td>
<td>11.5%</td>
<td>12.4%</td>
</tr>
<tr>
<td>Backpacking</td>
<td>5.0%</td>
<td>8.4%</td>
<td>10.4%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Golf</td>
<td>13.0%</td>
<td>17.3%</td>
<td>16.7%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Horseback riding</td>
<td>9.0%</td>
<td>10.3%</td>
<td>9.7%</td>
<td>9.7%</td>
</tr>
<tr>
<td>Hunting</td>
<td>12.0%</td>
<td>12.5%</td>
<td>11.1%</td>
<td>11.5%</td>
</tr>
</tbody>
</table>


The NSRE is a valuable national source of information that provides a sample size large enough to extrapolate Texans’ participation in outdoor recreation activities. The most popular activities participated by U.S. residents and Texas residents are shown in
Figure 5.1. The percent of Texans participating in these outdoor activities generally mirrors participation by U.S. residents.

Addressing Demographic Change

Outdoor recreation participation by Hispanics in Texas is important to understand as the Hispanic population is projected to increase to more than 53% of the total population by 2040 (Texas State Data Center, 2008). As Texas demographics continue to shift,
participation in outdoor activities among diverse groups is becoming increasingly important. Understanding the participation and non-participation rate among the largest ethnicity in Texas is critical to reaching this under-served group.

The NSRE provides socio-demographics of Texans participating in outdoor recreation activities, including detailed information by ethnicity, age, education, household income, and location of residence. A second study, Hispanic Qualitative Research: Conclusions and Recommendations, was conducted in 2009 for TPWD using focus groups in Houston, Dallas, and San Antonio. This research focused specifically on generating ideas from Hispanic State Park visitors regarding how to increase park visitation, broaden conservation and stewardship, and solidify future support for nature-based outdoor recreation. The qualitative findings led to several key strategies being considered to broaden engagement with diverse, dynamic, and growing populations. Together the studies create a more complete picture of outdoor recreation demand in Texas.

Table 5.2 shows the top 10 outdoor recreation activities participated in by Hispanics and White/Non-Hispanics in Texas. Hispanics report participating more frequently than White/Non-Hispanics in five out of the ten outdoor recreation categories.

<table>
<thead>
<tr>
<th>Table 5.2</th>
<th>Comparison of Top 10 Outdoor Recreation Activities, White/Non-Hispanics and Hispanics in Texas, 2006-2009</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>% Texans Participating</strong></td>
<td><strong>% Difference</strong></td>
</tr>
<tr>
<td><strong>2006-2009</strong></td>
<td><strong>2006-2009</strong></td>
</tr>
<tr>
<td>White/Non-Hispanics</td>
<td>Hispanics</td>
</tr>
<tr>
<td>Walking for Pleasure</td>
<td>81.1%</td>
</tr>
<tr>
<td>Family Gatherings</td>
<td>66.6%</td>
</tr>
<tr>
<td>Gardening or Landscaping</td>
<td>66.3%</td>
</tr>
<tr>
<td>Attend Outdoor Sports Events Outdoors</td>
<td>57.3%</td>
</tr>
<tr>
<td>View/Photograph Natural Scenery</td>
<td>63.3%</td>
</tr>
<tr>
<td>Visit Outdoor Nature Centers</td>
<td>49.8%</td>
</tr>
<tr>
<td>View/Photograph Wildflowers</td>
<td>59.3%</td>
</tr>
<tr>
<td>Sightseeing</td>
<td>54.1%</td>
</tr>
<tr>
<td>Driving for Pleasure</td>
<td>53.6%</td>
</tr>
<tr>
<td>Picnicking</td>
<td>43.4%</td>
</tr>
</tbody>
</table>
While the NSRE research provides valuable information on participation trends to assist TPWD and other outdoor providers and entities in planning and evaluating opportunities and needs for outdoor recreation facilities, programs, and services; the Hispanic focus group recommendations have also assisted in developing new strategies to engage historically underserved groups.

For example, the qualitative research found that basic awareness of state parks near major cities was highly limited, even among current park visitors. This has resulted in efforts to develop new, more targeted media partnerships in urban areas that include large Hispanic media markets.

A second recommendation from the qualitative research was to explore more bilingual signage, advertising, and other park resources. Most bilingual Hispanic park visitors are able to speak Spanish and English, but many report varying degrees of comfort speaking English, and others feel even less fluent when reading English. Recent examples from TPWD include a bilingual “Discovery Center” at Guadalupe River State Park near San Antonio, new bilingual trail signage in Franklin Mountains State Park in El Paso, and the first-ever publication of the Texas State Park Guide in Spanish thanks to third-party sponsorship.

Several operational recommendations from the Hispanic focus groups study are also being considered for further exploration. These include further engagement among park visitors (of all ethnicities) regarding stewardship, continued emphasis on family-oriented outdoor activities in parks, and utilization of bilingual staff where possible.

In addition to operational ideas, the research recommendations also included new communication and program-centered ideas, such as increasing awareness of “Free Fishing in State Parks” programs and Texas Outdoor Family workshops and greater cross-promotion of parks located near one another and near large metropolitan areas.

In several instances the two studies were mutually reinforcing. For example, the NSRE survey found that Hispanic park visitors in Texas place much higher importance than Non-Hispanics on using outdoor space for family gatherings. Similarly, the qualitative focus groups revealed that many Hispanic state park visitors felt the current 8-person-per campsite rule was culturally restrictive in that many preferred to visit and spend the night with larger groups, to be able to include more extended family members. As a result of these findings and recommendations, the agency is exploring ways to create future campsite areas that can accommodate larger groups, as well as further
identification and marketing of its current state park areas that are already able to accommodate larger groups.

Outdoor Recreation Participation Trends in the U.S.

The Outdoor Foundation has produced an annual report on outdoor recreation participation trends since 2004. The 2010 Outdoor Recreation Participation Report helps the outdoor industry, federal officials, and state/local organizations better address the continuing inactivity among kids and the growing disconnect between children and the outdoors. The Outdoor Foundation’s report provides detailed information on the most popular outdoor activities participated by Americans ages 6 and older and provides details on youth participation and the reasons why youth do not participate more in outdoor activities.

Some of the key findings from this study include:

- The most popular outdoor activities for Americans, ages 6 and older are:
  - Freshwater, Saltwater, and Fly Fishing (17%)
  - Running, Jogging, and Trail Running (16%)
  - Car, Backyard, and RV Camping (16%)
  - Road Biking, Mountain Biking, and BMX (15%)
  - Hiking (12%)

- The most popular team sports for Americans, ages 6 and older are:
  - Basketball (9% of Americans ages 6 and older)
  - Football (6%)
  - Soccer - Indoor and Outdoor (6%)
  - Baseball (5%)
  - Volleyball - Court, Grass, and Beach (5%)

- Participation in outdoor recreation typically declines with age.
  - Participation in some form of outdoor recreation ranged from a high of 62% for children ages 6 to 12 to a low of 39% for adults 45 and older.
There is an overall downward decline in outdoor recreation participation among youth, ages 6 to 12 year olds.

- 62% of youth ages 6 to 12 participated in some form of outdoor recreation in 2009 compared to 64% in 2008 and 78% in 2006.
- This decline among 6 to 12 year olds is due largely to decreased participation rates among boys, while participation among girls in the same age remained nearly flat.
- Although participation in outdoor activities is higher among youth than any other age group, decreases among youth could mean shrinking numbers of outdoor enthusiasts for future generations. Most outdoor participants are introduced to the outdoors between ages 5 and 18.

Participation in outdoor recreation among Hispanic and African American youth is lower than Caucasian youth.

- 67% of Caucasian youth ages 6 to 12 participated in some form of outdoor recreation in 2009; while only 50% of Hispanic and only 39% of African American youth in the same age range participated. These trends mirror older age groups as well.

Lack of time is the number one reason why youth do not participate in outdoor activities more often.

- Among all youth ages 6 to 17, a lack of time is followed closely by a lack of interest and the impact of schoolwork.
- Among youth of varying ethnicities (African American, Asian/Pacific Islander, and Hispanic) schoolwork is the number one reason cited why youth do not participate more in outdoor activities. Asians/Pacific Islanders cite too much schoolwork significantly more than other ethnicities.
- For Caucasians, schoolwork is the second most cited reason behind lack of interest.
- Nearly one-third of Hispanic outdoor recreation participants cite a lack of access to places to participate in outdoor activities as a top reason for failing to get into the outdoors more often.

**Participation in Hunting, Fishing and Wildlife-Associated Recreation**

According to the USFWS National Survey of Fishing, Hunting and Wildlife Associated Recreation, the number of U.S. hunters has dropped from 14 million in 1996 to 13 million in 2001 to 12.5 million in 2006. Angler numbers in the U.S. have likewise decreased from 35.2 million in 1996 to 34.1 million in 2001 to 30 million in 2006. In contrast, wildlife viewers in Texas, including birders, have increased significantly. This shift mirrors national trends.
Table 5.3
Participation in Hunting, Fishing and Wildlife Watching in U.S.
(Residents 16 years and older)

<table>
<thead>
<tr>
<th>U.S.</th>
<th>Fishing</th>
<th>Hunting</th>
<th>Wildlife Watching</th>
<th>Total Participants (Fishing + Hunting + Wildlife Watching)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996 Survey</td>
<td>35.2 million</td>
<td>14.0 million</td>
<td>62.9 million</td>
<td>77.0 million</td>
</tr>
<tr>
<td>2001 Survey</td>
<td>34.1 million</td>
<td>13.0 million</td>
<td>66.1 million</td>
<td>82.3 million</td>
</tr>
<tr>
<td>2006 Survey</td>
<td>30.0 million</td>
<td>12.5 million</td>
<td>71.1 million</td>
<td>87.5 million</td>
</tr>
</tbody>
</table>


In Texas, the numbers of hunters and anglers have stayed about the same since 1996. However, the general population of Texas has increased during this time, so the per capita percentage of Texans who hunt/fish has declined.

Table 5.4
Participation in Hunting, Fishing and Wildlife Watching in Texas
(Residents and Non-Residents, 16 years and older)

<table>
<thead>
<tr>
<th>Texas</th>
<th>Fishing</th>
<th>Hunting</th>
<th>Wildlife Watching</th>
<th>Total Participants (Fishing + Hunting + Wildlife Watching)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996 Survey</td>
<td>2.5 million</td>
<td>829 thousand</td>
<td>3.6 million</td>
<td>4.7 million</td>
</tr>
<tr>
<td>2001 Survey</td>
<td>2.4 million</td>
<td>1.2 million</td>
<td>3.2 million</td>
<td>4.9 million</td>
</tr>
<tr>
<td>2006 Survey</td>
<td>2.5 million</td>
<td>1.1 million</td>
<td>4.2 million</td>
<td>6.0 million</td>
</tr>
</tbody>
</table>


Another way to look at hunting and fishing trends is by total volume of licenses sold. In Texas, the total number of hunting and fishing licenses sold was relatively stable between 1997 and 2007. In recent years there were increases in the number of licenses sold (2007 – 2010).
In Texas, recreational hunting and fishing license sales revenue has steadily increased in recent years from about $81 million in 2005 to just over $94 million in 2011. License fees were increased by about 5% across the board in 2009, the first fee increase since 2004, and before that TPWD had not increased fees for eight years.

License revenue increased by almost $4 million in 2010 owing to the fee increase and to a great hunting/fishing season brought about by abundant rainfall. This was sadly followed by the worst drought in recorded history in 2011; causing significantly reduced lake levels with nearly a 5% decline in fishing license sales (Miller, 2011).
Figure 5.3
Total Texas Hunting, Fishing and Combination License Sales Revenue, 1987-2010

Sources: 2011 AFWA Annual Meeting, Conference Proceeding Notes by Carter Smith, TPWD Executive Director. TPWD, License Sales Reports 1998 - 2010, Tom Newton, License Sales Manager.
Participation in Boating

Nationwide boating participation identified in the NSRE shows an increase in canoeing/kayaking, with a small decline in overall boating (Cordell & Green, National Survey on Recreation and the Environment, Texas Reports 1994-95, 2000-01 and 2006-09, 2009). The USFS reports 82 million adult Americans participated in recreational boating in 2009, with 12.7 million registered U.S. boats (Haas, 2010).

<table>
<thead>
<tr>
<th>Table 5.5</th>
<th>Percent of Population Participating in Recreational Boating in the U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boating</td>
<td>28.0%</td>
</tr>
<tr>
<td>Canoeing/Kayaking</td>
<td>8.0%</td>
</tr>
</tbody>
</table>

Source: (Cordell & Green, National Survey on Recreation and the Environment, Texas Reports 1994-95, 2000-01 and 2006-09, 2009)

According to the National Marine Manufacturers Association (NMMA), Texas ranked number three of the top boating states for 2009, based on annual sales (Top Four US Boating States, 2010). Texas ranks number six in overall number of boats registered (ThomasNet News, 2008). Figure 5.4 shows total number of boats registered in Texas from 1992-2011.

A drop in registered boats in 2011 was most likely due to the reduced lake levels brought on by the worst one-year drought documented in the U.S.

“Texas’ Gulf of Mexico coastline only accounts for a portion of the recreational boating locations” with many “popular boating, fishing and water sport destinations” at Texas lakes (Top Four US Boating States, 2010).
Participation in Camping

According to the Outdoor Foundation, camping in the U.S. has seen steady participation in recent years. In 2006, 15.7% of U.S. residents participated in camping (including car, backyard, and RV camping) and 15.6% in 2009, with only slight fluctuations reported between those years.
National statistics from the Outdoor Foundation are not directly comparable to the NSRE conducted by the USFS due to differing methodologies. For example, the Outdoor Foundation Report evaluates camping overall (including car, backyard, and RV camping) while the NSRE survey distinguishes between primitive and developed camping.

The NSRE survey shows that camping has seen a decline in recent years in both the U.S. and Texas (Table 5.6). The study years comparing Texas and the U.S. do not coincide. However, overall trends in the U.S. show a slight decline of 9% in developed camping from 26.4% in 1999-2001 to 24.1% in 2005-2009, and a greater decline in primitive camping (11% decrease).

In Texas, a more significant decrease was seen between 2000-2001 and 2006-2009. A 15% decrease was reported for developed camping, with 25.8% of Texans participating in 2000-2001 and only 21.9% in recent years (2006-2009). Primitive camping has seen an even greater decrease at 39%, with 16% of Texans participating in 2000-2001 and only 9.7% in 2006-2009.

<table>
<thead>
<tr>
<th>Table 5.6</th>
<th>Participation in Camping in U.S. and Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U.S. Participation</td>
</tr>
<tr>
<td>Developed Camping</td>
<td>26.4%</td>
</tr>
<tr>
<td>Primitive Camping</td>
<td>15.9%</td>
</tr>
</tbody>
</table>

Source: NSRE
While the number of motor home and travel trailer registrations is not likely to correlate directly with participation in camping, it can be a useful indicator of outdoor recreation. According to the Texas Department of Motor Vehicles (DMV), the number of motor home and travel trailer registrations has generally increased over the last 8 years, with 2005 being the only year in the last 7 that actually saw a decrease in the number of registrations.

### Table 5.7
**Total Number of Motor Home and Travel Trailer Registrations in Texas, 2006-2010**

<table>
<thead>
<tr>
<th>Year</th>
<th>Motor homes</th>
<th>Travel Trailers</th>
<th>Total Registrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>82,289</td>
<td>294,924</td>
<td>378,241</td>
</tr>
<tr>
<td>2005</td>
<td>19,867</td>
<td>302,422</td>
<td>322,289</td>
</tr>
<tr>
<td>2006</td>
<td>76,819</td>
<td>308,384</td>
<td>385,203</td>
</tr>
<tr>
<td>2007</td>
<td>74,128</td>
<td>317,432</td>
<td>391,560</td>
</tr>
<tr>
<td>2008</td>
<td>68,706</td>
<td>323,470</td>
<td>392,176</td>
</tr>
<tr>
<td>2009</td>
<td>67,730</td>
<td>321,992</td>
<td>389,722</td>
</tr>
<tr>
<td>2010</td>
<td>66,399</td>
<td>328,776</td>
<td>395,175</td>
</tr>
<tr>
<td>2011</td>
<td>63,637</td>
<td>336,380</td>
<td>400,017</td>
</tr>
</tbody>
</table>

Source: Texas DMV

### Visitation at Texas State Parks and National Parks

Visitation at Texas State Parks has remained relatively stable in recent years. In FY 2009 visits totaled 7.45 million, while in FY 2010 there were 7.47 million visits, and in FY 2011 visits totaled 7.7 million. Historic trend data for state park visitation is not available as the department recently updated the methodology of counting park visitors in 2008. Therefore, estimates preceding FY 2009 are not directly comparable.

National Park visitation has fluctuated from 270 million visits in 1995 to 281 million visits in 2010. Visitation has fluctuated up and down over the last 15 years, with the highest reported visitation in 1999 at 287 million.
Figure 5.5
Visits to National Parks, 2002-2011


© TPWD, Big Bend National Park
Nature Tourism and Participation in Nature-Based Outdoor Recreation

The USFS studied long-term trends in nature-based outdoor recreation using data from the NSRE. The USFS’s Internet Research Information Series (IRIS) study, released in 2010, grouped nature-based outdoor activities into categories such as hunting and fishing, non-motor boating, motorized activities, viewing/photographing nature, and visiting recreation and historic sites. Participation in motorized activities grew from 2000 up until about 2005; however, motorized activities along with hunting and fishing, visiting recreation and historic sites, and non-motor boating ended up toward the end of the decade to be about the same level of participation as in 2000. The group of activities encompassing “viewing and photographing nature” showed clear growth between 2000 and 2008.

Table 5.8 compares Texans’ participation in viewing and photographing birds compared to U.S. resident participation. Although the study years are not directly comparable, the increases seen in Texans participating is similar to national trends.

<table>
<thead>
<tr>
<th>Table 5.8</th>
<th>Percent of U.S. and Texas Residents Participating in Viewing/Photographing Birds, 2000-2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Texans Participating</td>
</tr>
<tr>
<td>View/photograph birds</td>
<td>29.1%</td>
</tr>
</tbody>
</table>

Source: NSRE

The growth in viewing and photographing nature has increased revenue in nature tourism as evidenced by an economic study completed by the Outdoor Industry Foundation (2006), where 66 million wildlife viewing participants contributed to the outdoor recreation economy. The study used “ripple effect” and “economic contribution” to determine the total national economic contribution of the outdoor recreation economy and concluded that the industry as a whole pumps $730 billion into the national economy. Within this total contribution, the study reports $243 billion in retail sales related to outdoor recreation trips (food/drink, transportation, entertainment/activities, lodging, and souvenirs/gifts/miscellaneous).

Nature tourism and the associated economic impact in Texas has not yet been extensively recorded and studied. However, a recent survey conducted by Texas A&M University examined nature tourism - specifically wildlife watching – in South Texas. The study concluded that those who visit South Texas to partake in bird or wildlife watching activities contribute over $300 million to the Rio Grande Valley economy per year.
Furthermore, the study found that almost one-quarter of leisure visitors coming to Hidalgo County and Cameron County travel to the Rio Grande Valley specifically to enjoy nature tourism.

In an effort to contribute to the understanding of Texas Nature Tourism, the Texas Agrilife Extension is currently conducting an ongoing project - *The Texas Nature Tourism Inventory (TNTI)* - to catalog the number of nature tourism businesses in Texas and indicate the economic significance of the nature tourism sector. The *TNTI* currently includes more than 10,000 Texas nature tourism operations. In the future it will be beneficial to take an in-depth look at Texas nature tourism business trends and compare the findings to that of the rest of the nation.

**Outdoor Recreation Needs and Marketing Strategies for Texas State Parks**

The State Park On-site Visitor Survey was a survey conducted from 2002-2007 at 67 state parks to gain a system-wide understanding of park visitors in order to help plan for statewide and regional marketing strategies. The survey collected site-specific and statewide information on demographics, visitation patterns, and visitor satisfaction. The survey also highlighted specific outdoor recreation facilities and services needed at the parks. The research resulted in the development of strategies and actions to increase attendance, revenue, and customer satisfaction at state parks. Some of the key research findings and resulting actions are summarized below.

The on-site survey evaluated the type of visitors coming to state parks. It was found that two-thirds of park visitors (67%) come to state parks with adults only, while only one-third (33%) of visitors come with children (under age 17). When compared to the U.S. Census, where approximately 70% of Texans have kids under the age of 17, this is indicative of a large demographic that is not visiting state parks. Additionally, the survey found that the percentage of visitors with kids changes slightly by season, where visitors with kids tend to be slightly higher in the spring (38%) and summer (43%) and lower during the fall (27%) and winter (24%). Even considering the increase of visitors with kids in the spring and summer, it is apparent that visitors to state parks still do not reflect the key demographic of 70% of Texans with kids. The resulting action identified based on this research finding was the need to promote family-oriented programs at state parks, including:

- Increased promotion of existing family-oriented programs including
- Texas Outdoor Family program,
• Free Fishing in state parks, and
• Go Fish.
  • Emphasize free entry for children under 13 in marketing materials and website.
  • Develop “Family Fun” campaign for both general market and Hispanics
  • Partner with businesses to implement family-oriented programs

The research found the TPWD website to be one of the most important communication tools for motivating visitors to come to state parks. Aside from word of mouth and learning about the park from a previous visit, the TPWD website was the third most common source of influence for visiting parks. When looking at only first time visitors, the website was even more important as it was the second most common source of information, followed by the State Park Guide.

This research finding solidified the need to launch a new state park website, www.texasstateparks.org, and promote the new features and functionality in attempt to encourage more Texans to learn about parks online. The website is being implemented in phases, and strategies identified to improve the website include:

• Provide more enhanced interactive maps on website
• More photos and videos
• Facebook fan pages and Twitter
• Provide more Spanish language web pages
• Explore mobile website and mobile apps
• “Parks Near You” online ads targeting families
• Promote online advertising via email communication.

The on-site survey research found that trails are very important to park visitors. Trails were found to be the most often used amenity at state parks for both day and overnight users. Day visitors also indicated that hiking was their most important “top of mind” reason for visiting state parks. Trail maintenance and the need for new trails were identified by day users as the most desired park improvement.

The resulting action based on this research finding is the need to develop strategies for promoting hiking at parks, including the need to:

• Improve trail maps/signage (incorporate GPS coordinates)
• Improve trail-related information on website, including more descriptive content and user-generated comments about trails
• Offer more guided/interpretive walk/tours, possible video camp of hikes, and mobile app tours
• Develop hiking programs at parks (geocaching, treasure hunts, walking/trail clubs)
• Consider targeted advertising in magazines (Backpacker, Outside)

The survey evaluated customer satisfaction at state parks. The overwhelming majority (94%) of park visitors are very satisfied or satisfied with their park visit. However, only two-thirds are “very satisfied,” so there is room for improvement. The survey found that the degree of satisfaction has an important impact on repeat visits to the park, as 92% of “very satisfied” visitors - compared to only 80% of “satisfied” visitors - are likely to return to the park. Only 25% of “somewhat satisfied” or “dissatisfied” visitors intended to return. This indicates how important it is to focus on customer satisfaction efforts and to strive towards improving the number of “very satisfied” visitors.

The research related to customer satisfaction helped define the need to develop an action plan for measuring customer satisfaction on an ongoing basis and create a system for continually collecting customer feedback. This information helps to assess reasons for dissatisfaction so that TPWD may dedicate resources to analyze and act on customer feedback in order to consistently improve visitor experiences in state parks.

Outdoor Recreation Needs Surveys

In order to garner public input, the Recreation Grants Branch conducted two on-line surveys related to the outdoor recreational needs of Texans. There was a survey formulated specifically for recreation providers and a survey aimed towards citizen input. The surveys were conducted between August 15 and September 28, 2011. We do acknowledge that the primary limitation of this method is that the surveys were conducted as a convenience sample, as we were unable to gather a full representation of the populations surveyed.

Due to the use of the website to conduct the survey, citizens or recreation providers who did not have Internet access could not take part in the survey. Though the use of the Internet is generally high among Americans, and Internet access is widely available through libraries and schools, as well as in private homes and offices, it is possible that citizens who do not use the Internet may vary from the web-users who participated in the survey. Additionally, web surveys do not allow for a way to screen out special interest groups that might use internet blogs to direct group members to the survey to voice their particular needs or concerns.
A convenience sample poses risks as it may not fully represent the population of recreation providers in Texas and there was no way to follow up with respondents to determine whether respondents differed from non-respondents. Therefore, the results presented here are intended to provide a measure of public input, not as a scientific endeavor.

**Recreation Provider Survey Responses**

The recreation providers from across the state were invited by email or postcard to participate in the survey. Complete survey results are located in Appendix E. By analyzing the results from the 253 responding recreation providers, we were able to gain some insight into the issues they face.

Additionally, by comparing the differing needs and barriers facing recreation providers versus citizens, we were able to establish some of the challenges that create a gap in service. All of the recreation provider respondents are identified by type of governmental entity in Figure 5.6, and at 68%, city officials were the primary respondents in the survey.
The location of all respondents by Metropolitan Statistical Area (MSA) is identified in Table 5.9, based on the reported zip code. The respondents from the Dallas and Fort Worth-Arlington area represent a combined total of 33% of the recreation provider survey respondents.

<table>
<thead>
<tr>
<th>MSA</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dallas</td>
<td>16.9%</td>
</tr>
<tr>
<td>Fort Worth-Arlington</td>
<td>16.1%</td>
</tr>
<tr>
<td>All other counties outside MSA (Rural areas)</td>
<td>15.7%</td>
</tr>
<tr>
<td>Houston</td>
<td>12.8%</td>
</tr>
<tr>
<td>Austin-San Marcos</td>
<td>9.5%</td>
</tr>
<tr>
<td>San Antonio</td>
<td>6.6%</td>
</tr>
<tr>
<td>El Paso</td>
<td>3.3%</td>
</tr>
<tr>
<td>Galveston-Texas City</td>
<td>1.7%</td>
</tr>
<tr>
<td>Killeen-Temple</td>
<td>1.7%</td>
</tr>
<tr>
<td>Odessa</td>
<td>1.7%</td>
</tr>
<tr>
<td>Waco</td>
<td>1.7%</td>
</tr>
<tr>
<td>Brazoria</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MSA</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bryan-College Station</td>
<td>1.2%</td>
</tr>
<tr>
<td>Amarillo</td>
<td>0.8%</td>
</tr>
<tr>
<td>Beaumont-Port Arthur</td>
<td>0.8%</td>
</tr>
<tr>
<td>Brownsville-Harlingen-San Benito</td>
<td>0.8%</td>
</tr>
<tr>
<td>Corpus Christi</td>
<td>0.8%</td>
</tr>
<tr>
<td>Longview-Marshall</td>
<td>0.8%</td>
</tr>
<tr>
<td>Victoria</td>
<td>0.8%</td>
</tr>
<tr>
<td>Abilene</td>
<td>0.4%</td>
</tr>
<tr>
<td>McAllen-Edinburg-Mission</td>
<td>0.4%</td>
</tr>
<tr>
<td>Midland</td>
<td>0.4%</td>
</tr>
<tr>
<td>San Angelo</td>
<td>0.4%</td>
</tr>
<tr>
<td>Sherman-Denison</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

Providers were also asked if they had a system-wide master plan/comprehensive plan with 86% responding YES. For the YES respondents, they were asked to rate the usefulness of the local planning document, with overwhelmingly positive results. Table 5.10 details the responses to this question.

City of Georgetown,
http://files.georgetown.org/2009/06/parks_master_plan/
When recreation providers were asked to rate the importance of four major issues, they ranked them in the following order of importance:

- funding – 97.1%
- land protection – 93.5%
- management – 80.7%
- meeting public needs - 75.4%

For each of these issues, recreation providers were asked to rate the level of difficulty associated with administration. Not surprising, with funding as the top issue, the need to fund new facilities and major renovations tied as the most difficult to direct.

“A recent summit meeting of the leaders of Texas’ largest municipal parks systems revealed dramatic shortfalls in available funding to meet current recreation infrastructure maintenance and development needs:

- Dallas-$ 2 Billion, replacement and new parks
- Fort Worth-$ 400 Million, replacement and new parks
- Austin-$ 1 Billion, replacement and repair
- San Antonio has not estimated overall need but working on a $65 million bond program
- Houston-$ 1 Billion+, replacement and new parks”

(Testimony by TRAPS before the TX House of Representatives, Interim Charges, Committee on Culture, Recreation and Tourism 01/24/2012)
Table 5.11
Recreation Providers Rate the Level of Difficulty with FUNDING

<table>
<thead>
<tr>
<th>Recreation Need</th>
<th>Difficult – Very Difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtaining new facility development funds</td>
<td>74.2%</td>
</tr>
<tr>
<td>Obtaining major renovation funds</td>
<td>74.2%</td>
</tr>
<tr>
<td>Obtaining land acquisition funds</td>
<td>71.1%</td>
</tr>
<tr>
<td>Obtaining facility replacement funds</td>
<td>70.5%</td>
</tr>
<tr>
<td>Obtaining outdoor recreation and education programming funds</td>
<td>59.5%</td>
</tr>
<tr>
<td>Obtaining overall recreation administration funds</td>
<td>52.6%</td>
</tr>
<tr>
<td>Obtaining daily maintenance funds</td>
<td>45.8%</td>
</tr>
</tbody>
</table>

Under the category of land protection, preserving land for future development is nearly half of the overall challenge facing recreation providers, with the other four categories closely ranked.

©TPWD: Devils River Ranch
Under the category of management, recreation providers identified providing adequate staffing levels as the most difficult management issue. The other challenges were not ranked nearly as high.
Table 5.12

Recreation Providers Rate the Level of Difficulty with MANAGEMENT

<table>
<thead>
<tr>
<th></th>
<th>Difficult – Very Difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providing adequate staffing levels</td>
<td>73.7%</td>
</tr>
<tr>
<td>Maintaining existing recreation infrastructure and resources</td>
<td>51.2%</td>
</tr>
<tr>
<td>Enforcing rules and regulations</td>
<td>43.2%</td>
</tr>
<tr>
<td>Alleviating visitor impacts on natural resources</td>
<td>38.5%</td>
</tr>
<tr>
<td>Informing visitors of rules and regulations</td>
<td>31.4%</td>
</tr>
<tr>
<td>Alleviating user conflicts</td>
<td>27.1%</td>
</tr>
<tr>
<td>Setting fees so that costs do not hinder participation</td>
<td>25.7%</td>
</tr>
<tr>
<td>Working with other outdoor recreation providers</td>
<td>14.9%</td>
</tr>
</tbody>
</table>

Meeting public needs was ranked as the lowest priority; however, there are still a number of difficulties identified. The results of the top 10 responses showed a closer clustering in problems associated with meeting public needs. Table 5.13 details the responses.

Table 5.13

Recreation Providers Rate the Level of Difficulty with MEETING PUBLIC NEEDS

<table>
<thead>
<tr>
<th></th>
<th>Difficult – Very Difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td>For a growing population</td>
<td>56.8%</td>
</tr>
<tr>
<td>For undeveloped public lands</td>
<td>52.8%</td>
</tr>
<tr>
<td>For athletic fields/complexes</td>
<td>46.4%</td>
</tr>
<tr>
<td>Of youth through provision of facilities, services and programs</td>
<td>45.8%</td>
</tr>
<tr>
<td>For off-leash dog areas</td>
<td>44.6%</td>
</tr>
<tr>
<td>For off-street walking or biking paths</td>
<td>42.1%</td>
</tr>
<tr>
<td>For older people through provision of facilities, services and programs</td>
<td>38.1%</td>
</tr>
<tr>
<td>For accessibility standards for people with disabilities</td>
<td>37.6%</td>
</tr>
<tr>
<td>For public access to water for swimming, boating or fishing</td>
<td>36.5%</td>
</tr>
<tr>
<td>Of diverse cultures</td>
<td>26.0%</td>
</tr>
<tr>
<td>For families</td>
<td>20.8%</td>
</tr>
</tbody>
</table>
Recruitment providers were asked to rate the importance of the types of park needs that they are currently facing in their park system. Trail linkages within their own park system rated significantly higher in importance than the next category of trail linkages with other jurisdictions (Figure 5.8).

The City of Grapevine has utilized its many resources to develop more than twenty-two (22) miles of hard-surface trails and four (4) miles of soft-surface trails. Grapevine will eventually have approximately 34 miles of trails within its city limits.
As in numerous other agency plans, including previous SCORP submissions, trails still rank highest as the top facilities needed now. Trails account for three of the five top needs.

Table 5.14
Top 5 Facilities Needed Now by Recreation Providers

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paved trails for walking, hiking, skating or biking</td>
<td>54.2%</td>
</tr>
<tr>
<td>Natural park area/open space</td>
<td>30.4%</td>
</tr>
<tr>
<td>Nature/interpretive trails</td>
<td>29.2%</td>
</tr>
<tr>
<td>Unpaved trails for walking and hiking</td>
<td>27.4%</td>
</tr>
<tr>
<td>Dog parks</td>
<td>25.0%</td>
</tr>
</tbody>
</table>

The final question asked recreation providers to rate the barriers they perceive that limit visitors from going to their parks. The top 10 responses are ranked in Table 5.15.

Table 5.15
Barriers that Limit Visitors to your Parks, Percent as Perceived by Recreation Providers as More than a Minor Barrier

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack knowledge of available facilities</td>
<td>40.7%</td>
</tr>
<tr>
<td>Lack of time</td>
<td>32.9%</td>
</tr>
<tr>
<td>Not interested</td>
<td>22.8%</td>
</tr>
<tr>
<td>Poor health</td>
<td>20.5%</td>
</tr>
<tr>
<td>Lack of access to transportation</td>
<td>18.6%</td>
</tr>
<tr>
<td>Lack of handicap accessible facilities</td>
<td>16.2%</td>
</tr>
<tr>
<td>Travel distance</td>
<td>13.2%</td>
</tr>
<tr>
<td>Cost of travel</td>
<td>12.7%</td>
</tr>
<tr>
<td>Anxiety about being in the outdoors with limited knowledge/skills</td>
<td>12.0%</td>
</tr>
<tr>
<td>Lack of security</td>
<td>11.5%</td>
</tr>
</tbody>
</table>
CITIZEN SURVEY RESPONSES

Even with the limitations of the on-line public input survey, we were able to garner 3,726 responses. In presenting the results, note that the reasons why non-visitors did not go to local and state parks, and any barriers encountered by visitors to state and local parks are offered at the end of this chapter.

Questions about Local Parks

Respondents, 88.3%, agreed or strongly agreed that local governments have a responsibility to provide outdoor recreation lands and facilities. When questioned about the methods for how parks and recreation should be financed, 93% thought that voluntary contribution would be an ideal method, while 85.5% felt that state grant funds would be appropriate. The methods to finance parks and recreation are presented in Table 5.16.

<table>
<thead>
<tr>
<th>Method of Financing Local Parks and Recreation</th>
<th>Support/Strongly Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary contributions (gifts of cash or goods specifically for parks)</td>
<td>93.0%</td>
</tr>
<tr>
<td>State grant funds (revenue from a portion of the state sales tax on sporting goods, 50% matching grants)</td>
<td>85.5%</td>
</tr>
<tr>
<td>Land dedication (developers are required to offer acres of land for parks)</td>
<td>80.4%</td>
</tr>
<tr>
<td>General Obligation Bonds (requires voter approval, repayment with property tax revenues)</td>
<td>72.3%</td>
</tr>
<tr>
<td>Revenue generating facilities (construct facilities that will generate enough revenue from fees to pay for the facility)</td>
<td>70.9%</td>
</tr>
<tr>
<td>Cash in lieu of land dedication (developer may offer an equal amount of cash instead of required acres)</td>
<td>52.6%</td>
</tr>
<tr>
<td>Increase park user fees</td>
<td>49.8%</td>
</tr>
<tr>
<td>Increase local sales tax specifically to fund parks</td>
<td>49.1%</td>
</tr>
<tr>
<td>Certificates of Obligation (does not require voter approval, repayment from property tax revenues)</td>
<td>48.5%</td>
</tr>
</tbody>
</table>
Texans continue to support local efforts to fund parks. Since 2002, almost 90% of local ballot initiatives for recreation and parks (facilities and lands) have been approved by the voting public. In a survey conducted in 2009, 68% of respondents strongly/somewhat approved support for a constitutional amendment dedicating all outdoor sporting goods sales tax revenue to acquire, maintain, and operate state and local parks in Texas (Hill, White, Bezion, & Nemeck, 2009).

Overwhelmingly, 93% of citizens responded YES to having visited a local park. Of those visiting, over 60% had gone to their local park more than 11 days in the past year. Equally as impressive, 90% of citizens responded YES to having visited a state park. Out of those that had visited a state park, 75% made one to ten visits. Figure 5.9 compares the local park and state park respondents on the number of visits made in the last 12 months.

For state parks, respondents were asked if they took children (under the age of 18) with them on their last visit. Sixty-two percent of state park visitors did not take children with them. This result is similar to the results found by the State Park Statewide Onsite Visitor Survey, which indicated that two-thirds of all state park visitors did not take children.

### Table 5.17
**Bond Election Results in Texas for Parks, Recreation and Open Space**

<table>
<thead>
<tr>
<th>Year</th>
<th># Proposed</th>
<th># Approved</th>
<th>$ Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>7</td>
<td>3</td>
<td>$29,250,000</td>
</tr>
<tr>
<td>2003</td>
<td>7</td>
<td>6</td>
<td>$160,174,792</td>
</tr>
<tr>
<td>2004</td>
<td>4</td>
<td>4</td>
<td>$20,955,000</td>
</tr>
<tr>
<td>2005</td>
<td>8</td>
<td>8</td>
<td>$287,180,000</td>
</tr>
<tr>
<td>2006</td>
<td>8</td>
<td>7</td>
<td>$680,905,000</td>
</tr>
<tr>
<td>2007</td>
<td>7</td>
<td>7</td>
<td>$258,855,292</td>
</tr>
<tr>
<td>2008</td>
<td>4</td>
<td>4</td>
<td>$76,000,000</td>
</tr>
<tr>
<td>2009</td>
<td>2</td>
<td>2</td>
<td>$52,000,000</td>
</tr>
<tr>
<td>2010</td>
<td>4</td>
<td>4</td>
<td>$170,145,000</td>
</tr>
<tr>
<td>2011</td>
<td>1</td>
<td>1</td>
<td>$82,105,000</td>
</tr>
<tr>
<td>Total</td>
<td>52</td>
<td>46</td>
<td>$1,817,570,084</td>
</tr>
</tbody>
</table>

Source: Trust for Public Land
Visitors to local parks were asked what the outstanding qualities about the park were; Table 5.18 presents the results.
Table 5.18
Top 3 Outstanding Qualities of Local Parks by Texas Citizens

<table>
<thead>
<tr>
<th>Quality</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active recreation facilities (courts, fields, playgrounds, trails)</td>
<td>63.4%</td>
</tr>
<tr>
<td>Support facilities (restrooms, benches, trash cans)</td>
<td>51.3%</td>
</tr>
<tr>
<td>Passive recreation facilities (natural features, gardens, outdoor education, park interpretation)</td>
<td>47.3%</td>
</tr>
</tbody>
</table>

Respondents were also asked to identify the facilities currently needed in their local park. Table 5.19 identifies the top five facilities.

Table 5.19
Top 5 Facilities Needed Now In Local Parks by Texas Citizens

<table>
<thead>
<tr>
<th>Facility</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unpaved trails for walking and hiking</td>
<td>43.6%</td>
</tr>
<tr>
<td>Natural park area/open space</td>
<td>31.8%</td>
</tr>
<tr>
<td>Mountain bike trails</td>
<td>31.4%</td>
</tr>
<tr>
<td>Paved trails for walking, hiking, biking, skating</td>
<td>30.1%</td>
</tr>
<tr>
<td>Wildlife/nature observation sites</td>
<td>27.8%</td>
</tr>
</tbody>
</table>

The second portion of the survey is related to state parks. Similar questions on the local park issues such as funding, qualities, and needed facilities were asked of citizens.

Questions about State Parks

Over 94% of Respondents agreed or strongly agreed that the state of Texas has a responsibility to provide outdoor recreation lands and facilities for its citizens; of those respondents over 90% believe that TPWD should receive a larger share of revenue from the sporting goods sales tax. The methods identified by citizens as being ideal for financing parks and recreation are presented in Table 5.20.
### Table 5.20
Support/Strongly Support Method of Financing Texas State Parks

<table>
<thead>
<tr>
<th>Method of Financing</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPWD receiving a larger share of the revenue from sporting goods sales tax</td>
<td>90.3%</td>
</tr>
<tr>
<td>Developers paying a fee to compensate for the negative impact on the environment</td>
<td>84.4%</td>
</tr>
<tr>
<td>Motor vehicle registration opt-in donation for state parks</td>
<td>79.0%</td>
</tr>
<tr>
<td>Tax on agricultural or open space land that is developed for commercial use</td>
<td>74.2%</td>
</tr>
<tr>
<td>Voter approved bonds using general state revenue to repay</td>
<td>73.0%</td>
</tr>
<tr>
<td>Voter approved bonds using future park revenue to repay</td>
<td>70.8%</td>
</tr>
<tr>
<td>Tax on agricultural or open space land that is developed for residential use</td>
<td>63.1%</td>
</tr>
<tr>
<td>Motor vehicle fee for people moving to Texas</td>
<td>45.7%</td>
</tr>
<tr>
<td>Increase state park entrance fees</td>
<td>40.0%</td>
</tr>
<tr>
<td>Increase state general sales tax for state parks</td>
<td>39.7%</td>
</tr>
<tr>
<td>Increase state park camping fees</td>
<td>39.6%</td>
</tr>
<tr>
<td>Real estate transfer fee (for every property exchange)</td>
<td>32.3%</td>
</tr>
</tbody>
</table>

“Texas State Parks need $4.6 million to help keep parks open. Record drought and devastating wildfires have created a critical situation for state parks. We need to raise $4.6 million to keep state parks open, and we can’t do it without you. There are three simple ways you can help:

- Visit state parks often with your family and friends – visitor fees pay for about half of all park operating costs.
- Make a tax-deductible donation.
- Make a donation when it's time to renew your vehicle, boat or trailer registration.

Please act now, to help keep Texas State Parks open for everyone to enjoy. Our state parks won't be the same without you.”

A message from Carter Smith, TPWD Executive Director

Respondents were also asked to identify the reason that most influenced their decision to visit a state park based on a list of provided responses. Figure 5.9 illustrates the responses based on visitor’s most recent visit. See the survey results in Appendix E for
the complete list of the categories, and all the open-ended responses incorporated under ‘Other.’

Figure 5.9
Reason that Influenced Most Recent Visit to Texas State Parks

- Previous state park visit: 53.0%
- Word of mouth: 42.1%
- Texas Parks & Wildlife website: 41.0%
- Other: 18.5%
- State Park Guide: 16.1%
- Texas Parks & Wildlife magazine: 15.6%
- State Park brochure: 9.0%
- Other internet site: 8.7%
- Other state park: 7.8%
- Texas Parks & Wildlife TV show: 7.1%
- Texas Parks & Wildlife Facebook Fan Page: 4.9%
- Travel guide: 4.2%
- Travel information center: 3.1%
- Newspaper article: 2.5%
- Other magazine article: 2.2%
- Other Facebook/Twitter sites: 1.1%
- Other TV show or TV news: 0.8%
- Advertisement: 0.8%
- Texas Parks & Wildlife Twitter: 0.4%
Visitors to state parks were asked what the outstanding qualities about the park were; refer to Table 5.21 for the citizen responses.

<table>
<thead>
<tr>
<th>Table 5.21</th>
<th>Top 3 Outstanding Qualities of Texas State Parks by Texas Citizens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive recreation facilities (natural features, gardens, outdoor education, park interpretation)</td>
<td>57.3%</td>
</tr>
<tr>
<td>Support facilities (restrooms, benches, trash cans)</td>
<td>52.5%</td>
</tr>
<tr>
<td>Active recreation facilities (courts, fields, playgrounds, trails)</td>
<td>45.3%</td>
</tr>
</tbody>
</table>

Respondents were also asked to identify the facilities currently needed in state parks. Table 5.22 identifies the top five facilities. Similar to local parks, the desire for trails remains on top of the lists for needed facilities.

<table>
<thead>
<tr>
<th>Table 5.22</th>
<th>Top 5 Facilities Needed Now in Texas State Parks by Texas Citizens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hiking trails</td>
<td>37.5%</td>
</tr>
<tr>
<td>Primitive hiking trails</td>
<td>31.7%</td>
</tr>
<tr>
<td>Mountain bike trails</td>
<td>29.5%</td>
</tr>
<tr>
<td>Biking trails</td>
<td>26.9%</td>
</tr>
<tr>
<td>Restrooms</td>
<td>26.9%</td>
</tr>
</tbody>
</table>
For those respondents that answered NO to visiting local parks (7%) and state parks (10%) in the last 12 months, the responses are compared below. The top responses were similar for non-visitors to state parks and local parks, with their reasons for not visiting are that they are too busy with other activities and lack of time. Travel distance was also shown to be a top reason for not visiting state parks in the last year. The top responses for each type of park are highlighted in the table.

<table>
<thead>
<tr>
<th>Table 5.23</th>
<th>Non-Visitor Citizen Reasons to Not Visit Local and State Parks in the Last 12 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local Parks</td>
</tr>
<tr>
<td>Anxiety about being in the outdoors with limited knowledge/skills</td>
<td>0.0%</td>
</tr>
<tr>
<td>Cost of travel</td>
<td>17.1%</td>
</tr>
<tr>
<td>Discrimination</td>
<td>0.5%</td>
</tr>
<tr>
<td>High user fees</td>
<td>4.3%</td>
</tr>
<tr>
<td>Lack knowledge of available facilities</td>
<td>11.8%</td>
</tr>
<tr>
<td>Lack of access to transportation</td>
<td>0.5%</td>
</tr>
<tr>
<td>Lack of handicap accessible facilities</td>
<td>0.0%</td>
</tr>
<tr>
<td>Lack of security, safety concerns</td>
<td>3.8%</td>
</tr>
<tr>
<td>Lack of time</td>
<td>35.5%</td>
</tr>
<tr>
<td>Not interested</td>
<td>13.3%</td>
</tr>
<tr>
<td>Other</td>
<td>31.8%</td>
</tr>
<tr>
<td>Poor maintenance</td>
<td>6.6%</td>
</tr>
<tr>
<td>Too busy with other activities</td>
<td>36.5%</td>
</tr>
<tr>
<td>Travel distance</td>
<td>22.3%</td>
</tr>
<tr>
<td>Use of alcohol and drugs in the park</td>
<td>5.2%</td>
</tr>
</tbody>
</table>

Over 40% of respondents that said YES that they had made visits in the last 12 months to local and/or state parks said they did not encounter any barriers, as shown in Table 5.24. The top barriers encountered for local park visitors are “lack of time” and “poor maintenance.” For state park visitors, “travel distance” and “lack of time” were the top barriers encountered.
<table>
<thead>
<tr>
<th></th>
<th>Local Parks</th>
<th>State Parks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety about being in the outdoors with limited knowledge/skills</td>
<td>0.9%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Cost of travel</td>
<td>7.4%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Did not encounter any barriers</td>
<td>45.2%</td>
<td>40.3%</td>
</tr>
<tr>
<td>Discrimination</td>
<td>0.7%</td>
<td>0.6%</td>
</tr>
<tr>
<td>High user fees</td>
<td>5.6%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Lack knowledge of available facilities</td>
<td>7.1%</td>
<td>4.6%</td>
</tr>
<tr>
<td>Lack of access to transportation</td>
<td>1.8%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Lack of handicap accessible facilities</td>
<td>2.3%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Lack of security, safety concerns</td>
<td>8.9%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Lack of time</td>
<td>17.9%</td>
<td>22.5%</td>
</tr>
<tr>
<td>Not interested</td>
<td>0.7%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Other</td>
<td>10.0%</td>
<td>10.6%</td>
</tr>
<tr>
<td>Poor maintenance</td>
<td>16.8%</td>
<td>9.3%</td>
</tr>
<tr>
<td>Too busy with other activities</td>
<td>13.3%</td>
<td>11.8%</td>
</tr>
<tr>
<td>Travel distance</td>
<td>13.3%</td>
<td>30.8%</td>
</tr>
<tr>
<td>Use of alcohol and drugs in the park</td>
<td>6.9%</td>
<td>2.3%</td>
</tr>
</tbody>
</table>

The final questions in the survey requested limited demographic information, including zip code and age group of respondent. The results are presented in the following tables.
### Table 5.25
Citizen Respondents by MSA Based on Zip Code Response

<table>
<thead>
<tr>
<th>MSA</th>
<th>Percent</th>
<th>MSA</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austin-San Marcos</td>
<td>25.3%</td>
<td>Brownsville-Harlingen-San Benito</td>
<td>0.6%</td>
</tr>
<tr>
<td>Houston</td>
<td>19.0%</td>
<td>Lubbock</td>
<td>0.6%</td>
</tr>
<tr>
<td>All other counties outside MSA's (Rural Areas)</td>
<td>16.1%</td>
<td>Tyler</td>
<td>0.5%</td>
</tr>
<tr>
<td>Dallas</td>
<td>10.0%</td>
<td>Abilene</td>
<td>0.4%</td>
</tr>
<tr>
<td>San Antonio</td>
<td>6.5%</td>
<td>San Angelo</td>
<td>0.4%</td>
</tr>
<tr>
<td>Fort Worth-Arlington</td>
<td>5.1%</td>
<td>El Paso</td>
<td>0.4%</td>
</tr>
<tr>
<td>Brazoria</td>
<td>2.2%</td>
<td>Beaumont-Port Arthur</td>
<td>0.3%</td>
</tr>
<tr>
<td>Galveston-Texas City</td>
<td>1.9%</td>
<td>McAllen-Edinburg-Mission</td>
<td>0.3%</td>
</tr>
<tr>
<td>Corpus Christi</td>
<td>1.3%</td>
<td>Midland</td>
<td>0.3%</td>
</tr>
<tr>
<td>Sherman-Denison</td>
<td>1.3%</td>
<td>Laredo</td>
<td>0.3%</td>
</tr>
<tr>
<td>Killeen-Temple</td>
<td>1.2%</td>
<td>Victoria</td>
<td>0.2%</td>
</tr>
<tr>
<td>Waco</td>
<td>1.2%</td>
<td>Wichita Falls</td>
<td>0.2%</td>
</tr>
<tr>
<td>Bryan-College Station</td>
<td>1.1%</td>
<td>Odessa</td>
<td>0.2%</td>
</tr>
<tr>
<td>Amarillo</td>
<td>0.9%</td>
<td>Texarkana</td>
<td>0.0%</td>
</tr>
<tr>
<td>Longview-Marshall</td>
<td>0.7%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The age ranges for respondents presented in Table 5.24 show almost 73% of respondents were age 35-64.

Although the citizen and recreation provider surveys were not scientifically conducted, the trends are similar to the results from numerous other surveys conducted by and on behalf of TPWD for various planning needs. The national and state surveys presented in the earlier part of this chapter also reinforce the results from the public input surveys. Having accurate trend information for the long-term goals continues to drive the planning and development processes for TPWD.
The Economic Values and Impacts of Outdoor Recreation

Economic *impact* and economic *value* both help characterize the importance of outdoor recreation in Texas. Economic *impact* has long been a tool to justify investments by the private sector. In the past couple of decades, a variety of studies have been completed that demonstrate the value to the local and state economies by the presence of parks and recreational facilities. This includes local job creation, increased sales tax revenue, and increased business transactions through lodging, food, and transportation by visitors. Sporting goods expenditures and park visitor trip expenditures are two of the more tangible examples of economic impacts of outdoor recreation on the Texas economy.

Economic *value* is the worth of parks that cannot be measured by direct economic impact. This focuses on the intangibles provided by parks; quality of life, physical and mental benefits of the outdoors, increased air quality, watershed protection, increased property values, wildlife conservation, and development buffers. Economists attempt to demonstrate some of this value by utilizing the option, existence, and bequest valuation methods in order to attach economic worth to the existence of outdoor recreation and conservation lands.

**ECONOMIC VALUE**

The total economic value of park lands to society is not a concept easily understood. A neighborhood park is an example. Neighborhood parks generally do not have an entrance or user fees, and if within walking distance, cost little to use. Therefore, no direct economic impact is generated by the user. Yet these parks have a value to society by both the user and non-user. These are identified as off-site values.

There are three primary ways to measure off-site values, the *option* value, *existence* value, and *bequest* value. *Option* value refers to the public’s willingness to pay to keep the future “option” of using the park, and keeping the land as a park rather than some other public or private use. The *existence* value is the benefit generated from the fact that parks and recreation opportunities “exist” for the user and non-user. *Bequest* value is the economic worth of providing or maintaining park resources for future generations. These three valuation methods take into consideration the economic worth of public outdoor recreation opportunities through a

“An analysis of approximately 30 studies found a positive impact of 20% on property values abutting or fronting a passive park area.” (The Perryman Group, 2006).
variety of measurements. While these valuation methods offer great insight into how much the public values the existence and protection of parkland, these methods can be expensive to generate, and thus were not used in this analysis.

However, intrinsic values and direct outcomes provided by parks and recreation experiences cannot be overlooked. The National Recreation and Park Association (NRPA) offers a number of studies that attempt to quantify the value of parks and recreation from a variety of alternative perspectives. The 2010 Research Series generated by NRPA show an ever broadening view of the community benefits associated with parks and recreation. In place of generating numbers through the option, existence, and bequest valuation methods, the following studies demonstrate the broad-based economic value of outdoor recreation opportunities for the public and the environment. Chapter 7 on Physical, Mental, and Social Well-being goes further in-depth on the indirect economic value of parks and recreation.

- *The Rationale for Recreation Services for Youth: An Evidenced Based Approach* (Witt, Peter A. and Linda L. Caldwell)
- *Air Quality Effects of Urban Trees and Park* (Nowak, David J. and Gordon M. Heisler)
- *Parks and Other Green Environments: Essential Components of a Healthy Human Habitat* (Kuo, Frances E. (Ming)

There is also evidence of continued public support for the conservation of Texas’ water and lands. Hill Research Consultants conducted a survey of Texas voters regarding conservation and parks in 2009. Findings included:

- **79% strongly support**, Protect land over our aquifers and around rivers, lakes and streams to protect the quality of our drinking water.
- **71% strongly support**, Conserve water usage to leave for future generations enough pristine flowing rivers to insure we have healthy bays, estuaries, waterfowl habitat, and coastal economies.
- **50% strongly support**, Protect/preserve diversity of our natural areas (vistas, plains, streams, lakes, wildlife habitats, prairies, coastal wetlands) for enjoyment of present and future generations.
- **83% agreed**, Unless we protect Texas’ natural areas, we will lose the very things that make Texas a special place in which to live.
- **79% agreed**, If state leaders don’t purchase and protect some of Texas’ natural areas, today, they will be lost forever to development.
- **71% agreed**, As the economy improves, we should use some of the extra revenue the state collects to purchase parkland and other natural areas while they are still available.
These results show that after improving public education; safeguarding, conserving, and protecting water make up the next three priorities. Protecting habitat for wildlife, increasing the number of neighborhood parks, and creating new state parks were important to respondents, but did not rank as important issues related to water conservation.

**ECONOMIC IMPACT**

Economic impact identifies the monetary outcomes generated by the existence of parks and recreation facilities. It all starts with investment in outdoor recreation by the sponsoring entity; be it city, county, or TPWD. The return from investment comes back to the local economy by way of creating local jobs, increased sales taxes, and visitor expenditures on lodging, food, and transportation. There is not necessarily a direct financial return to the city budget, for example, but the benefit goes to the community as a whole. By making the investment in outdoor recreation lands, opportunities for other impacts to the local economy are created. The city budget may see a direct return from user/entrance fees, but the big picture return is to the local economy. This return is called the ripple effect because investment in a community park can ripple through the community by creating jobs, in addition to increasing opportunity for visitor spending. This economic impact from visitor spending is calculated through the use of a multiplier. The following formula utilized by NRPA for an example multiplier.

Number of visitors x average spending per visitor x multiplier:

- Define who qualifies as a visitor;
- Estimate the number of visitors attracted to the community by the park, recreation event or facility;
- Estimate the average level of spending of visitors in the local area;
- Determine the ripple effects of this new money through the community by applying appropriate multipliers. (Crompton & Culpepper, The Economic Contribution of Texas State Parks FY 2006, 2006).

The ripple effect can occur from state parks and municipal parks, though the impact is generally different based on whether it is state or local. This analysis will attempt to
identify the ripple effect from both state parks and local parks by highlighting major findings from previous in-depth analysis.

**State Parks**

The methodology for determining the multipliers for state parks was developed as Texas Input-Output Model by the Texas Water Development Board. The Model calculates a multiplier for each sector of the state’s economy that estimates the degree of recirculation of purchases. IMPLAN (IMpact analysis for PLANning) is the software program that provides an accurate model for determining the economic impact of state parks on local economies. The IMPLAN database contains county, state, zip code, and federal economic statistics specialized by region, and can be used to measure the effect on a regional or local economy of a given change or event in the economy's activity.

The first study of the economic impact of Texas State Parks was *The 1987 Annual Economic Impact of State Park Visitors on Gross Business Receipts in Texas*. This report set the stage for subsequent studies in 2003, 2005, and 2006 that continue to demonstrate the impact to the local host county and state economies by state parks.

Although most state parks show an operating loss, “many of them, especially in rural areas, are important economic engines in their host communities because they attract non-resident visitors who spend money in the local community beyond that expended in the park itself.” (Crompton & Culpepper, 2006).

The report was commissioned by the Texas Coalition for Conservation, and written by John L. Crompton and Juddson C. Culpepper, Recreation, Parks and Tourism Sciences, Texas A&M University. Within the report non-resident visitors are those that made the state park their *primary reason* for the visit to the county, and did not live in the zip code(s) of the host county. It also excludes state park visitors that came to the park while in the area for some other purpose, these are considered casual visitors.
“Ultimately, the most significant finding is that, while the total sales and income generated by state parks in rural and metropolitan counties are roughly the same in real terms, the smaller size of rural economies means that state parks provide a larger proportion of total county economic activity.”

(Combs, Susan; Texas Comptroller of Public Accounts, 2008)

One state park from each of the six state park regions are presented with the summary of impacts to the state from the 2006 report. The information used for each site to establish the summary economic impacts on the local county includes:

- Total visitor days
- Average party size
- Per person, per day expenditures
- Sales impacts
- Employment (jobs created)
- Personal income impacts to local residents
- TPWD operating budget

(Combs, Susan; Texas Comptroller of Public Accounts, 2008)
The economic impact on sales indicates how the state park visitor expenditures recirculate within the local host county economy. However, the most significant indicator of economic impact can be seen in the contribution to the personal income of local residents by state park visitors. This measure illustrates how visitor spending directly affects the standard of living in the county.
The overall impact on Texas resident’s personal income by the non-resident/non-casual state park visitors to the state is important. The figure below shows the categories of expenditures that account for the economic impact on incomes in Texas. In addition, 8,078.8 regional jobs were created in 2006 based on the existence of state parks.
Local Parks

Also in 2006, The Perryman Group, a third party economic and financial analysis firm, was hired by the Texas Parks and Recreation Foundation (TPRF) to take a comprehensive look into the economic impact generated by the existence of local parks. The resulting study, *Sunshine, Soccer and Success: An Assessment of the Impact of Municipal Parks and Recreation Facilities and Programs on Business Activity in Texas* was the first exhaustive analysis to evaluate the economic impacts provided by local parks and other outdoor recreation facilities. This analysis revealed that local parks across the state in 2006 lead to the formation of 45,623 (gross) jobs, not only through maintenance and operation, but also through capital investment and direct tourism (The Perryman Group, 2006).

On a net basis, excluding government revenues needed to generate the funds, the economic impact reported was a massive $5.51 billion in spending and 38,390 jobs created. The study also found that the park acquisition and development grants awarded to local communities enhance the return in economic impact. Additionally, events, such as sports tournaments, held in local parks can help offset “57.7% of all direct outlays by municipal parks departments” (The Perryman Group, 2006). Looking at only initial and direct cost as a measure of putting on an event is short-changing the overall economic impact to the community. Just as in state parks, the ripple effect of visitor spending has a demonstrable economic benefit on the entire community. “Local parks represent a good investment of taxpayer dollars, bringing overall benefits which far exceed costs” (The Perryman Group, 2006).

The Perryman Group looked at three major systems which lead to economic gains from local parks:

- Expenditures for parks operations and maintenance
- Capital outlays for improvements, acquisitions, and related activities
- Stimulus from tourism directly linked to local parks

The following chart represents the findings by The Perryman Group regarding the economic impact generated within any given community by all activities related to the...
use of local public parkland. The results indicated take into account total expenditures by visitor spending, including retail sales, and personal income and are identified by Metropolitan Statistical Area (MSA).

<table>
<thead>
<tr>
<th>MSA</th>
<th>Total Expenditures</th>
<th>Gross Product</th>
<th>Personal Income</th>
<th>Retail Sales</th>
<th>Employment (permanent jobs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abilene</td>
<td>$33,960,278</td>
<td>$17,270,114</td>
<td>$10,923,841</td>
<td>$5,527,467</td>
<td>246</td>
</tr>
<tr>
<td>Amarillo</td>
<td>$47,349,548</td>
<td>$24,802,537</td>
<td>$15,807,637</td>
<td>$8,175,454</td>
<td>357</td>
</tr>
<tr>
<td>Austin-Round Rock</td>
<td>$354,956,896</td>
<td>$184,116,117</td>
<td>$118,080,984</td>
<td>$58,182,708</td>
<td>2,654</td>
</tr>
<tr>
<td>Beaumont-Port Arthur</td>
<td>$47,732,128</td>
<td>$24,095,004</td>
<td>$15,612,920</td>
<td>$9,202,067</td>
<td>356</td>
</tr>
<tr>
<td>Brownsville-Harlingen</td>
<td>$40,596,643</td>
<td>$21,066,629</td>
<td>$13,389,608</td>
<td>$6,584,253</td>
<td>311</td>
</tr>
<tr>
<td>College Station-Bryan</td>
<td>$35,019,512</td>
<td>$17,900,794</td>
<td>$11,486,195</td>
<td>$5,885,902</td>
<td>265</td>
</tr>
<tr>
<td>Corpus Christi</td>
<td>$76,999,578</td>
<td>$37,158,359</td>
<td>$23,756,711</td>
<td>$12,112,264</td>
<td>535</td>
</tr>
<tr>
<td>Dallas-Plano-Irving MD*</td>
<td>$1,169,657,204</td>
<td>$616,825,860</td>
<td>$388,918,532</td>
<td>$173,066,188</td>
<td>8,550</td>
</tr>
<tr>
<td>Fort Worth-Arlington MD*</td>
<td>$519,189,608</td>
<td>$257,411,173</td>
<td>$163,327,399</td>
<td>$79,776,790</td>
<td>3,681</td>
</tr>
<tr>
<td>El Paso</td>
<td>$109,491,338</td>
<td>$13,146,794</td>
<td>$8,313,635</td>
<td>$4,446,836</td>
<td>189</td>
</tr>
<tr>
<td>Houston-Baytown-Sugar Land</td>
<td>$1,633,618,973</td>
<td>$761,192,874</td>
<td>$483,576,317</td>
<td>$202,555,194</td>
<td>10,338</td>
</tr>
<tr>
<td>Killeen-Temple-Fort Hood</td>
<td>$67,121,525</td>
<td>$34,689,091</td>
<td>$22,404,679</td>
<td>$11,955,326</td>
<td>514</td>
</tr>
<tr>
<td>Laredo</td>
<td>$11,733,532</td>
<td>$6,162,138</td>
<td>$3,920,281</td>
<td>$2,474,906</td>
<td>94</td>
</tr>
<tr>
<td>Longview</td>
<td>$39,560,795</td>
<td>$20,631,735</td>
<td>$13,290,898</td>
<td>$7,309,893</td>
<td>301</td>
</tr>
<tr>
<td>MSA</td>
<td>Total Expenditures</td>
<td>Gross Product</td>
<td>Personal Income</td>
<td>Retail Sales</td>
<td>Employment (permanent jobs)</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------------</td>
<td>---------------</td>
<td>-----------------</td>
<td>--------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Lubbock</td>
<td>$55,729,760</td>
<td>$29,442,282</td>
<td>$18,822,948</td>
<td>$9,097,053</td>
<td>422</td>
</tr>
<tr>
<td>McAllen-Edinburg-Pharr</td>
<td>$64,386,560</td>
<td>$34,746,056</td>
<td>$22,358,438</td>
<td>$10,819,610</td>
<td>516</td>
</tr>
<tr>
<td>Midland</td>
<td>$29,177,728</td>
<td>$15,077,948</td>
<td>$9,538,765</td>
<td>$5,492,080</td>
<td>215</td>
</tr>
<tr>
<td>Odessa</td>
<td>$35,061,780</td>
<td>$17,435,030</td>
<td>$11,173,975</td>
<td>$6,670,454</td>
<td>256</td>
</tr>
<tr>
<td>San Angelo</td>
<td>$23,507,309</td>
<td>$11,700,585</td>
<td>$7,348,977</td>
<td>$3,870,166</td>
<td>169</td>
</tr>
<tr>
<td>San Antonio</td>
<td>$504,018,501</td>
<td>$255,163,373</td>
<td>$162,339,758</td>
<td>$79,409,049</td>
<td>3,671</td>
</tr>
<tr>
<td>Sherman-Denison</td>
<td>$19,244,069</td>
<td>$10,055,275</td>
<td>$6,446,167</td>
<td>$3,798,718</td>
<td>150</td>
</tr>
<tr>
<td>Texarkana</td>
<td>$16,345,024</td>
<td>$8,820,133</td>
<td>$5,706,117</td>
<td>$3,067,282</td>
<td>129</td>
</tr>
<tr>
<td>Tyler</td>
<td>$44,194,803</td>
<td>$22,218,583</td>
<td>$13,976,546</td>
<td>$7,416,929</td>
<td>316</td>
</tr>
<tr>
<td>Victoria</td>
<td>$21,821,919</td>
<td>$10,897,009</td>
<td>$7,000,713</td>
<td>$3,868,250</td>
<td>157</td>
</tr>
<tr>
<td>Waco</td>
<td>$42,593,920</td>
<td>$21,101,505</td>
<td>$13,286,907</td>
<td>$6,660,101</td>
<td>301</td>
</tr>
<tr>
<td>Wichita Falls</td>
<td>$28,534,630</td>
<td>$15,289,848</td>
<td>$9,849,602</td>
<td>$5,579,709</td>
<td>229</td>
</tr>
<tr>
<td>Non-MSA (rural counties)</td>
<td>$446,491,160</td>
<td>$234,132,077</td>
<td>$150,295,192</td>
<td>$85,359,358</td>
<td>3,468</td>
</tr>
<tr>
<td><strong>Total State Impact</strong></td>
<td><strong>$5,518,094,721</strong></td>
<td><strong>$2,722,548,923</strong></td>
<td><strong>$1,730,953,742</strong></td>
<td><strong>$818,364,007</strong></td>
<td><strong>38,390</strong></td>
</tr>
</tbody>
</table>

*Metropolitan Division, Source: U.S. Multi-Regional Impact Assessment System, The Perryman Group

The Houston-Baytown-Sugarland MSA represents the largest economic gain from the ripple effect associated with local public parklands and outdoor recreation facilities. With approximately $1.6 billion generated through total expenditures, in addition to the creation of 10,338 jobs, the local park system in the Houston-Baytown-Sugarland MSA has had an incredible impact on the local economy.

Communities across the state have benefited enormously from the existence of local parklands and other outdoor recreation facilities. The Perryman Group determined that, on average, the typical net annual impact of all activities associated with local public
parks on business activity across the entire state is $5.518 billion in total expenditures, in addition to the creation of 38,380 permanent jobs.

In summary, the worth of parkland and outdoor recreation is closely intertwined with the intrinsic value to society and the economic impact generated by visitor spending. Needless to say, our precious parklands, be it a community park or a state park, are a commodity that require careful planning, public input, and coordination with local organizations. Funding and community partnership are needed to identify and maintain the sites and facilities that create a balance for preservation, conservation, recreation, and economic value.
The Value of Parks and Recreation in Physical, Mental, and Social Well-Being

There are a number of well-documented health benefits that can be directly attributed to parkland and other community green space. For a community, having green space is important for individuals, the environment, and the community as a whole.

The environmental health benefits are primarily attributed to the improved water and air quality that the trees, prairies, and grasslands can provide. Mental health benefits ascribed to outdoor spaces include an increase in self-discipline, self-esteem, and most importantly, increased resilience in dealing with stress. The physical health connections to nature are well-documented and consist of increased immune system functioning, reduced anxiety and stress, in addition to increased cognitive function. However, the most important advantage of outdoor spaces on physical health comes in the form of reducing obesity trends by encouraging and providing meaningful space for exercise and physical activity.

While the environmental, physical, and mental health benefits are clearly documented, the value that green space has for the health of the overall community is tremendous. Parks and outdoor recreation facilities have a remarkable ability to foster positive social ties, a sense of belonging and neighborliness, in addition to crime prevention in the community at large. Reconnecting children with nature is a vital component of ensuring these positive benefits for future generations of nature stewards.

Environmental Benefits

In recent decades scholars from various disciplines have begun to design and implement studies to quantify and qualify the many environmental health benefits provided to a community by open space and parks. From protecting water resources to increasing air quality; parklands and green spaces can positively influence a community on several environmental levels.

Improved Water Quality

Water in Texas is sacred, especially in the more arid portions of the state and protecting the quality of this vital resource tops the list of environmental priorities. In recent decades, parklands (and the urban natural systems they support) have been proven to provide a natural, cost-effective form of water quality protection. An urban forest is comprised of any “high value trees in yards, parks, and along city streets (Texas Forest Service, 2012).” Roots from trees, shrubs and grasses perform a vital service by increasing infiltration of rainwater, reducing flood risk, soil and bank erosion, and by absorbing pollutants across the community.
By building and maintaining parks, a community can strategically place parkland and other greenways around its city to significantly reduce stormwater management costs. As Texas becomes a primarily urban society it will be particularly important to ensure that we do not make the mistake of paving our way into a water shortage (Funder's Network For Smart Growth and Livable Communities, 2011). Impervious surfaces, like concrete, disrupt the natural hydrological cycle by redirecting water through run-off, thus depriving aquifers the appropriate level of recharge. Furthermore, when pollution attributed to roadways and other impervious surfaces does not have a natural riparian buffer zone (such as a wetland), these pollutants are then deposited directly into rivers, streams, lakes, and other water bodies instead of being treated by the natural infiltration process that green spaces provide.

Promoting natural infiltration through a strong parks system can help communities accomplish multiple goals. First and foremost, parklands provide a place for urban vegetation. Trees increase soil aeration through their complex root systems, thereby increasing infiltration for rainwater. This process ensures that local aquifers, and the gaining waterways they feed, are being recharged. In addition, the complex root systems from urban green spaces serve to help absorb and treat some of the pollutants produced from urban run-off. “Trees and soils improve water quality and reduce the need for costly stormwater treatment (the removal of harmful substances washed off roads, parking lots, and roofs during rain/snow events), by intercepting and retaining or slowing the flow of precipitation (Nowak, et al., 2010).” Impervious surfaces restrict natural rainwater infiltration/aquifer recharge and contribute to stormwater run-off and other pollutants, while parks and community green spaces can help mitigate some of these impacts.

By protecting urban green spaces and parks, cities can directly reduce their stormwater management costs. According to a study by Dr. Jade Freeman and a team of top scientific experts, “The less forest in a source water drainage area, the higher water treatment costs (Freeman, et al., 2008).” An extensive statistical analysis was performed to determine the impact that increased urban forest cover has on water quality within areas served by drinking water treatment plants. Data was analyzed from 40-60 different drinking water treatment plants across the nation in 2004 and 2006, taking into account differing land cover ratios. It was discovered that the “water quality index seemed to be positively correlated with forest cover within 100ft (Freeman, et al., 2008).” This study draws the conclusion that water quality is positively correlated with forested land cover, thus, an increase in urban forests and parkland likely leads to positive gains in water quality. Increases in water quality from urban forests will decrease stormwater treatment costs for the local communities. Furthermore, an increase in green space and parkland will help reduce costs from traditional stormwater infrastructure because of the added ecological services.
“Over-development in regions with limited water resources, disruption of the water cycle through too much impervious surface, untreated run-off entering water bodies, and the destruction of the form and function of rivers, lakes, and other water bodies are making the United States increasingly vulnerable to water shortages and poor water quality.” (Funder’s Network For Smart Growth and Livable Communities, 2011). This is particularly true for the large concrete metropolises, such as Houston, where the high ratio of impervious surfaces and the destruction of the natural buffer riparian wetlands have led to frequent flooding. Parks and other open green spaces help to prevent flooding and absorb the pollutants from stormwater run-off. The Galveston-Houston area has started to recognize the financial and environmental benefits from promoting greenways and parklands as a stormwater management system and is the first major regional authority to do so.

The regional H-GAC is not the only Texas metropolis to work on implementing green infrastructure. Communities in North Texas, along with the entire county of Angelina, and other Texas municipalities are starting to realize the economic and environmental benefits from incorporating parks and connecting greenways into a strong green infrastructure system to reduce stormwater costs and improve the built urban environment in a planned and meaningful way.

**Improved Air Quality**

As demonstrated in the previous section on water quality; trees, shrubs, and grasses located in urban areas play a very important part for any community. A study by David Nowak and Gordan Heisler revealed the vital role that parks and urban trees play in air quality. Nowak and Heisler found that urban trees and green spaces have the ability to reduce air temperature, air pollution, ultra violet radiation, in addition to carbon dioxide.

Cities across the world suffer from higher temperatures than their rural counterparts because of a phenomena referred to as the Urban Heat Island (UHI) effect (see Figure 7.1). The UHI effect happens in cities because of an increase in short wave radiation linked to higher levels of impervious surfaces. “Heat islands can affect communities by increasing summertime peak energy demand, air conditioning costs, air pollution and greenhouse gas emissions, heat-related illness and mortality, and water quality (Environmental Protection Agency, 2008).” The trees, shrubs, and grasses found in parks and other urban green spaces can have a positive impact on reducing some of the effects from urban heat islands by having a cooling influence in parks, and to some extent, surrounding neighborhoods.

In partnership with the Conservation Fund and Houston Wilderness, the Houston-Galveston Area Council (H-GAC) has come up with a regional plan to implement green infrastructure efforts, like parks and connecting greenways, as a tactic to reduce flooding and stormwater infrastructure costs (The Conservation Fund, 2011).
Several studies show that there is a distinct connection between reduced air temperatures and the prevalence of green spaces. In Baltimore, “Patapsco Valley Park, which is heavily forested with 68% tree cover, was 13°F (7.1°C) cooler in the evening and about 5°F (2.7°C) cooler in daytime relative to the warm inner city (Nowak & Heisler, 2010).” These results were duplicated for multiple parks within Baltimore, and also within similar studies for other cities. Generally speaking, parks and urban green spaces have a cooling effect depending on acreage, type of vegetation, and quality of vegetation. Trees play an especially important role because they “evaporate significant amounts of water through their leaves (transpiration), which can significantly reduce local air temperatures (Nowak & Heisler, 2010).” Furthermore, urban park trees have the ability to reduce human exposure to ultra violet radiation (UV rays) by providing shady spots to walk, picnic, read, or play.

In addition to curbing the UHI effect, urban trees and parklands can have a measurable impact on reducing air pollution. “The Royal Parks of London were referred to as the “lungs of London” by several people in the early 1800s, and later Central Park in New York City was referred to as the “lungs of the city” by Fredrick Law Olmsted (Nowak & Heisler, 2010).” This turn of phrase can be very useful for visualizing how parks can reduce air pollution through absorption of ozone, sulfur dioxide, particulate matter, nitrogen dioxide, and carbon monoxide.

![Figure 7.1
Urban Heat Island Effect](image-url)
“Trees and vegetation in parks can help reduce carbon dioxide (a dominant greenhouse gas) by directly removing and storing carbon dioxide and indirectly by reducing air temperature and building energy use in and near parks. Park vegetation can increase carbon dioxide by either directly emitting carbon dioxide from the vegetation (e.g., decomposition) or indirectly through emissions from vegetation maintenance practices.” (Nowak, et al., 2010). Carbon storage and annual removal by urban park trees and soils in the United States is estimated at about:

- Carbon storage (trees): 75 million tons ($1.6 billion)
- Carbon storage (soils): 102 million tons of carbon ($2.1 billion)
- Annual carbon removal (trees): 2.4 million tons ($50 million)

Urban park trees in the United States remove 75,000 tons of air pollution annually, with a value of $500 million, thus, in addition to environmental benefits, urban park trees also have a positive economic impact on communities. (Nowak, et al., 2010).

There are a multitude of studies linking the positive benefits of parks and open space to an increase in air quality. “Trees save money and protect human health by reducing stormwater runoff, energy costs, and air pollution (Texas Forest Service, 2012).” The trees, shrubs, and grasses found in urban green spaces help to promote ecological services and environmental health.

The record one-year drought in 2011 devastated Texan’s on numerous levels, not to mention the death of many urban trees. “An estimated 5.6 million trees in urban areas were killed as a result of the drought. This figure may represent as much as 10 percent of the total number of trees that make up the urban forest (Texas Forest Service, 2012).” This devastating loss of urban trees is estimated to cause a net economic loss of “roughly $280 million per year (Texas Forest Service, 2012).”

The primary state strategy for encouraging urban tree growth is managed by the Texas Forest Service (TFS). The TFS established the Urban Forestry Program “to help build self-sustaining urban forestry and tree care programs in Texas communities (Texas Forest Service, 2012).” The Urban Forestry Program benefits communities in a variety of ways, and functions primarily through state-wide partnerships with local, state, and federal organizations. The local and state park systems in Texas play an enormous role in perserving the natural ecosystem services of urban green space by focusing on native, water-thrifty species. Given the nature of diverse needs from one community to the next, it is vital to have cross-sectoral partnerships.
There are a number of smaller regional plans and initiatives in place to support green infrastructure, parks, and municipal urban forests, like that seen in the Galveston-Houston Area. At the state level the TFS supports urban forests, while TPWD supports the public places for our urban forests through the State Park program, in addition to giving local park grants to municipalities through the Recreation Grants Branch, and by supporting education and outreach efforts in communities all across Texas. These interagency state partnerships are vital to supporting a strong statewide effort to promote parkland and green spaces.

Mental Health Benefits

In order to present a concise picture on the primary mental health benefits associated with outdoor space, a special emphasis will be placed upon the effects of outdoor parks on self-esteem, impulse control, resilience to stress, and ability to reduce stress. While the value gained by a walk in a park can be both intangible and obvious to most, there are other variables that do offer themselves for empirical study.

Self-esteem is an important facet to an individual’s sense of well-being, especially for children. In one Meta study, several individuals began a program to spend more time exercising in a park or wooded area and, as a result, reported a dramatic increase in self-esteem in the short term and noticeably in the long term. Furthermore, while individuals from all ages showed improvements, the largest gain in self-esteem happened with children, regardless of gender (Barton, 2010). A community could easily implement similar outdoor activities if they have access to outdoor recreational space.

In addition to increased self-esteem, self-discipline has also been shown to have significant improvement when individuals have easy access to parks or outdoor spaces. A study looking at the impact of access to green spaces on children living within a public housing setting revealed that proximity to green space led to higher levels of self-discipline. “Three aspects of self-discipline were tested: the ability to resist distractions, the ability to inhibit impulses, and the ability to delay gratification. On each of these measures, girls who lived in greener apartments scored higher than their counterparts (Kuo F. E., 2010).”

Lastly, nature has been found to have a therapeutic affect especially when buffering against unwanted emotions, such as depression and stress. In one study of children, two populations were questioned, focusing on indicators of self-worth, reaction to stress, and depression. One of the populations was in an area with many easily accessed gateways to nature, through parks and other green spaces, while the other population had little or no green outdoor spaces. It was shown that those children in areas with
plenty of accessible green space could handle the challenges of life easier, with lower cases of depression and healthy reactions to stress (Wells, 2003).

It has been shown that outdoor areas with high vegetation around an individual's home and access to parks are beneficial to everyone, especially our young. Parks and green spaces help buffer the ill outcomes associated with stress and depression, increase self-discipline and performance in school, and increase self-worth and feelings of social support. Providing parks and outdoor recreation is an easy and relatively inexpensive way to improve the morale and positive emotional states of individuals within a community, in addition to the community as a whole.

**Physical Health Benefits**

Many physiological health benefits corresponding with green environments have been studied as well. These health benefits can be easily seen in immune system functioning, overall improved health, and can even help expedite recovery from injuries or surgery. Furthermore, clear indications of cognitive improvement can be shown to be associated with time spent in green outdoor settings.

By having access to and spending time in green outdoor settings, individuals are more likely to experience good health outcomes and a reduction in negative outcomes associated with risky exposures. The correlation between exposure to natural green environments and positive increases in physiological health is easily shown with observational study.

In one study conducted in six urban Montreal neighborhoods, and 28 associated parks and outdoor spaces, health outcomes were compared with location. Those who were located in poor health regions had an obvious deprivation of resources from lack of any outdoor area in which to exercise, lack of parks for recreation, and an over-abundance of industrial sites and urban clutter, such as multi-lane roads. Furthermore, men who lived in the areas with increased outdoor and recreational space had a longer life expectancy than others (Coen, 2006). The study suggests that adding parks and outdoor spaces to areas with poor health outcomes can help reduce and combat illness.

Time spent in green spaces, or spent viewing green spaces from a window have been shown to bolster immune system function, and are especially helpful in maintaining resilience during times of great stress. An individual’s anxiety level can play a large role in health outcomes before and after surgery. It has been shown that having access to green areas, be it a small park or garden, reduces anxiety before surgery and reduces stress after surgery. This leads to a decreased recovery time, which translates to less costs associate with extended hospital stays and a better recovery outlook (Marcus, 1999).
The cognitive function benefits of being outdoors in parks, gardens, or recreational areas are fairly well understood. In one study looking at elderly and memory showed that those who rested in a garden, versus resting indoors, led to increased scores in concentration testing and recall ability. Those who rested indoors had no such cognitive improvement (Kuo F. E., 2010). As this result was seen with only one brief exposure to the outdoor garden, imagine how extended lifelong exposures could lead to even greater results.

Perhaps the most intriguing affect that nature can have on cognitive function can be seen in children, where time spent in green settings has the ability to increase focus and cognitive functioning in individuals suffering from attention deficit hyperactivity disorder (ADHD). In a study of children between the ages of 7 and 11, individuals who had been diagnosed with ADHD were sent on a walk through several different settings: a scenic walk through nature, a downtown city walk, and a neighborhood walk for 20 minutes in each setting. After each walk they were directed indoors to test cognitive function related to concentration and ability to focus. The difference in performance was surprising, after each test subject took the walk through nature, their scores for concentration increased dramatically compared with the tests taken after the other two walks. In addition, the nature walks increased the individual's concentration test scores by about the same, or even more than taking the two most commonly prescribed medications for ADHD (Kuo F. E., 2010).

Lastly, when looking at large populations and comparing areas with high vegetation density to areas with low vegetation density, experts can find a strong correlation between chronic mental health disorders and low access to green spaces. In a cross-sectional study an area that contained significant urban sprawl and relatively no accessible parks or outdoor spaces was examined. These areas suffered from 96 more chronic medical conditions per 1,000 residents, which is the same result one would expect if the entire population were to age by 4 years. Suburban design clearly plays a role in health outcomes (Sturm, 2004).

**Obesity and Preventable Diseases**

Obesity is one of the most challenging health issues the country has ever faced. Two-thirds of adults and nearly one-third of children and adolescents are considered obese or overweight (Trust for America's Health, 2011). This is not good news, as studies have shown that 50%-80% of overweight children remain overweight as adults (Interagency Obesity Council, 2011). According to a recent Gallop-Healthways Well-Being Index, Texas has two of the top ten fattest cities in America – Beaumont-Port Arthur at #5 and

© TPWD
McAllen-Edinburg-Mission at #1. (America’s Fattest Cities, 2012) Texas is near the top in terms of the most obese and overweight states, ranking in at 12th in 2011, putting Texans at increased risk for more than 20 major diseases (Trust for America’s Health, 2011)

The graph below (Figure 7.2) shows the quick pace in which we have become a population with more obese and overweight individuals. While the overweight category has remained somewhat stagnant, the obesity trends demonstrate an upward development that has not shown any signs of slowing. The trend clearly demonstrates an increase in obesity and a decrease in physically fit individuals.

![Figure 7.2](image)

Obesity is associated with a greater risk to a myriad of life-changing and life-ending diseases, such as Coronary Heart Disease (CHD), cancer, and diabetes. Perhaps the most widely acknowledged poor health outcome associated with a sedentary lifestyle and obesity is Type 2 Diabetes. Weight and inactivity are considered the top two risk factors associated with this serious and expensive disease. It is critical that we help manage the weight of the population, especially for our youth, as we are now seeing
more cases of Type 2 Diabetes in very young populations, a group that traditionally almost never acquired it. In Figure 7.3 we see the significant difference between obese and non-obese people with diabetes.

In addition to the decrease in health and quality of life for individuals, the cost of obesity is also hitting Texas employers. According to the Texas Comptroller's office, obesity cost Texas businesses $9.5 billion in 2009 with a projected cost of $32.5 billion by 2030 if current trends continue (See Figure 7.4).
As educated health professionals will claim, there are many things one can do in order to prevent or reduce mortality and ill health outcomes from diseases associated with obesity. The two most prevalent solutions include living an active lifestyle and making healthy eating choices.

A review of more than 200 research studies was published by the American Heart Association in 2011 that concluded that most cardiovascular disease can be prevented or at least delayed until old age through a combination of direct medical care and community-based prevention programs and policies. One of the key findings included that every $1 spent on building biking trails and walking paths would save an estimated nearly $3 in medical expenses. (Trust for America’s Health, 2012)

In order to address nutrition and obesity prevention, the 2007 Texas Legislature codified the Interagency Obesity Council (IOC) made up of the following state agencies; Texas Department of Agriculture (TDA), the Department of State Health Services (DSHS) and the Texas Education Agency. (TEA) Together these entities have implemented several initiatives to combat the obesity epidemic. One such initiative is the Growing Community Communications Campaign helping to educate and inspire local communities into action. The campaign introduces community residents, stakeholders and public health professionals on how community-based changes make a difference through increasing access and availability to healthier food and physical activity options. One way this is
done is through a video series highlighting local communities that are implementing these changes.

Both the City of Dallas and the City of Henderson focus on creating trails and improving parks to encourage an active lifestyle for their community in the Increasing Physical Activity video. To help the City of Henderson achieve this goal, they applied for and were awarded both a Local Park Grant and a Recreational Trails Grant through TPWD in 2008.

Parks and recreation are recognized as a valuable health service by many organizations, as diverse as the Center for Disease Control and Prevention, DSHS, the Robert Wood Johnson Foundation, the RAND Corporation, and the Trust for Public Land. One way TPWD is addressing the obesity problem is by participating in health-based strategies of Live Smart Texas and the Texas Action for Healthy Kids. These collaborations of health professionals and organizations recognize and welcome the healthy lifestyle choices offered through outdoor activity in natural areas.

One study looked at proximity to parks and the level of physical activity engaged by the surrounding populations. The study concluded that park space is the number one reason individuals engage in any activity at all beyond normal daily movement. This was especially true to minority populations (Coen N., 2007)

**Community Benefits**

There are a number of well-documented community benefits that are gained through the presence of parks and recreation facilities. In recent years numerous studies connect the importance of mental and physical well-being with access to parks and public green space. In addition to the positive effects on the individual, the larger, overarching community benefits include increased social ties and other evidence of positive social functioning, such as acts of kindness and neighborly caring. According to Frances Kuo, “vegetation is associated with better social behavior across the board…More green translates to less aggression, less transgression, more socialization, and more acts of caring (Kuo F. E., 2010).”

"The City can't tell people what to eat or not to eat or force people to exercise, but it can provide a place and an environment.”

Randy Freeman, City of Henderson
Former City Manager
Social Functioning

Social functioning is vital for a healthy community and parks can play an important role in fostering healthy social ties. Studies on the impact of green spaces, or lack thereof, on people are providing important considerations on planning for parks. “For the last 99.95% of the last two million years, our species has been on an extended camping trip, living in the wild and making our way by hunting and gathering; only in the last 10,000 years did we move into our first villages and develop agriculture (Kuo F. E., 2010).” This coupled with the population shift moving into urban areas has resulted in a rapid social evolution within a relatively short amount of time. Public health experts are only just discovering the multifaceted implications of living in increasingly urban environments. Studies have consistently shown that animals living in unfit environments begin to experience physical, psychological, and social breakdowns, and these same symptoms are being seen in humans living in unfit environments. Since the 1970s, psychologists and other scientists have been studying complex neighborhood social ties or NSTs, and over the last few decades, scientists have found a significant connection between green space and positive social functioning.

A study performed on the role of common space within a low-income housing development showed an interesting connection between the prevalence of green common space versus that of a concrete common space, and the role that environment played in determining neighborhood social ties. The results showed that the rate of simultaneous use of the common green spaces was much higher than the often desolate concrete common space. Authors also discovered that “the more vegetation in a common space, the stronger the neighborhood social ties near that space—compared to residents living adjacent to relatively barren spaces, individuals living adjacent to greener common spaces had more social activities and more visitors, knew more of their neighbors, reported their neighbors were more concerned with helping and supporting one another, and had stronger feelings of belonging (Kuo, Sullivan, Coley, & Brunson, 1998).” This study is an excellent example of a growing body of research which has discovered a strong correlation between access to green spaces and positive social behavior between neighbors (kindness, mutual trust, friendliness, sense of community).

Access to parks offer support for social opportunities and spontaneous play, where parents and children can connect with other peer groups. Formal and informal outdoor recreation activities have the ability to create a sense of being connected to the larger community. Just the presence of vegetation has been proven to have a positive impact on the sense of belonging. “A Dutch study of more than 10,000 households in the Netherlands used aerial photographs of the percentage of vegetation within 1 km and
In 1912, the Juvenile Protection Association stated that “recreation is the antitoxin of delinquency and the sooner it is administered the milder will be the disease and the better it will be for all children.” (Crompton & Witt, 1999).

Crime Prevention

The positive social functioning that is supported by parks and other green spaces can benefit a community in other, more readily measured ways too. “Since the 1800s, a consistent link has been made between youth’s opportunities to participate in recreation programs and the level of crime and delinquency. Thus the contemporary importance ascribed to providing recreation opportunities is not new.” (Witt & Caldwell, 2010). While parks and recreation have measurable impacts on state and local economies (Chapter 6), they also have other positive social benefits, such as reduced crime rates, which can lead to reduced community costs associated with criminal activity. Here we will explore how parks and recreation opportunities help youth avoid/reduce criminal activity.

Parks and recreation are especially important for reducing criminal activity in our youth population. “Safe parks and recreation centers topped the list when researchers asked adolescents what they wanted most during their non-school hours.” (Trust for Public Land, 1994). When those opportunities are not available, the instances of criminal acts increase. “Fifty-seven percent of all violent crimes by juveniles occur on school days, and 19% in the 4 hours between 3 p.m. and 7 p.m., based on the FBI’s National Incident-Based Reporting System data.” (California State Parks, 2005). This continues to be an important issue for Texas as 30% of the state’s population is under the age of 19.
Table 7.1
Age Populations Comparison of Texas Youth

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Texas Population</td>
<td>20,851,820</td>
<td>25,145,561</td>
<td>17.7</td>
</tr>
<tr>
<td>Under 5</td>
<td>1,624,628</td>
<td>1,928,473</td>
<td>15.8</td>
</tr>
<tr>
<td>5 to 9</td>
<td>1,654,184</td>
<td>1,928,234</td>
<td>14.2</td>
</tr>
<tr>
<td>10 to 14</td>
<td>1,631,192</td>
<td>1,881,883</td>
<td>13.3</td>
</tr>
<tr>
<td>15 to 19</td>
<td>1,636,232</td>
<td>1,883,124</td>
<td>13.1</td>
</tr>
<tr>
<td>Total &lt;5-19</td>
<td>6,546,236</td>
<td>7,621,714</td>
<td>14.1</td>
</tr>
<tr>
<td>Percent of Total Population 19 and less</td>
<td>31%</td>
<td>30%</td>
<td></td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, American Fact Finder, 2010

Data from the Texas Youth Commission (TYC) presents information on the ages of offenders and the cost associated with their incarceration.

“The cost for the assessment and orientation process for youth committed to the Texas Youth Commission is an additional expense that is only incurred during a youth’s initial 30 to 45-day stay at the Orientation and Assessment Units. All youth committed to TYC enter through the orientation and assessment units. The total cost per day for youth at the units is equal to the cost of assessment and orientation per day, plus the cost per day for a stay at a regular institution.

After youth are placed in their designated treatment facilities and are no longer receiving assessment and orientation services, the cost per youth per day decreases. The institutions cost per day reflected in this graph is an average. Specific costs can vary depending on the type of facility and whether youth are receiving specialized treatment. (Average Cost per Day per Youth, 2010).”

These daily cost figures translate into significant annual expenses; the annual expenditures are as follows: TYC institutions - $131,247, contract facilities - $74,303, and halfway houses - $102,934. No matter the location, this is a huge expense to the
state and local governments. Therefore, “park and recreation departments should be part of a community-wide approach to implementing youth directed supports, opportunities, programs, and services.” (Witt & Caldwell, 2010).

Table 7.2
Average TYC Incarceration Cost per Day per Youth

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment &amp; Orientation</td>
<td>$26.64</td>
<td>$26.72</td>
<td>$28.26</td>
<td>$37.95</td>
<td>$61.16</td>
<td>$63.84</td>
<td>$77.37</td>
</tr>
<tr>
<td>TYC Institutions *</td>
<td>$155.02</td>
<td>$153.20</td>
<td>$162.88</td>
<td>$190.07</td>
<td>$270.49</td>
<td>$323.05</td>
<td>$359.58</td>
</tr>
<tr>
<td>Contract Facilities</td>
<td>$123.59</td>
<td>$123.19</td>
<td>$128.66</td>
<td>$130.92</td>
<td>$147.41</td>
<td>$193.30</td>
<td>$203.57</td>
</tr>
<tr>
<td>Halfway Houses</td>
<td>$141.29</td>
<td>$139.83</td>
<td>$147.13</td>
<td>$152.46</td>
<td>$184.26</td>
<td>$204.26</td>
<td>$282.01</td>
</tr>
<tr>
<td>Parole Supervision</td>
<td>$10.51</td>
<td>$11.33</td>
<td>$10.95</td>
<td>$11.23</td>
<td>$13.61</td>
<td>$19.37</td>
<td>$23.13</td>
</tr>
</tbody>
</table>

Source: TYC, http://www.tyc.state.tx.us/research/cost_per_day.html

*Includes educational costs paid by TYC. Educational costs are not reflected in the total cost per day for contract care programs since that money is paid by the Texas Education Agency and local school districts, not TYC.

A study published in 1972 took a comparative look at census data, FBI crime statistics, and data from the Department of Health, Education and Welfare, in addition to the Department of Housing and Urban Development. The purpose was “to make a systematic inquiry into the public policy impact on crime-deterrence” (Cho, 1972) for 49 major cities in the U.S.

When local police and public policy makers are faced with rising crime rates, local governments tend to direct their efforts to control policies, which are for “law enforcement and criminal justice that directly affect” (Cho, 1972) a government’s ability to deal with criminals. In contrast, the “social services policies are…those that provide amenities and opportunities essential for the enhancement of the quality of urban life” (Cho, 1972), which includes per capita expenditures for recreation and parks.

“Studies have shown that well-maintained parks and active recreational programs reduce crime in urban areas. Unfortunately the opposite is also true, un-maintained parks (or no park space) and lack of recreational programs leads to high crime rates.” (Kennedy, 2011)

With the growing urbanization, parks and green spaces in the urban environment are important to reducing crime and these positive social benefits should be considered ahead of just providing for the beauty of green spaces.
Several cities have experienced positive benefits associated with service policies. For instance, in a 2002 report on Austin, TX used GIS spatial analysis to “evaluate the relationship between the amounts of greenness and the crime level, and results show that the vegetation within city environments can reduce crime and promote safer communities.” (Snelgrove, Michael, Waliczek, & Zajicek, 2004).

Furthermore, the conclusion of the Cho report states that “six of the seven service policy measures are significantly correlated with one or more crime variables. This finding does indicate that service policies affect crime rates more often than control policies.” The findings also support the conclusion that a “high level of...environmental service policies is most likely to be a significant deterrent.” (Cho, 1972).

In Phoenix, AZ the link between parks and recreation, police and the judiciary has been strengthened with two programs – “a grant from the Arizona Supreme Court which extended summer recreation programs and helped pilot new programs; the other is the Juvenile Curfew Program which keeps kids off the streets at night and puts them in recreation programs.” (National Recreation and Park Association, 1994).


In Austin, TX the Dove Springs neighborhood reported a 44% reduction in juvenile crime in 1998 following the opening of a recreation center and the introduction of a ‘Roving Leaders Program,’ sponsored by the Austin-Travis County MHMR. Recreational programs and facilities also have a crime-deterring impact. In Austin, TX the Dove Springs neighborhood reported a 44% reduction in juvenile crime in 1998 following the opening of a recreation center and the introduction of a ‘Roving Leaders Program,’ sponsored by the Austin-Travis County MHMR. Similar results were seen in Fort Worth, TX after the launch of ‘midnight basketball’ programs. While controversial, midnight basketball leagues have “…spread rapidly across the country in recent years – often with active support from local law enforcement agencies...particularly when they require participation in life skill workshops and other construction activities as a prerequisite for playing.” (Mendel, 2000)

The City of Los Angeles has implemented an anti-gang initiative that involves keeping parks open for certain hours at night with extensive programming and free food. For 2011, the Summer Night Lights program has led to a reduction in
Chapter 7 – The Value of Parks & Recreation in Well-Being

Texas Outdoor Recreation Plan 2012

“Though commonly viewed as expendable, parks are a vital component of the community and minimize long term avoidable costs associated with public safety, health and the local economy.” (Kennedy, 2011).

“The potential prevention benefits from such (recreation) programs may well exceed the benefits of prison, perhaps at much lower cost.” (Sherman, Gottfredson, MacKenzie, Eck, Reuter, & Bushway). In addition to reducing community costs from youth crime, parks and recreation programs also play a major role in creating safe, healthy, and productive people and neighborhoods.

Connectling Children with Nature

It has been found that children ages 8 -18 spend an average of 7.5 hours a day, over 50 hours per week, connected to a television, computer, video games and other electronic media (The Texas Partnership for Children in Nature, 2010). Providing nature-based experiences for the children of Texas is important to their health, education, and well-being. Numerous studies have confirmed the importance of connecting children to nature. Offering access to unique outdoor recreation opportunities, in addition to providing educational outreach programs for children and families, is the first step to reversing this disturbing trend.

As a major player in the state and local parks system, the TPWD Recreation Grants Branch offers funding for a program that introduces underserved populations to outdoor recreation activities. The Texas Legislature first approved funding for the Community Outdoor Outreach Program (CO-OP) in 1996 and the program was later codified in 1999. As a component of TRPA, this grant program provides funding to local governments and non-profit organizations for programming that introduces underserved populations to environmental and conservation programs, as well as, TPWD...
mission-oriented outdoor activities.

The success of this program lies in the partnerships created between TPWD and community organizations who have already established a relationship with these identified targeted audiences; namely, females, physically/mentally challenged individuals, ethnic minorities, low income communities, and youth populations. The CO-OP provides program funding, outdoor training, and other TPWD resources while building long term relationships with participants. This type of collaboration has the potential to introduce new users to the wonders and benefits of the outdoors, thus creating lifetime users and supporters.

In 2005, Richard Louv, in his groundbreaking book *Last Child in the Woods*, coined the term ‘Nature-Deficit Disorder.’ Although it is not a clinical disorder, it describes the essence of what many have believed; namely, that being in nature is not just a ‘nice to have’ experience, but is critical to human health and development. In his book he challenged us to bring community planners, health professionals, educators, and organizers under one tent to reconnect children with nature. The book spawned an international movement. In the U.S., a national organization with numerous grassroots campaigns has sprung up around the country, including Texas. The movement to connect children with nature resonated swiftly and deeply in Texas, crossing geographic, economic, political, and ideological boundaries.

As the state’s primary outdoor recreation provider, TPWD recognized the importance of this rallying cry. In 2006, TPWD facilitated a collaboration of volunteers who developed outreach materials, recruited others to share in the message, and developed a recognition program called Green Ribbon Schools ([www.greenribbonschools.org](http://www.greenribbonschools.org)). In 2009, a bipartisan group of Texas legislators requested that TPWD, along with three other state agencies, create a public-private partnership and strategic plan.

In 2010, TPWD and other stakeholders, through Texas Children in Nature (TCiN), convened a diverse group of over 85 professionals in health, education, recreation, and the built environment to develop a Texas strategic plan to connect children and their families to nature by increasing opportunities across the state. In December 2010 the group held a statewide conference of over 300 professionals to launch the plan. Conference attendees also volunteered to work on action teams and regional collaboratives based on the plan.
As a result of the strategic plan, today we have the following cooperative structure in place:

<table>
<thead>
<tr>
<th>TCiN Community</th>
<th>Informal group with open membership that meets at locations around the state to share news, tools and a common message</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCiN Steering Committee</td>
<td>Representative leadership supporting the effort and overseeing implementation of the plan</td>
</tr>
<tr>
<td>Action Teams</td>
<td>Working on specific statewide goals in the plan</td>
</tr>
<tr>
<td>Regional Collaboratives</td>
<td>Local partnerships who are creating regional web sites, holding events and providing outreach based on the organization of the plan</td>
</tr>
<tr>
<td>Children in Nature Network</td>
<td>TPWD maintains a leadership presence at the national level.</td>
</tr>
</tbody>
</table>

The body of this strategic plan and its findings are included in Appendix F. The Texas Children in Nature Strategic Plan identifies the following goals for promoting health, education, access, and community:

**Health**

A growing body of evidence points to the benefits of physical activity and play in nature to children’s physical and mental health and development. More research is needed, but we know enough to act. We envision healthier children and families as a result of increased time spent in nature and more outdoor physical activity.

- Utilize healthcare and related professionals to educate families about the benefits of nature to children’s physical health, emotional well-being, and cognitive functioning; the importance of nature and outdoor activities for healthy child development; and safety precautions.
- Encourage Texas-specific research to describe the causal relationship between nature and children’s health and development, including the therapeutic benefits of nature.
- As appropriate, encourage integration of nature opportunities as a health strategy in existing health and childcare guidelines.
- Promote health considerations in urban and community planning.
**Education**

Natural resource literacy is the ability to understand, analyze and address major natural resource opportunities and challenges. The goals to achieve natural resource literacy through education includes educating school administrators, educators and future educators; tracking students’ outcomes and experiences; integrating local informal resources; involving parents; and assessing these processes and outcomes. Our vision is that every child in Texas will be engaged in meaningful outdoor learning experiences and achieve natural resource literacy.

- Increase the understanding, appreciation and use of experiential learning outdoors within the formal education system.
- Develop quality outdoor classrooms, wildlife habitats and natural play areas on every Texas schoolyard.
- Develop integrated and collaborative partnerships between the formal education and informal systems and resources to benefit Texas youth.
- Assess the effectiveness of natural resource literacy education in Texas.

**Access**

Safety, convenience and multi-purpose design are essential to developing a connection with nature and a sense of place, the building blocks to conservation stewardship. We envision a Texas where children and their families have safe, convenient, sustainable, and desirable access to the outdoors, where they can develop respect and appreciation for the natural environment.

- Optimize access to natural areas to make them safe and convenient.
- Partner with government agencies, nonprofits and the private sector, in coordination with youth, to provide increased access to Texas lands and waters.
- Encourage creation and expansion of natural areas that provide varied and recurring nature-based experiences.

- Plan, develop, or expand built environments to include natural areas with interpretive elements.

---

The Texas Children in Nature policy priorities include acquisition of natural areas close to population centers, funding for the State Parks system and Local Park grants programs, and support for outdoor and natural resource education at public schools.
Community

Connecting with nature must be relevant and welcoming to all, including unifying messages, partnerships and efforts that are respectful to Texas’s diverse peoples, cultures and economic needs. We envision that the message “Happier, Healthier, Smarter” Children in Nature is widely and mutually communicated and that communities inspire children to maintain a lifelong connection to nature.

- Raise awareness and action among adults and children through consistent and unified communication.
- Create community-based regional partnerships throughout Texas to increase “children in nature” activities.
- Promote the cultural and economic gateways and benefits through nature-based opportunities.

Conclusion

Strategic planning, partnerships, recreational programs, and an increase in parklands and recreational spaces contribute to the solution to a myriad of problems facing today’s society. As shown throughout this chapter, there is strong evidence to support the positive relationship between improved physical, mental, and social well-being and direct access to parklands and outdoor recreation programs. These benefits, coupled with the economic value presented in Chapter 6, create a return on investment that is too great to ignore. Please see Figure 7.5 for a summarized flow chart of benefits.
Figure 7.5
How Investing in Parks and Recreation Benefits Society

INVESTMENT
Park acquisition, conservation, development, operations, and outdoor recreation programming from both public and private entities
Strategic planning among public officials, private entities, law enforcement, healthcare providers, educators, and recreation professionals

ECONOMIC RETURN ON INVESTMENT
Creates jobs & attracts new businesses
Increased business revenue
Increased sales tax revenue
Increased property values
Reduced stormwater management costs
Reduced energy costs
Reduced healthcare costs
Reduced incarceration costs

SOCIETAL RETURN ON INVESTMENT
Physical Health Benefits
- Reduced obesity/diabetes rates
- Longer life expectancy
- Improved memory in the elderly
- Increased focus for ADHD
Community Benefits
- Reduced crime rates
- Improved neighborhood social ties
- Lower school dropout rates

Mental Health Benefits
- Lower stress levels
- Decrease in depression
- Increase in self esteem
- Improved school performance

Environmental Benefits
- Improved water quality
- Improved air quality
- Increase in water conservation

IMPROVEMENTS
Expansion of publicly owned parkland
Improved access to parks
New and improved recreational facilities
Increase in recreational programming
Safer and healthier parks and communities
Sustainable Park Design

Introduction

Using sustainable techniques in the design and construction of public parks and other outdoor recreation supports the broader mission of TPWD, to manage and conserve the natural and cultural resources of Texas for the use and enjoyment of present and future generations. Parks provide important community space, valuable open space, and areas for maintaining biological diversity. There is immense added value to outdoor recreation areas across the state when sustainable measures are incorporated into the construction and maintenance of these public spaces.

Specifically, sustainable parks can be less expensive to operate, repair, and maintain. They can also have a variety of environmental benefits including reduced stormwater pollution, support for native species, and improved ecosystem services. Additionally, by utilizing sustainability as a key design element, recreation providers can provide an example of environmental stewardship to Texas citizens. Incorporating sustainable design elements helps to accommodate current demands for outdoor opportunities while also ensuring that the needs of future generations can be met.

This chapter provides several strategies for identifying a wide range of ways in which recreation providers can deal with financial obstacles and create sustainable outdoor recreation opportunities to meet public demand now and in the coming years. Numerous studies and reports have demonstrated that though sustainable, ‘green’ buildings may incur initial increases beyond conventional construction costs, this premium is more than compensated for over the lifetime of the building in proven financial returns such as savings in utility bills, increased property values, and user productivity gains.

A move from solely recreation-based parks to sustainable parks not only improves the quality of the natural environment, but also adds to the visitor experience in the park and the community in general. Many of the initiatives defined within this chapter are outlined in the Sustainable Sites Initiative™ (SSI), which was developed by a partnership between the American Society of Landscape Architects, the Ladybird Johnson Wildflower Center at the University of Texas in Austin, and the U.S. Botanical Garden.

The SSI, offers a set of “voluntary national guidelines and performance benchmarks for sustainable land design, construction, and maintenance practices.” (American Society of Landscape Architects, Ladybird Johnson Wildflower Center, U.S. Botanical Garden, 2009). The SSI is modeled after the Leadership in Energy and Environmental Design (LEED®) Green Building Rating System™ and is a 250 point rating system based on 15 prerequisites and 51 credits. The U.S. Green Building Council anticipates
incorporating the SSI rating system into future versions of the LEED Green Building Design Rating System™. In an attempt to increase the validity of TPWD’s Sustainable Park Design initiative, many of the key elements outlined are further supported by the prerequisites and credits listed under the SSI SITES rating system.

Land practices are defined as sustainable if they enable natural and built systems to work together to “meet the needs of the present without compromising the ability of future generations to meet their own needs.” (American Society of Landscape Architects, Ladybird Johnson Wildflower Center, U.S. Botanical Garden, 2009). It should be the goal of all public outdoor recreation projects, buildings, and sites to strive to follow as many of the LEED and SSI™ concepts as possible, even if the projects are not participating in full and formal certification.

This chapter seeks to explore and analyze the outdoor recreation issues that will be of concern to public agencies in the coming years. Rising costs of utilities are impacting operation budgets. Looking to sustainable methods is an effective way to mitigate these impacts, in addition to ensuring the future of ecosystem services. Maintaining and promoting natural ecosystem services is very important for the environment and the economy because ecosystem services provide a large and often overlooked economic benefit. Additionally, as new generations of Texans become park users, their education and life experiences influence their expectation of parks. Young people today recycle at school, study natural resource conservation, and take environmental issues seriously. These lessons can be further ingrained by seeing sustainable practices in place at their parks.

The primary objective of this chapter is to assist recreation providers in developing a comprehensive strategy to incorporate sustainable park design for their unique park systems. There are many diverse regions within the state of Texas. A sustainable solution that works well in Central Texas may not be as effective in Far West Texas. This chapter provides a starting point for recreation providers to help identify specific solutions for implementing sustainable design elements into the creation, construction, and maintenance of outdoor recreation lands across the state.

Techniques for Sustainable Park Design

This chapter will outline techniques for addressing sustainability for the following elements of park design and environmental stewardship:

- Planning, Evaluation, and Monitoring
- Land Conservation
- Building Materials
- Energy Conservation
- Water Conservation
- Stormwater Management
- Wetlands, Streams, and Shorelines
Planning, Evaluation of Resources, and Monitoring

In order to begin implementing sustainable park design into a local park system, recreation providers must first identify the natural resources offered by their regional environment. An ideal way to accomplish this is to create a Natural Resource Inventory. Additionally, after this step, recreation providers are encouraged to develop a Natural Resource Management Plan, which highlights objectives and strategies for meeting the objectives. It is also important for recreation providers to develop a baseline understanding of each impacted site so that they may create a monitoring system to track the positive benefits for their efforts. The following sections provide further detail about the Natural Resource Inventory, the Natural Resource Management Plan, in addition to Monitoring and Evaluation techniques.

Natural Resource Inventory

A Natural Resource Inventory is a list and description of all the characteristics of the land, including soils, bedrock, ground and surface water, vegetation, and wildlife, in addition to the built landscape (roads, trails, utility rights-of-way, buildings). It can be a valuable resource for assessing which sustainable techniques will apply best to each individual site.

More Information:
TX Natural Resources Information System - www.tnris.org/
National Park Service NRI Guide - science.nature.nps.gov/im/index.cfm

Natural Resource Management Plan

A Natural Resource Management Plan is a document that outlines the objectives for park management and provides a list of actions for meeting the objectives. The level of detail may vary depending on the area being evaluated. There is a wide variety of ways to develop a resource management plan depending on respective needs and use.
Evaluation and Monitoring
As recreation providers continue with efforts to sustainably manage a site, they can look to their Natural Resource Inventory to help in documenting and evaluating the effect of their efforts. Monitoring the performance of sustainable design practices is useful when determining how an area has been affected. Keeping up to date with the impact that efforts have made will help in the continuation to plan for the future.

Land Conservation
Whether developing a new park system or maintaining a current one, recreation providers must consider each individual site, in addition to potential impacts from site development and construction. The following sections outline some important sustainable design components to keep in mind.

Greenfields, Greyfields, Brownfields
Greenfield land is a term used to describe undeveloped land in a city or rural area. Rather than build upon a greenfield space, developers may choose to re-develop a brownfield or greyfield area. Those are areas that have previously been developed but have been left abandoned or underutilized. The term greyfield has historically been applied to formerly viable retail and commercial shopping sites (such as regional malls and strip centers) that suffer from lack of reinvestment and have been "outclassed" by larger, better designed, better anchored malls or shopping sites. Unlike brownfields (which feature actual or perceived levels of environmental contamination) a hidden value of greyfields, in many cases, is the presence of underlying infrastructure (such as plumbing and sewer, electrical systems, foundations, etc.) that allow a developer to more efficiently improve the site through major or minor capital expenditures.

More Information:
University of Florida NRMP - edis.ifas.ufl.edu/fr126

Land Conservation:
SSI Areas Addressed: P1.1, P1.4, P7.1, P7.2, C1.5, C1.6, C7.3, C7.6

- Limit development of soils designated as prime farmland, unique farmland, and farmland of statewide importance
- Preserve threatened or endangered species and their habitat
- Control and retain construction pollutants
- Restore soils disturbed during construction
- Select brownfields or greyfields for redevelopment
- Select sites within existing communities
- Restore soils disturbed by previous development
- Minimize generation of greenhouse gas emissions and exposure to localized air pollutants during construction
expenditures. A brownfield site (or simply a brownfield) is land previously used for industrial purposes or certain commercial uses. The land may be contaminated by low concentrations of hazardous waste or pollution, and has the potential to be reused once it is cleaned up. For instance, a former landfill site may be transformed into a community park.

More Information:
EPA Brownfields - [epa.gov/brownfields/overview/glossary.htm](http://epa.gov/brownfields/overview/glossary.htm)

Site Development Impact

Cities are getting larger, squeezing out the open spaces for parks and disconnecting the state’s biological resources. Re-developing areas rather than building on previously undisturbed land minimizes the impacts of sprawl. Limiting development on open spaces helps to protect the habitats of threatened or endangered species and limits development on soils with prime farmland, unique farmland, or farmland importance.

Construction Impact

Minimizing the impacts of development can have several positive impacts on the natural environment. Controlling and retaining construction pollutants helps minimize pollutants that enter the watershed and ultimately the community drinking water supply. Restoring soils disturbed during construction and other development helps to encourage plant growth which minimizes additional stormwater runoff. (See the Water Conservation and Stormwater Management sections for more information.)

Building Materials

The choice in building materials can have a significant impact on the degree of sustainability in park design. By choosing recycled, reused, or sustainably sourced materials; recreation providers can drastically reduce the negative impacts associated with construction. Furthermore, by planning into the future and using materials that can easily be deconstructed and reused, recreation providers can further ensure sustainability efforts for future generations. Another sustainable way to cut down construction costs for outdoor recreation areas is to utilize Natural Play Elements over traditional playscapes. The following sections go into further detail.

Building Materials:
SSI Areas Addressed: P5.1, C5.3, C5.4, C5.5, C5.6, C5.7,

- Eliminate the use of wood from threatened tree species
- Design for deconstruction and disassembly
- Reuse salvaged materials and plants
- Use recycled content materials
- Use certified wood
- Use regional materials
Reused Materials

Reuse of building materials is one of the most sustainable activities associated with our built environment. Buildings can be deconstructed in such a way that the materials being removed may be reused for new construction. Through the reuse of the materials, rather than disposal, landfill waste is minimized, consumption of new and raw materials is reduced, and fuel pollution and consumption is mitigated when materials are reused on-site. The American Society of Landscape Architects has put together an excellent video showcasing how the deconstruction and reuse of building materials may be used to develop a sustainable park. See the video here: vimeo.com/18507807

More Information:
Building Materials Reuse Association - www.bmra.org/
Habitat for Humanity Re-Store - www.habitat.org/restores/

Recycled Materials

Thanks to the work of educators, government programs, and community organizations the word “recycled” is a familiar term to most individuals but determining exactly what benefit to the environment is being achieved can sometimes be difficult to discern. Products can be purchased that tout that they are recyclable, are made of recycled content, and are made from post-consumer content, however, they do not all carry the same positive impact on the environment.

Recycled-content products are made from materials that would otherwise have been discarded. That means these products are made at least partially from materials that have been recycled. When a product is labeled ‘recycled content,’ the material might have come from excess or damaged items generated during normal manufacturing processes and not collected through a traditional recycling program. Most of the time when people consider the term ‘recycled’ they are thinking of post-consumer products. Post-consumer content is a material that has served its intended use and instead of being disposed of it is being reused in a different product. Recyclable products can be collected and remanufactured into new products after they’ve been used. These products do not necessarily contain recycled materials and only benefit the environment if people recycle them after use.
The EPA has published a document helping to guide the purchase of recycled content materials for parks & recreation products and provide a minimum suggested recycled content level. This document can be found by searching for the 2007 Buy-Recycled Series: Park and Recreation Products.

**Sustainable Materials**

The use of sustainable materials is a way to minimize impact on the environment by selecting materials that are easily renewed, reused, or recycled. An excellent example of a sustainable material is bamboo. It grows quickly (a.k.a. rapidly renewable) and can be used in place of endangered hardwoods. The Forest Stewardship Council provides a certification system to verify woods that are harvested and manufactured using principles of sustainability. The use of local or regionally manufactured materials can also be considered sustainable because the products do not require as much fuel traveling to the work site.

*More Information:*
Forest Stewardship Council - [www.fscus.org/](http://www.fscus.org/)
EPA’s Sustainable Materials Management - [www.epa.gov/osw/inforeresources/pubs/vision2.pdf](http://www.epa.gov/osw/inforeresources/pubs/vision2.pdf)

**Natural Play Elements**

Playgrounds over the past 20 to 30 years have been narrowly designed for specific age ranges, practically eliminating appropriate playgrounds for pre-teens and teenagers. These “sterile” playgrounds constrict the learning and play possibilities for all children. Playgrounds have become less and less challenging and interesting for children. Over the past several years the interest in “adventure” or “natural” playgrounds has increased tremendously, especially in urban neighborhoods. These types of playgrounds are based on the belief that children should be offered a safe place to play, where they can manipulate and create their own play environment. This in turn helps children develop skills, no matter the age, to solve problems, be creative, invent, and organize.

Natural Play Elements consist of loose materials such as wood blocks, logs, and limbs; tires, sand, water, or anything that might be found around the site. Natural terrain, vegetation, rock outcroppings, and other natural features feed into the play experience. As these types of playgrounds may not be appropriate for all situations and sites, planners and designers are encouraged to analyze all aspects to assess the feasibility for such facilities, including the feasibility for long term maintenance of the area.

Several resources on this subject may be found on the Internet and in various books, the newest being by Lisa Horne, entitled *Nature at Play.*
Building Deconstruction

Building materials reuse is one of the most sustainable activities associated with our built environment. Deconstruction is the practice of disassembling a building in such a way that the materials (joists, flooring, siding, fixtures, and more) can be reused for new construction. With some planning and forethought, deconstruction is a cost competitive alternative to conventional building demolition.

Energy Conservation

Reducing energy consumption is an important feature of sustainable park design. By curbing energy usage, recreation providers can reduce greenhouse gas emission associated with energy consumption. There are multiple techniques available to accomplish this goal including the use of renewable energy sources. Additionally, utilizing more efficient materials, such as energy efficient lighting and efficient mechanical systems, can help reduce energy consumption. Another important component for recreation providers to consider is the use of alternative transportation for internal usage. This section identifies strategies for achieving greater energy conservation.

Thanks to a grant from the American Recovery and Reinvestment Act, TPWD has installed over 450kW of renewable solar energy. These projects are scattered across the state in 18 facilities.
Renewable Energy sources

The Texas Legislature defines renewable energy as “any energy resource that is naturally regenerated over a short time scale and derived directly from the sun (such as thermal, photochemical, and photoelectric), indirectly from the sun (such as wind, hydropower, and photosynthetic energy stored in biomass), or from other natural movements and mechanisms of the environment (such as geothermal and tidal energy). Renewable energy does not include energy resources derived from fossil fuels, waste products from fossil sources, or waste products from inorganic sources." (Public Utility Commission of Texas). One of the most important benefits of renewable energy is the fact that it’s non-polluting. An often overlooked advantage of renewable energy is that it benefits the local economy because most of the money invested in renewable energy stays within its same state or county. Additionally, once the initial investment has been paid off, a renewable energy system can make a large impact on reducing energy costs. Photovoltaic solar panels currently have a life span of up to 50 years!

Efficient Lighting

Efficient outdoor lighting can produce significant energy and cost savings. Additionally, when combined with dark sky principles, which seek to minimize the amount of light pollution created by outdoor lighting, it can have an even more significant impact on the environment. There are many efficient outdoor lighting products on the market and newer, more efficient alternatives are being introduced each year. Communicate to your designer that you want to invest in the most efficient lighting product that will meet your needs. Evaluate the equipment that will work best for the specific situation and examine the full operational cost along with the initial “first” cost of the equipment to determine the most sustainable choice. Do not forget to consider the operations cost of bulb replacement and maintenance. Having to rent expensive equipment to reach high places can sometimes offset the added cost of more expensive equipment if it has a longer anticipated burn time.

More Information:
Department of Energy Day lighting Information –
www.energysavers.gov/your_home/lighting_daylighting/index.cfm/mytopic=12020

Efficient Mechanical Systems (pumps and motors)

Selecting efficient mechanical equipment will have a long-term impact on the energy use of a site. Pumps and motors can have increased efficiency with Variable Frequency Drive (VFD) Motors, which can operate at partial capacity when only a portion of the work is needed, thereby conserving energy. If your site has air conditioning, selecting a
unit with a higher Energy Efficiency Rating (EER) or Seasonal EER (SEER) can also make a noticeable impact on utility savings. Currently, many areas have a code that requires a minimum efficiency of 13 SEER on smaller rooftop HVAC units. Upgrading that unit beyond current code, to a 16 or even 17 SEER unit, for example, will cost more up-front and may need to be pre-ordered by the contractor, but can yield savings over time that pay down the upfront expense of that unit. Ask your HVAC technician or contractor to see what types of efficient equipment are available for your needs. Additionally, a smaller unit may be used if you have taken supplementary measures to improve the envelope (walls, flooring, and roof) surrounding your building, which can help reduce initial unit cost.

More Information:
CEE Paper on System Efficiency –
www.advancedbuildings.net/29-mechanical-systems-efficiency

Alternative Transportation

About half of the energy used in the US is consumed through the use of automobiles and trucks, and burning just one gallon of gasoline emits almost 20 pounds of carbon dioxide; a greenhouse gas. There are several ways to encourage park users to utilize alternative transportation. Parks may offer more traditional support for alternative transportation such as bike lanes and safe bike parking, as well as bus stops, sidewalks, and connecting trails. Some sites are even using preferred alternative fuel vehicle parking and electric vehicle charging stations to encourage site users to invest in and use alternative transportation.

More Information:
NPF Program – www.nationalparks.org/news/?fa=viewArticle&articleID=2516
NPS Program at Glacier Bay – www.nps.gov/glba/parknews/alternative-transportation-program-at-glacier-bay.htm

Water Conservation

Ensuring water conservation is one of the number one elements to incorporating sustainable park design into a parks system. Water conservation is particularly important in Texas, where a large portion of the state’s climate ranges from semi-arid to arid. There are several methods available to reduce water consumption in an outdoor recreation area including only using limited irrigation on landscapes, implementing a rainwater catchment system, in addition to reusing or recycling water for various needs. These

Water Conservation:
SSI Areas Addressed: P3.1, C3.2, C3.8

- Reduce potable water use for landscape irrigation by 50% from established baselines
- Reduce potable water use for landscape irrigation by 75% or more from established baselines
- Maintain water features to conserve water and other resources
methods for improving water conservation efforts are outlined below.

Irrigation

Licensed irrigation designers need to work hand-in-hand with landscape architects to ensure proper amounts of water are applied specific to the plant material installed. Overwatering of plant material can weaken the plant and allow disease and pests to attack the weak plant. Overwatering can also cause soil compaction. Efficient design of the system to avoid over spraying in some local governments is mandated by law and/or ordinance and should be investigated. Water for irrigation can also be utilized for rainwater catchment systems.

Rainwater Catchment

Rainwater harvesting is the capture and storage of rainwater for landscape irrigation, potable and non-potable indoor use, and stormwater abatement. Harvested rainwater can be particularly useful when no other source of water supply is available, or if the available supply is inadequate or of poor quality. Collecting rainwater can also provide a consistent water resource for wildlife, help to reduce water utility bills, and mitigate the negative impact of stormwater runoff on local streams and rivers. Even a small roof can collect a large amount of rainwater. For example, if you have a 1,000 square-foot roof, for every inch of rain that falls you could yield about 600 gallons of water! (1000 x 0.6 = 600) Rainwater catchment is a powerful water conservation tool, and will become more important in the future.

In 2011 Texas faced one of the most serious droughts on record. Rainwater catchment helps conserve precious fresh water resources both for humans and wildlife.

More Information:
American Rainwater Catchment Systems Association - www.arcsa.org/
Tx Water Development Board - www.twdb.state.tx.us/innovativewater/rainwater/

Water Reuse

Water reuse is an important water management strategy to help meet the growing demands being placed on available water supplies. Although it is a relatively new sustainability practice, it is rapidly becoming a more accepted method of conserving
scarce water resources. Water reuse involves using recycled water in a wide variety of applications, including landscape and agricultural irrigation, toilet and urinal flushing, industrial processing, power plant cooling, wetland habitat creation, restoration and maintenance, and groundwater recharge.

More Information:
TX Water Development Board -
www.twdb.state.tx.us/innovativewater/reuse/faq.asp

Stormwater Management

Incorporating stormwater management techniques into a parks system can help recreation providers save money by maintaining and encouraging natural filtration systems. Having an appropriate stormwater management system can reduce runoff and reduce the heat island effect. An effective way to incorporate stormwater management into a sustainable park design is to utilize erosion control mechanisms. For more information on erosion control, please see below.

Erosion Control Mechanisms

Erosion control mechanisms can make a significant impact on community water quality by limiting the disruption of natural hydrology, increasing on-site filtration and even reducing pollution and contaminants in local rivers and streambeds. This is achieved by directing stormwater and other contaminated sources through manufactured wetlands or other natural filtration devices. Reducing the amount of impervious cover may also act as an effective filter for stormwater runoff and can reduce the heat island effect. Innovative products are now on the market to help achieve these measures including permeable paving. There are also local and national ordinances and laws that regulate this based on the size of the project. Designers should check to verify rules that may govern individual projects.
Wetlands, Streams, and Shorelines

Wetlands, streams, and shorelines provide a natural buffer during tropical storms and natural flooding events. They can act as a filter of contaminants and provide valuable scenic opportunities. These areas also provide hatchery and nursery areas for many fish and other wildlife. Designers should comply with any governmental regulations or ordinances that may govern individual projects.

More Information:
Texas Treasures - [www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_bk_k0700_0908.pdf](http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_bk_k0700_0908.pdf)

These wetlands at the Sheldon Environmental Learning Center provide habitat to nearly 250 bird species throughout the year including the Rosette Spoonbill, Osprey, and Bald Eagle.
Landscaping

Texas is geographically large and there are many climate and ecosystems that exist in the state. As such, specifics for the categories listed below can change from region to region of the state, and may even vary within a county. It is recommended that recreation providers contact the Texas County AgriLife Extension Service in the county in which the project resides for help on specific projects. For information on how to contact a specific county agent refer to www.agrilifeextension.tamu.edu

Integrated Pest Management strategies

Integrated Pest Management (IPM) is a strategy used in home, commercial, public, and horticultural/agricultural landscapes to manage insect pests by using economically and environmentally sustainable management practices. IPM programs do not eliminate or eradicate pests, but are geared more to strengthen a plant and its ecosystem so that plants are able to combat problems. The concepts used in today’s IPM strategies evolved from those used in apple and cotton production during the 1950s and 1960s. Using chemical treatment to combat plant pests is no longer viable, environmentally or culturally. IPM utilizes a combination of landscape practices to combat pest problems before they crop up. These practices include:

- Utilize disease and pest resistant varieties of plants
- Proper site and soil preparation as the effects of this on the health of installed plant materials greatly affects the plant's ability to ward off disease and pests.
- Only use a combination of cultural (non-chemical), mechanical, biological (predators, parasites, and pathogens), and as a last resort, chemical (least toxic) methods of pest management.

It is recommended that if an IPM program is desired, that an IPM Program Plan be developed to aid your entity and your staff in implementation of the program.

Invasive Species

In landscape terms, an invasive species is a non-native plant species that is highly invasive into natural habitats, and adversely affects the biological makeup of a natural landscape. Many introduced and common landscape plants have become invasive species throughout Texas including Bamboo, Chinaberry, Chinese Tallow, Kudzu, Ligustrum, Nandina, English Ivy, and Elephant Ear. Invasive species are spread by seeds with the aid of birds and mammals, and by other means, and can quickly spread to nature preserves, conservation areas, fallow farmland, and other non-developed areas of a community. They can out-compete native species for nutrients, light, space,
water, and food. The impacts can be felt in the local ecology, in genetic pollution, and in the local economy. It is recommended that plants listed in your local area as “invasive” should not be used in the landscape on project sites, and native, or at least non-invasive species be used. Consult a local professional for specific recommendations.

Native, Adaptive, Appropriate Landscapes

Native and appropriate plant material should be utilized on project sites that are suitable for the specific project and for the specific use and desired effect. Consult a local professional for specific recommendations.

Organics

Organic landscape development involves the use of essential practices and principles including soil building, conservation, pest and disease management, and plant selection. It includes the use of only naturally produced fertilizers and non-chemical means of pest control, as well as other sustainable techniques discussed in this document. Consult a local professional for specific available resources in your area, and for specific recommendations for the project site.

Re-used Plants (see Building Materials)

Re-using vegetation, rocks, and soil displaced by construction is a positive way to reduce costs, minimize waste, and encourage the preservation of native natural elements. Pre-planning what will be re-used, where it will be stored during construction (if needed), and other specific needs of the vegetation may impact your decision to attempt this sustainability measure. However, the potential cost savings may be significant and worth the added effort.

Waste and Recycling

Recycling is often one of the first strategies that come to mind for citizens and recreation providers alike when questioned about sustainability. Providing adequate recycling facilities onsite can have an incredible impact on waste reduction. Furthermore, composting and mulching can help curb organic waste, such as fall leaves or fallen branches.

Waste and Recycling:
SSI Areas Addressed: P8.2, C7.4, C8.3,
- Provide for storage and collection of recyclable
- Divert construction and demolition materials from disposal
- Recycle organic matter generated during site operations and maintenance
This section provides details regarding recycling and organic waste disposal.

**Waste Diversion**

Waste Diversion involves diverting construction and demolition materials from the landfill to recycling or reuse. To achieve this goal, a job site must be well-managed and organized. Waste diversion helps to save money through lower tipping (landfill dumping) fees and by providing a cleaner site, which is safer to walk through, resulting in fewer opportunities for falls, injuries, or fire.

**Recycling**

Just a few years ago it was a common practice to throw empty beverage containers into the trash can. Times have changed and people young and old understand the sustainable benefits of recycling. Today park users expect facilities to offer recycling opportunities. Not only does this help reduce waste disposal fees, recycled material could also generate revenue for parks. If recreation providers are interested in starting a recycling program in their park, a good place to begin is by contacting a local waste disposal contractor. Many contractors also offer recycling programs and this service can be negotiated into current contracts.

*More Information:*
  EPA Park Recycling Guide -
  [www.epa.gov/epawaste/conserve/rrr/rogo/venues/parks.htm](http://www.epa.gov/epawaste/conserve/rrr/rogo/venues/parks.htm)

**Compost**

Compost is a soil amendment made from biodegradable landscape items such as tree trimmings and lawn clippings, and is an excellent source of nutrients for landscape areas. Compost mimics the naturally occurring decomposition material found on forest floors that feeds native habitats. The use of compost in landscapes can reduce the use of water, fertilizers, and pesticides. Additionally, composting can suppress plant diseases and pests by making plants and soils stronger and healthier. To determine the amount and type of compost to be added as a soil amendment, a soils test should be conducted on the project site. Consult a local professional for specific recommendations.

**Mulch**

Mulch is a protective layer that mimics the natural leaf cover found on forest floors; it is placed over the soil in landscaped areas to retain moisture, reduce erosion, provide nutrients (as it breaks down), and suppress the growth and seed germination of weeds. Materials used as mulch vary and selection of the appropriate material should be based on several factors including availability, cost, appearance, and the effect the mulch will have on the soil (pH, durability, combustibility, rate of decomposition, and cleanliness). Mulch materials may be organic (leaves, bark chips, wood chips, straw, grass clippings,
shredded bark or wood, and gravel) or inorganic (shredded rubber, plastic, and crushed glass). Native mulch derived from native and local trees is preferred to provide nutrients back to the local soils. Local sources are also preferred as some chemical reactions and pH issues may be at issue if non-local sources are used. To determine the amount and recommended type of mulch to add, you should consult a local professional for specific recommendations.

**Social Impacts**

Recreation providers understand the importance of considering the social impacts of their respective park systems. It is important to ensure that public outdoor recreation areas are safe and accessible for the community. In terms of incorporating sustainability, by minimizing exposure to second hand smoke and other air pollutants, recreation providers can further improve the local/state park environment for park visitors and the community at large.

**Accessibility**

All public projects in the state of Texas are required to comply with the Texas Accessibility Standards (TAS) and the Americans with Disabilities Act (ADA) requirements. Although the requirements are state and federal laws, providing facilities for all to use is important in communities, as social integration is an important tool in developing community cohesion and a sense of belonging and place.

Parks are for everyone. Ensuring they are accessible to all is an important part of a sustainable community.

For requirements specific to individual projects, planners and designers should confer with the Texas Department of Licensing and Regulation (TDLR), the organization tasked with administering the TAS. For information contact the TDLR at 1-800-803-9202 or visit their website at [www.license.state.tx.us](http://www.license.state.tx.us)

In addition, there is a state law that requires that any playground built with public funds shall be accessible. (Texas Health and Safety Code 756.061 effective September 1, 1997)
Multi-ethnic and Multi-cultural

A recent trend in the discussion on sustainability involves the inclusion of various ethnicities and cultures. Diverse populations residing in our communities and using our parks can create cultural opportunities that bring diverse populations together. Increasing diversity enhances the fabric of the community, helps to overcome social barriers, and brings communities together.

Health

Parks offer a wide range of health benefits including space to exercise, relax, and breathe fresh air. In order to ensure that all park visitors have full access to the maximum amount of fresh air, some jurisdictions have imposed smoking bans in parks, most recently New York City. Minimizing exposure to environmental tobacco smoke is important and although you might not be ready to institute an outright ban on cigarette smoke, encouraging designated smoking areas helps minimize second hand smoke exposure and reduces litter from cigarette butts.

Another practice that can have a negative impact on clean air in parks is the use of landscape maintenance equipment. Minimizing the generation of greenhouse gases during landscape maintenance helps keep ozone levels low and reduces the impact of emissions on park users. Depending on the alternatives used, it can also positively impact noise pollution problems.

Operations and Maintenance

Once a park facility is developed and put in place, it is often used for ten years or more. Durability is imperative in park facilities and can lead to long term savings because well-built facilities do not need as much maintenance. Sustainability is achieved through the reduction in need for utilities, additional repair materials, transportation, and construction waste. By incorporating sustainable park design into a park system, recreation providers will see positive results in terms of reduced operating costs, in addition to reduced maintenance costs. Furthermore, given the recent economic environment in Texas and the rest of the United States, doing more for a community with less fiscal resources will become increasingly important.
Walking the Walk

Sustainable building is becoming more popular every day because it is not only environmentally responsible, it also saves money and looks great. With the increased adoption of these techniques, it is becoming easier to find examples of sustainable buildings in your own area. TPWD has been working to incorporate these principles of sustainability into our sites and have illustrations scattered throughout the state. We invite you to come out and visit a Texas Parks and Wildlife site near you.
Historical Progression of Texas Recreation Grants

With the passage of the federal LWCF Act in 1964, Texas launched into a new era of conservation through state and local park land acquisition. The LWCF provided grants to states “on a matching basis for up to fifty percent (50%) of the total project-related allowable costs for the acquisition of land and the development of facilities for public outdoor recreation (National Parks Service, 2008).” The availability of federal funds motivated Texas to set up a means to meet the matching requirement of the LWCF and by 1972 that funding source was realized.

The long history of state funding began with the establishment of the Texas State Park Fund in 1972, followed up by the Texas Local Parks, Recreation and Open Space Fund in 1979, when House Bill 233 was passed. These initial grant funds, known as the State Park Fund and the Local Park Fund, respectively, were each financed by a penny per pack tax from an existing cigarette tax. The Local Park Fund was utilized to match resources for the creation or renovation of hundreds of local parks, while the State Park Fund (also known as Fund 64) allowed TPWD to acquire, develop, maintain, and renovate state parks across Texas. Additionally, when the Local Park Fund was renewed in 1983, by Senate Bill 325, the fund was also authorized “to acquire and develop state parks in urban areas, to provide matching grants to local governments for half the cost of new local parks and recreation facilities, and to provide the 10-percent state share for obtaining federal Urban Parks Rehabilitation and Recovery Grants (S.B 325, 1983).”

After twenty years of using the penny per pack tax from cigarettes to fund park acquisition and development, it was determined that the link between cigarette smoking and outdoor recreation was nonexistent, thus the usage of a cigarette tax was inappropriate. In an attempt to utilize a more appropriate funding source, state representatives identified sales tax from sporting goods as being a potential funding source that had a more direct relationship to the use of outdoor recreation.

In 1993, with the passage of House Bill 706, funding for state and local park expansion was switched to the new sporting goods sales tax allocation (H.B 706, 1993). Under House Bill 706, the Texas Recreation and Parks Account (TRPA) replaced the Local Park Fund. In addition to changing the source of funding, the new TRPA was only allowed for local park grant use. Although State Parks were no longer eligible to use Local Park funding for the creation of urban state parks, they continued to receive funds through Fund 64.

Furthermore, TRPA established the ability to fund indoor recreation projects. While the use of sales tax from sporting goods was identified as a more appropriate funding
source for recreation grants, a capped limit was established so that only a portion of the sales tax was appropriated for TRPA.

Up until 1999, the TRPA funded the following grant programs: Outdoor Recreation, Indoor Recreation, and Small Community. In 1999 House Bill 2108 amended the Parks and Wildlife Code by allowing TRPA to also be used for Regional Outdoor Recreation Grants, in addition to codifying the Community Outdoor Outreach Program (CO-OP). The CO-OP grant was different than the other grant programs in that it was established to support underserved communities by funding educational and outreach programs, rather than park development.

The last major alteration of Local Park funding streams occurred in 2007 when House Bill 12 created a new urban program called the Large County and Municipality Recreation and Parks Account. Since it was established that urban communities comprised 40% of the population, it was determined that those communities should receive a proportionately equal amount of the funding for park acquisition. This change reallocated 40% of TRPA funding to urban areas in order to accommodate a rural to urban shift in population. Under the Large County and Municipality Recreation and Parks Account, the Urban Indoor Recreation and Urban Outdoor Recreation grant programs were created to address increasing demand for recreation opportunities in large urban areas across the state.

TRPA Grants: Program Overview

TPWD acts as a silent partner in hundreds of communities across the state through its grant, assistance, education, and outreach programs. From the largest metropolis to the smallest rural community these programs help to build new parks, conserve natural resources, provide access to water bodies, develop educational programs for youth, and much more. Providing grants to communities across Texas helps build access to outdoor experiences and encourages a connection with nature that is vital for promoting conservation and good environmental stewardship amongst Texans young and old. Table 9.1 identifies the historical array of programs administered by Recreation Grants.

Recreation Grants also administers the Recreational Trails and Boating Access grants, which are discussed later in this chapter.

Outdoor Recreation Grants

These grants provide 50% matching grant funds to local units of government with populations less than 500,000 to acquire and develop parkland or to renovate existing public recreation areas. Local governments must permanently dedicate project areas for public recreational use, and assume responsibility for operation and maintenance. Funding for these grant projects comes from both TRPA and LWCF.
Indoor Recreation Grants

These grants provide 50% matching grant funds to local units of government with populations less than 500,000 to construct recreation centers, nature centers and other indoor recreation-related buildings. Local governments must permanently dedicate project areas for public recreational use, and assume responsibility for operation and maintenance. Funding for these grant projects comes from TRPA.

Small Community Grants

These grants were created to meet the recreation needs of small Texas communities with a population of 20,000 and under. The grant provides 50% matching funds to eligible local governments. Funds must be used for development and/or acquisition of parkland. Local governments must permanently dedicate project areas for public recreational use and assume responsibility for operation and maintenance. Funding for these grant projects comes from both TRPA and LWCF.

Urban Outdoor Recreation Grants

Grants are available to cities and counties with populations over 500,000 for the acquisition and development of parkland. This assistance program is distributed in the form of 50% matching grant funds. Local governments must permanently dedicate project areas for public recreational use and assume responsibility for operation and maintenance. Funding for these grant projects comes from the Large County and Municipality Recreation and Parks Account and LWCF.

Urban Indoor Recreation Grants

Grants are available to cities and counties with populations over 500,000 for the acquisition, construction or renovation of indoor recreation facilities. This assistance is in the form of 50% matching grant funds. Local governments must permanently dedicate the building for public recreational use and assume responsibility for operation and maintenance. Funding for these grant projects comes from the Large County and Municipality Recreation and Parks Account.
Regional Grants

These grant programs were created to assist local governments with the acquisition and development of multi-jurisdictional public recreation areas in the metropolitan areas of the state. It allows cities, counties, water districts, and other units of local government to acquire and develop parkland. The program provides 50% matching, reimbursement grants to eligible local governments for both active recreation and conservation opportunities. Funding for these grant projects comes from TRPA funds.

Community Outdoor Outreach Program (CO-OP) Grants

The CO-OP grants help to introduce under-served populations to the services, programs, and sites of TPWD. This is a program grant awarded to non-profit organizations, schools, municipalities, counties, cities, and other tax-exempt groups. Funding for these grant projects comes from the Large County and Municipality Recreation and Parks Account and TRPA.

Recreational Trail Grants

TPWD administers the National Recreational Trails Fund in Texas under the approval of the Federal Highway Administration (FHWA). This federally funded program receives its funding from a portion of federal gas taxes paid on fuel used in non-highway recreational vehicles. The grants can be up to 80% of project cost with a maximum of $200,000 for non-motorized trail grants and currently there is not a maximum amount for motorized trail grants. Funds can be spent on both motorized and non-motorized recreational trail projects such as the construction of new recreational trails, to improve existing trails, to develop trailheads or trailside facilities, and to acquire trail corridors.

Boating Access Grants

This grant program provides 75% matching grant funds for the construction of public boat ramp facilities throughout Texas. Local government sponsors must make an application, provide the land, provide access to the proposed boat ramp, supply 25% of the development costs, and accept operation and maintenance responsibilities for a minimum 25-year period. These funds are allocated annually through the federal Sport Fish Restoration Act. This program is administered through the Recreation Grants Branch.
Boat Sewage Pumpout Grants

Federal Sport Fish and Wildlife Restoration funds through the Clean Vessel Act of 1992 allow private marinas and local governments to receive grants to install boat sewage pumpout stations in Texas. Pumpout Grants are distributed on a first-come, first-served basis and can constitute up to 75% of all approved project costs. These grants provide funds for the construction and/or renovation, operation, and maintenance of pumpout and portable toilet dump stations. All recreational vessels must have equal access to pumpout stations funded under the Clean Vessel Act. These stations will be marked on all nautical charts. This program is administered through the Recreation Grants Branch.

<table>
<thead>
<tr>
<th>Table 9.1</th>
<th>Sources of Funding and Distribution of Grants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programs</td>
<td>Timeframe</td>
</tr>
<tr>
<td>Land and Water Conservation Fund (LWCF) – federal funds, 50% matching grants</td>
<td>1965 – Present</td>
</tr>
<tr>
<td>Local Park, Recreation and Open Space Fund (LPF) – state funds, 50% matching grants</td>
<td>1980 - 1995</td>
</tr>
<tr>
<td>Texas Recreation and Parks Account (TRPA) – state funds (replaced LPF), 50% matching grants</td>
<td>1994 – 2011</td>
</tr>
<tr>
<td>Outdoor Recreation Parks</td>
<td>1996 – 2011</td>
</tr>
<tr>
<td>Indoor Recreation Facilities</td>
<td>1996 – 2011</td>
</tr>
<tr>
<td>Community Outdoor Outreach Program (CO-OP)</td>
<td>1996 – 2011</td>
</tr>
<tr>
<td>Regional Parks</td>
<td>2001 – 2005</td>
</tr>
<tr>
<td>Small Community Parks</td>
<td>2002 – 2011</td>
</tr>
<tr>
<td>Urban Outdoor Recreation Parks</td>
<td>2008 – 2011</td>
</tr>
<tr>
<td>Urban Indoor Recreation Facilities</td>
<td>2008 – 2011</td>
</tr>
<tr>
<td>Boating Access – state and federal funds, 75% matching grants</td>
<td>1968 - present</td>
</tr>
<tr>
<td>Recreational Trails Grants – federal funds, 80% matching grants</td>
<td>2003 - present</td>
</tr>
<tr>
<td><strong>TOTAL NUMBER OF PROJECTS FOR ALL PROGRAMS</strong></td>
<td></td>
</tr>
</tbody>
</table>

In attempt to give a better idea of how the grants have been distributed across the state, two maps have been prepared which represent the total grant projects funded in each county.
Figure 9.1 represents the total number of recreation grant projects distributed by county across the state since 1962. Almost every county in Texas has benefitted from the recreation grant programs. The counties highlighted by stars are identified as having a population of 500,000 or more.

![Figure 9.1](image-url)
Figure 9.2 depicts the number of grant projects funded per county and per decade to give an idea of how funding trends have changed from decade to decade. As the population in Texas has moved from primarily rural to urban, so too has the grant project distribution. This changing trend highlights the efforts of the Recreation Grants Branch to best address changing recreation needs across the state for all the grant programs.
Local Grants in the 21st Century

The TRPA is still the preferred method of funding for outdoor and indoor recreation at the local level and is supported through a portion of Texas sales tax received on select sporting good items. The TRPA is a grant program for local parkland acquisition and development that is administered by TPWD. TPWD also administers the Texas apportionment of the federal LWCF through TRPA.

State funding for TRPA

Unfortunately, state funding for the TRPA has fluctuated over the past several legislative sessions. The annual state appropriation for the TRPA prior to the 78th Legislature was $15.5 million. During the 78th Legislature TRPA was reduced to $8.1 million annually and then to $5 million by the 79th Legislature. The 80th Legislature brought back the full $15.5 million annual appropriation.

Regrettably, the most recent session of the 82nd Legislature brought about a drastic budgetary cut for TRPA. For the 2012-2013 fiscal years the appropriation covers only the administrative costs for the Recreation Grants Branch, thus TRPA state funding for grant programs has been suspended.

These drastic cuts in funding have come at a time when the population of the state is expanding and the need for acquiring and developing outdoor recreation lands and programs is vital. As state funding for TRPA comes from a portion of the sales tax attributed to the sale of sporting goods, Figure 9.3 shows the collected tax revenue, and the appropriated funds allocated to State Parks and Recreation Grants. Funds include the Recreation Grants program administrative costs.
Local Parks/ CO-OP grant funds include program administrative costs

http://www.elpasotexas.gov/parks
The reduction in appropriations for TRPA has resulted in the suspension of all state grant funding for the local park programs. This means that state funding for the following programs is presently suspended:

- Outdoor Recreation
- Indoor Recreation
- Urban Outdoor Recreation
- Urban Indoor Recreation
- Small Community
- Regional Outdoor Recreation
- CO-OP

This suspension comes at a time of record growth, not only in population, but also in demand for outdoor recreation experiences. As the population expands and urban areas continue to replace natural open space, children and adults alike have less access to outdoor experiences. Moving forward, state and regional governments will have to address growing demand for outdoor recreation with decreasing resources available. Figure 9.4 represents the increasing demand for grants from TPWD for acquisition and development of parklands and programs.

“...the money generated from the sales tax on sporting goods is money well spent to address many issues for Texans by providing State and Local Parks programs including local park acquisition and development.” Testimony by Texas Recreation and Parks Society to the Texas House of Representatives Committee on Culture, Recreation, and Tourism, January 2012
Awarded projects include funding from TRPA (state funds) and LWCF (federal funds)

**LWCF for Recreation Grants**

While state funding is currently suspended, a limited amount of federal funding from the LWCF may be available for three of the local grant programs. The LWCF allows projects under the Outdoor Recreation, Urban Outdoor Recreation, and Small Community programs to be funded.

In April of 2010, President Obama commissioned the following U.S. agencies to develop an updated and cohesive conservation and recreation agenda:

- Department of the Interior
- Department of Agriculture
- Environmental Protection Agency
- Council on Environmental Quality
The resulting collaboration produced the America’s Great Outdoors (AGO) Initiative. By utilizing a grassroots approach to generate public input, “senior administration officials held 51 public listening sessions all across the nation, 21 of them specifically with youth.” (CEQ, USDA, DOI, EPA, 2011). The AGO identifies specified strategies toward reconnecting the American people to the outdoors, conserving and restoring the nation’s outdoor resources, in addition to developing methods for cooperative improvement through strategic federal partnerships.

By fielding questions to the American people regarding recreation and conservation lands, it became clear that a major strategy for improving quality and access across the nation would be to allocate full funding under the LWCF. This strategy is outlined under Recommendation 5.1 in the AGO Initiative.

Since inception of the LWCF program, Texas has received approximately $175 million in matching grants distributed by the NPS, Department of the Interior. In FY 2011, Texas received just over $2 million. (Figure 9.5) The primary source of these funds is from the revenue from fees for off-shore drilling for oil and gas. Texas continues to receive about 5% of the total available state-side funds through the LWCF program. The LWCF state-side assistance program faces similar issues as the state funded TRPA; fewer funds are being made available to support the acquisition and development of state and local parks.
Historically, the Texas State Park System has been a beneficiary of the LWCF program with eighty-nine projects and over $34 million awarded at 55 park sites across the state. Appendix I identifies the state parks that have received assistance through the LWCF program.
Other TPWD Grant Programs

In addition to the multitude of programs administered formally by the Recreation Grants Branch, TPWD also has a variety of other grant-giving programs that are operated through various divisions. Included below is a brief sampling of a few other grants offered by other TPWD divisions. This should not be considered a comprehensive listing.
Landowner Incentive Program (LIP)

The Texas Landowner Incentive Program (LIP) is a collaborative effort between TPWD Wildlife and Inland Fisheries Divisions to meet the needs of private landowners wishing to enact good conservation practices on their lands for the benefit of healthy terrestrial and aquatic ecosystems. Many partnerships and funding sources external to TPWD help to make this program possible.

The Texas LIP currently offers the following funding options:

The Texas Watershed Funding Series

- **USFWS Community Riparian Enhancement** is dedicated to developing partnerships to conserve all habitats essential to environmentally and economically healthy watersheds that benefit the natural resources of Texas. This is a cooperative effort between the United States Fish and Wildlife Service (USFWS) and both the Wildlife and Inland Fisheries Divisions of TPWD. This allocation of LIP funding is made possible through a cooperative agreement with the USFWS Partners for Fish and Wildlife Program.

- **The Llano Watershed/Texas Guadalupe Bass Restoration Initiative** - LIP Funding Series is dedicated to conservation actions that positively impact the Llano Watershed, thereby protecting Guadalupe bass populations and their habitat, by developing networks of willing landowners interested in implementing coordinated landscape conservation actions at watershed-scales. Conservation actions implemented by private landowners will promote functional riparian and stream systems, in addition to emphasizing the conservation of native fish communities and supporting habitats. The networks will attempt to reduce or eliminate activities on the landscape that degrade water quality, reduce water quantity, degrade riparian systems, favor non-native species, or fragment stream systems, while encouraging a wide array of sustainable land-use activities that are compatible with aquatic resource conservation.

This allocation of LIP funding is made possible through a grant from the National Fish and Wildlife Foundation Southeastern U.S. Native Black Bass Keystone Initiative as well as partnerships with Anheuser Busch, U.S. Fish and Wildlife Service State Wildlife Grants, Southeast Aquatic Resources Partnership, U.S. Fish and Wildlife Service Fish Passage Program, U.S. Fish and Wildlife Service Sport Fish and Restoration Program, etc.

- **James River Watershed Restoration** - LIP Funding Series is dedicated to conservation actions that positively impact the James River Watershed by developing networks of willing landowners interested in implementing coordinated landscape conservation actions at watershed-scales. Conservation actions implemented by private landowners will promote functional riparian and stream systems, in addition to emphasizing the conservation of native fish
communities and supporting habitats. The networks will attempt to reduce or eliminate activities on the landscape that degrade water quality, reduce water quantity, degrade riparian systems, favor non-native species, or fragment stream systems while encouraging a wide array of sustainable land-use activities that are compatible with aquatic resource conservation.

The Texas Great Plains Landscape Conservation Cooperative (GPLCC) LIP Funding Series is dedicated to on-the-ground conservation work on private lands in an effort to mitigate the potential effects of climate change on terrestrial and migratory species in the Texas Panhandle portion of the GPLCC. This allocation of LIP funding is made possible through a cooperative agreement with the USFWS Partners for Fish and Wildlife Program.

Traditional LIP Funding Series is designed to meet the needs of private landowners wishing to enact good conservation practices on their lands in any Texas County. This funding series is focused on projects aimed at creating, restoring, protecting, and enhancing habitat for rare or at-risk-species throughout the state. The U.S. Fish and Wildlife Service define at-risk species as any species identified as a "species of greatest conservation need" (high priority) in a state’s Wildlife Action Plan (Texas Conservation Action Plan). Rare species include those species that are federally or state listed as threatened or endangered or federal Candidate species not currently on the federal list.

Section 6 Grants

Section 6 of the federal Endangered Species Act, since 30 September 1988, has authorized yearly allocation of funds (awarded at a ratio of 3:1, or 9:1 if multistate) into the Cooperative Endangered Species Conservation Fund (CESCF) to be accessed by states through their state agencies operating under a current Cooperative Agreement with the U. S. Fish & Wildlife Service. The broadly stated objective for these funds was to “assist in development of programs for the conservation of endangered and threatened species or to assist in monitoring the status of candidate species...and recovered species (U.S. Fish and Wildlife Service, 1973).” TPWD has been actively involved with this program since its inception.

Originally, only projects focusing on scientific research related to conservation and recovery of federally listed taxa and species of concern (formerly called Candidate Species) were considered for funding. These are now known as “Traditional” Section 6 grants, and are awarded funding based competition at the state level. Beginning in 1998 money was also set aside under the CESCF program for awarding proposals related to land acquisitions and habitat conservation plans. To distinguish this latter set of awards from the earlier “research” grants these were termed “Nontraditional.”

Nontraditional grants now consist of three types: 1) Habitat Conservation Planning Assistance grants, to facilitate development of Habitat Conservation Plans (HCP), 2) Habitat Conservation Plan Land Acquisition grants, to fund acquisition of preserve lands
under a permitted HCP, and 3) Recovery Land Acquisition grants, to fund acquisition of lands containing high priority or critical habitat to protect federally listed taxa. Competition is held at the national level (among all states) for HCP Planning and HCP Land Acquisition proposals, whereas competition for Recovery Land Acquisition proposals is held at the Regional (USFWS) level.

To date, Section 6 grants to TPWD have totaled over $110,000,000 in federal share (~$150,000,000 total cost) and have supported 224 projects addressing high priority habitat protection and conservation needs for 445 species of rare, threatened and endangered species. Additionally, approximately 50,000 acres of private land in Texas have been successfully involved in conservation efforts, half of which have been secured with fee simple acquisition or conservation easements. Annually, this program funds 6-9 Traditional grants (median federal share = $83K), and 0-4 Nontraditional grants (median federal share = ~ $4M). TPWD posts a Request for Proposals (RFP) for Traditional grants each September. RFPs for Nontraditional grants originate at the federal level and dates vary each year.

**Target Range Fund Program**

The National Hunter Education and Shooting Range Program was established on October 23, 1970, and October 25, 1972 under Public Laws 91-503 and 92-358 (U.S. Fish and Wildlife Service, 2005). In Texas, the range portion became effective with the State Appropriations Act on September 1, 1981. Federal funds for the program are derived, in part, from the 11% excise tax on the sale of handguns and archery equipment. TPWD is responsible for administering the program.

The Target Range Fund Program provides financial assistance for construction, development, improvement and/or maintenance of target ranges and associated facilities. This is a 75% reimbursement program. The applicant is expected to finance 25% of the entire project. Seventy-five percent of actual expenditures will be refunded either during the project period as billings are submitted and/or when the project final inspection is completed.

Projects eligible for reimbursement include: Backstops, berms, target holders, benches, baffles, protective fencing, signs, gun racks, platforms, roads, parking areas, sanitary facilities, storage rooms, shelter buildings, and classroom. Furthermore, all range construction must be on lands owned by applicant(s) or lands controlled by applicant(s) by use permit, lease, or easement which assures hunter education classes and public use. In FY 2010 TPWD approved $240,000 in target range construction grants.

**Conclusion**

While this is not a comprehensive list of recreation grants available across the state, the grants detailed in this chapter offer a snapshot of the wide variety of grants available. Despite challenges, Texas continues to promote and maintain a quality park system.
Open Project Selection Process

Each year the LWCF apportionment is split between the State Park Program and the Local Park Program. As needs differ slightly for each program, separate project selection criteria have been developed. Once funding amounts are established, projects are selected by the applicable selection criteria. The Local Park Grants Program Selection Criteria are designed to give recreation providers positive incentives for improving grant project design, while the State Park Program Project Selection Criteria are based on achieving strategic and cost effective land acquisitions that are in-line with the 2010 TPWD Land and Water Resources Conservation and Recreation Plan (Land and Water Plan).

Local Park Grants Program Project Selection Criteria

The Local Park Grants Program is managed by the Recreation Grants Branch, which is housed in the State Parks Division of TPWD. The Local Park Grants Program manages the federal LWCF as well as the state funded TRPA and the Large County and Municipality Recreation and Parks Account.

During the development of the TORP, criteria for a newly developed national grant program were being proposed through President Obama’s “America’s Great Outdoors” initiative. This, along with state-wide budget cuts and the suspension of the state funded Local Park Grants program was the basis for a decision to retain the current Open Project Selection Process (OPSP).

Statewide public meetings were held in 2007 in order to review the scoring criteria for the Local Park Grant Programs. Three Urban Focus Group meetings were conducted in 2009, 2011, and again in 2012 to address program needs of our cities and counties with populations over 500,000. The current OPSP utilizes a range of scoring points as an incentive for local recreation providers to improve
proposed grant projects through a variety of means. In addition to the traditional scoring points (given for elements like eligibility, project design, and support costs), recreation providers can earn more points by incorporating state-wide goals into their project design. Additional scoring points can be accrued by implementing additional design elements, such as the utilization of environmentally friendly design techniques, improved access for underserved areas, usage of trail linkages, extra points for preserving vulnerable natural habitats such as wetlands, and more. The scoring criteria were analyzed to insure that they promoted overall national, state, and local recreation goals.

The Local Park Grants Program currently manages the following grants:

- Outdoor Recreation Grant*
- Small Community Grant*
- Indoor Recreation Grant
- Urban Outdoor Recreation Grant*
- Urban Indoor Recreation Grant
- Regional Grant

Of these programs, three are eligible to receive LWCF money, including the Outdoor Recreation, Small Community, and Urban Outdoor Recreation grants. In 2007, public meetings were held throughout the state with the purpose of reviewing proposed changes to the Outdoor Recreation and Small Community grant programs and their respective priority scoring criteria. In addition, a survey was conducted. Changes were sent to the Texas Register for public comment and subsequently approved by the TPW Commission.

All Local Park Grant Program applications submitted to TPWD are evaluated for program eligibility and prioritized with the criteria in the following scoring systems. Scored applications are presented to the TPW Commission for approval.

**AMERICA’S GREAT OUTDOORS: A PROMISE TO FUTURE GENERATIONS**

**GOAL A: Create and enhance a new generation of safe, clean, accessible great urban parks and community green spaces.**

“As America continues to become more urbanized, the need for green spaces close to home increases. Such spaces are good for our health, our ties to community, and our economy. They can be critical to building lasting personal connections with the great outdoors.”
### Table 10.1
Outdoor Recreation Grant Priority Scoring Criteria

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sponsor Eligibility</td>
<td>Sponsor is in full compliance with previously approved projects and the Recreation Grants Branch – Local Park Grant Program Manual</td>
</tr>
<tr>
<td>Master Plan</td>
<td>Project Sponsor has locally adopted TPWD approved, parks, recreation and open space master plan that addresses outdoor recreation needs.</td>
</tr>
<tr>
<td>Recreation Diversity</td>
<td>Project will provide a diversity of park and recreation opportunities and facilities within the sponsor’s jurisdiction or intended project service area.</td>
</tr>
<tr>
<td>Water-Based Recreation Opportunities</td>
<td>Project will provide improved water-based park and recreation opportunities.</td>
</tr>
<tr>
<td>Geographic Distribution / Innovative Use</td>
<td>Project will improve the geographic distribution or innovative use of park and recreation lands and facilities in the project’s intended service area or within the sponsor’s jurisdiction.</td>
</tr>
<tr>
<td>Recreation vs. Support Costs</td>
<td>Project maximizes the use of development funds for basic park and recreation opportunities.</td>
</tr>
<tr>
<td>Special Populations</td>
<td>Project improves park and recreation opportunities for low income, minority, and/or elderly citizens.</td>
</tr>
<tr>
<td>Partnerships</td>
<td>Project involves matching funds from sources other than the sponsor and/or additional outside cooperation not involving match.</td>
</tr>
<tr>
<td>Land Acquisition</td>
<td>Project provides for the ACQUISITION AND PRESERVATION/CONSERVATION of park and recreation lands, which consist of regionally representative natural resources or provide desirable wetlands, open space, water access, or needed parkland.</td>
</tr>
<tr>
<td>Renovation or Adaptive Reuse</td>
<td>Project provides for the renovation or adaptive reuse of an existing obsolete park and recreation area or facilities.</td>
</tr>
<tr>
<td>Environmentally Responsible Activities</td>
<td>Project promotes environmentally responsible activities and development.</td>
</tr>
<tr>
<td>Linkage</td>
<td>Project provides a significant linkage to other parks and recreation areas, neighborhoods, or public facilities.</td>
</tr>
<tr>
<td>Cultural Resources</td>
<td>Project provides park and recreation opportunities which enhance and encourage an appreciation and preservation of site-based cultural (historical and archaeological) resources through interpretation facilities or preservation strategies.</td>
</tr>
<tr>
<td>TPWD Land and Water Resources Conservation Recreation</td>
<td>Sponsor must specifically address how the project meets the goals of the Plan in the Project Narrative.</td>
</tr>
<tr>
<td>Post Completions</td>
<td>Sponsor has not sufficiently addressed issues related to post completion inspections of previously funded projects.</td>
</tr>
<tr>
<td>Application Materials</td>
<td>A complete application was received by the application deadline.</td>
</tr>
</tbody>
</table>
In 2007 the Texas Legislature created the Large Community and Municipality Recreation and Parks Account with the purpose of designating park grant funds for cities and counties with populations over 500,000. Shortly afterwards, an Urban Parks Summit was convened with representatives from eligible cities and counties to develop administrative procedures and scoring criteria for the newly created Urban Parks Account Grant Program. These criteria were then sent to the Texas Register for public comment and subsequently approved by the TPW Commission. Two additional Urban Summits were conducted in 2009 and again in 2011. The 2009 Urban Summit focused on updating the Summary of Guidelines to reflect the needs of the Urban Program, while the 2011 Urban Summit’s priority was to discuss the suspension of the state grant funds and other current issues. Each of the approved Local Park Priority Scoring criteria can be found in Appendix G.

<table>
<thead>
<tr>
<th>Table 10.2 Small Community Recreation Grant Priority Scoring Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPONSOR ELIGIBILITY</strong></td>
</tr>
<tr>
<td>Sponsor is in full compliance with the Grant Administration and Eligibility Guidelines for all grant programs administered by the TPWD Recreation Grants Branch.</td>
</tr>
<tr>
<td><strong>POPULATION</strong></td>
</tr>
<tr>
<td>Sponsor population is 2,500 or less.</td>
</tr>
<tr>
<td><strong>GEOGRAPHIC DISTRIBUTION / INNOVATIVE USE</strong></td>
</tr>
<tr>
<td>Project will improve geographic distribution or innovative use of park and recreation lands within the project’s intended service area or within the sponsor’s jurisdiction.</td>
</tr>
<tr>
<td><strong>RECREATION vs. SUPPORT COSTS</strong></td>
</tr>
<tr>
<td>Project maximizes the use of development funds for basic park and recreation opportunities.</td>
</tr>
<tr>
<td><strong>SPECIAL POPULATIONS</strong></td>
</tr>
<tr>
<td>Project improves park and recreation opportunities for low income, minority, and/or elderly citizens.</td>
</tr>
<tr>
<td><strong>PARTNERSHIPS</strong></td>
</tr>
<tr>
<td>Project involves documented matching funds from sources other than the sponsor and/or additional outside cooperation not involving match.</td>
</tr>
<tr>
<td><strong>RENOVATION OR ADAPTIVE REUSE</strong></td>
</tr>
<tr>
<td>Project proposes the renovation of existing obsolete facilities.</td>
</tr>
<tr>
<td><strong>ENVIRONMENTALLY RESPONSIBLE ACTIVITIES</strong></td>
</tr>
<tr>
<td>Project promotes environmentally responsible activities and development.</td>
</tr>
<tr>
<td><strong>TPWD LAND AND WATER RESOURCES CONSERVATION RECREATION PLAN</strong></td>
</tr>
<tr>
<td>The project supports the TPWD Land and Water Resources Conservation and Recreation Plan</td>
</tr>
<tr>
<td><strong>COMPLIANCE</strong></td>
</tr>
<tr>
<td>Sponsor is not in compliance with previously funded projects</td>
</tr>
<tr>
<td><strong>APPLICATION MATERIALS</strong></td>
</tr>
<tr>
<td>A complete application was received by the application deadline</td>
</tr>
</tbody>
</table>
### Figure 10.3

**Urban Outdoor Recreation Grant Priority Scoring Criteria**

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPONSOR ELIGIBILITY</strong></td>
<td>Sponsor is in full compliance with previously approved projects and the Recreation Grants Branch – Local Park Grant Program Manual</td>
</tr>
<tr>
<td><strong>ACQUISITION</strong></td>
<td>The project proposes to acquire land for significant natural areas, green corridors, acquiring in-holdings, intensive use facilities, land banking, expansion of existing parkland/conservation areas, adaptive reuse for recreation or conservation of lands, proximity to high population areas</td>
</tr>
<tr>
<td><strong>DEVELOPMENT</strong></td>
<td>Project proposes development of neighborhood parks, nature centers, parks and conservation areas of regional significance, green construction/sustainability, multi-purpose recreation facilities, and outdoor aquatic recreation</td>
</tr>
<tr>
<td><strong>RESTORATION</strong></td>
<td>Project provides for the renovation of existing recreation and conservation infrastructure which is no longer usable for its intended purpose (renewal or revival of existing facilities)</td>
</tr>
<tr>
<td><strong>TRAILS/CORRIDORS/GREENWAYS</strong></td>
<td>Project proposes the development of one or more trails.</td>
</tr>
<tr>
<td><strong>SPORTS FACILITIES</strong></td>
<td>Project proposes the development of large, intensive-use sports facilities and/or competitive or practice facilities in close proximity to users</td>
</tr>
<tr>
<td><strong>UNDERSERVED POPULATIONS</strong></td>
<td>Project improves park and recreation opportunities geographically, or for low income, minority, and/or elderly citizens.</td>
</tr>
<tr>
<td><strong>JOINT EFFORTS/PARTNERSHIPS</strong></td>
<td>Project involves matching funds from sources other than the sponsor and/or additional outside cooperation</td>
</tr>
<tr>
<td><strong>MASTER PLAN</strong></td>
<td>Project Sponsor has a locally adopted and TPWD approved, parks, recreation and open space master plan that addresses outdoor recreation needs.</td>
</tr>
<tr>
<td><strong>THREAT</strong></td>
<td>To what extent will this project reduce a threat to the public availability of a conservation or recreation opportunity?</td>
</tr>
<tr>
<td><strong>TPWD LWRCRP</strong></td>
<td>Project supports the TPWD Land and Water Resources Conservation and Recreation Plan</td>
</tr>
<tr>
<td><strong>POST COMPLETION INSPECTIONS</strong></td>
<td>Sponsor has not sufficiently addressed issues related to post completion inspections of previously funded projects</td>
</tr>
<tr>
<td><strong>APPLICATION MATERIALS</strong></td>
<td>A complete application was received by the application deadline</td>
</tr>
<tr>
<td><strong>URBAN BIOLOGIST CONSULTATION</strong></td>
<td>Applicants have consulted with a TPWD Urban Biologist regarding the proposed site plan 30 days prior to the application</td>
</tr>
<tr>
<td><strong>HISTORICAL/CULTURAL RESOURCE</strong></td>
<td>Project provides park and recreation opportunities which enhance and encourage an appreciation and preservation of site-based resources through interpretation, facilities or preservation strategies.</td>
</tr>
</tbody>
</table>
Many good suggestions through the public meetings have been implemented. Having separate programs based on population is one prominent suggestion. Another key suggestion (that was implemented) is to encourage the Urban and Outdoor Recreation applicants to complete a Park, Recreation, and Open Space Master Plan by rewarding them with points in the Priority Scoring Systems. Small Community applicants are rewarded for either having a Master Plan or for documenting a public input process. This helps ensure that the local community needs are being met by the project.

Local Park Grant Program Master Plan Guidelines are provided to the applicants and must be submitted at least sixty days prior to the application date. Plans must be updated at least once every five years. A copy of the Master Plan Guidelines can be found in Appendix H.

State Park Program Project Selection Criteria

As more and more Texans reside in urban areas, there is an increasing disconnection between people and their natural and cultural heritage. Access to high quality affordable outdoor recreational and educational opportunities is more important than ever for physical health, mental health, and quality of life. TPWD helps meet these needs by acquiring, developing, and managing lands for public access. With funding extremely limited, it is critical that land acquisitions be strategic and cost-effective. The basis for prioritizing and evaluating potential land acquisitions in light of the agency’s mission and goals is found in the 2010 Land and Water Plan. Among other things, this plan places a high value on the acquisition of lands that represent all major ecoregions of Texas, lands that are readily accessible to people living in urban areas.
centers, and lands that offer a diverse range of outdoor opportunities for present and future generations.

There are many factors that affect the suitability of land for use as a state park, and objectively quantifying the value of one tract over another can be difficult or impossible. Nonetheless, there are a number of criteria that can be evaluated to help assess and rank the value of any given tract or tracts of land. TPWD only acquires land from willing sellers or donors, eliminating from consideration many tracts that might otherwise be desirable. Due to the high cost of acquiring lands of sufficient scope for new parks, and the high cost of developing, staffing, and operating new parks, most acquisition effort is geared toward expanding existing sites, and acquiring tracts within existing sites (inholdings), especially sites which protect rare and critical habitats or are heavily used by the public.

Every transaction is unique, and even with established evaluation guidelines, assessment of some criteria, such as aesthetic values or visitation projections, will always be subjective or speculative, and subject to best professional judgment. Nonetheless, all acquisitions are evaluated for their attributes in the following four areas: site attributes, location, recreation, in addition to social and economic value. The relative importance of each parameter within these four areas will vary from proposal to proposal, depending upon the specific needs and goals of TPWD at the time of consideration.

**Selection Criteria**

**Site Attributes**

(*Supports TPWD 2010 Land and Water Plan Objectives*)

- Quality of natural resources require little to no restoration
  - Indigenous soils, topography, hydrology, and species communities intact
  - If restoration is required, appropriate funding and other resources have been considered and are available
- Physical size of the site offers opportunity to preserve ecosystem scale processes and landscapes
  - Will fire be practical if appropriate?
  - Is there sufficient habitat to support species recovery, where appropriate, large herbivores and predators where appropriate, and the desired compatible recreation?
- Contributes to watershed health**
- Opportunity for research and demonstration**
- Site will fill a gap in representation of publicly-owned and managed cultural sites, recreational opportunities, and/or conservation properties**
- Offers outstanding aesthetic qualities
- Offers significant features including rare or listed species or communities**
- Existing TPWD sites in this eco-region or area of the state**
• Ownership of the associated mineral estate; implications for potential future exploration and recovery operations
• Suitable and adequate access
• Past land uses with potential for contamination or other environmental liability

Location
• Expansion of an existing TPWD facility (in-holding or adjacent tract)**
• Existing TPWD sites in this eco-region or area of the state**
  o Would this site or facilities be significantly different?
  o Is there a demonstrable need for additional facilities?
• Site serves a population center or potentially serves a large public audience**
• Likelihood of available housing for park staff
• What are prospects for expanding in the future??
• Land uses occurring or expected to occur on adjacent or nearby properties that would diminish fish and wildlife and recreational value
• Aesthetic qualities of the drive to the site; i.e. is it through rural countryside or through a neighborhood?

Recreation
• Offers outstanding aesthetic qualities or other exceptional recreation amenities**
• Offers special topographic or geographic features such as springs or canyons
• Offers recreation opportunities that are in demand, but unmet in the area**
• Potential for public hunting and or fishing**
• Utilities available and sufficient for park operation
• Other local recreational resources (city, county parks)
  o Will the acquisition duplicate existing recreation opportunities?
  o Would a TPWD facility compete with existing recreational facilities?
• Proposed acquisition site expands an existing recreation opportunity or creates a new recreation opportunity

Social and Economic
• Current owner(s) is a willing seller**
• Good financial value
  o Based on cost comparison to undeveloped land in the region
  o In relation to expected fish and wildlife and public benefits
  o Do the added values justify the expense?
  o Would the acquisition and development costs accomplish more elsewhere?
• Presents an opportunity in funding to partner with a willing donor, local land trust, non-government organization, or the property is eligible for funding through grants (endangered species, migratory waterfowl, wetlands)**
• Local community and local government support proposed acquisition
Ranking

As mentioned above, every potential land acquisition proposal is different, and ascribing purely objective values to each of the attributes listed above to yield a numeric ranking order for multiple proposals is not possible. However, the Land and Water Plan provides guidance regarding the relative importance of some of these attributes, and by assigning priorities to them, it is possible to generate a ranking system helpful for evaluating the relative importance of diverse properties. This system should not be the sole guide for prioritizing TPWD land transactions. In deliberating the importance of a given transaction, unique factors, not adequately reflected here, such as truly spectacular vistas, strategic water resources such as major springs, endemic or listed species, cultural resources of statewide significance, or land uses that threaten the viability of adjacent TPWD facilities, to name just a few, must be given special consideration.

The following characteristics are assigned scoring based on their relative values. The numbers are arbitrary rather than quantitative. Maximum scores should be applied only in cases where values are truly exceptional. NOTE: These criteria do not address the viability of proposed land donations.

- Mission criticality (possible 100 points)
  - Legislative mandate
  - Obvious health/safety need
  - Necessary for viability of existing or planned TPWD site/facility
  - Fills a specific gap in ability to fulfill Mission or Land and Water Plan

- Value (possible 80 points)
  - Unusually high density of recreational or resource values
  - Bargain sale
  - Increases viability of existing conservation or recreation facilities

- Opportunity (possible 70 points)
- Transaction is important and time critical
  - Land owner is motivated
- Location (possible 70 points)
  - Location near urban center
  - Fills recreational or ecosystem gap
  - Public demand
- Partnerships (possible 70 points)
  - Potential funding assistance
  - Potential development assistance
  - Potential management or operations assistance
- In holdings (possible 50 points)
  - Inholding represents immediate threat to planned or current TPWD site uses
  - Acquisition simplifies or enhances site development, management or operation
  - Acquisition addresses access or incompatible use issues
- Adjacent lands (possible 40 points)
  - Acquisition prevents compromises to TPWD site use
  - Acquisition adds natural, cultural, or recreational resource opportunities
  - Acquisition protects viewshed and/or watershed
- High resource values (possible 40 points)
  - Unique features (i.e. springs, mountain tops, rock shelters, etc.)
  - Rare or listed species and habitats
- Threatened resources (possible 40 points)
  - Important natural or cultural resources in immediate danger of destruction
Plan Recommendations

By engaging in a concerted strategic planning process, and supporting park acquisition, sustainable development, and outdoor recreation programs; we can promote healthy lifestyles and address environmental concerns while reducing costs and increasing revenue.

The below recommendations were developed based on the research and data collected through the 2012 TORP planning process. Six recommendations with action items were identified according to need and feasibility in promoting a more holistic planning process on both the state and local levels. Implementation of this plan will bring Texas closer to realizing the full potential of the economic, mental, physical, social, environmental and community benefits that parks and outdoor recreation provide.

Plan Recommendations

1. Promote to general public and decision makers the total economic value of parks and recreation as it relates to attracting tourism, economic development, and improving the quality of life.

   **Action Item 1A:** Create a working group made up of federal, state, and local parks and recreation providers to support a system of parks and the benefits they provide.

   **Action Item 1B:** Take a more active leadership role in state, regional, and local planning efforts to incorporate the benefits that parks and outdoor recreation programming can produce in the physical, mental, social, and economic well-being for the citizens of Texas.

   **Action Item 1C:** Engage the Texas Interagency Obesity Council to further incorporate parks and recreation as a solution to the obesity epidemic.

   **Action Item 1D:** Coordinate with local law enforcement to identify parks and recreation sites and develop programming to reduce neighborhood crime.

   **Action Item 1E:** Collaborate with other agencies, organizations, and schools to engage youth in conservation and outdoor recreation programs.

2. Seek sustainable funding and leverage resources to meet the expanding outdoor recreation and conservation needs of the growing, diverse and predominately urban population of Texas.
**Action Item 2A:** Capitalize on the research showing public support and a willingness-to-pay for land and water conservation and outdoor recreation.

**Action Item 2B:** Take on an expanded role in supporting funding initiatives concerning outdoor recreation and conservation.

**Action Item 2C:** Identify additional resources to implement the Texas Children in Nature Strategic Plan and the Community Outdoor Outreach Program.

**Action Item 2D:** Improve coordination to further leverage outside funding opportunities.

**Action Item 2E:** Seek additional grant opportunities for conservation and outdoor recreation opportunities.

3. **Respond to prominent outdoor recreation trends.**

**Action Item 3A:** Promote trails, greenways, and linkages to encourage active lifestyles.

**Action Item 3B:** Inventory, prioritize, and develop trail opportunities.

**Action Item 3C:** Partner with the Texas Nature Tourism Council and other nature based recreation groups to identify creative ways of promoting nature and heritage tourism.

**Action Item 3D:** Continue efforts to provide new acquisition and development of parklands near urban areas through the Open Project Selection Process for state and local grants.

**Action Item 3E:** Provide new recreational opportunities for changing demographics.

4. **Manage access to public waters for recreation.**

**Action Item 4A:** Create an inventory of boat ramps under the Texas Parks and Wildlife Department’s (TPWD) authority.

**Action Item 4B:** Use a team approach involving all affected TPWD divisions in the decision making process on the best use of available resources for the improvement and development of boat access facilities.
5. Maintain the commitment to periodically review the Open Project Selection Process (OPSP) and grant administration guidelines for state and local parks to ensure they adequately reflect current statewide outdoor recreation and conservation values and trends, and are effective and easy to understand.

**Action Item 5A:** Create a process on how to allocate the state and local share of LWCF grants.

**Action Item 5B:** Continue to utilize the Urban Park Director’s Focus Group to strategize how best to address scoring criteria for Urban Local Park grants.

**Action Item 5C:** Continue to hold statewide public meetings to address the local park OPSP.

**Action Item 5D:** Work with other TPWD divisions on how to best evaluate the Local Park Grant Scoring Criteria regarding acquiring and conserving wetlands and sustainable park development.

**Action Item 5E:** Utilize the 2012 Inventory of Outdoor Recreation and Conservation Lands to identify GIS data for grant funded projects in Texas.


**Action Item 6A:** Take an active role in state, regional, and local planning efforts for water conservation and protection.

**Action Item 6B:** Promote sustainable park design and green infrastructure as an eco-friendly and cost effective alternative to non-sustainable construction.

**Action Item 6C:** Provide technical guidance and assistance to local governments, developers, and citizens for sustainable park design and green infrastructure.
Bibliography/Literature Cited


http://www.odellengineering.com/informer/LC-Mar-2011_online.html


Recreation Grants Branch, TPWD. (2011). Local Park Grant Program, Recreation and Open Space Master Plan Guidelines. Austin: TPWD.


TPWD, Tom Newton, License Sales Manager. *License Sales Reports 1998 - 2010.* Austin: TPWD.


APPENDIX A. The Land & Water Conservation Fund Act

Land and Water Conservation Fund Act of 1965, Public Law 88-578 Title 16, United States Code Selected Relevant Parts – State Assistance Program
For full code section:
http://www.access.gpo.gov/uscode/title16/chapter1_subchapterlxix_partb_.html

§ 460l–4. Land and water conservation provisions; statement of purposes

The purposes of this part are to assist in preserving, developing, and assuring accessibility to all citizens of the United States of America of present and future generations and visitors who are lawfully present within the boundaries of the United States of America such quality and quantity of outdoor recreation resources as may be available and 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 by

(1) providing funds for and authorizing Federal assistance to the States in planning, acquisition, and development of needed land and water areas and facilities and

(2) providing funds for the Federal acquisition and development of certain lands and other areas.

§ 460l–5. Land and water conservation fund; establishment; covering certain revenues and collections into fund

During the period ending September 30, 2015, there shall be covered into the land and water conservation fund in the Treasury of the United States, which fund is hereby established and is hereinafter referred to as the “fund”, the following revenues and collections:

(a) Surplus property sales All proceeds (except so much thereof as may be otherwise obligated, credited, or paid under authority of those provisions of law set forth in section 572 (a) or 574 (a)–(c) of title 40 or the Independent Offices Appropriation Act, 1963 (76 Stat. 725) or in any later appropriation Act) hereafter received from any disposal of surplus real property and related personal property under the Federal Property and Administrative Services Act of 1949, as amended, notwithstanding any provision of law that such proceeds shall be credited to miscellaneous receipts of the Treasury. Nothing in this part shall affect existing laws or regulations concerning disposal of real or personal surplus property to schools, hospitals, and States and their political subdivisions.

(b) Motorboat fuels tax The amounts provided for in section 460l–11 of this title.

(c) Other revenues:

(1) In addition to the sum of the revenues and collections estimated by the Secretary of the Interior to be covered into the fund pursuant to this section, as amended, there are
authorized to be appropriated annually to the fund out of any money in the Treasury not otherwise appropriated such amounts as are necessary to make the income of the fund not less than $300,000,000 for fiscal year 1977, and $900,000,000 for fiscal year 1978 and for each fiscal year thereafter through September 30, 2015.

(2) To the extent that any such sums so appropriated are not sufficient to make the total annual income of the fund equivalent to the amounts provided in clause (1), an amount sufficient to cover the remainder thereof shall be credited to the fund from revenues due and payable to the United States for deposit in the Treasury as miscellaneous receipts under the Outer Continental Shelf Lands Act, as amended (43 U.S.C. 1331 et seq.):
Provided, That notwithstanding the provisions of section 460l–6 of this title, moneys covered into the fund under this paragraph shall remain in the fund until appropriated by the Congress to carry out the purpose of this part.

§ 460l–7. Allocation of land and water conservation fund for State and Federal purposes

There shall be submitted with the annual budget of the United States a comprehensive statement of estimated requirements during the ensuing fiscal year for appropriations from the fund. Not less than 40 per centum of such appropriations shall be available for Federal purposes. Those appropriations from the fund up to and including $600,000,000 in fiscal year 1978 and up to and including $750,000,000 in fiscal year 1979 shall continue to be allocated in accordance with this section. There shall be credited to a special account within the fund $300,000,000 in fiscal year 1978 and $150,000,000 in fiscal year 1979 from the amounts authorized by section 460l–5 of this title. Amounts credited to this account shall remain in the account until appropriated. Appropriations from the special account shall be available only with respect to areas existing and authorizations enacted prior to the convening of the Ninety-fifth Congress, for acquisition of lands, waters, or interests in lands or waters within the exterior boundaries, as aforesaid, of—

(1) the national park system;
(2) national scenic trails;
(3) the national wilderness preservation system;
(4) federally administered components of the National Wild and Scenic Rivers System; and
(5) national recreation areas administered by the Secretary of Agriculture.

§ 460l–8 [Sec 6]. Financial assistance to States

(a) Authority of Secretary of the Interior; payments to carry out purposes of land and water conservation provisions

The Secretary of the Interior (hereinafter referred to as the “Secretary”) is authorized to provide financial assistance to the States from moneys available for State purposes. Payments may be made to the States by the Secretary as hereafter provided, subject to such terms and conditions as he considers appropriate and in the public interest to carry out the purposes of this part, for outdoor recreation:

(1) planning,
(2) acquisition of land, waters, or interests in land or waters, or
(3) development.

(b) Apportionment among States; finality of administrative determination; formula; notification; reapportionment of unobligated amounts; definition of State

Sums appropriated and available for State purposes for each fiscal year shall be apportioned among the several States by the Secretary, whose determination shall be final, in accordance with the following formula:

(1) Forty per centum of the first $225,000,000; thirty per centum of the next $275,000,000; and twenty per centum of all additional appropriations shall be apportioned equally among the several States; and

(2) At any time, the remaining appropriation shall be apportioned on the basis of need to individual States by the Secretary in such amounts as in his judgment will best accomplish the purposes of this part. The determination of need shall include among other things a consideration of the proportion which the population of each State bears to the total population of the United States and of the use of outdoor recreation resources of individual States by persons from outside the State as well as a consideration of the Federal resources and programs in the particular States.

(3) The total allocation to an individual State under paragraphs (1) and (2) of this subsection shall not exceed 10 per centum of the total amount allocated to the several States in any one year.

(4) The Secretary shall notify each State of its apportionments; and the amounts thereof shall be available thereafter for payment to such State for planning, acquisition, or development projects as hereafter prescribed. Any amount of any apportionment that has not been paid or obligated by the Secretary during the fiscal year in which such notification is given and for two fiscal years thereafter shall be reapportioned by the Secretary in accordance with paragraph (2) of this subsection, without regard to the 10 per centum limitation to an individual State specified in this subsection.

(5) For the purposes of paragraph (1) of this subsection, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands (when such islands achieve Commonwealth status) shall be treated collectively as one State, and shall receive shares of such apportionment in proportion to their populations. The above listed areas shall be treated as States for all other purposes of this title.

(c) Matching requirements

Payments to any State shall cover not more than 50 per centum of the cost of planning, acquisition, or development projects that are undertaken by the State. The remaining share of the cost shall be borne by the State in a manner and with such funds or services as shall be satisfactory to the Secretary. No payment may be made to any State for or on account of any cost or obligation incurred or any service rendered prior to September 3, 1964.
A comprehensive statewide outdoor recreation plan shall be required prior to the consideration by the Secretary of financial assistance for acquisition or development projects. The plan shall be adequate if, in the judgment of the Secretary, it encompasses and will promote the purposes of this part. Provided, That no plan shall be approved unless the Governor of the respective State certifies that ample opportunity for public participation in plan development and revision has been accorded. The Secretary shall develop, in consultation with others, criteria for public participation, which criteria shall constitute the basis for the certification by the Governor. The plan shall contain—

1. the name of the State agency that will have authority to represent and act for the State in dealing with the Secretary for purposes of this part;
2. an evaluation of the demand for and supply of outdoor recreation resources and facilities in the State;
3. a program for the implementation of the plan; and
4. other necessary information, as may be determined by the Secretary. The plan shall take into account relevant Federal resources and programs and shall be correlated so far as practicable with other State, regional, and local plans. Where there exists or is in preparation for any particular State a comprehensive plan financed in part with funds supplied by the Housing and Home Finance Agency, any statewide outdoor recreation plan prepared for purposes of this part shall be based upon the same population, growth, and other pertinent factors as are used in formulating the Housing and Home Finance Agency financed plans.

The Secretary may provide financial assistance to any State for projects for the preparation of a comprehensive statewide outdoor recreation plan when such plan is not otherwise available or for the maintenance of such plan. For fiscal year 1988 and thereafter each comprehensive statewide outdoor recreation plan shall specifically address wetlands within that State as an important outdoor recreation resource as a prerequisite to approval, except that a revised comprehensive statewide outdoor recreation plan shall not be required by the Secretary, if a State submits, and the Secretary, acting through the Director of the National Park Service, approves, as a part of and as an addendum to the existing comprehensive statewide outdoor recreation plan, a wetlands priority plan developed in consultation with the State agency with responsibility for fish and wildlife resources and consistent with the national wetlands priority conservation plan developed under section 3921 of this title or, if such national plan has not been completed, consistent with the provisions of that section.

(e) Projects for land and water acquisition; development

In addition to assistance for planning projects, the Secretary may provide financial assistance to any State for the following types of projects or combinations thereof if they are in accordance with the State comprehensive plan:

4

Appendix A – LWCF Act

Texas Outdoor Recreation Plan
(1) For the acquisition of land, waters, or interests in land or waters, or wetland areas and interests therein as identified in the wetlands provisions of the comprehensive plan (other than land, waters, or interests in land or waters acquired from the United States for less than fair market value), but not including incidental costs relating to acquisition. Whenever a State provides that the owner of a single-family residence may, at his option, elect to retain a right of use and occupancy for not less than six months from the date of acquisition of such residence and such owner elects to retain such a right, such owner shall be deemed to have waived any benefits under sections 4623, 4624, 4625, and 4626 of title 42 and for the purposes of those sections such owner shall not be considered a displaced person as defined in section 4601 (6) of title 42.

(2) For development of basic outdoor recreation facilities to serve the general public, including the development of Federal lands under lease to States for terms of twenty-five years or more: Provided, That no assistance shall be available under this part to enclose or shelter facilities normally used for outdoor recreation activities, but the Secretary may permit local funding, and after September 28, 1976, not to exceed 10 per centum of the total amount allocated to a State in any one year to be used for sheltered facilities for swimming pools and ice skating rinks in areas where the Secretary determines that the severity of climatic conditions and the increased public use thereby made possible justifies the construction of such facilities.

(f) Requirements for project approval; conditions; progress payments; payments to Governors or State officials or agencies; State transfer of funds to public agencies; conversion of property to other uses; reports to Secretary; accounting; records; audit; discrimination prohibited

(1) Payments may be made to States by the Secretary only for those planning, acquisition, or development projects that are approved by him. No payment may be made by the Secretary for or on account of any project with respect to which financial assistance has been given or promised under any other Federal program or activity, and no financial assistance may be given under any other Federal program or activity for or on account of any project with respect to which such assistance has been given or promised under this part. The Secretary may make payments from time to time in keeping with the rate of progress toward the satisfactory completion of individual projects: Provided, That the approval of all projects and all payments, or any commitments relating thereto, shall be withheld until the Secretary receives appropriate written assurance from the State that the State has the ability and intention to finance its share of the cost of the particular project, and to operate and maintain by acceptable standards, at State expense, the particular properties or facilities acquired or developed for public outdoor recreation use.

(2) Payments for all projects shall be made by the Secretary to the Governor of the State or to a State official or agency designated by the Governor or by State law having authority and responsibility to accept and to administer funds paid hereunder for approved projects. If consistent with an approved project, funds may be transferred by the State to a political subdivision or other appropriate public agency.

(3) No property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if he finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as he deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location.: Provided, That wetland areas and interests therein as identified in the
wetlands provisions of the comprehensive plan and proposed to be acquired as suitable replacement property within that same State that is otherwise acceptable to the Secretary, acting through the Director of the National Park Service, shall be considered to be of reasonably equivalent usefulness with the property proposed for conversion.

(4) No payment shall be made to any State until the State has agreed to (1) provide such reports to the Secretary, in such form and containing such information, as may be reasonably necessary to enable the Secretary to perform his duties under this part, and (2) provide such fiscal control and fund accounting procedures as may be necessary to assure proper disbursement and accounting for Federal funds paid to the State under this part.

(5) Each recipient of assistance under this part shall keep such records as the Secretary shall prescribe, including records which fully disclose the amount and the disposition by such recipient of the proceeds of such assistance, the total cost of the project or undertaking in connection with which such assistance is given or used, and the amount and nature of that portion of the cost of the project or undertaking supplied by other sources, and such other records as will facilitate an effective audit.

(6) The Secretary, and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access for the purpose of audit and examination to any books, documents, papers, and records of the recipient that are pertinent to assistance received under this part.


(8) With respect to property acquired or developed with assistance from the fund, discrimination on the basis of residence, including preferential reservation or membership systems, is prohibited except to the extent that reasonable differences in admission and other fees may be maintained on the basis of residence.

(g) Coordination with Federal agencies

In order to assure consistency in policies and actions under this part with other related Federal programs and activities (including those conducted pursuant to title VII of the Housing Act of 1961 [42 U.S.C. 1500 et seq.] and section 701 of the Housing Act of 1954) and to assure coordination of the planning, acquisition, and development assistance to States under this section with other related Federal programs and activities, the President may issue such regulations with respect thereto as he deems desirable and such assistance may be provided only in accordance with such regulations.

(h) Capital improvement and other projects to reduce crime

(1) Availability of funds In addition to assistance for planning projects, and in addition to the projects identified in subsection (e) of this section, and from amounts appropriated out of the Violent Crime Reduction Trust Fund, the Secretary may provide financial assistance to the States, not to exceed $15,000,000, for projects or combinations thereof for the purpose of making capital improvements and other measures to increase safety in urban parks and recreation areas, including funds to—

(A) increase lighting within or adjacent to public parks and recreation areas;
(B) provide emergency phone lines to contact law enforcement or security personnel in areas within or adjacent to public parks and recreation areas;

(C) increase security personnel within or adjacent to public parks and recreation areas; and

(D) fund any other project intended to increase the security and safety of public parks and recreation areas.

(2) Eligibility In addition to the requirements for project approval imposed by this section, eligibility for assistance under this subsection shall be dependent upon a showing of need. In providing funds under this subsection, the Secretary shall give priority to projects proposed for urban parks and recreation areas with the highest rates of crime and, in particular, to urban parks and recreation areas with the highest rates of sexual assault.

(3) Federal share Notwithstanding subsection (c) of this section, the Secretary may provide 70 percent improvement grants for projects undertaken by any State for the purposes described in this subsection, and the remaining share of the cost shall be borne by the State.

§ 460l–10. Availability of land and water conservation fund for publicity purposes; standardized temporary signing; standards and guidelines

Moneys derived from the sources listed in section 460l–5 of this title shall not be available for publicity purposes: Provided, however, That in each case where significant acquisition or development is initiated, appropriate standardized temporary signing shall be located on or near the affected site, to the extent feasible, so as to indicate the action taken is a product of funding made available through the Land and Water Conservation Fund. Such signing may indicate the per centum and dollar amounts financed by Federal and non-Federal funds, and that the source of the funding includes moneys derived from Outer Continental Shelf receipts. The Secretary shall prescribe standards and guidelines for the usage of such signing to assure consistency of design and application.
Appendix B. Legal Authority

TITLE 31  NATURAL RESOURCES AND CONSERVATION
PART 2  TEXAS PARKS AND WILDLIFE DEPARTMENT
CHAPTER 61  DESIGN AND CONSTRUCTION
SUBCHAPTER B  PROCEDURAL GUIDE FOR LAND AND WATER CONSERVATION FUND PROGRAM

RULE §61.81  Application Procedures
(a) The Texas Parks and Wildlife Department adopts the procedural guide for Land and Water Conservation Fund Program, as published in August 1978, and as amended in January, 1980, by reference. The department is the state agency designated to cooperate with the federal government in the administration of the provisions of the Land and Water Conservation Fund Act of 1965. This procedural guide is designed to assist local governments in making application for federal funds, and describes the rules and regulations governing the disbursement of such funds.

(b) Copies of the procedural guide are available at the Parks and Wildlife Department, 4200 Smith School Road, Austin, Texas 78744.

Parks and Wildlife Code

CHAPTER 24. STATE ASSISTANCE FOR LOCAL PARKS
SUBCHAPTER A. LOCAL PARKS FOR SMALLER COUNTIES AND MUNICIPALITIES AND OTHER POLITICAL SUBDIVISIONS

§ 24.001. DEFINITIONS. In this subchapter:

(1) Political subdivision" means a county, municipality, special district, river authority, or other governmental entity created under the authority of the state or a county or municipality.

(2) Urban area" means the area within a standard metropolitan statistical area (SMSA) in this state used in the last preceding federal census.

(3) Park" includes land and water parks owned or operated by the state or a political subdivision.

(4) Open space area" means a land or water area for human use and enjoyment that is relatively free of man-made structures.

(5) Natural area" means a site having valuable or vulnerable natural resources, ecological processes, or rare, threatened, or endangered species of vegetation or wildlife.
(6) Parks, recreational, and open space area plan" means a comprehensive plan that includes information on and analyses of parks, recreational, and open space area objectives, needs, resources, environment, and uses, and that identifies the amounts, locations, characteristics, and potentialities of areas for adequate parks, recreational, and open space opportunities.

(7) Federal rehabilitation and recovery grants" means matching grants made by the United States to or for political subdivisions for the purpose of rebuilding, remodeling, expanding, or developing existing outdoor or indoor parks, recreational, or open space areas and facilities, including improvements in park landscapes, buildings, and support facilities.

(8) Account" means the Texas recreation and parks account.

(9) Rural area" means any area not included in an urban area.

(10) Cultural resource site or area" means a site or area determined by the commission to have valuable and vulnerable cultural or historical resources.

(11) Nonprofit corporation" means a nonpolitical legal entity incorporated under the laws of this state that has been granted an exemption from federal income tax under Section 501(c), Internal Revenue Code of 1986, as amended.

(12) Underserved population" means any group of people that is low income, inner city, or rural as determined by the last census, or minority, physically or mentally challenged youth at risk, youth, or female.


§ 24.002. TEXAS RECREATION AND PARKS ACCOUNT.

The Texas recreation and parks account is a separate account in the general revenue fund. Money in the account may be used only for:

(1) grants under this subchapter to a county or municipality with a population of less than 500,000;

(2) grants under this subchapter to any other political subdivision that is not a county or municipality; or

(3) planning for, and acquisition, operation, and development of, outdoor recreation and conservation resources of this state and the administrative expenses incident to the projects or programs authorized under Subchapter D, Chapter 13.


Acts 2009, 81st Leg., R.S., Ch. 952, § 10, eff. September 1, 2009.

§ 24.003. ACCOUNT REVENUE SOURCE; REVENUE DEDICATION.
(a) The department shall deposit to the credit of the Texas recreation and parks account:

(1) an amount of money equal to 15 percent of the credits made to the department under Section 151.801, Tax Code; and

(2) money from any other source authorized by law.

(b) The department may deposit to the credit of the Texas recreation and parks account:

(1) private contributions, grants, and donations received in connection with this subchapter or Subchapter D, Chapter 13; and

(2) federal funds received in connection with this subchapter or Subchapter D, Chapter 13.

§ 24.004. ASSISTANCE GRANTS.

(a) The department may make grants of money from the account to a political subdivision for use by the political subdivision as all or part of the subdivision’s required share of funds for eligibility for receiving a federal rehabilitation and recovery grant.

(b) In order to receive a grant under this section, the political subdivision seeking the federal grant shall apply to the department for the grant and present evidence that the political subdivision qualifies for the federal grant.

(c) A grant under this section is conditioned on the political subdivision qualifying for and receiving the federal grant.

§ 24.005. DIRECT STATE MATCHING GRANTS.

(a) The department shall make grants of money from the account to a political subdivision to provide one-half of the costs of the planning, acquisition, or development of a park, recreational area, or open space area to be owned and operated by the political subdivision.

(b) In establishing the program of grants under this section, the department shall adopt rules and regulations for grant assistance.

(c) Money granted to a political subdivision under this section may be used for the operation and maintenance of parks, recreational areas, cultural resource sites or areas, and open space areas only:
(a) if the park, site, or area is owned or operated and maintained by the department and is being transferred by the commission for public use to a political subdivision for operation and maintenance; and

(b) during the period the commission determines to be necessary to effect the official transfer of the park, site, or area.

(d) The department shall make grants of money from the account to a political subdivision or nonprofit corporation for recreation, conservation, or education programs for underserved populations to encourage and implement increased access to and use of parks, recreational areas, cultural resource sites or areas, and open space areas by underserved populations.

(e) The department may provide from the account for direct administrative costs of the programs described by this subchapter.


§ 24.006. FUNDS FOR GRANTS TO LOCAL GOVERNMENTS.

When state revenues to the Texas recreation and parks account exceed $14 million per year, an amount not less than 15 percent shall be made available for grants to local governments for up to 50 percent of the cost of acquisition or development of indoor public recreation facilities for indoor recreation programs, sports activities, nature programs, or exhibits.


§ 24.007. ACCOUNT USE TO BE CONSISTENT WITH PLANS.

No grant may be made under Section 24.005 of this code nor may account money be used under Section 24.006 of this code unless:

(1) there is a present or future need for the acquisition and development of the property for which the grant is requested or the use is proposed; and

(2) a written statement is obtained from the regional planning commission having jurisdiction of the area in which the property is to be acquired and developed that the acquisition and development is consistent with local needs.

§ 24.008. ACQUISITION OF PROPERTY.

(a) No property may be acquired with grant money made under this subchapter or by the department under this subchapter if the purchase price exceeds the fair market value of the property as determined by one independent appraiser.

(b) Repealed by Acts 1999, 76th Leg., ch. 267, § 7, eff. Sept. 1, 1999.

(c) Property may be acquired with provision for a life tenancy if that provision facilitates the orderly and expedient acquisition of the property.

(d) Repealed by Acts 1999, 76th Leg., ch. 267, § 7, eff. Sept. 1, 1999.

(e) If land or water designated for park, recreational, cultural resource, or open space use is included in the local and regional park, recreational, cultural resource, and open space plans for two or more jurisdictions, the two or more jurisdictions may cooperate under state law to secure assistance from the account to acquire or develop the property. In those cases, the department may modify the standards for individual applicants but must be assured that a cooperative management plan for the land or water can be developed and effectuated and that one of the jurisdictions possesses the necessary qualifications to perform contractual responsibilities for purposes of the grant.

(f) All land or water purchased with assistance from the account shall be dedicated for park, recreational, cultural resource, indoor recreation center, and open space purposes in perpetuity and may not be used for any other purpose, except where the use is compatible with park, recreational, cultural resource, and open space objectives, and the use is approved in advance by the department.


§ 24.009. PAYMENTS, RECORDS, AND ACCOUNTING.

(a) On the approval of a grant under this subchapter and on the written request by the director, the comptroller of public accounts shall issue a warrant drawn against the Texas recreation and parks account and payable to the political subdivision or nonprofit corporation in the amount specified by the director.

(b) Each recipient of assistance under this subchapter shall keep records as required by the department, including records which fully disclose the amount and the disposition of the proceeds by the recipient, the total cost of the acquisition, a copy of the title and deed for the property acquired, the amount and nature of that portion of the cost of the acquisition supplied by other funds, and other records that facilitate effective audit. The director and the comptroller, or their authorized representatives, may examine any book, document, paper, and record of the recipient that are pertinent to assistance received under this subchapter.

(c) The recipient of funds under this subchapter shall, on each anniversary date of the grant for five years after the grant is made, furnish to the department a comprehensive report detailing the present and anticipated use of the property,
any contiguous additions to the property, and any major changes in the character of the property, including the extent of park development which may have taken place.


§ 24.011. NONCOMPLIANCE WITH SUBCHAPTER.

The attorney general shall file suit in a court of competent jurisdiction against a political subdivision or nonprofit corporation that fails to comply with the requirements of this subchapter to recover the full amount of the grant plus interest on that amount of five percent a year accruing from the time of noncompliance or for injunctive relief to require compliance with this subchapter. If the court finds that the political subdivision or nonprofit corporation has not complied with the requirements of this subchapter, it is not eligible for further participation in the program for three years following the finding for noncompliance.


§ 24.012. ACCOUNT NOT TO BE USED FOR PUBLICITY.

No money credited to the account may be used for publicity or related purposes.


§ 24.013. AUTHORITY OF POLITICAL SUBDIVISIONS TO HAVE PARKS. This subchapter does not authorize a political subdivision to acquire, develop, maintain, or operate a park, recreational area, open space area, or natural area.


SUBCHAPTER B. PARKS FOR LARGE COUNTIES AND MUNICIPALITIES

§ 24.051. DEFINITIONS. In this subchapter:

(1) "Account" means the large county and municipality recreation and parks account.

(2) "Cultural resource site or area" means a site or area determined by the commission to have valuable and vulnerable cultural or historical resources.

(3) "Federal rehabilitation and recovery grants" means matching grants made by the United States to or for political subdivisions for the purpose of rebuilding, remodeling, expanding, or developing existing outdoor or indoor parks, recreational, or open space areas and facilities, including improvements in park landscapes, buildings, and support facilities.
(4) "Large county or municipality" means a county or municipality with a population of 500,000 or more.

(5) "Natural area" means a site having valuable or vulnerable natural resources, ecological processes, or rare, threatened, or endangered species of vegetation or wildlife.

(6) "Nonprofit corporation" means a nonpolitical legal entity incorporated under the laws of this state that has been granted an exemption from federal income tax under Section 501(c), Internal Revenue Code of 1986, as amended.

(7) "Open space area" means a land or water area for human use and enjoyment that is relatively free of man-made structures.

(8) "Park" includes land and water parks owned or operated by the state or a political subdivision.

(9) "Parks, recreational, and open space area plan" means a comprehensive plan that includes information on and analyses of parks, recreational, and open space area objectives, needs, resources, environment, and uses, and that identifies the amounts, locations, characteristics, and potentialities of areas for adequate parks, recreational, and open space opportunities.

(10) "Political subdivision" means a county, municipality, special district, river authority, or other governmental entity created under the authority of the state or a county or municipality.

(11) "Underserved population" means any group of people that is low income or inner city, as determined by the last census, or minority, physically or mentally challenged youth at risk, youth, or female.


§ 24.052. LARGE COUNTY AND MUNICIPALITY RECREATION AND PARKS ACCOUNT.

The large county and municipality recreation and parks account is a separate account in the general revenue fund. Money in the account may be used only as provided by this subchapter or Subchapter D, Chapter 13.

Amended by: Acts 2009, 81st Leg., R.S., Ch. 952, § 10, eff. September 1, 2009.

§ 24.053. ACCOUNT REVENUE SOURCE; DEDICATION.

(a) The department shall deposit to the credit of the large county and municipality recreation and parks account:
   (1) an amount of money equal to 10 percent of the credits made to the department under Section 151.801, Tax Code; and
   (2) money from any other source authorized by law.

(1) The department may deposit to the credit of the large county and municipality recreation and parks account:
   (1) private contributions, grants, and donations received in connection with this subchapter or Subchapter D, Chapter 13; and
§ 24.054. ASSISTANCE GRANTS.

(a) The department may make grants of money from the account to a large county or municipality for use by the county or municipality as all or part of the county's or municipality's required share of funds for eligibility for receiving a federal rehabilitation and recovery grant.

(b) In order to receive a grant under this section, the county or municipality seeking the federal grant shall apply to the department for the grant and present evidence that the county or municipality qualifies for the federal grant.

(c) A grant under this section is conditioned on the county or municipality qualifying for and receiving the federal grant.


§ 24.055. DIRECT STATE MATCHING GRANTS.

(a) The department shall make grants of money from the account to a large county or municipality to provide one-half of the costs of the planning, acquisition, or development of a park, recreational area, or open space area to be owned and operated by the county or municipality.

(b) In establishing the program of grants under this section, the department shall adopt rules and regulations for grant assistance.

(c) Money granted to a county or municipality under this section may be used for the operation and maintenance of parks, recreational areas, cultural resource sites or areas, and open space areas only:

(1) if the park, site, or area is owned or operated and maintained by the department and is being transferred by the commission for public use to the county or municipality for operation and maintenance; and

(2) during the period the commission determines to be necessary to effect the official transfer of the park, site, or area.

(d) The department shall make grants of money from the account to a large county or municipality or to a nonprofit corporation for use in a large county or municipality for recreation, conservation, or education programs for underserved populations to encourage and implement increased access to and use of parks, recreational areas, cultural resource sites or areas, and open space areas by underserved populations.

(e) The department may provide from the account for direct administrative costs of the programs described by this subchapter.

§ 24.056. FUNDS FOR GRANTS TO LARGE COUNTIES AND MUNICIPALITIES.

When state revenue to the large county and municipality recreation and parks account exceeds $14 million per year, an amount not less than 15 percent shall be made available for grants to large counties and municipalities for up to 50 percent of the cost of acquisition or development of indoor public recreation facilities for indoor recreation programs, sports activities, nature programs, or exhibits.

Amended by: Acts 2009, 81st Leg., R.S., Ch. 952, § 10, eff. September 1, 2009.

§ 24.057. ACCOUNT USE TO BE CONSISTENT WITH PLANS.

No grant may be made under Section 24.055 nor may account money be used under Section 24.056 unless:

(1) there is a present or future need for the acquisition and development of the property for which the grant is requested or the use is proposed; and

(2) a written statement is obtained from the regional planning commission having jurisdiction of the area in which the property is to be acquired and developed that the acquisition and development is consistent with local needs.


§ 24.058. ACQUISITION OF PROPERTY.

(a) No property may be acquired with grant money made under this subchapter or by the department under this subchapter if the purchase price exceeds the fair market value of the property as determined by one independent appraiser.

(b) Property may be acquired with provision for a life tenancy if that provision facilitates the orderly and expedient acquisition of the property.

(c) If land or water designated for park, recreational, cultural resource, or open space use is included in the local and regional park, recreational, cultural resource, and open space plans for two or more large counties or municipalities, the two or more large counties or municipalities may cooperate under state law to secure assistance from the account to acquire or develop the property. In those cases, the department may modify the standards for individual applicants but must be assured that a cooperative management plan for the land or water can be developed and effectuated and that one of the counties or municipalities possesses the necessary qualifications to perform contractual responsibilities for purposes of the grant.

(d) All land or water purchased with assistance from the account shall be dedicated for park, recreational, cultural resource, indoor recreation center, and open space purposes in perpetuity and may not be used for any other purpose, except where the use is compatible with park, recreational, cultural resource, and open space objectives, and the use is approved in advance by the department.

§ 24.059. PAYMENTS, RECORDS, AND ACCOUNTING.

(a) On the approval of a grant under this subchapter and on the written request by the director, the comptroller shall issue a warrant drawn against the large county and municipality recreation and parks account and payable to the county, municipality, or nonprofit corporation in the amount specified by the director.

(b) Each recipient of assistance under this subchapter shall keep records as required by the department, including records that fully disclose the amount and the disposition of the proceeds by the recipient, the total cost of the acquisition, a copy of the title and deed for the property acquired, the amount and nature of that portion of the cost of the acquisition supplied by other funds, and other records that facilitate effective audit. The director and the comptroller, or their authorized representatives, may examine any book, document, paper, and record of the recipient that are pertinent to assistance received under this subchapter.

(c) The recipient of funds under this subchapter shall, on each anniversary date of the grant for five years after the grant is made, furnish to the department a comprehensive report detailing the present and anticipated use of the property, any contiguous additions to the property, and any major changes in the character of the property, including the extent of park development that may have taken place.


§ 24.060. NONCOMPLIANCE WITH SUBCHAPTER.

The attorney general shall file suit in a court of competent jurisdiction against a county, municipality, or nonprofit corporation that fails to comply with the requirements of this subchapter to recover the full amount of the grant plus interest on that amount of five percent a year accruing from the time of noncompliance or for injunctive relief to require compliance with this subchapter. If the court finds that the county, municipality, or nonprofit corporation has not complied with the requirements of this subchapter, it is not eligible for further participation in the program for three years following the finding for noncompliance.


§ 24.061. ACCOUNT NOT TO BE USED FOR PUBLICITY.

No money credited to the account may be used for publicity or related purposes.


§ 24.062. AUTHORITY OF LARGE COUNTY OR MUNICIPALITY TO HAVE PARKS.

This subchapter does not authorize a large county or municipality to acquire, develop, maintain, or operate a park, recreational area, open space area, or natural area.

The Texas Outdoor Recreation Plan addresses the following State strategies and action items either explicitly or indirectly:

### Land and Water Resources Conservation and Recreation Plan 2010

- **Str 1.C.3**: Inventory conservation, recreation and historic properties to identify gaps in representation and protection
- **Str 1.C.4**: Pursue funding for acquisition of land, conservation easements, and the purchase of development rights from willing sellers
- **Str 1.G.1**: Work with international, federal, state, local and private organizations and the public to generate creative ways to achieve landscape-scale habitat management
- **Str 1.G.4**: Foster regional and statewide dialogue about conservation priorities through the Texas Conservation and Recreation Forums (TxCRF)
- **Str 1.G.5**: Utilize annual TxCRF to analyze the state’s existing and future land and water conservation and recreation needs; identify threatened land and water resources; and establish the relative importance of identified needs
- **Str 1.J.3**: Evaluate the environmental advantages and disadvantages of emerging energy, utility and fuel technologies
- **Str 2.A.1**: Increase public fishing and hunting opportunities
- **Str 2.A.2**: Provide diverse outdoor recreational opportunities, from urban programs to paddling trails to wilderness backcountry camping
- **Str 2.A.4**: Expand and enhance agency sites by acquiring in-holdings and adjacent tracts from willing donors and sellers
- **Str 2.A.5**: Construct facilities and amenities to broaden access to the outdoors, protect natural resources, and enhance the quality of experience for people of all ages, abilities and interests
- **Str 2.A.8**: Seek opportunities to create new state parks of high biological and recreational value near metropolitan centers
- **Str 2.B.1**: Partner with federal, state and local agencies to provide increased access to public lands and waters
- **Str 2.B.6**: Promote paddling trails, recreational fishing and other forms of aquatic-based recreation in and around urban areas
- **Str 2.B.7**: Improve the quality and distribution of boat ramps statewide
- **Str 2.C.1**: Promote the enjoyable, responsible and ethical use of natural, cultural and recreational resources
- Str 2.D.2  Assist local communities and private landowners in developing economically viable recreational venues for activities such as wildlife-watching, stargazing, photo safaris, camping and other nature-based recreation
- Str 3.E.2  Provide recommendations and assistance to local governments regarding the importance of green space, watersheds, aquifer recharge zones and park lands
- Str 4.A.7  Develop a tool to prioritize opportunistic land acquisitions that are biologically, recreationally and/or culturally significant
- Str 4.B.3  Involve Texans through expanded social media tools, public meetings, public forums, one-on-one conversations and customer surveys
- Str 4.C.2  Identify and leverage new and existing revenue streams to maximize recreation and conservation efforts
- Str 4.C.4  Maximize federal aid reimbursement through appropriate allocation of funds to approved projects
- Str 4.C.5  Seek additional grant opportunities
- Str 4.G.2  Keep agency policies, procedures, plans and programs relevant through periodic review

**TPWD Natural Agenda, 2011**

- Str. B.2.1. Provide Local Park Grants. Provide technical assistance and outdoor, indoor, regional and small community grants to local governments.
- Str. D.1.2. Land Acquisition. Acquire priority natural, cultural and recreational resources in accordance with the Land and Water Resources Conservation and Recreation Plan.

**Texas Partnership for Children in Nature Strategic Plan, 2010**

- Access Action 2.1.3  Increase the number of safe and accessible parks and playgrounds, particularly in underserved and low-income communities
- Access Obj. 2.4  Support funding for the state park system and local park grants program
- Access Action 3.2.3  Support stable funding for land acquisition for publicly-accessible natural areas in close proximity to population centers
## APPENDIX D. List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADA</td>
<td>Americans with Disabilities Act</td>
</tr>
<tr>
<td>AGO</td>
<td>America's Great Outdoors</td>
</tr>
<tr>
<td>BMI</td>
<td>Body Mass Index</td>
</tr>
<tr>
<td>CESSF</td>
<td>Cooperative Endangered Species Conservation Fund</td>
</tr>
<tr>
<td>CHD</td>
<td>Coronary Heart Disease</td>
</tr>
<tr>
<td>COG</td>
<td>Council of Government</td>
</tr>
<tr>
<td>COOP</td>
<td>Community Outdoor Outreach Program</td>
</tr>
<tr>
<td>DFHP</td>
<td>Desert Fish Habitat Protection</td>
</tr>
<tr>
<td>DMV</td>
<td>Department of Motor Vehicles</td>
</tr>
<tr>
<td>DOI</td>
<td>United States Department of the Interior</td>
</tr>
<tr>
<td>DSHS</td>
<td>Department of State Health Services</td>
</tr>
<tr>
<td>EER</td>
<td>Energy Efficiency Rating</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>EWRA</td>
<td>Emergency Wetlands Resources Act</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>GCJV</td>
<td>Gulf Coast Joint Venture</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information System</td>
</tr>
<tr>
<td>GPLCC</td>
<td>Great Plains Landscape Conservation Cooperative</td>
</tr>
<tr>
<td>GPS</td>
<td>Global Positioning System</td>
</tr>
<tr>
<td>HCP</td>
<td>Habitat Conservation Plan</td>
</tr>
<tr>
<td>HEW</td>
<td>Health, Education and Welfare</td>
</tr>
<tr>
<td>H-GAC</td>
<td>Houston-Galveston Area Council (COG)</td>
</tr>
<tr>
<td>HUD</td>
<td>Housing and Urban Development</td>
</tr>
<tr>
<td>HVAC</td>
<td>Heating, Ventilation, and Air Conditioning</td>
</tr>
<tr>
<td>IMPLAN</td>
<td>Impact Analysis for Planning</td>
</tr>
<tr>
<td>IOC</td>
<td>Interagency Obesity Council</td>
</tr>
<tr>
<td>IPM</td>
<td>Integrated Pest Management</td>
</tr>
<tr>
<td>IRIS</td>
<td>Internet Research Information Series</td>
</tr>
<tr>
<td>LEED</td>
<td>Leadership in Energy and Environment Design</td>
</tr>
<tr>
<td>LIP</td>
<td>Landowner Incentive Program</td>
</tr>
<tr>
<td>LMVJV</td>
<td>Lower Mississippi Valley Joint Venture</td>
</tr>
<tr>
<td>LPF</td>
<td>Local Park, Recreation and Open Space Fund</td>
</tr>
<tr>
<td>Acronym</td>
<td>Full Form</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>LWCF</td>
<td>Land and Water Conservation Fund</td>
</tr>
<tr>
<td>LWRCRP</td>
<td>Land and Water Resources Conservation and Recreation Plan</td>
</tr>
<tr>
<td>MI</td>
<td>Myocardial Infarction</td>
</tr>
<tr>
<td>MSA</td>
<td>Metropolitan Statistical Area</td>
</tr>
<tr>
<td>MUD</td>
<td>Municipal Utility District</td>
</tr>
<tr>
<td>NABCI</td>
<td>North American Bird Conservation Initiative</td>
</tr>
<tr>
<td>NAD83</td>
<td>North American Datum 1983</td>
</tr>
<tr>
<td>NMMA</td>
<td>National Marine Manufacturers Association</td>
</tr>
<tr>
<td>NOAA</td>
<td>National Oceanic and Atmospheric Administration</td>
</tr>
<tr>
<td>NPS</td>
<td>National Parks Service</td>
</tr>
<tr>
<td>NSRE</td>
<td>National Survey on Recreation and the Environment</td>
</tr>
<tr>
<td>NWPCP</td>
<td>National Wetlands Priority Conservation Plan</td>
</tr>
<tr>
<td>OPJV</td>
<td>Oaks and Prairies Joint Venture</td>
</tr>
<tr>
<td>OPSP</td>
<td>Open Project Selection Process</td>
</tr>
<tr>
<td>PLJV</td>
<td>Playa Lakes Joint Ventures</td>
</tr>
<tr>
<td>RFP</td>
<td>Request For Proposals</td>
</tr>
<tr>
<td>RGJV</td>
<td>Rio Grande Joint Ventures</td>
</tr>
<tr>
<td>SARP</td>
<td>Southeast Aquatic Resources Partnership</td>
</tr>
<tr>
<td>SCORP</td>
<td>State Comprehensive Outdoor Recreation Plan</td>
</tr>
<tr>
<td>SEER</td>
<td>Seasonal Energy Efficiency Rating</td>
</tr>
<tr>
<td>SSI</td>
<td>Sustainable Sites Initiative</td>
</tr>
<tr>
<td>TAS</td>
<td>Texas Accessibility Standards</td>
</tr>
<tr>
<td>TCAP</td>
<td>Texas Conservation Action Plan</td>
</tr>
<tr>
<td>TCIN</td>
<td>Texas Children in Nature</td>
</tr>
<tr>
<td>TDA</td>
<td>Texas Department of Aging</td>
</tr>
<tr>
<td>TDLR</td>
<td>Texas Department of Licensing and Regulations</td>
</tr>
<tr>
<td>TEA</td>
<td>Texas Education Agency</td>
</tr>
<tr>
<td>TNC</td>
<td>The Nature Conservancy</td>
</tr>
<tr>
<td>TNTI</td>
<td>Texas Nature Tourism Inventory</td>
</tr>
<tr>
<td>TORP</td>
<td>Texas Outdoor Recreation Plan</td>
</tr>
<tr>
<td>TPL</td>
<td>Trust for Public Land</td>
</tr>
<tr>
<td>TPRF</td>
<td>Texas Parks and Recreation Foundation</td>
</tr>
<tr>
<td>TPWD</td>
<td>Texas Parks and Wildlife Department</td>
</tr>
<tr>
<td>TRAPS</td>
<td>Texas Recreation and Parks Society</td>
</tr>
<tr>
<td>TRPA</td>
<td>Texas Recreation and Parks Account</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>TSF</td>
<td>Texas Forest Service</td>
</tr>
<tr>
<td>TSMS</td>
<td>Texas State Mapping System</td>
</tr>
<tr>
<td>TWCP</td>
<td>Texas Wetlands Conservation Plan</td>
</tr>
<tr>
<td>TWDB</td>
<td>Texas Water Development Board</td>
</tr>
<tr>
<td>TYC</td>
<td>Texas Youth Commission</td>
</tr>
<tr>
<td>U.S.</td>
<td>United States</td>
</tr>
<tr>
<td>UHI</td>
<td>Urban Heat Island</td>
</tr>
<tr>
<td>UPARR</td>
<td>Urban Park and Recreation Recovery program</td>
</tr>
<tr>
<td>USDA</td>
<td>U.S. Department of Agriculture</td>
</tr>
<tr>
<td>USFS</td>
<td>U.S. Forest Service</td>
</tr>
<tr>
<td>USFWS</td>
<td>U.S. Fish and Wildlife Service</td>
</tr>
<tr>
<td>VFD</td>
<td>Variable Frequency Drive</td>
</tr>
</tbody>
</table>
Appendix E. Survey Results

Recreation Providers Survey

An on-line survey was offered to the recreation providers between August 15 and September 28, 2011, with the process outlined in the Planning Process chapter. We do acknowledge that the primary limitation of this method is that the survey was conducted as a convenience sample in which invited web visitors had the option to complete the survey. A convenience sample poses risks as it may not fully represent the population of recreation providers in Texas and there was no way to follow up with respondents to determine whether respondents differed from non-respondents.

The survey responses are included in this appendix. For more detailed information on the Recreation Providers Survey, contact the Recreation Grants Branch at 512-389-8109. An analysis of the recreation providers input is presented in Chapter 5 Outdoor Recreation Demand.

<table>
<thead>
<tr>
<th>2012 Texas Outdoor Recreation Plan - Recreation Provider Survey Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents: 253</td>
</tr>
</tbody>
</table>

1. What type of governmental entity do you represent?

<table>
<thead>
<tr>
<th>Response Total</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td>165</td>
</tr>
<tr>
<td>State</td>
<td>36</td>
</tr>
<tr>
<td>County</td>
<td>18</td>
</tr>
<tr>
<td>Special District (river authority, municipal utility district, water district, etc.)</td>
<td>12</td>
</tr>
<tr>
<td>Federal</td>
<td>12</td>
</tr>
</tbody>
</table>

2. Name of your organization

Total Respondents 242

3. Zip code

Total Respondents 242
4. Do you have a system-wide master plan/comprehensive plan for your parks and outdoor recreation sites, facilities and services?

<table>
<thead>
<tr>
<th>Response</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>208</td>
<td>86%</td>
</tr>
<tr>
<td>No</td>
<td>34</td>
<td>14%</td>
</tr>
</tbody>
</table>

5. Rate the usefulness of your system-wide master plan/comprehensive plan for:

<table>
<thead>
<tr>
<th>Prioritizing overall needs for your local park system/park system</th>
<th>Very Useful</th>
<th>Useful</th>
<th>Neutral</th>
<th>Not Useful</th>
<th>Not at all Useful</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>45.66%</td>
<td>42.77%</td>
<td>6.94%</td>
<td>1.73%</td>
<td>0.58%</td>
<td>2.31%</td>
</tr>
<tr>
<td></td>
<td>(79)</td>
<td>(74)</td>
<td>(12)</td>
<td>(3)</td>
<td>(1)</td>
<td>(4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prioritizing decisions related to providing high quality recreation experiences in your local community/park system</th>
<th>Very Useful</th>
<th>Useful</th>
<th>Neutral</th>
<th>Not Useful</th>
<th>Not at all Useful</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>45.98%</td>
<td>41.95%</td>
<td>8.62%</td>
<td>1.15%</td>
<td>1.15%</td>
<td>1.15%</td>
</tr>
<tr>
<td></td>
<td>(80)</td>
<td>(73)</td>
<td>(15)</td>
<td>(2)</td>
<td>(2)</td>
<td>(2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prioritizing development of recreation facilities in your local community/park system</th>
<th>Very Useful</th>
<th>Useful</th>
<th>Neutral</th>
<th>Not Useful</th>
<th>Not at all Useful</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>44.83%</td>
<td>41.95%</td>
<td>8.05%</td>
<td>1.72%</td>
<td>1.15%</td>
<td>2.3%</td>
</tr>
<tr>
<td></td>
<td>(78)</td>
<td>(73)</td>
<td>(14)</td>
<td>(3)</td>
<td>(2)</td>
<td>(4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prioritizing acquisition of parkland for your local community/park system</th>
<th>Very Useful</th>
<th>Useful</th>
<th>Neutral</th>
<th>Not Useful</th>
<th>Not at all Useful</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>44.25%</td>
<td>34.48%</td>
<td>13.22%</td>
<td>2.3%</td>
<td>0.57%</td>
<td>5.17%</td>
</tr>
<tr>
<td></td>
<td>(77)</td>
<td>(60)</td>
<td>(23)</td>
<td>(4)</td>
<td>(1)</td>
<td>(9)</td>
</tr>
</tbody>
</table>

6. Rate the level of difficulty in the administration of the FUNDING issues facing your park/park system.

<table>
<thead>
<tr>
<th>Obtaining new facility development funds</th>
<th>1. Not difficult</th>
<th>2</th>
<th>3. Neutral</th>
<th>4</th>
<th>5. Very difficult</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.05%</td>
<td>8.42%</td>
<td>13.16%</td>
<td>24.74%</td>
<td>49.47%</td>
<td>3.16%</td>
</tr>
<tr>
<td></td>
<td>(2)</td>
<td>(16)</td>
<td>(25)</td>
<td>(47)</td>
<td>(94)</td>
<td>(6)</td>
</tr>
</tbody>
</table>

| Obtaining major renovation funds        | 0.53%            | 7.89% | 12.63% | 27.89% | 46.32% | 4.74% |
|                                        | (1)              | (15) | (24)    | (53)    | (88)    | (9)   |

| Obtaining land acquisition funds        | 2.11%            | 7.37% | 12.63% | 25.26% | 45.79% | 6.84% |
|                                        | (4)              | (14) | (24)    | (48)    | (87)    | (13)  |

| Obtaining facility replacement funds    | 1.58%            | 8.42% | 15.26% | 25.79% | 44.74% | 4.21% |
|                                        | (3)              | (16) | (29)    | (49)    | (85)    | (8)   |

<p>| Obtaining outdoor recreation and education programming funds | 1.05% | 13.16% | 22.63% | 30.53% | 28.95% | 3.68% |
|                                                              | (2)  | (25)   | (43)   | (58)    | (55)   | (7)   |</p>
<table>
<thead>
<tr>
<th>Obtaining overall recreation administration funds</th>
<th>1.58% (3)</th>
<th>15.79% (30)</th>
<th>26.84% (51)</th>
<th>25.26% (48)</th>
<th>27.37% (52)</th>
<th>3.16% (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtaining daily maintenance funds</td>
<td>5.26% (10)</td>
<td>24.21% (46)</td>
<td>21.58% (41)</td>
<td>25.26% (48)</td>
<td>20.53% (39)</td>
<td>3.16% (6)</td>
</tr>
</tbody>
</table>

7. Rate the level of difficulty in the administration of the MEETING PUBLIC NEEDS issues facing your park/park system.

<table>
<thead>
<tr>
<th>Issue</th>
<th>1. Not difficult</th>
<th>2</th>
<th>3. Neutral</th>
<th>4</th>
<th>5. Very difficult</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting demand for a growing population</td>
<td>2.84% (5)</td>
<td>14.2% (25)</td>
<td>21.59% (38)</td>
<td>34.66% (61)</td>
<td>22.16% (39)</td>
<td>4.55% (8)</td>
</tr>
<tr>
<td>Meeting the need for undeveloped public lands</td>
<td>4.49% (8)</td>
<td>15.73% (28)</td>
<td>23.03% (41)</td>
<td>26.97% (48)</td>
<td>25.84% (46)</td>
<td>3.93% (7)</td>
</tr>
<tr>
<td>Meeting the need for athletic fields/complexes</td>
<td>8.94% (16)</td>
<td>10.61% (19)</td>
<td>19.55% (35)</td>
<td>21.23% (38)</td>
<td>25.14% (45)</td>
<td>14.53% (26)</td>
</tr>
<tr>
<td>Meeting the needs of youth through provision of facilities, services and programs</td>
<td>8.38% (15)</td>
<td>20.67% (37)</td>
<td>24.02% (43)</td>
<td>27.93% (50)</td>
<td>17.88% (32)</td>
<td>1.12% (2)</td>
</tr>
<tr>
<td>Meeting the needs for off-leash dog areas</td>
<td>6.21% (11)</td>
<td>10.17% (18)</td>
<td>22.6% (40)</td>
<td>19.21% (34)</td>
<td>25.42% (45)</td>
<td>16.38% (29)</td>
</tr>
<tr>
<td>Meeting the needs of off-street walking or biking paths</td>
<td>11.24% (20)</td>
<td>21.91% (39)</td>
<td>23.6% (42)</td>
<td>24.72% (44)</td>
<td>17.42% (31)</td>
<td>1.12% (2)</td>
</tr>
<tr>
<td>Meeting the needs of older people through provision of facilities, services and programs</td>
<td>9.66% (17)</td>
<td>23.86% (42)</td>
<td>27.27% (48)</td>
<td>26.7% (47)</td>
<td>11.36% (20)</td>
<td>1.14% (2)</td>
</tr>
<tr>
<td>Meeting accessibility standards for people with disabilities</td>
<td>11.24% (20)</td>
<td>17.98% (32)</td>
<td>31.46% (56)</td>
<td>25.28% (45)</td>
<td>12.36% (22)</td>
<td>1.69% (3)</td>
</tr>
<tr>
<td>Meeting demand for public access to water for swimming, boating or fishing</td>
<td>13.48% (24)</td>
<td>20.79% (37)</td>
<td>18.54% (33)</td>
<td>20.22% (36)</td>
<td>16.29% (29)</td>
<td>10.67% (19)</td>
</tr>
<tr>
<td>Meeting the needs of diverse cultures</td>
<td>8.47% (15)</td>
<td>19.77% (35)</td>
<td>43.5% (77)</td>
<td>18.08% (32)</td>
<td>7.91% (14)</td>
<td>2.26% (4)</td>
</tr>
<tr>
<td>Providing a safe environment</td>
<td>16.76% (30)</td>
<td>36.87% (66)</td>
<td>22.91% (41)</td>
<td>18.99% (34)</td>
<td>3.35% (6)</td>
<td>1.12% (2)</td>
</tr>
<tr>
<td>Meeting the needs of families</td>
<td>13.48% (24)</td>
<td>33.15% (59)</td>
<td>31.46% (56)</td>
<td>13.48% (24)</td>
<td>7.3% (13)</td>
<td>1.12% (2)</td>
</tr>
</tbody>
</table>
8. Rate the level of difficulty in the administration of the LAND PROTECTION issues facing your park/park system.

<table>
<thead>
<tr>
<th>Issue</th>
<th>1. Not difficult</th>
<th>2</th>
<th>3. Neutral</th>
<th>4</th>
<th>5. Very difficult</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preserving land for future recreational development</td>
<td>7.3% (13)</td>
<td>11.8% (21)</td>
<td>30.34% (54)</td>
<td>23.03% (41)</td>
<td>22.47% (40)</td>
<td>5.06% (9)</td>
</tr>
<tr>
<td>Preserving significant natural resource areas</td>
<td>17.42% (31)</td>
<td>19.66% (35)</td>
<td>25.84% (46)</td>
<td>20.79% (37)</td>
<td>13.48% (24)</td>
<td>2.81% (5)</td>
</tr>
<tr>
<td>Preserving open space lands</td>
<td>15.17% (27)</td>
<td>21.35% (38)</td>
<td>24.72% (44)</td>
<td>22.47% (40)</td>
<td>11.8% (21)</td>
<td>4.49% (8)</td>
</tr>
<tr>
<td>Preserving land for cultural resources</td>
<td>10.11% (18)</td>
<td>17.42% (31)</td>
<td>30.9% (55)</td>
<td>20.22% (36)</td>
<td>13.48% (24)</td>
<td>7.87% (14)</td>
</tr>
<tr>
<td>Preserving land for historical resources</td>
<td>10.67% (19)</td>
<td>19.1% (34)</td>
<td>30.9% (55)</td>
<td>16.29% (29)</td>
<td>12.92% (23)</td>
<td>10.11% (18)</td>
</tr>
</tbody>
</table>

9. Rate the level of difficulty in the administration of the MANAGEMENT issues facing your park/park system.

<table>
<thead>
<tr>
<th>Issue</th>
<th>1. Not difficult</th>
<th>2</th>
<th>3. Neutral</th>
<th>4</th>
<th>5. Very difficult</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providing adequate staffing levels</td>
<td>2.92% (5)</td>
<td>8.77% (15)</td>
<td>12.87% (22)</td>
<td>34.5% (59)</td>
<td>39.18% (67)</td>
<td>1.75% (3)</td>
</tr>
<tr>
<td>Maintaining existing recreation infrastructure and resources</td>
<td>3.53% (6)</td>
<td>25.29% (43)</td>
<td>18.82% (32)</td>
<td>35.29% (60)</td>
<td>15.88% (27)</td>
<td>1.18% (2)</td>
</tr>
<tr>
<td>Enforcing rules and regulations</td>
<td>11.24% (19)</td>
<td>26.63% (45)</td>
<td>17.75% (30)</td>
<td>30.77% (52)</td>
<td>12.43% (21)</td>
<td>1.18% (2)</td>
</tr>
<tr>
<td>Alleviating visitor impacts on natural resources</td>
<td>5.92% (10)</td>
<td>16.57% (28)</td>
<td>35.5% (60)</td>
<td>27.81% (47)</td>
<td>10.65% (18)</td>
<td>3.55% (6)</td>
</tr>
<tr>
<td>Informing visitors of rules and regulations</td>
<td>8.28% (14)</td>
<td>26.63% (45)</td>
<td>32.54% (55)</td>
<td>24.85% (42)</td>
<td>6.51% (11)</td>
<td>1.18% (2)</td>
</tr>
<tr>
<td>Alleviating user conflicts</td>
<td>5.88% (10)</td>
<td>26.47% (45)</td>
<td>38.24% (65)</td>
<td>22.94% (39)</td>
<td>4.12% (7)</td>
<td>2.35% (4)</td>
</tr>
<tr>
<td>Setting fees so that costs do not hinder participation</td>
<td>9.36% (16)</td>
<td>27.49% (47)</td>
<td>32.16% (55)</td>
<td>17.54% (30)</td>
<td>8.19% (14)</td>
<td>5.26% (9)</td>
</tr>
<tr>
<td>Working with other outdoor recreation providers</td>
<td>17.86% (30)</td>
<td>30.36% (51)</td>
<td>34.52% (58)</td>
<td>11.31% (19)</td>
<td>3.57% (6)</td>
<td>2.38% (4)</td>
</tr>
</tbody>
</table>
10. Rate the overall importance of the issues facing your park/park system.

<table>
<thead>
<tr>
<th></th>
<th>1. Very important</th>
<th>2</th>
<th>3. Neutral</th>
<th>4</th>
<th>5. Not at all important</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding</td>
<td>88.3% (151)</td>
<td>8.77% (15)</td>
<td>1.17% (2)</td>
<td>0% (0)</td>
<td>1.17% (2)</td>
<td>0.58% (1)</td>
</tr>
<tr>
<td>Meeting Public Needs</td>
<td>61.76% (105)</td>
<td>31.76% (54)</td>
<td>5.29% (9)</td>
<td>0.59% (1)</td>
<td>0% (0)</td>
<td>0.59% (1)</td>
</tr>
<tr>
<td>Management</td>
<td>45.03% (77)</td>
<td>35.67% (61)</td>
<td>14.62% (25)</td>
<td>3.51% (6)</td>
<td>0% (0)</td>
<td>1.17% (2)</td>
</tr>
<tr>
<td>Land Protection</td>
<td>43.27% (74)</td>
<td>32.16% (55)</td>
<td>16.37% (28)</td>
<td>4.68% (8)</td>
<td>1.17% (2)</td>
<td>2.34% (4)</td>
</tr>
</tbody>
</table>

11. Rate the importance of the types of parks NEEDED NOW in your park system.

<table>
<thead>
<tr>
<th></th>
<th>1 Very important</th>
<th>2</th>
<th>3 Neutral</th>
<th>4</th>
<th>5 Not at all important</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trail linkage within your system</td>
<td>51.19% (86)</td>
<td>31.55% (53)</td>
<td>8.93% (15)</td>
<td>1.79% (3)</td>
<td>0% (0)</td>
<td>6.55% (11)</td>
</tr>
<tr>
<td>Trail linkage to other jurisdictions</td>
<td>39.64% (67)</td>
<td>29.59% (50)</td>
<td>13.02% (22)</td>
<td>4.14% (7)</td>
<td>1.78% (3)</td>
<td>11.83% (20)</td>
</tr>
<tr>
<td>Nature parks</td>
<td>39.52% (66)</td>
<td>28.74% (48)</td>
<td>20.36% (34)</td>
<td>5.99% (10)</td>
<td>1.8% (3)</td>
<td>3.59% (6)</td>
</tr>
<tr>
<td>Creek corridors</td>
<td>30.54% (51)</td>
<td>28.14% (47)</td>
<td>20.36% (34)</td>
<td>4.19% (7)</td>
<td>4.79% (8)</td>
<td>11.98% (20)</td>
</tr>
<tr>
<td>Conservation parks</td>
<td>27.98% (47)</td>
<td>29.17% (49)</td>
<td>27.38% (46)</td>
<td>7.74% (13)</td>
<td>2.38% (4)</td>
<td>5.36% (9)</td>
</tr>
<tr>
<td>Specialty parks (skate parks, dog parks, etc.)</td>
<td>28.14% (47)</td>
<td>28.74% (48)</td>
<td>14.97% (25)</td>
<td>10.18% (17)</td>
<td>8.38% (14)</td>
<td>9.58% (16)</td>
</tr>
<tr>
<td>Community parks</td>
<td>32.35% (55)</td>
<td>24.12% (41)</td>
<td>18.82% (32)</td>
<td>6.47% (11)</td>
<td>4.12% (7)</td>
<td>14.12% (24)</td>
</tr>
<tr>
<td>Sports complexes</td>
<td>31.33% (52)</td>
<td>24.7% (41)</td>
<td>15.06% (25)</td>
<td>9.04% (15)</td>
<td>7.23% (12)</td>
<td>12.65% (21)</td>
</tr>
<tr>
<td>Water-front parks</td>
<td>30.18% (51)</td>
<td>21.89% (37)</td>
<td>14.79% (25)</td>
<td>6.51% (11)</td>
<td>9.47% (16)</td>
<td>17.16% (29)</td>
</tr>
<tr>
<td>Regional/district parks</td>
<td>24.4% (41)</td>
<td>25.6% (43)</td>
<td>21.43% (36)</td>
<td>5.36% (9)</td>
<td>8.93% (15)</td>
<td>14.29% (24)</td>
</tr>
<tr>
<td>Special use parks</td>
<td>21.43% (36)</td>
<td>28.57% (48)</td>
<td>33.93% (57)</td>
<td>4.76% (8)</td>
<td>2.98% (5)</td>
<td>8.33% (14)</td>
</tr>
</tbody>
</table>
### Appendix E – Survey Results

#### 12. What are the TOP 5 facilities NEEDED NOW in your park/park system?

<table>
<thead>
<tr>
<th>Facility</th>
<th>Response Total</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paved trails for walking, hiking, skating or biking</td>
<td>91</td>
<td>54.2%</td>
</tr>
<tr>
<td>Natural park area/open space</td>
<td>51</td>
<td>30.4%</td>
</tr>
<tr>
<td>Nature/interpretive trails</td>
<td>49</td>
<td>29.2%</td>
</tr>
<tr>
<td>Unpaved trails for walking and hiking</td>
<td>46</td>
<td>27.4%</td>
</tr>
<tr>
<td>Dog parks</td>
<td>42</td>
<td>25.0%</td>
</tr>
<tr>
<td>Nature/interpretive centers</td>
<td>41</td>
<td>24.4%</td>
</tr>
<tr>
<td>Wildlife/nature observation sites</td>
<td>40</td>
<td>23.8%</td>
</tr>
<tr>
<td>Soccer fields</td>
<td>39</td>
<td>23.2%</td>
</tr>
<tr>
<td>Non-swimming water activities (splashpad, sprayground)</td>
<td>36</td>
<td>21.4%</td>
</tr>
<tr>
<td>Playgrounds</td>
<td>36</td>
<td>21.4%</td>
</tr>
<tr>
<td>Skateboard parks</td>
<td>34</td>
<td>20.2%</td>
</tr>
<tr>
<td>Picnic shelters</td>
<td>31</td>
<td>18.5%</td>
</tr>
<tr>
<td>Camping facilities</td>
<td>28</td>
<td>16.7%</td>
</tr>
</tbody>
</table>
### Survey Results

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Response Total</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swimming pools</td>
<td>29</td>
<td>17.3%</td>
</tr>
<tr>
<td>Softball fields</td>
<td>28</td>
<td>16.7%</td>
</tr>
<tr>
<td>Other</td>
<td>27</td>
<td>16.1%</td>
</tr>
<tr>
<td>Baseball fields</td>
<td>25</td>
<td>14.9%</td>
</tr>
<tr>
<td>Fishing piers</td>
<td>23</td>
<td>13.7%</td>
</tr>
<tr>
<td>Mountain bike trails</td>
<td>22</td>
<td>13.1%</td>
</tr>
<tr>
<td>Basketball courts</td>
<td>19</td>
<td>11.3%</td>
</tr>
<tr>
<td>Picnic tables</td>
<td>15</td>
<td>8.9%</td>
</tr>
<tr>
<td>Shore/bank fishing</td>
<td>10</td>
<td>6.0%</td>
</tr>
<tr>
<td>Volleyball courts</td>
<td>10</td>
<td>6.0%</td>
</tr>
<tr>
<td>Football fields</td>
<td>10</td>
<td>6.0%</td>
</tr>
<tr>
<td>Non-motorized boating access (canoe, kayak)</td>
<td>9</td>
<td>5.4%</td>
</tr>
<tr>
<td>Tennis courts</td>
<td>9</td>
<td>5.4%</td>
</tr>
<tr>
<td>Motorized, off-highway vehicle trails (ATV, 4X4, dirt bike)</td>
<td>7</td>
<td>4.2%</td>
</tr>
<tr>
<td>Horseback riding trails</td>
<td>6</td>
<td>3.6%</td>
</tr>
<tr>
<td>Golf courses</td>
<td>3</td>
<td>1.8%</td>
</tr>
<tr>
<td>Motorized boat launching ramps</td>
<td>1</td>
<td>0.6%</td>
</tr>
</tbody>
</table>

13. Rate the level of the barriers that may limit citizens from visiting your parks or participating in your park programs.

<table>
<thead>
<tr>
<th></th>
<th>1 - Not a barrier</th>
<th>2</th>
<th>3 - Minor barrier</th>
<th>4</th>
<th>5 - Major barrier</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of knowledge of available facilities</td>
<td>10.18% (17)</td>
<td>16.77% (28)</td>
<td>31.14% (52)</td>
<td>28.14% (47)</td>
<td>12.57% (21)</td>
<td>1.2% (2)</td>
</tr>
<tr>
<td>Lack of time</td>
<td>19.16% (32)</td>
<td>13.17% (22)</td>
<td>32.93% (55)</td>
<td>25.15% (42)</td>
<td>7.78% (13)</td>
<td>1.8% (3)</td>
</tr>
<tr>
<td>Not interested</td>
<td>8.97% (14)</td>
<td>15.38% (24)</td>
<td>39.1% (61)</td>
<td>16.03% (25)</td>
<td>4.49% (7)</td>
<td>16.03% (25)</td>
</tr>
<tr>
<td>Poor health</td>
<td>18.07% (30)</td>
<td>29.52% (49)</td>
<td>34.34% (57)</td>
<td>9.04% (15)</td>
<td>2.41% (4)</td>
<td>6.63% (11)</td>
</tr>
<tr>
<td>Lack of access to transportation</td>
<td>25.75% (43)</td>
<td>26.95% (45)</td>
<td>22.75% (38)</td>
<td>10.78% (18)</td>
<td>11.98% (20)</td>
<td>1.8% (3)</td>
</tr>
<tr>
<td>Issue</td>
<td>1 - Not a barrier</td>
<td>2</td>
<td>3 - Minor barrier</td>
<td>4</td>
<td>5 - Major barrier</td>
<td>N/A</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------------------</td>
<td>------------------------</td>
<td>-------------------</td>
<td>------------------------</td>
<td>------------------</td>
<td>-----</td>
</tr>
<tr>
<td>Lack of handicap accessible facilities</td>
<td>29.34% (49)</td>
<td>27.54% (46)</td>
<td>24.55% (41)</td>
<td>11.98% (20)</td>
<td>4.19% (7)</td>
<td>2.4% (4)</td>
</tr>
<tr>
<td>Travel distance</td>
<td>41.92% (70)</td>
<td>18.56% (31)</td>
<td>26.95% (45)</td>
<td>5.99% (10)</td>
<td>5.99% (10)</td>
<td>0.6% (1)</td>
</tr>
<tr>
<td>Cost of travel</td>
<td>37.72% (63)</td>
<td>21.56% (36)</td>
<td>19.76% (33)</td>
<td>12.57% (21)</td>
<td>5.99% (10)</td>
<td>2.4% (4)</td>
</tr>
<tr>
<td>Anxiety about being in the outdoors with limited knowledge/skills</td>
<td>37.72% (63)</td>
<td>26.35% (44)</td>
<td>20.36% (34)</td>
<td>10.18% (17)</td>
<td>2.99% (5)</td>
<td>2.4% (4)</td>
</tr>
<tr>
<td>Lack of security</td>
<td>40.36% (67)</td>
<td>26.51% (44)</td>
<td>22.89% (38)</td>
<td>6.63% (11)</td>
<td>2.41% (4)</td>
<td>1.2% (2)</td>
</tr>
<tr>
<td>Poor maintenance</td>
<td>46.06% (76)</td>
<td>23.03% (38)</td>
<td>16.36% (27)</td>
<td>7.88% (13)</td>
<td>4.85% (8)</td>
<td>1.82% (3)</td>
</tr>
<tr>
<td>High user fees</td>
<td>46.06% (76)</td>
<td>23.03% (38)</td>
<td>15.15% (25)</td>
<td>6.67% (11)</td>
<td>3.64% (6)</td>
<td>5.45% (9)</td>
</tr>
<tr>
<td>Alcohol and drug use in parks</td>
<td>43.71% (73)</td>
<td>29.94% (50)</td>
<td>15.57% (26)</td>
<td>2.99% (5)</td>
<td>4.79% (8)</td>
<td>2.99% (5)</td>
</tr>
<tr>
<td>Discrimination</td>
<td>71.69% (119)</td>
<td>16.87% (28)</td>
<td>5.42% (9)</td>
<td>1.81% (3)</td>
<td>1.2% (2)</td>
<td>3.01% (5)</td>
</tr>
</tbody>
</table>
PUBLIC INPUT SURVEY

An on-line survey was offered to the public between August 15 and September 28, 2011, with the process outlined in the Planning Process chapter. We do acknowledge that the primary limitation of this method is that the survey was conducted as a convenience sample in which web visitors had the option to complete the survey while visiting the TPWD web site. A convenience sample poses risks as it may not fully represent the population of Texas citizens and there was no way to follow up with respondents to determine whether respondents differed from non-respondents.

Additionally, due to the use of the website to conduct the survey, citizens who do not have Internet access could not take part in the survey. Though the use of the Internet is generally high among Americans, and Internet access is widely available through libraries and schools as well as in private homes and offices, it is possible that citizens who do not use the Internet may vary from the web-users who participated in the survey. Also, web surveys do not allow for a way to screen out special interest groups that might use internet blogs to direct group members to the survey to voice their particular needs or concerns.

The survey responses are included in this appendix. For more detailed information on the Public Input Survey, contact the Recreation Grants Branch at 512-389-8109. An analysis of the public input is presented in Chapter 5 Recreation Demand and Survey Results.

<table>
<thead>
<tr>
<th>2012 Texas Outdoor Recreation Plan-Citizen Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents: 3726</td>
</tr>
</tbody>
</table>

1. Indicate how strongly you feel about the following statement:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCAL governments have a responsibility to provide outdoor recreation</td>
<td>58.52% (1683)</td>
<td>29.8%</td>
<td>7.34%</td>
<td>3.2%</td>
<td>1.15%</td>
<td>0%</td>
</tr>
<tr>
<td>lands and facilities for the citizens of Texas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| LOCAL governments have a responsibility to provide outdoor recreation   | 58.52% (1683)  | 29.8% | 7.34%   | 3.2%     | 1.15%             | 0%  |
| lands and facilities for the citizens of Texas.                          |                |       |         |          |                   |     |
2. Rate how strongly you support or oppose the methods of financing land acquisition and development of LOCAL PARKS.

<table>
<thead>
<tr>
<th>Method of Financing</th>
<th>Strongly Support</th>
<th>Support</th>
<th>Neutral</th>
<th>Oppose</th>
<th>Strongly Oppose</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary contributions (gifts of cash or goods specifically for parks)</td>
<td>55.76% (1574)</td>
<td>37.27% (1052)</td>
<td>6.06% (171)</td>
<td>0.57% (16)</td>
<td>0.18% (5)</td>
<td>0.18% (5)</td>
</tr>
<tr>
<td>State grant funds (revenue from a portion of the state sales tax on sporting goods, 50% matching grants)</td>
<td>40.83% (1151)</td>
<td>44.7% (1260)</td>
<td>9.01% (254)</td>
<td>3.23% (91)</td>
<td>1.92% (54)</td>
<td>0.32% (9)</td>
</tr>
<tr>
<td>Land dedication (developers are required to offer acres of land for parks)</td>
<td>47.16% (1321)</td>
<td>33.27% (932)</td>
<td>11.42% (320)</td>
<td>5.21% (146)</td>
<td>2.36% (66)</td>
<td>0.57% (16)</td>
</tr>
<tr>
<td>General Obligation Bonds (requires voter approval, repayment with property tax revenues)</td>
<td>25.37% (706)</td>
<td>46.93% (1306)</td>
<td>16.17% (450)</td>
<td>7.15% (199)</td>
<td>3.34% (93)</td>
<td>1.04% (29)</td>
</tr>
<tr>
<td>Revenue generating facilities (construct facilities that will generate enough revenue from fees to pay for the facility)</td>
<td>24.38% (682)</td>
<td>46.51% (1301)</td>
<td>19.34% (541)</td>
<td>7.22% (202)</td>
<td>2.04% (57)</td>
<td>0.5% (14)</td>
</tr>
<tr>
<td>Cash in lieu of land dedication (developer may offer an equal amount of cash instead of required acres)</td>
<td>21.37% (594)</td>
<td>31.23% (868)</td>
<td>21.16% (588)</td>
<td>16.05% (446)</td>
<td>8.92% (248)</td>
<td>1.26% (35)</td>
</tr>
<tr>
<td>Increase park user fees</td>
<td>12.73% (351)</td>
<td>37.07% (1022)</td>
<td>22.23% (613)</td>
<td>19.88% (548)</td>
<td>7.8% (215)</td>
<td>0.29% (8)</td>
</tr>
<tr>
<td>Increase local sales tax specifically to fund parks</td>
<td>16.19% (449)</td>
<td>32.95% (914)</td>
<td>20.55% (570)</td>
<td>20.44% (567)</td>
<td>9.48% (263)</td>
<td>0.4% (11)</td>
</tr>
<tr>
<td>Certificates of Obligation (does not require voter approval, repayment from property tax revenues)</td>
<td>17.44% (482)</td>
<td>31.04% (858)</td>
<td>22.21% (614)</td>
<td>17.62% (487)</td>
<td>10.24% (283)</td>
<td>1.45% (40)</td>
</tr>
</tbody>
</table>
3. Have you visited a LOCAL PARK (within 30 minutes of your home) in the last 12 months?

<table>
<thead>
<tr>
<th>Response</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2687</td>
<td>93%</td>
</tr>
<tr>
<td>No</td>
<td>217</td>
<td>7%</td>
</tr>
</tbody>
</table>

4. Please check the reasons why you did not visit a LOCAL PARK in the last 12 months. Check all that apply.

<table>
<thead>
<tr>
<th>Reason</th>
<th>Response</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety about being in the outdoors with limited knowledge/skills</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Cost of travel</td>
<td>36</td>
<td>17.1%</td>
</tr>
<tr>
<td>Discrimination</td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td>High user fees</td>
<td>9</td>
<td>4.3%</td>
</tr>
<tr>
<td>Lack knowledge of available facilities</td>
<td>25</td>
<td>11.8%</td>
</tr>
<tr>
<td>Lack of access to transportation</td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td>Lack of handicap accessible facilities</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Lack of security, safety concerns</td>
<td>8</td>
<td>3.8%</td>
</tr>
<tr>
<td>Lack of time</td>
<td>75</td>
<td>35.5%</td>
</tr>
<tr>
<td>Not interested</td>
<td>28</td>
<td>13.3%</td>
</tr>
<tr>
<td>Other</td>
<td>67</td>
<td>31.8%</td>
</tr>
<tr>
<td>Poor maintenance</td>
<td>14</td>
<td>6.6%</td>
</tr>
<tr>
<td>Too busy with other activities</td>
<td>77</td>
<td>36.5%</td>
</tr>
<tr>
<td>Travel distance</td>
<td>47</td>
<td>22.3%</td>
</tr>
<tr>
<td>Use of alcohol and drugs in the park</td>
<td>11</td>
<td>5.2%</td>
</tr>
</tbody>
</table>
5. How many visits have you made in the last 12 months?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 3 Visits</td>
<td>303</td>
</tr>
<tr>
<td>4 - 5 Visits</td>
<td>278</td>
</tr>
<tr>
<td>6 - 10 Visits</td>
<td>398</td>
</tr>
<tr>
<td>11 - 20 Visits</td>
<td>428</td>
</tr>
<tr>
<td>21 or more visits</td>
<td>1045</td>
</tr>
</tbody>
</table>

6. On your last visit to a local park, did you go to the park with children (under age 18)?

<table>
<thead>
<tr>
<th>Response</th>
<th>Total</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1048</td>
<td>40.5%</td>
</tr>
<tr>
<td>No</td>
<td>1539</td>
<td>59.5%</td>
</tr>
</tbody>
</table>

7. What are the TOP 3 most OUTSTANDING QUALITIES of your LOCAL PARKS (within 30 minutes of your home)

<table>
<thead>
<tr>
<th>Quality</th>
<th>Response Total</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active recreation facilities (courts, fields, playgrounds, trails)</td>
<td>1625</td>
<td>63.4%</td>
</tr>
<tr>
<td>Support facilities (restrooms, benches, trash cans)</td>
<td>1315</td>
<td>51.3%</td>
</tr>
<tr>
<td>Passive recreation facilities (natural features, gardens, outdoor education, park interpretation)</td>
<td>1213</td>
<td>47.3%</td>
</tr>
<tr>
<td>Convenient locations</td>
<td>879</td>
<td>34.3%</td>
</tr>
<tr>
<td>Safe and secure</td>
<td>748</td>
<td>29.2%</td>
</tr>
<tr>
<td>Size of park (appropriate for amount of park users)</td>
<td>718</td>
<td>28.0%</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>347</td>
<td>13.5%</td>
</tr>
<tr>
<td>Historical or cultural resources</td>
<td>249</td>
<td>9.7%</td>
</tr>
<tr>
<td>Available facilities for</td>
<td>151</td>
<td>5.9%</td>
</tr>
</tbody>
</table>
large groups

| Information/materials (interpretive signs, education materials, park system information) | 144 | 5.6% |
| Fund generating opportunities (concession, tourism related) | 39 | 1.5% |

8. Indicate the TOP 5 facilities NEEDED NOW in your LOCAL PARKS (within 30 minutes of your home).

<table>
<thead>
<tr>
<th>Facility Description</th>
<th>Response Total</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unpaved trails for walking and hiking</td>
<td>1105</td>
<td>43.6%</td>
</tr>
<tr>
<td>Natural park area/open space</td>
<td>807</td>
<td>31.8%</td>
</tr>
<tr>
<td>Mountain bike trails</td>
<td>795</td>
<td>31.4%</td>
</tr>
<tr>
<td>Paved trails for walking, hiking, biking, skating</td>
<td>763</td>
<td>30.1%</td>
</tr>
<tr>
<td>Wildlife/nature observation sites</td>
<td>704</td>
<td>27.8%</td>
</tr>
<tr>
<td>Nature/interpretive trails</td>
<td>567</td>
<td>22.4%</td>
</tr>
<tr>
<td>Dog parks</td>
<td>437</td>
<td>17.2%</td>
</tr>
<tr>
<td>Non-swimming water facilities (spray park, sprayground, splashpad)</td>
<td>371</td>
<td>14.6%</td>
</tr>
<tr>
<td>Fishing piers</td>
<td>371</td>
<td>14.6%</td>
</tr>
<tr>
<td>Picnic shelters/pavilions</td>
<td>378</td>
<td>14.9%</td>
</tr>
<tr>
<td>Outdoor swimming pools</td>
<td>347</td>
<td>13.7%</td>
</tr>
<tr>
<td>Tent camping</td>
<td>364</td>
<td>14.4%</td>
</tr>
<tr>
<td>Non-motorized boating access (canoe, kayak)</td>
<td>298</td>
<td>11.8%</td>
</tr>
<tr>
<td>Nature/interpretive centers</td>
<td>275</td>
<td>10.8%</td>
</tr>
<tr>
<td>Swimming beaches</td>
<td>258</td>
<td>10.2%</td>
</tr>
<tr>
<td>Facility</td>
<td>Response Total</td>
<td>Response Percent</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Horseback riding trails</td>
<td>250</td>
<td>9.9%</td>
</tr>
<tr>
<td>RV/trailer camping</td>
<td>242</td>
<td>9.5%</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>242</td>
<td>9.5%</td>
</tr>
<tr>
<td>Picnic tables</td>
<td>203</td>
<td>8.0%</td>
</tr>
<tr>
<td>No additional facilities needed</td>
<td>171</td>
<td>6.7%</td>
</tr>
<tr>
<td>Disc golf</td>
<td>180</td>
<td>7.1%</td>
</tr>
<tr>
<td>Playgrounds</td>
<td>183</td>
<td>7.2%</td>
</tr>
<tr>
<td>Motorized, off-highway vehicle trails (ATV, 4X4, dirt bikes)</td>
<td>153</td>
<td>6.0%</td>
</tr>
<tr>
<td>Skateboard parks</td>
<td>117</td>
<td>4.6%</td>
</tr>
<tr>
<td>Motorized boat launching ramps</td>
<td>80</td>
<td>3.2%</td>
</tr>
<tr>
<td>Soccer fields</td>
<td>74</td>
<td>2.9%</td>
</tr>
<tr>
<td>Golf courses</td>
<td>43</td>
<td>1.7%</td>
</tr>
<tr>
<td>Tennis courts</td>
<td>63</td>
<td>2.5%</td>
</tr>
<tr>
<td>Basketball courts</td>
<td>54</td>
<td>2.1%</td>
</tr>
<tr>
<td>Volleyball courts</td>
<td>57</td>
<td>2.2%</td>
</tr>
<tr>
<td>Baseball fields</td>
<td>36</td>
<td>1.4%</td>
</tr>
<tr>
<td>Softball fields</td>
<td>24</td>
<td>0.9%</td>
</tr>
<tr>
<td>Football fields</td>
<td>12</td>
<td>0.5%</td>
</tr>
</tbody>
</table>
9. In the last 12 months, what BARRIERS (if any) have you or a member of your household encountered when visiting LOCAL PARKS (within 30 minutes of your home).

<table>
<thead>
<tr>
<th>Response Total</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety about being in the outdoors with limited knowledge/skills</td>
<td>22</td>
</tr>
<tr>
<td>Cost of travel</td>
<td>185</td>
</tr>
<tr>
<td>Did not encounter any barriers</td>
<td>1131</td>
</tr>
<tr>
<td>Discrimination</td>
<td>18</td>
</tr>
<tr>
<td>High user fees</td>
<td>140</td>
</tr>
<tr>
<td>Lack knowledge of available facilities</td>
<td>177</td>
</tr>
<tr>
<td>Lack of access to transportation</td>
<td>46</td>
</tr>
<tr>
<td>Lack of handicap accessible facilities</td>
<td>58</td>
</tr>
<tr>
<td>Lack of security, safety concerns</td>
<td>222</td>
</tr>
<tr>
<td>Lack of time</td>
<td>448</td>
</tr>
<tr>
<td>Not interested</td>
<td>17</td>
</tr>
<tr>
<td>Other</td>
<td>251</td>
</tr>
<tr>
<td>Poor maintenance</td>
<td>421</td>
</tr>
<tr>
<td>Too busy with other activities</td>
<td>334</td>
</tr>
<tr>
<td>Travel distance</td>
<td>334</td>
</tr>
<tr>
<td>Use of alcohol and drugs in the park</td>
<td>174</td>
</tr>
</tbody>
</table>

10. Indicate how strongly you feel about the following statement:

<table>
<thead>
<tr>
<th>The State of Texas has a responsibility to provide outdoor recreation lands and facilities for the citizens of TX</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>75.31% (2038)</td>
<td>19.07% (516)</td>
<td>3.73% (101)</td>
<td>1.44% (39)</td>
<td>0.44% (12)</td>
<td>0% (0)</td>
</tr>
</tbody>
</table>
11. Rate how strongly your support or oppose the methods of financing land acquisition and development of TEXAS STATE PARKS.

<table>
<thead>
<tr>
<th>Method</th>
<th>Strongly support</th>
<th>Support</th>
<th>Neutral</th>
<th>Oppose</th>
<th>Strongly oppose</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developers paying a fee to compensate for the negative impact on the environment</td>
<td>58.62% (1554)</td>
<td>25.8%</td>
<td>8.83%</td>
<td>4.15%</td>
<td>2.49%</td>
<td>0.11%</td>
</tr>
<tr>
<td>TPWD receiving a larger share of the revenue from sporting goods sales tax</td>
<td>60.17% (1606)</td>
<td>30.16%</td>
<td>6.86%</td>
<td>1.8%</td>
<td>0.82%</td>
<td>0.19%</td>
</tr>
<tr>
<td>Voter approved bonds using future park revenue to repay</td>
<td>29.65% (779)</td>
<td>41.19%</td>
<td>19.19%</td>
<td>6.97%</td>
<td>2.51%</td>
<td>0.49%</td>
</tr>
<tr>
<td>Voter approved bonds using general state revenue to repay</td>
<td>29.66% (779)</td>
<td>43.34%</td>
<td>17.78%</td>
<td>6.25%</td>
<td>2.48%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Tax on agricultural or open space land that is developed for residential use</td>
<td>35.55% (932)</td>
<td>27.54%</td>
<td>19.91%</td>
<td>11.98%</td>
<td>4.46%</td>
<td>0.57%</td>
</tr>
<tr>
<td>Tax on agricultural or open space land that is developed for commercial use</td>
<td>46.14% (1218)</td>
<td>28.03%</td>
<td>13.22%</td>
<td>8.14%</td>
<td>3.94%</td>
<td>0.53%</td>
</tr>
<tr>
<td>Real estate transfer fee (for every property exchange)</td>
<td>14.62% (382)</td>
<td>17.68%</td>
<td>35.48%</td>
<td>20.09%</td>
<td>10.79%</td>
<td>1.34%</td>
</tr>
<tr>
<td>Increase state park entrance fees</td>
<td>9.8% (257)</td>
<td>30.21%</td>
<td>24.98%</td>
<td>23.61%</td>
<td>10.34%</td>
<td>1.07%</td>
</tr>
<tr>
<td>Increase state park camping fees</td>
<td>9.39% (245)</td>
<td>30.2%</td>
<td>24.57%</td>
<td>24.34%</td>
<td>10.46%</td>
<td>1.03%</td>
</tr>
<tr>
<td>Motor vehicle fee for people moving to Texas</td>
<td>19.25% (505)</td>
<td>26.42%</td>
<td>26.57%</td>
<td>18.91%</td>
<td>7.74%</td>
<td>1.11%</td>
</tr>
<tr>
<td>Increase state general sales tax for state parks</td>
<td>14.39% (378)</td>
<td>25.32%</td>
<td>24.11%</td>
<td>24.18%</td>
<td>10.85%</td>
<td>1.14%</td>
</tr>
<tr>
<td>Motor vehicle registration opt-in donation for state parks</td>
<td>38.8% (1026)</td>
<td>40.24%</td>
<td>14.45%</td>
<td>4.27%</td>
<td>1.7%</td>
<td>0.53%</td>
</tr>
</tbody>
</table>
12. Have you visited a TEXAS STATE PARK in the last 12 months?

<table>
<thead>
<tr>
<th>Response</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2457</td>
<td>90%</td>
</tr>
<tr>
<td>No</td>
<td>275</td>
<td>10%</td>
</tr>
</tbody>
</table>

13. Please check the reasons why you did not visit a STATE PARK in the last 12 months. Check all that apply.

<table>
<thead>
<tr>
<th>Reason</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety about being in the outdoors with limited knowledge/skills</td>
<td>5</td>
<td>1.8%</td>
</tr>
<tr>
<td>Cost of travel</td>
<td>57</td>
<td>20.9%</td>
</tr>
<tr>
<td>Discrimination</td>
<td>1</td>
<td>0.4%</td>
</tr>
<tr>
<td>High user fees</td>
<td>18</td>
<td>6.6%</td>
</tr>
<tr>
<td>Lack knowledge of available facilities</td>
<td>47</td>
<td>17.2%</td>
</tr>
<tr>
<td>Lack of access to transportation</td>
<td>3</td>
<td>1.1%</td>
</tr>
<tr>
<td>Lack of handicap accessible facilities</td>
<td>2</td>
<td>0.7%</td>
</tr>
<tr>
<td>Lack of security, safety concerns</td>
<td>9</td>
<td>3.3%</td>
</tr>
<tr>
<td>Lack of time</td>
<td>165</td>
<td>60.4%</td>
</tr>
<tr>
<td>Not interested</td>
<td>18</td>
<td>6.6%</td>
</tr>
<tr>
<td>Other</td>
<td>37</td>
<td>13.6%</td>
</tr>
<tr>
<td>Poor maintenance</td>
<td>10</td>
<td>3.7%</td>
</tr>
<tr>
<td>Too busy with other activities</td>
<td>134</td>
<td>49.1%</td>
</tr>
<tr>
<td>Travel distance</td>
<td>130</td>
<td>47.6%</td>
</tr>
<tr>
<td>Use of alcohol and drugs in the park</td>
<td>3</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

14. How many visits have you made to a TEXAS STATE PARK in the last 12 months?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 3 Visits</td>
<td>766</td>
</tr>
<tr>
<td>4 - 5 Visits</td>
<td>437</td>
</tr>
</tbody>
</table>
### Frequency and Valid Percent of Visit Frequency

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 - 10 Visits</td>
<td>21.5%</td>
</tr>
<tr>
<td>11 - 20 Visits</td>
<td>13.4%</td>
</tr>
<tr>
<td>21 or more visits</td>
<td>12.6%</td>
</tr>
</tbody>
</table>

#### Question 15: On your last visit to a TEXAS STATE PARK, did you go to the park with children (under age 18)?

<table>
<thead>
<tr>
<th>Response</th>
<th>Total</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>904</td>
<td>37.6%</td>
</tr>
<tr>
<td>No</td>
<td>1500</td>
<td>62.4%</td>
</tr>
</tbody>
</table>

#### Question 16: On your most recent visit to a TEXAS STATE PARK, which of the following influenced your decision to visit that state park?

<table>
<thead>
<tr>
<th>Response</th>
<th>Total</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous state park visit</td>
<td>1249</td>
<td>53.0%</td>
</tr>
<tr>
<td>Word of mouth</td>
<td>991</td>
<td>42.1%</td>
</tr>
<tr>
<td>Texas Parks &amp; Wildlife website</td>
<td>965</td>
<td>41.0%</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>436</td>
<td>18.5%</td>
</tr>
<tr>
<td>State Park Guide</td>
<td>379</td>
<td>16.1%</td>
</tr>
<tr>
<td>Texas Parks &amp; Wildlife magazine</td>
<td>368</td>
<td>15.6%</td>
</tr>
<tr>
<td>State Park brochure</td>
<td>211</td>
<td>9.0%</td>
</tr>
<tr>
<td>Other internet site</td>
<td>206</td>
<td>8.7%</td>
</tr>
<tr>
<td>Other state park</td>
<td>184</td>
<td>7.8%</td>
</tr>
<tr>
<td>Texas Parks &amp; Wildlife TV show</td>
<td>168</td>
<td>7.1%</td>
</tr>
<tr>
<td>Texas Parks &amp; Wildlife Facebook Fan Page</td>
<td>115</td>
<td>4.9%</td>
</tr>
<tr>
<td>Travel guide</td>
<td>99</td>
<td>4.2%</td>
</tr>
<tr>
<td>Travel information center</td>
<td>72</td>
<td>3.1%</td>
</tr>
<tr>
<td>Newspaper article</td>
<td>59</td>
<td>2.5%</td>
</tr>
<tr>
<td>Other magazine article</td>
<td>52</td>
<td>2.2%</td>
</tr>
<tr>
<td>Other Facebook/Twitter</td>
<td>27</td>
<td>1.1%</td>
</tr>
</tbody>
</table>
### Appendix E – Survey Results

<table>
<thead>
<tr>
<th>Response</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertisement</td>
<td>20</td>
<td>0.8%</td>
</tr>
<tr>
<td>Other TV show or TV news</td>
<td>18</td>
<td>0.8%</td>
</tr>
<tr>
<td>Texas Parks &amp; Wildlife Twitter</td>
<td>10</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

17. What are the TOP 3 most OUTSTANDING QUALITIES of the TEXAS STATE PARKS you visited in the last 12 months?

<table>
<thead>
<tr>
<th>Response</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive recreation facilities (natural features, gardens, outdoor education, park interpretation)</td>
<td>1353</td>
<td>57.3%</td>
</tr>
<tr>
<td>Support facilities (restrooms, benches, trash cans)</td>
<td>1239</td>
<td>52.5%</td>
</tr>
<tr>
<td>Active recreation facilities (courts, fields, playgrounds, trails)</td>
<td>1069</td>
<td>45.3%</td>
</tr>
<tr>
<td>Size of park (appropriate for amount of park users)</td>
<td>784</td>
<td>33.2%</td>
</tr>
<tr>
<td>Safe and secure</td>
<td>703</td>
<td>29.8%</td>
</tr>
<tr>
<td>Convenient locations</td>
<td>655</td>
<td>27.7%</td>
</tr>
<tr>
<td>Historical or cultural resources</td>
<td>417</td>
<td>17.7%</td>
</tr>
<tr>
<td>Information materials (interpretive signs, education materials, park system information)</td>
<td>229</td>
<td>9.7%</td>
</tr>
<tr>
<td>Available facilities for large groups</td>
<td>166</td>
<td>7.0%</td>
</tr>
<tr>
<td>Fund generating opportunities (concession, tourism related)</td>
<td>18</td>
<td>0.8%</td>
</tr>
</tbody>
</table>
18. Indicate the TOP 5 facilities NEEDED NOW in TEXAS STATE PARKS.

<table>
<thead>
<tr>
<th>Facility</th>
<th>Response Total</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hiking trails</td>
<td>876</td>
<td>37.5%</td>
</tr>
<tr>
<td>Primitive hiking trails</td>
<td>740</td>
<td>31.7%</td>
</tr>
<tr>
<td>Mountain bike trails</td>
<td>688</td>
<td>29.5%</td>
</tr>
<tr>
<td>Biking trails</td>
<td>629</td>
<td>26.9%</td>
</tr>
<tr>
<td>Restrooms</td>
<td>628</td>
<td>26.9%</td>
</tr>
<tr>
<td>Nature/interpretive trails</td>
<td>576</td>
<td>24.7%</td>
</tr>
<tr>
<td>Swimming (fresh or saltwater)</td>
<td>427</td>
<td>18.3%</td>
</tr>
<tr>
<td>Showers</td>
<td>425</td>
<td>18.2%</td>
</tr>
<tr>
<td>Fishing/fishing pier</td>
<td>369</td>
<td>15.8%</td>
</tr>
<tr>
<td>Non-motorized boating access (canoe, kayak)</td>
<td>343</td>
<td>14.7%</td>
</tr>
<tr>
<td>Tent campsites</td>
<td>361</td>
<td>15.5%</td>
</tr>
<tr>
<td>Shelters with A/C</td>
<td>309</td>
<td>13.2%</td>
</tr>
<tr>
<td>Cabins</td>
<td>305</td>
<td>13.1%</td>
</tr>
<tr>
<td>Water and electric campsites</td>
<td>277</td>
<td>11.9%</td>
</tr>
<tr>
<td>Equestrian trails</td>
<td>247</td>
<td>10.6%</td>
</tr>
<tr>
<td>Exhibit/interpretive center</td>
<td>251</td>
<td>10.8%</td>
</tr>
<tr>
<td>Primitive/walk-in campsites</td>
<td>266</td>
<td>11.4%</td>
</tr>
<tr>
<td>Water, electric and sewer campsites</td>
<td>262</td>
<td>11.2%</td>
</tr>
<tr>
<td>Full or limited cabins</td>
<td>227</td>
<td>9.7%</td>
</tr>
<tr>
<td>Rock climbing</td>
<td>210</td>
<td>9.0%</td>
</tr>
<tr>
<td>Picnic tables</td>
<td>180</td>
<td>7.7%</td>
</tr>
<tr>
<td>Playgrounds</td>
<td>176</td>
<td>7.5%</td>
</tr>
<tr>
<td>Equestrian facilities (corrals, barns)</td>
<td>178</td>
<td>7.6%</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>183</td>
<td>7.8%</td>
</tr>
<tr>
<td>Historic site/museum</td>
<td>169</td>
<td>7.2%</td>
</tr>
<tr>
<td>Swimming pool</td>
<td>144</td>
<td>6.2%</td>
</tr>
</tbody>
</table>
### 19. In the last 12 months, what BARRIERS (if any) have you or a member of your household encountered when visiting TEXAS STATE PARKS.

<table>
<thead>
<tr>
<th>Response</th>
<th>Response Total</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety about being in the outdoors with limited knowledge/skills</td>
<td>33</td>
<td>1.4%</td>
</tr>
<tr>
<td>Cost of travel</td>
<td>380</td>
<td>16.2%</td>
</tr>
<tr>
<td>Did not encounter any barriers</td>
<td>943</td>
<td>40.3%</td>
</tr>
<tr>
<td>Discrimination</td>
<td>13</td>
<td>0.6%</td>
</tr>
<tr>
<td>High user fees</td>
<td>141</td>
<td>6.0%</td>
</tr>
<tr>
<td>Lack knowledge of available facilities</td>
<td>108</td>
<td>4.6%</td>
</tr>
<tr>
<td>Lack of access to transportation</td>
<td>17</td>
<td>0.7%</td>
</tr>
<tr>
<td>Lack of handicap accessible facilities</td>
<td>39</td>
<td>1.7%</td>
</tr>
<tr>
<td>Lack of security, safety concerns</td>
<td>54</td>
<td>2.3%</td>
</tr>
<tr>
<td>Lack of time</td>
<td>526</td>
<td>22.5%</td>
</tr>
<tr>
<td>Not interested</td>
<td>9</td>
<td>0.4%</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>249</td>
<td>10.6%</td>
</tr>
<tr>
<td>Poor maintenance</td>
<td>218</td>
<td>9.3%</td>
</tr>
<tr>
<td>Too busy with other activities</td>
<td>277</td>
<td>11.8%</td>
</tr>
<tr>
<td>Travel distance</td>
<td>720</td>
<td>30.8%</td>
</tr>
<tr>
<td>Use of alcohol and drugs in the park</td>
<td>53</td>
<td>2.3%</td>
</tr>
</tbody>
</table>
20. What is your zip code?

<table>
<thead>
<tr>
<th>Response</th>
<th>Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2670</td>
</tr>
</tbody>
</table>

21. What is your age range?

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Response Total</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>47</td>
<td>1.8%</td>
</tr>
<tr>
<td>25-34</td>
<td>434</td>
<td>16.3%</td>
</tr>
<tr>
<td>35-44</td>
<td>633</td>
<td>23.8%</td>
</tr>
<tr>
<td>45-54</td>
<td>694</td>
<td>26.1%</td>
</tr>
<tr>
<td>55-64</td>
<td>613</td>
<td>23.0%</td>
</tr>
<tr>
<td>65-74</td>
<td>220</td>
<td>8.3%</td>
</tr>
<tr>
<td>Over 75</td>
<td>22</td>
<td>0.8%</td>
</tr>
</tbody>
</table>
Dear fellow Texans,

Many of us have fond childhood memories of a special place where play, imagination and wonder reigned. For most, that place was outdoors. Through these experiences, we gained understanding, appreciation and a personal relationship with the natural world.

Sadly, today’s children are allowed less time for unstructured, creative play in nature than ever before. As the trend away from outdoor play and learning deepens, we are witnessing sobering consequences for children’s health and well-being. Additionally, this youngest generation is missing out on critical experiences that lay the foundation for future stewardship of our natural resources.

We can reverse this trend. One achievable solution is to restore active play and learning in nature. This issue has brought together an unprecedented coalition of partners from all walks of life who formed the Texas Partnership for Children in Nature. These 80+ experts examined the issues and outlined their recommendations in this strategic plan.

Their wisdom, sincerity and integrity is reflected throughout the plan. By design, the plan is concise, optimizes partnerships and focuses on implementation across multiple public and private sectors.

Please consider the recommendations in this plan and join us in restoring our children’s well-being and their relationship with Texas’s rich natural and cultural heritage. The trend is real, the problem is solvable and the time to act is now.

Carter Smith
Executive Director
Texas Parks and Wildlife Department
# Executive Summary

4

# About the Texas Partnership for Children in Nature

8

# Stakeholder Team Report:

<table>
<thead>
<tr>
<th>Category</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>9</td>
</tr>
<tr>
<td>Education</td>
<td>13</td>
</tr>
<tr>
<td>Access</td>
<td>17</td>
</tr>
<tr>
<td>Community</td>
<td>21</td>
</tr>
<tr>
<td>Marketing</td>
<td>25</td>
</tr>
</tbody>
</table>

# Glossary

30

# The Texas Partnership for Children in Nature

32

# Citations

34
During the 81st legislative session, organizations including the Texas Wildlife Association, the National Wildlife Federation, Texas PTA, the Texas Pediatric Society, and many other conservation, education and public health organizations advocated for the well-being of children through the creation of a formal state plan to enable children to spend more time out-of-doors and to better understand Texas’ natural resources.

In fall 2009, a bipartisan group of Texas legislators requested that the Texas Parks and Wildlife Department, along with the Texas Education Agency, the Texas Department of State Health Services and the Texas Department of Agriculture form a public-private partnership to develop that strategic plan. Over 80 professionals including representatives from state and federal agencies, NGOs, health, education, natural resources, community organizations and businesses, answered the call and formed the Texas Partnership for Children in Nature.

Their discoveries included some sobering statistics:

- **Children ages 8 - 18 spend an average of 7.5 hours a day, over 50 hours per week, connected to a television, computer, video games and other electronic media.**

- **A child is six times more likely to play a video game than ride a bike.**

- **Texas is home to three of the five cities with the highest obesity rates in the nation.**

- **In the 2009-2010 Fitnessgram school year report, only a little over 8% of 12th grade-girls and boys were deemed physically fit.**

- **Today’s children may be the first generation at risk of having a shorter lifespan than their parents.**
This executive summary highlights the major recommendations of the Texas Partnership for Children in Nature. It focuses on the role of Health, Education, Access and Community in furthering engagement with nature and increasing understanding of Texas’ natural resources. Stakeholder teams of content experts examined relevant issues, reviewed current research and developed recommendations for each focus area. The plan optimizes partnerships and relies on implementation across multiple public and private sectors. The full report includes their analyses of the problem, objectives and suggested action items. The plan will be the focus of a state implementation conference held in Austin on December 3-4, 2010. A report on the conference and implementation strategies will be posted online at www.texaschildreninnature.org.

www.texaschildreninnature.org

Children who play and learn in nature are:

**Healthier.**
Active nature play improves physical conditioning, and has a positive effect on emotional wellbeing and child development. Outdoor play has been linked to reduced risk of myopia and vitamin D deficiency.

**Happier.**
Nature play increases self-esteem and reduces stress. Children learn self-discipline and are more cooperative with others. Children feel more capable, confident and connected to nature.

**Smarter.**
Nature play stimulates creativity and improves problem solving. Schools using environmental themes report improved academic performance. And, children who play in nature are more likely to become tomorrow’s conservation leaders.
**Team Recommendations**

We envision that all Texas children and their families will spend more time outdoors, engaged in nature for a happy and healthy life.

---

**Health**

A growing body of evidence points to the benefits of physical activity and play in nature to children’s physical and mental health and development. More research is needed, but we know enough to act. We envision healthier children and families as a result of increased time spent in nature and more outdoor physical activity.

- **Goals**
  - Utilize healthcare and related professionals to educate families about the benefits of nature to children’s physical health, emotional well-being and cognitive functioning; the importance of nature and outdoor activities for healthy child development; and safety precautions.
  - Encourage Texas-specific research to describe the causal relationship between nature and children’s health and development, including the therapeutic benefits of nature.
  - As appropriate, encourage integration of nature opportunities as a health strategy in existing health and childcare guidelines.
  - Promote health considerations in urban and community planning.

**Education**

Natural resource literacy is the ability to understand, analyze and address major natural resource opportunities and challenges. The goals to achieve natural resource literacy through education includes educating school administrators, educators and future educators; tracking students’ outcomes and experiences; integrating local informal resources; involving parents; and assessing these processes and outcomes. Our vision is that every child in Texas will be engaged in meaningful outdoor learning experiences and achieve natural resource literacy.

- **Goals**
  - Increase the understanding, appreciation and use of experiential learning outdoors within the formal education system.
  - Develop quality outdoor classrooms, wildlife habitats and natural play areas on every Texas schoolyard.
  - Develop integrated and collaborative partnerships between the formal education and informal systems and resources to benefit Texas youth.
  - Assess the effectiveness of natural resource literacy education in Texas.
Access
Safety, convenience and multi-purpose design are essential to developing a connection with nature and a sense of place, the building blocks to conservation stewardship. We envision a Texas where children and their families have safe, convenient, sustainable and desirable access to the outdoors, where they can develop respect and appreciation for the natural environment.

- Optimize access to natural areas to make them safe and convenient.
- Partner with government agencies, nonprofits and the private sector, in coordination with youth, to provide increased access to Texas lands and waters.
- Encourage creation and expansion of natural areas that provide varied and recurring nature-based experiences.
- Plan, develop or expand built environments to include natural areas with interpretive elements.

Community
Connecting with nature must be relevant and welcoming to all, including unifying messages, partnerships and efforts that are respectful to Texas’s diverse peoples, cultures and economic needs. We envision that the message “Happier, Healthier, Smarter” Children in Nature is widely and mutually communicated and that communities inspire children to maintain a lifelong connection to nature.

- Raise awareness and action among adults and children through consistent and unified communication.
- Create community-based regional partnerships throughout Texas to increase “children in nature” activities.
- Promote the cultural and economic gateways and benefits through nature-based opportunities.

Implementation Strategies
Private and public entities must work together to implement this plan, relying on the leadership of regional collaborations and a state coalition. Implementation strategies developed from a December 2010 state conference of stakeholders should guide actions. The following additional efforts are underway to advance the implementation of the Texas Children in Nature Strategic Plan.

Marketing
A unifying message and brand, with audience-specific tool kits, will help communicate and promote this important initiative. Research is needed to establish baselines for the plan’s goals. The Marketing Team will further identify the marketing implications associated with the plan’s strategic goals.

Policy and Legislative
Policy priorities include acquisition of natural areas close to population centers, funding for the state parks system and local park grants programs, and support for outdoor and natural resource education at public schools. The Policy and Legislative Team will be working with partner organizations and legislative staff to identify policy responses that will advance the Texas Children in Nature Strategic Plan.
About the Texas Partnership for Children in Nature

Inspired by the benefits nature holds for children, and concerned by the alarming downward trend in children’s fitness, Sen. Eliot Shapleigh and Rep. Donna Howard called for a Texas Partnership for Children in Nature during the 81st legislative session. Senate Bill 205 was championed by the Texas Wildlife Association, the National Wildlife Federation, Texas PTA, the Texas Pediatric Society, and many other conservation, education, and public health organizations. These groups advocated for the well-being of children through the creation of a formal state plan to enable children to spend more active time outdoors in nature and to better understand Texas’ rich natural and cultural legacy.

Although S.B. 205 passed the Senate unanimously and cleared House committees, it did not make the final House deadline for a vote. To keep momentum on this issue between sessions, a bipartisan group of legislators tasked the Texas Parks and Wildlife Department, Texas Education Agency, Texas Department of Agriculture and Texas Department of State Health Services to join with private-sector organizations and together form a Texas Partnership for Children in Nature (TPCIN).

The partnership was charged initially with developing a statewide plan to promote “healthy children in a healthy world” by integrating health and school initiatives with increased opportunities for understanding Texas’ natural resources and developing outdoor skills, scientific study and outdoor play opportunities for children.

Carter Smith, executive director of the Texas Parks and Wildlife Department, chaired the effort. In January 2010, a 17-member Texas Steering Committee representing four state agencies, NGOs, health, education and business, convened to establish a work plan and stakeholder teams. The focus areas were Education, Health, Access and Community, and later, Marketing and Policy/Legislative.

Stakeholder teams formed for each focus area brought in a diversity of expertise and perspectives. Altogether, over 80 professionals from state and federal agencies, NGOs, health, education, natural resources, community organizations and business worked on this plan over the course of 10 months. The teams examined relevant issues, reviewed current research and explored the strengths, weaknesses, challenges and opportunities for the plan. From this they drafted recommendations for each area. The plan will be presented to the TPW Commission and then to legislators and their staff in November 2010. The plan will be the focus of a state implementation conference held in Austin on December 3-4, 2010.
Team Reports and Recommendations

Stakeholder Team Report: HEALTH

Children are spending less time outdoors in nature, which could be detrimental to their health. There is a growing body of research that clearly supports a positive relationship between contact with nature and physical health, emotional well-being and child development. Some of the strongest research to date indicates that children who spend time playing outdoors are more physically active than those in other settings.\(^6\)\(^7\)\(^8\)\(^9\)\(^10\)

In 2008, the U.S. Department of Health and Human Services published the *Physical Activity Guidelines for Americans*.\(^11\) These guidelines call for children and adolescents to be physically active for 60 minutes or more every day, most of which should be either moderate- or vigorous-intensity aerobic physical activity. On at least three days per week, they should do vigorous-intensity activity as well as muscle-strengthening and bone-strengthening activity.

Increased time spent indoors on video or computer games and in front of the TV is considered to be a major contributor to both reduced exposure to nature and physical inactivity, which is an underlying factor in obesity. According to a survey of Texas high-school students conducted in 2009, 25.1 percent reported that they spent three or more hours per day playing video or computer games or using a computer for something that was not schoolwork. In this same survey, 36.3 percent said they spent three or more hours per day watching TV. When asked about the amount of physical activity they received, less than half (46.6 percent) said they were physically active for a total of at least 60 minutes per day on five or more of the past seven days.\(^12\)

A survey of Texas school children’s weight status conducted in 2004 and 2005 indicated that 42 percent of fourth-graders, 39 percent of eighth-graders and 36 percent of 11th-graders were either overweight or obese.\(^13\) The Texas Education Agency released data from the 2009-2010 school year that shows disappointing physical fitness overall and declining physical fitness at the high-school level. Fitnessgram scores of over 2.9 million third- through 12th-grade students in 92 percent of all school districts were assessed. Children were found most fit at the younger grades and showed a steady decline at older grades. Yet, there is especially alarming lack of fitness even of 3rd graders, with only 37.27 percent for girls and 30.98 percent for boys deemed fit—significantly lower than one would expect for active 8-year old children. Only 8.07 percent of 12th-grade girls and 8.54 percent of 12th-grade boys participating in the fitness tests were deemed physically fit. Fitness levels of minority children were on average worse than their white/non-Hispanic counterparts.\(^14\)

Nationally, it is estimated that 61 percent of obese children and adolescents have at least one additional risk factor for heart disease, such as high cholesterol or high blood pressure.\(^15\) In addition, obese children are at greater risk than healthy weight children for bone and joint problems, asthma, sleep apnea and social and psychological problems such as stigmatization and poor self-esteem.\(^16\)\(^17\) This increases the risk for associated health problems including heart disease, type 2 diabetes, stroke, several types of cancer, and osteoarthritis. In addition, overweight and obese children are more likely to become overweight and obese adults.\(^18\) Although many variables can affect weight status over the life cycle, retrospective studies show that 50 to 80 percent of overweight children remain overweight as adults.
and that if children are overweight before the age of 8, obesity in adulthood is likely to be more severe.19 20 21

Research shows that children who play outdoors are more likely to be vigorously active, and children who spend more time in vigorous activity are less likely to have weight and health problems. In addition to increased physical activity, outdoor play and exposure to nature have been linked to the reduced risk of myopia (nearsightedness),22 23 asthma24 and vitamin D deficiency.25 Vitamin D deficiency, which is evident in approximately 9 percent of children in the U.S., can lead to bone disease, cardiovascular disease, diabetes, high blood pressure and other health problems.26 27 28

Exposure to nature has been found to have a positive association with enhanced mental health and cognitive functioning. The amount of nature in the day-to-day living environment is associated with lower levels of depression and anxiety, and higher levels of perceived self-worth in children.29 30 Further, exposure to nature may also serve as a protective factor for children experiencing stressful life events, buffering them against such stressors. Unstructured free play in the outdoors has been linked to various social benefits including cooperation, self-awareness and increased feeling of self-efficacy and confidence.31 32 The benefits of simply observing nature have also shown value in terms of pain control during medical procedures and recuperation time after surgery among both adults and youth.33 34 Nature may also have restorative value in fatigue associated with directing and focusing attention and inhibiting other stimuli, thus holding some promise for improving attention in children. The amount of nature in a child’s play environment has been reported by parents to be associated with improved attention span.35 Further, physical activity in a natural setting may improve symptoms of Attention-Deficit Hyperactivity Disorder (ADHD), in comparison to physical activity in other settings.36 37 38 Further research including randomized clinical trials is needed to elucidate the benefit of nature in treating ADHD.

Additional research is needed to determine the extent to which nature and outdoor time reduce the risks of health problems as well as their role in the treatment of health problems. Meta-analysis of existing research and causal research are also needed to distinguish between the multiple benefits of the environment (nature) and the activities engaged in—play, work, meditation, reflection, etc. However, as Dr. Howard Frumkin of the Centers for Disease Control (also a supporter of land conservation as a way to promote public health) states, “We know enough to act.”39

We envision healthier children and families as a result of increased time spent in nature and more outdoor physical activity.

**Target audiences**
- Health-care professionals
- Health-related organizations and coalitions
- K-12 schools and colleges
- Youth organizations
- Community-based services for families with young children

**Key focus areas**
- Nature-based activities as a health strategy
- Outreach and professional development
- Research

**Strengths and weaknesses:**

**Strengths**

- Local and state parks provide opportunities for exposure to nature and increased physical activity and, therefore, improve the health of children and families in Texas.
- There are existing statewide networks, programs and services that can be used to educate families and practitioners about the link between health and nature.
- Nature is accessible and often free or low-cost for most Texas youth.
- This is an emerging area of research which creates new and exciting opportunities for academic institutions in Texas and also for research foundations.
- Partnerships are already working to improve safety and accessibility to the outdoors.
- There is a great deal of public awareness of the obesity problem among children and the relationship between physical inactivity and obesity.
There is political will to address physical inactivity because of its impact on obesity and health-care costs.

Increasing time spent outdoors in nature will most likely not be a polarizing issue among stakeholder groups.

This is an opportunity for the development of non-traditional partnerships to improve health as exemplified by the Texas Partnership for Children in Nature.

Weaknesses

For many, the research linking nature and health is new, so much education will need to be done.

Further research needs to be done, including longitudinal studies and randomized trials to clarify causal/predictive mechanisms and inform intervention.

Nature may not be easily accessible, and outdoor time may not be viewed as safe for some children living in certain areas.

Marketing budgets for “nature/outdoor time” can not compete with the large marketing budgets for TV, video and computer games.

Opportunities for children and families to use local and state parks are subject to budget cuts during economic downturns and are further challenged by lack of funding for land acquisition to accommodate the projected increase in the state’s population.

GOAL 1: Utilize health-care and related professionals to educate families about the benefits of nature to children’s physical health, emotional well-being and cognitive functioning; the importance of nature and outdoor activities for healthy child development; and safety precautions.

Objective 1: Engage professional organizations to increase awareness and disseminate information about nature and health through professional development opportunities.

Action 1: Hold presentations at professional conferences and seminars.

Action 2: Develop journal articles and other resources.

Action 3: Target organizations such as the Texas Pediatric Society, Texas Medical Association; local medical societies, Texas Society of Psychiatric Physicians; Texas Psychological Association; Texas Counseling Association; Texas School Nurses Organization; Texas Parent Teachers Association; Texas Association for the Education of Young Children; and the Texas Association for Health, Physical Education, Recreation and Dance.

Objective 2: Work with existing statewide networks, universities and state governmental agencies to incorporate information about health and nature into existing curricula and resources for children, students, families and teachers.

Action 1: Work with state agencies such as the Texas Women, Infants and Children (WIC) program and Texas AgriLife Extension Service to incorporate nature and wellness messages in their materials.

Action 2: Work with community organizations such as Boys and Girls Clubs, Girl and Boy Scouts, HeadStart and Education Service Centers to incorporate nature and wellness messages in their materials.

Action 3: Work with day cares, schools and universities to encourage and educate students, parents and communities to enjoy the outdoors and nature.

Objective 3: Work with academic institutions to incorporate training on nature and health into undergraduate and graduate coursework in education, child development, social work, counseling, kinesiology, health education, public health, medicine, nursing and other related fields.

GOAL 2: Encourage Texas-specific research to describe the causal relationship between nature and children’s health and development, including the therapeutic benefits of nature.

Objective 1: Work with the national children in nature initiative and academic community to identify research needs.

Objective 2: Promote research through academic and professional organizations.

Objective 3: Support increased funding for research.
GOAL 3: As appropriate, encourage integration of nature opportunities into existing health and child-care guidelines as a strategy for improving children’s health.

Objective 1: Work with TEA to identify strategies and opportunities to incorporate nature and health messages into coordinated school health programs.

Objective 2: Incorporate the goals and objectives of the Texas Partnership for Children in Nature into state plans and advisory group recommendations such as the Strategic Plan for the Prevention of Obesity in Texas, Active Texas 2020 Plan, the Early Childhood Health and Nutrition Interagency Council and the Interagency Obesity Council.

Objective 3: Work with the Department of Family and Protective Services to incorporate “nature guidelines” into standards and regulations for daycare and residential childcare facilities.

Objective 4: Add the Texas Parks and Wildlife Department as a member agency on the Interagency Obesity Council.

GOAL 4: Promote health considerations in urban and community planning.

Objective 1: Increase the number of safe and accessible parks and playgrounds, particularly in underserved and low-income communities as a health strategy.

Objective 2: Improve the walk-ability and bike-ability of communities to promote and support programs that increase active transportation to and from schools.

Objective 3: Identify exemplary models of urban design and land use that encourage both nature-based physical activity and wise use of the natural environment.

“What’s important is the opportunity for children to get outside and play. Get out there, climb a tree, look at the birds. It’s also an opportunity for the family to do something together.”

- Dr. D. Michael Foulds
  Professor Emeritus, Dept. of Pediatrics
  University of Texas Health Science Center at San Antonio
The Kaiser Family Foundation found that the average American child (ages 8-18) now spends over 7.5 hours a day connected to electronic entertainment media, leaving little room for quality time outdoors. The disparity of time spent indoors is thought to have ramifications on physical and mental health, classroom performance and behavior, and a connection to nature later in life.

Multiple studies support the notion that time spent outdoors increases academic achievement. The American Institutes for Research compared students involved in an outdoor education program to a control group lacking the same program. Twenty-seven percent of the program participants increased in measures of mastering scientific concepts, enhanced cooperation and conflict resolution skill, and problem-solving. Similarly, according to the State Education and Environment Roundtable, students involved in environment-based instructional programs scored as well as or better than their peers in standardized tests for reading, math, language and spelling. Fourth-grade students from the Houston Independent School District who participated in the National Wildlife Federation’s Schoolyard Habitats Program had significantly increased math scores when compared to peers in schools that were taught using a more traditional curriculum. Students from two schools participating in the Texas Healthy Habitats service-learning environmental projects had significantly increased science test scores.

The Texas Essential Knowledge and Skills (TEKS) specifically reference outdoor and field experiences, yet these activities are sometimes viewed negatively by school district administrators and teachers in Texas. Restricting learning to indoor classrooms gives the impression that the formal education system fails to recognize, understand and appreciate the importance of experiential learning outdoors to student achievement. The benefits of nature-based learning and unstructured play have been documented to improve learning among children.

Current TEKS would lend themselves well to experiential learning outdoors. For example:

High school physical education TEKS §116.53. High School Adventure/Outdoor Education (One-Half Credit). (1) In Physical Education, students acquire knowledge and skills for movement that provide the foundation for enjoyment, continued social development through physical activity, and access to a physically-active lifestyle. The student exhibits a physically-active lifestyle and understands the relationship between physical activity and health throughout the lifespan (2) Students enrolled in adventure outdoor education are expected to develop competency in outdoor education activities that provide opportunities for enjoyment and challenge. Emphasis is placed upon student selection of activities that also promote a respect for the environment that can be enjoyed for a lifetime.

§112.4. Science, Grade 2. (9) The student knows that living organisms have basic needs that must be met for them to survive within their environment. The student is expected to: (C) compare and give examples of the ways living organisms depend on each other and on their environments such as food chains within a garden, park, beach, lake and wooded area.

Educators and researchers recognize a growing body of evidence indicating that children who have outdoor experiences are more successful in school than those who do not. However, the amount of time children spend outdoors is much less than that experienced by their parents and grandparents. This may have a negative impact on knowledge and skill conveyed in the classroom.
Additionally, there are many opportunities for experiential learning through informal education providers. A solid connection between formal education networks and informal education providers is lacking, however. Fostering this collaboration would greatly benefit Texas youth and both formal and informal educators.

**Our vision is that every child in Texas will be engaged in meaningful outdoor learning experiences and achieve natural resource literacy.**

Our mission is to (1) provide opportunities for every Texas child and family to engage with nature; and (2) increase understanding of Texas natural resources.

**Target Audiences**
- K-12 educators, including teachers, administrators, central office personnel and school board members
- Informal educators including representatives from nature centers, parks, museums and agencies
- Parents of school-age children
- Policy-makers

**Key Focus Areas**
- Integration of campus natural areas to strengthen and enhance K-12 education
- Collaborations between formal and informal educators
- Natural resource literacy

**Strengths and Weakness**

**Strengths**
- Texas has many successful, well-trained, practicing teachers.
- Texas schools have strong campus leadership.
- High quality training and training opportunities are available for in-service and pre-service educators.
- Schoolyards have potential outdoor learning areas.
- Schoolyards with existing integrated built/natural play environments can be expanded and naturalized.
- There are examples of successful schools with a nature focus.
- Existing curriculum and requirements can be taught in new ways in the outdoors.
- Educational resources that support learning standards can be used outdoors.
- Texas has rich educational resources in informal settings.
- Science TEKS for Grades 6-8 and for all high school science courses state that “The student, for at least 40 percent of instructional time, conducts laboratory and field investigations…”
- We have the opportunity to draw from the already existing organizations of outdoor, formal and informal educators and resources.
- Outdoor learning can occur on any schoolyard or natural area.

**Weaknesses**
- There is a lack of integration between indoor instruction and experiential outdoor learning.
- Some teachers have not received consistent TEKS or outdoor/experiential instruction themselves.
- For some districts, there is a lack of administrative support for experiential learning.
- Some teachers are not comfortable teaching outdoors, or lack content knowledge.
- Educators may lack access to professional development.
- Not all architects are aware of the state requirement to use native plants on state facilities.
- There are schoolyards without native plants.
- There can be a lack of connection between informal and formal settings.
- Schools offer fewer field trips.
- At the elementary level there is no requirement for lab and field investigations; however, the Science TEKS for Grades K-5 state that “Districts are encouraged to facilitate classroom and outdoor investigations” for at least 50-80 percent of instructional time, depending on grade level.

**Goals and Objectives**

Natural resource literacy is the ability to understand, analyze and address major natural resource opportunities and challenges. The goals to achieve natural resource literacy through education include educating school administrators, educators and future educators; tracking students’ outcomes and experiences; integrating local informal resources; and assessing these processes and outcomes.

> “Experiences that bond children to the natural world sharpen their senses, inspire a sense of beauty and build emerging concepts of biology, geology, physics and language.”

- Dr. Joe Frost
  Professor Emeritus, College of Education
  University of Texas at Austin
GOAL 1: Increase the understanding, appreciation and use of experiential learning outdoors within the formal education system.

Objective 1: Provide professional development training for formal education administrators.

  Action 1: Provide professional development to administrators about the benefits of outdoor learning; the importance of training educators to use outdoor learning; and how outdoor learning supports structured learning in the classroom.

  Action 2: Work with partners such as Texas Association of School Administrators (TASA), Texas Association of School Boards (TASB) and Local Educational Agencies (LEAs) to host, plan, implement and evaluate opportunities for school administrators.

  Action 3: Provide professional training for administrators about the value and enhancement of free, outdoor spontaneous play and its benefits for fitness, health, brain development and learning.

Objective 2: Provide professional development training for teachers that encourages continuing education and a community of learners, and provides training opportunities over time.

  Action 1: Develop methods that encourage experienced teachers to engage student learning outdoors.

  Action 2: Provide professional development to in-service teachers showing the importance of outdoor learning in enhancing structured learning in the classroom and as an opportunity for interdisciplinary teaching.

  Action 3: Identify and encourage professional development opportunities for teachers that are consistent with best practices in natural resource literacy education with, for example, a minimum of 36 contact hours.

  Action 4: Identify and encourage existing professional development opportunities for outdoor skills education.

  Action 5: Provide professional training for teachers about the value and enhancement of free, outdoor spontaneous play and its benefits for fitness, health, brain development and learning.

Objective 3: Provide professional development training opportunities to pre-service teachers.

  Action 1: Incorporate environmental education within existing teacher preparation programs.

  Action 2: Provide outdoor learning immersion experiences for teachers to help them become comfortable teaching in the outdoors.

  Action 3: Identify 5 to 10 Texas colleges or universities that will embed natural resource literacy and outdoor skills education into existing pre-service teacher preparation program course offerings.

  Action 4: Provide instruction in current technologies, such as GIS and probes.

  Action 5: Provide professional training for pre-service teachers about the value and enhancement of free, outdoor spontaneous play and its benefits for fitness, health, brain development and learning.

Objective 4: Provide students outdoor learning opportunities aligned with TEKS standards for natural resource literacy.

  Action 1: Convene an education summit to identify and review curriculum needs for developing literacy in natural resources.

  Action 2: Identify and solicit existing curricula for assessment.

  Action 3: Determine whether experiential curricula will meet TEKS requirements.

  Action 4: Identify model outdoor field and service-learning experiences that can be integrated into the regular school curriculum.

  Action 5: Distribute qualifying curricula to formal education outlets and into the hands of teachers trained in outdoor learning, and encourage its use.

  Action 6: Share with students information about nature-based careers.

Objective 5: Engage families in the understanding and appreciation for outdoor learning experiences.

  Action 1: Provide information in multiple languages to families on the benefits of outdoor learning experiences.

  Action 2: Provide information two times per year to families regarding resources and activities they can use easily at their homes to engage children in outdoor experiential learning.

  Action 3: Assess the impact of information regarding outdoor experiential learning on parent knowledge and behaviors.
GOAL 2: Develop quality outdoor classrooms, wildlife habitats and integrated natural play/learning environments on every Texas schoolyard.

Objective 1: Encourage design and planning of natural areas on school grounds.
   Action 1: Identify design guidelines for outdoor classrooms, wildlife habitats and integrated natural play/learning environments.
   Action 2: Encourage local school districts to provide structure for recess that includes outdoor activities.
   Action 3: Identify ways to encourage natural areas in new school construction and renovation through educational materials, development of a model school board policy, and incorporation into voluntary certification standards (for example, Leadership in Energy & Environmental Design (LEED) for Schools certification).

Objective 2: Partner with existing programs promoting school habitats and outdoor classrooms.
   Action 1: Assess existing schoolyard habitat programs and recommend a way that existing programs can work together to achieve the objective of increasing natural landscaping on schoolyards.
   Action 2: Build and train a cadre of volunteers to help with implementation and maintenance of the outdoor classrooms.
   Action 3: Encourage outdoor play as part of physical education classes.
   Action 4: Provide daily recess and challenging natural/built play environments for all preschool and elementary schools.

GOAL 3: Develop integrated and collaborative partnerships between the formal education and informal systems and resources to benefit Texas youth.

Objective 1: Assess informal education providers for relevant programming to meet the needs of formal education.
   Action 1: Identify and establish communication with at least 50 existing informal education providers.
   Action 2: Engage existing informal education providers of nature-based programming to create a plan of action.

Objective 2: Identify at least five strategies to link formal and informal educators in order to increase communication and clarity of alignment with the TEKS.
   Action 1: Create Web-based resources as a common point of communication.
   Action 2: Create video programming to educate students and teachers about nature and natural resources.
   Action 3: Identify successful formal-informal partnerships.

Objective 3: Identify partners to provide professional development opportunities for informal educators.
   Action 1: Endorse and promote existing training that meets the needs of informal educators.
   Action 2: Implement outdoor, nature-based education via well-trained volunteers and parents.

Objective 4: Encourage non-public education such as private schools, home schools and after-school programs to address natural resource literacy.
   Action 1: Identify and share resources and best practices tools through related networks and organizations.
   Action 2: Share opportunities for experiential learning and educator training.

Objective 5: Develop partnerships between schools, park departments and parents to provide training for playleaders or playworkers to staff park and/or school play and learning environments after school and during holidays.

GOAL 4: Assess the effectiveness of natural resource literacy education in Texas.

Objective 1: Assess the quality of experience and knowledge of Texas students on natural resource topics.
   Action 1: Assess changes in use of outdoor space for learning in formal and informal sites.
   Action 2: Identify related State of Texas Assessments of Academic Readiness (STAR) objectives and methods to measure and report progress of public school students toward becoming literate in natural resources.

Objective 2: Assess the effectiveness of the overall literacy strategy.
   Action 1: Develop a process for revising or updating the natural resource literacy plan every five years or as needed.
   Action 2: Convene a task force to examine the effectiveness of partnerships between the formal and informal education systems.
Stakeholder Team Report: ACCESS

As the state’s population becomes more urban and disconnected from natural resources—our lands and waters—it becomes increasingly important to provide accessible, safe and enjoyable outdoor recreation opportunities and to effectively inform and educate the public about them.

For youth, like all Americans, close-to-home opportunities for outdoor recreation are essential. The Outdoor Foundation noted in their 2010 report on youth that the participation rate in outdoor recreation of youth who live in communities with designated walking and biking trails is significantly higher than youth without these designated areas. Youth with nearby walking routes had a 21 percent higher participation rate, and youth with nearby biking routes had a nearly 25 percent higher participation rate. Youth with local outdoor infrastructure average more outings than do those without — about 20 percent higher, on average.44

To be successful, governments, nonprofits and the private sector must unite to develop, promote and invest in opportunities for Texans to access outdoor experiences. This aspect of the plan provides recommendations to make access to the outdoors convenient, safe and accessible, and to facilitate further development of places where children and their families can develop a sense of respect and appreciation for the natural environment.

It will take the commitment and involvement of all who care about Texas to ensure ample access to opportunities for outdoor experiences and to pass on values that sustain and conserve this state’s great natural, cultural and outdoor recreation resources.

We envision a Texas where children and their families have safe, convenient, sustainable and desirable access to the outdoors, where they can develop respect and appreciation for the natural environment.

Target Audiences
• State and local governments
• Urban designers and planners
• Related nonprofit organizations
• Landowners and land managers
• Community and neighborhood associations
• Constituent volunteer groups

Key Focus Areas
• Expanded access to and inventory of natural areas
• Safety
• Improved existing access
• Partnerships
• Multiple and recurring experiences
• Natural areas in built environments

Strengths and Weaknesses

Strengths
• Partnerships are already working to improve safety and accessibility to the outdoors.
• Volunteer and user groups are generally eager to maintain and expand access.
• There is public desire and political will to address physical inactivity because of its impact on obesity and health-care costs.
• Schoolyards with existing integrated built/natural play environments can be expanded and naturalized.
• There are examples of successful schools with outdoor classrooms and nature-based programming.
• There are examples of built environments that successfully incorporate natural areas.
• Trail grants and local park grants to improve and expand access are available from the state.
• Funding from private sources is increasingly available for improving and expanding access to natural areas.
• More government-control lands and waters could be made available to the public.
• There are examples of private landowners providing public access and field experiences for youth.

Weaknesses
• Nature may not be easily accessible, and outdoor time may not be viewed as safe for some children living in certain areas.
• There is no available current inventory of natural areas and their relative accessibility.
• Opportunities for children and families to use local and state parks are subject to budget cuts during economic downturns.
• Lack of funding for land acquisition to accommodate the projected increase in the state’s population presents a challenge.
• Schools offer fewer field trips to natural areas.
• In times of tight budgets, opening or improving access to public lands may be a challenge.
• Because of budget constraints, school districts may be reluctant to reconfigure schoolyards and playgrounds to provide increased access.
• Retrofitting existing landscapes to enhance access may be costly.
• Barriers, real and perceived, exist that inhibit use of natural areas.
• Liability concerns for landowners and other private partners inhibit access.
• Some areas are inaccessible to those with disabilities.
• Developing a sense of place or a relationship with natural areas depends on multiple visits and is enhanced by quality interpretive elements.

Goals and Objectives

GOAL 1: Optimize access to natural areas to make them safe and convenient.

Objective 1: Facilitate safe and convenient public access.
   Action 1: Encourage federal, state and local agencies to provide easily identifiable, accessible, public transportation routes to natural areas. Examples include bus stops, train stops and bicycle stands.

Action 2: Expand and encourage proactive law enforcement to protect public lands and waterways and the people of Texas.

Action 3: Develop partnerships between schools, park departments and parents to provide training for playleaders or playworkers to staff park and/or school play and learning environments after school and during holidays. (See Education.)

Action 4: Encourage universal design facilities and signage to ensure access to those with all abilities.

Action 5: Encourage grant incentives for federal, state and county designers to partner with other agencies, cities and communities to cost-share development of universal design facilities and signage.

Objective 2: Create hiking, biking, walking and paddling trails with points of access for multiple and diverse users in natural areas, including those with disabilities.

Action 1: Improve the quality and distribution of boat ramps statewide.

Action 2: Reach out to nonprofit organizations and volunteers to assist in creating, operating and managing hiking, biking, walking and paddling trails and other natural areas.

Action 3: Encourage alternate pathways within natural areas that are short and easily accessible to accommodate people who use mobility devices such as walkers, wheelchairs, canes, etc.

Action 4: Create natural rest stops along trails, and provide the public with signage that indicates the length of the trail and the location of additional stops.

Objective 3: Inventory and identify areas that provide experiences in nature.

Action 1: Work with the Texas Department of Transportation (TxDOT) and other regulatory agencies to evaluate the feasibility of public access to waters at TxDOT-owned bridges and other public locations.

Action 2: Encourage federal, state and local agencies with established trails and natural areas to work with nonprofit organizations to provide internet and GPS-accessible information such as location and coordinates, maps, and points of access, including ADA access icons, at no cost to the entities.
Action 3: Within state trail grants, where applicable, enable applicants to identify other entities/neighbors with adjacent trails or recreation areas and provide incentives to interconnect and manage those trails as cooperative units.

GOAL 2: Partner with government agencies, nonprofits and the private sector, in coordination with youth, to provide increased access to Texas lands and waters.

Objective 1: Encourage the creation of more natural areas in schools, neighborhoods, communities and park systems.

Action 1: Support the establishment of “outdoor classrooms” on school campuses.
  i. Promote the development of outdoor classrooms along trails to serve as learning laboratories.
  ii. Promote the formation of school groups or campus “nature clubs,” and encourage the involvement of local natural resource professionals.
  iii. Encourage after-school care programs that focus on nature/outdoor play.
  iv. Encourage the linkage of PTAs, the Master Naturalists program and other community outdoor enthusiasts with schools and outdoor classrooms.

Action 2: Encourage and incentivize the creation of pocket parks in communities.

Action 3: Increase the number of safe and accessible parks and playgrounds, particularly in underserved and low-income communities.

Action 4: Develop and consult with a youth advisory board to create natural areas appealing to youth.

Objective 2: Provide additional recreational access to private lands and waters.

Action 1: Encourage wildlife cooperatives to organize recreational activities and events.

Action 2: Collaborate with private landowners to increase public hunting, fishing and other outdoor opportunities.

Action 3: Develop programming and incentives and acquire grant funding for landowners to offer programming, establish youth camps, and provide experiential learning opportunities for underserved children.

Objective 3: Encourage collaboration among adjacent landowners, public and private, to link recreational venues.

Action 1: Encourage the formation of “educational cooperatives” among willing landowners and nearby public natural areas to promote “educational tourism.”

Action 2: Encourage increased collaboration and communication between state and federal land management agencies and the educational community. Develop MOUs between all interested parties pledging future support toward outdoor/natural resource education.

Objective 4: Support funding for the state park system and local park grants program.

Objective 5: Address liability concerns that limit access to nature on school grounds, parks, public lands and private lands.

Action 1: Seek clarity of liability laws and share findings.

Action 2: Determine recommendations based on findings.

GOAL 3: Encourage creation and expansion of natural areas that provide varied and recurring nature-based experiences.

Objective 1: Encourage the creation and expansion of natural areas that facilitate multiple uses and users.

Action 1: Provide universal design facilities for multi-generational families and people with disabilities to better enjoy the outdoors.

Action 2: Encourage program development that incorporates multiple opportunities for outdoor experiences and considers multiple levels of fitness and abilities. For example, a site might be conducive to fishing, hiking and restoration work available at the same location for novices and/or enthusiasts.

Objective 2: Encourage the creation and expansion of natural areas that foster recurring or frequent participation.

Action 1: Promote enhanced use through public awareness campaigns for sites near population centers.

Action 2: Highlight and promote the unique aesthetic qualities of natural areas.
**Action 3:** Support stable funding for land acquisition for publicly-accessible natural areas in close proximity to population centers.

**Action 4:** Identify and promote unique or underrepresented habitats available for public access that are near population centers.

**GOAL 4:** Plan, develop or expand built environments to include natural areas with interpretive elements.

**Objective 1:** Encourage the creation or expansion of natural play areas and wildscapes at schools.

**Action 1:** Identify model interpretive projects across the state, and disseminate project plans and potential contacts for support in interpretive product design.

**Action 2:** Encourage the installation of accessible playscapes and equipment to accommodate children who use mobility devices such as wheelchair-accessible train rides and platform swings for wheelchairs.

**Action 3:** Create cost-share programs for school developers to leave native vegetation on the premises when building new schools.

**Objective 2:** Encourage and identify incentives for the creation of natural areas in residential developments.

**Action 1:** Identify and disseminate model policies such as open space ordinances for urban design and land use that preserve the natural environment and provide examples of Texas communities that have successfully implemented such policies.

**Action 2:** Educate reviewing agencies such as city planning departments and planning and zoning boards about the benefits of natural play. Partner with them to develop incentive criteria for those developers that preserve accessible natural space.

**Objective 3:** Encourage and identify incentives for the creation of natural areas in commercial developments.

**Action 1:** Educate reviewing agencies (city planning departments and planning and zoning boards) about the benefits of natural play, and partner with them to develop incentive criteria for those developers that preserve accessible natural space.

**Action 2:** Promote and document the positive economic benefits of natural areas to statewide organizations representing the real-estate, development and building communities.

**Action 3:** Mobilize TRAPS and Texas Municipal League membership to educate local decision-makers such as city councils, realtor associations, planning and zoning boards about the need for more commercially-centered natural areas and accessibility using documentation prepared by the Texas Partnership for Children in Nature.

**Objective 4:** Include interpretive elements in natural areas.

**Action 1:** Ensure that interpretive elements are included on public lands and waters.

**Action 2:** Encourage and provide incentives and/or avenues for interpretive elements on private lands.

**Action 3:** Encourage interpretive elements that incorporate multiple learning styles, experiential learning and alternative access.

**Action 4:** Provide materials that model interpretive design.

---

**ACCESS**

It will take the commitment and involvement of all who care about Texas to ensure ample access to opportunities for outdoor experiences and to pass on values that sustain and conserve this state’s great natural, cultural and outdoor recreation resources.
It is necessary to create an effective, diverse and connected network of community organizations to deliver a consistent and unified “children in nature” message. Time and resources often challenge the networks and organizations that provide this valuable service to children and adults in a community.

Individuals in any community—suburban, urban or rural—are increasingly becoming disconnected from nature because they perceive that nature is not near their homes or that the safety of children is at risk.

The Outdoor Foundation’s Special Report on Youth: The next generation of outdoor champions (2010) states, “Reconnecting youth with the outdoors has become critical to the health of future generations and the health of our natural landscapes.” Their research indicates that the top two barriers are (1) lack of interest and (2) lack of time. The report also indicates that minority populations are underrepresented in outdoor recreation. Parents, friends and family are the most influential among youth outdoor participants, and the top motivator to participate in outdoor recreation is simple fun.

At the 2010 White House Conference on America’s Great Outdoors, Ernesto Pepito, youth program director at the Golden Gate National Park Conservancy, quoted a youth he had spoken to who said: “How can you expect our young or anyone to care about the natural environment when they don’t care about their own community?” Pepito continued his eloquent address with the decree that one must meet the young where they are and reminded us that youth can be ambassadors and teachers.

Barriers, both perceived and real, must be overcome so that youth and families can connect with nature. To solve this problem, communities need to embrace a consistent and unified message to increase awareness, encourage collaboration and interaction between community groups, and highlight the everyday connections to nature.

It is important for a community to come together to effectively inspire everyone, especially our children, to a lifelong connection to nature so that the whole community is “Happier, Healthier, Smarter.”

We envision that the message of “Happier, Healthier, Smarter” children in nature is mutually communicated and that communities will inspire children to a lifelong connection for career and recreation opportunities.

Target Audiences
• Youth and family-oriented organizations and businesses
• Local civic and philanthropic organizations and community agencies
• Culturally diverse youth and families
• Multi-generational mentors and volunteers

Key Focus Areas
• Delivering a consistent and unified message
• Connecting across generations
• Fostering regional children in nature collaboratives
• User-friendly campaign toolkit including presentations and marketing information
• Sharing best practices
• Economic opportunities for communities and youth career paths
Strengths and Weaknesses

Strengths

• The idea of reconnecting children with nature resonates across cultures, geographic regions, economic levels and professions.
• The children in nature mission is consistent with the mission of many community organizations with a focus on quality of life, health, family, etc.
• This is a solvable problem and can be achieved at varying levels of cost, starting at “free.”
• Existing toolkits to aid grassroots efforts are currently available from the national C&NN Web site such Family Nature Clubs, Natural Leaders and Community Action Guide.
• C&NN created a family campaign and Web site, Nature Rocks, which was customized for Austin, Nature Rocks Austin, and now serves as a model for other communities.
• Numerous community-wide organizations have requested a consistent and unified message to share with their constituents.
• Popular, successful collaboratives in Texas such as LiveSmart can serve as a model for a sustainable children in nature state effort.
• Readily available technology is available to generate interest and momentum, and to facilitate collaboration among organizations.
• Opportunities for economic development through eco-friendly activity or tourism benefits communities.

Weaknesses

• People often feel that nature is someplace far away and fail to realize and/or value nature nearby.
• The effort lacks a consistent, unified message.
• Defining community is challenging and can be looked at in multiple ways, such as geographic, physical or natural features, political or administrative boundaries, social, economic or cultural classifications.
• Each town, city, township or community is unique and has its own set of challenges and opportunities.
• Communities are dynamic and constantly evolving as people move in and move out.
• Texas is a large state with a diverse population.
• In today’s economic climate, an organization’s resources are stretched to their maximum limit, and they may be reluctant to commit or take action.

To effectively collaborate, organizations must be willing to “play with others.”
• Fostering collaboration at the regional and state level will take effort, time and resources.
• Economically disadvantaged groups may not be aware of the opportunities for connecting with nature.
• Perceived or real lack of safety is a barrier to participation.
• Promoting interest and involvement in nature through careers suffers from traditional high-profile career path messages and aspirations such as being a doctor, lawyer, etc.
• Many people have not developed a sense of personal responsibility, instead believing someone else will or is paid to take care of the environment.
• Busy schedules and other activities compete for people's limited time.
• Short-term economic development strategies often overlook ecotourism potential and the long-term benefits of retaining green spaces.

GOAL 1: Raise awareness and action among adults and children through consistent and unified communication.

Objective 1: Promote the brand marketing campaign so it is well recognized by parent and youth networks.

Action 1: Gather input from the community in creating and implementing a brand marketing campaign.
Action 2: Facilitate youth- and family-oriented organizations and businesses to adopt and communicate the unified message, “Children who play in nature are Healthier, Happier and Smarter” to their constituents.
Action 3: Provide and encourage youth and family oriented organizations and businesses to regularly use a campaign toolkit that includes monthly themes and suggested activities, including entry-level opportunities, backyard activities, and free resources, Web banners, exhibit materials, presentations, brochures, posters and flyers.
Action 4: Promote local coverage of children in nature monthly themes, activities and events to media outlets.
Objective 2: Support local networks in promoting children in nature activities, exchanging information and sharing best practices.

**Action 1:** Assist six communities each year in establishing their own Nature Rocks website.

**Action 2:** Recruit 100 schools annually for the Green Ribbon School program.

**Action 3:** Launch the Green Ribbon Communities program and recruit 50 organizations annually as members.

**GOAL 2:** Create community-based regional partnerships throughout Texas to increase children in nature activities.

**Objective 1:** Engage, recruit and educate new and diverse partnerships to support children in nature activities in communities. Create opportunities for new connections with community groups not formerly engaged.

**Action 1:** Invite a diversity of civic and citizen organizations (for example, Rotary Clubs, Lions Clubs, Kiwanis Clubs, community service agencies (police, sheriff, fire, EMS), local environmental interest groups, outdoor recreation organizations, land-trust organizations, condominium or homeowner associations, neighborhood groups, faith-based organizations, school clubs and organizations, historical and cultural societies); businesses (such as chambers of commerce, tourism boards, insurance companies, outdoor retailers, outdoor education/recreation groups, health and fitness groups, relevant local, state, tribal or federal government officials); philanthropic organizations; and health providers to join the state and/or local children in nature group.

**Action 2:** Recruit local leaders/partners in six priority communities that will identify and communicate with these diverse organizations within their region.

**Action 3:** Create a high-energy, informational and user-friendly presentation for outreach events and meetings that clearly states the need for a focus on children in nature to promote “Happier, Healthier and Smarter” children and incorporates health, education and nature issues.

**Objective 2:** Connect groups that are engaged in children in nature activities to one another, and leverage and share resources, ideas and strategies.

**Action 1:** Host 20 regional children in nature outreach events or town hall meetings with local partners to communicate the plan. Communities identify specific needs and fill gaps to provide nature opportunities and access.

**Action 2:** Utilize a local naturerocks.org to make available toolkits/resource guide for establishing a local children in nature collaborative. Where applicable, integrate the tools that have been developed by C&NN.

**Action 3:** Support local organizations and businesses in establishing local collaboratives to share resources and increase program participation.

**Action 4:** Share and utilize tools and strategies from national organizations such as C&NN’s Natural Leaders and Natural Teachers; and U.S. Department of Interior’s Let’s Move Outside!

**GOAL 3:** Promote the cultural and economic gateways and benefits through nature-based opportunities.

**Objective 1:** Raise awareness and concept of “nature is everywhere for everyone,” in your backyard, in your local park or abroad.

**Action 1:** Provide simple ideas for people to play outside and explore nature in their backyard, schoolyard, neighborhood or local park.

**Action 2:** Suggest easy-to-use resources or local programs to connect families to the outdoors. Encourage multi-generational participation and culturally relevant activities.

**Action 3:** Share information that many parks and natural areas have staff and/or volunteers to assist visitors.

**Objective 2:** Communicate that nature and open space provide economic value to local communities in the form of educational resources, recreational opportunities, protection of water resources, providing habitat for recreation and commercial fisheries, and ecotourism opportunities.
**Action 1:** Develop a series of case studies that identify the value of nature and of connecting children and nature in Texas; and promote conservation as an economic benefit to communities.

**Action 2:** Develop awareness of and educational opportunities for connecting local governments and conservation agencies to offer community, classroom and after-school educational programs about the value of local natural resources, watersheds, creeks, rivers and native flora and fauna.

**Action 3:** Offer incentives such as grants, tax breaks, technology upgrades, etc. for traditional after-school programs to design curriculum and activities around local natural resources.

**Action 4:** Encourage and promote awareness programs for county, city, neighborhood groups, homeowner associations, schools and businesses to use native plants and landscaping for wildlife in private and public spaces.

**Objective 3:** Encourage nature-based career path opportunities.

**Action 1:** Encourage public and private organizations to sponsor conservation and outdoor recreation job-readiness training and internship opportunities, targeting at-risk and underserved youth.

**Action 2:** Raise student awareness of natural-resource and outdoor-recreation vocational opportunities or college degree programs.

**Action 3:** Develop programs that reinforce youth peer acceptance of the outdoors.

**Objective 4:** Promote and encourage nature-based community economic opportunities.

**Action 1:** Encourage communities and businesses to collaborate to establish ecotourism opportunities at introductory and intermediate skill levels and/or provide incentives for people to spend time outdoors.

**Action 2:** Connect youth camps and human-powered activity organizations with the local children in nature collaborative.

**Action 3:** Invite new partners to become involved, and encourage organizations to take ownership.

**Objective 5:** Promote and encourage youth and families to participate in environmental stewardship opportunities.

**Action 1:** Encourage at-risk youth to participate in conservation and stewardship opportunities. Examples of sources for these activities include REI community service projects, Texas Master Naturalist and Junior Master Naturalist, Student Conservation Association, student internships and AmeriCorps.

**Action 2:** Connect land-managing organizations and agencies with youth engagement organizations such as Boy and Girl Scouts, 4-H, Campfire Kids, Boys and Girls Clubs, summer camps, church youth groups and others.

**Action 3:** Encourage environmental stewardship organizations to provide more volunteer opportunities for young children and families.

Communities need to embrace a consistent and unified message to increase awareness, encourage collaboration and interaction between community groups, and highlight the everyday connections to nature.
Stakeholder Team Report: MARKETING

The Marketing Team examined the issue and objectives of this plan from a marketing perspective. There are many organizations that focus on motivating families to spend more time in nature, including the Texas Parks and Wildlife Department, the U.S. Fish & Wildlife Service, the Texas Forest Service, various nature preserves, county and local parks, and especially members of the Texas Children in Nature Coalition. The Texas Children in Nature Coalition was formed as an offshoot of the national Children & Nature Network that was inspired by the book *Last Child in the Woods*.

Whereas many of these organizations are doing excellent work to provide programs and ad campaigns targeting unengaged families, the overarching messages are divergent, missing out on the impact of a unified, branded campaign, and could possibly confuse the consumer. For example, Texas Parks and Wildlife Department has used “Life’s better outside®” for ad campaigns, U.S. Fish and Wildlife uses “Let’s Go Outside®” and the Children & Nature Network has “Nature Rocks.” There is not a strong identified brand that unifies the initiative. Nor is there a marketing plan to effectively reach and engage targeted health-care professionals, educators, community leaders, families and access providers.

Most of these organizations are currently participating in and/or have knowledge of and support for the work being done by the Texas Partnership for Children in Nature (TPCIN). These organizations offer a wide reach and a powerful voice if they can join together to distribute one common message. A central point of communication to provide consistency and effectively leverage those resources would strengthen that potential.

An inclusive brand enables supporting agencies and private industries to “rally” around a common mission. For example, the brand and marketing efforts of the “Let’s Move” national initiative enables stakeholders to promote sound nutrition and exercise to their own target markets and distribution channels under the umbrella of a consistent and unifying brand. This approach in developing a branding and marketing campaign for Texas children in nature would leverage the full extent of infrastructures, resources and community partnerships, and unify Texans under an inclusive message about nature. For example, “Nature Rocks” is one of the potential brands that could be considered for this statewide initiative. Whether a new brand or existing one is used for communication efforts, it will need to be tested to ensure that the brand will not only resonate with families, but with the educators, health-care professionals, community and access audiences that the TPCIN stakeholder committees are targeting.

**Target Audiences**
- Parents
- Youth
- Minorities
- Educators
- Health-care professionals
- Community leaders
- Access providers

**Key Focus Areas**
- Research of stakeholder targets to determine attitudes about and knowledge of the benefits of outdoor play and learning
MARKETING

• Inventory and baseline to define success metrics
• Structure and organization
• Branding and marketing campaign development
• Fundraising efforts

Strengths and Weaknesses

Strengths
• Multiple grassroots efforts are working toward a common goal.
• The Children & Nature Network (C&NN) supports an international movement driven by strong grassroots support.
• Texas created a state network, the Texas Children in Nature Coalition, and regional groups in Central Texas and Houston.
• C&NN created the Nature Rocks campaign to reach families; Nature Rocks Austin is a successful model developed to feature local opportunities and collaboration.
• Last Child in the Woods author Richard Louv was enthusiastically received as keynote speaker at the American Academy of Pediatrics conference in October 2010.
• In a recent study commissioned by C&NN, Texans indicated a strong interest in supporting children in nature; and the study provides indicators that could be used in future assessments.45
• Concern about environmental issues sustain the thought of building tomorrow’s conservation leaders.46
• Marketing momentum regarding childhood obesity prevention offers opportunities to leverage message to move exercise activities outdoors.
• Social media offers a new, affordable platform for reaching youth.

• Nature play is not a priority for families. Families with children aged 6-12 cite that barriers to playing outside include homework, preference for playing video games/electronics, and lack of time.47
• Research is needed for Texas to establish a firm baseline on: (1) awareness of access opportunities and the benefits of nature play and (2) the existing access and resources available and what the usage is of those resources.
• Research is needed to determine the messaging and materials that would resonate best with various stakeholder targets.
• The campaign will need to account for the complexity and diversity of reaching the Texas market, to include Hispanic marketing strategies, the expense of marketing in two of the largest media markets in the U.S.A. (Houston and Dallas), and the overall fragmentation of media usage.
• Minority groups are underrepresented in outdoor recreation. Participation in outdoor activities is significantly higher among Caucasians than any other ethnicity for all age groups. Conversely, participation is lowest among African Americans for nearly all age groups.48
• Recreation participation is not reflecting Texas’ changing demographics. By 2020, Hispanics will make up the majority of Texas’ population.49
• Hispanics cite lack of access to nearby places to participate in outdoor activities as a barrier to participation more often than do other ethnicities.50

Weaknesses
• Groups targeting unengaged families and stakeholder targets are not organized or connected in a consistent manner. Multiple grassroots efforts are creating fragmented messaging to the stakeholder target groups.
• There is no established marketing plan from a children in nature perspective to capitalize on existing efforts to address childhood obesity.
Goals and Objectives

GOAL 1: Formalize a structure for the state to facilitate development and implementation of a state marketing campaign. (Structural Phase)

Objective 1: Form an entity or employ an existing entity such as a 501(c)(3) or foundation to serve as an umbrella organization that will be responsible for coordinating the effort, fundraising and developing an overarching brand and message.

  Action 1: Raise approximately $200,000 to cover start-up costs and operational funding for the umbrella organization.
  Action 2: Raise approximately $100,000 as seed money for the brand and marketing campaign plan development.

Objective 2: Hire a marketing or advertising firm to research and estimate costs of a brand and marketing campaign.

GOAL 2: Conduct specific research to better understand the awareness, perceptions, barriers, cultural considerations and motivations of the stakeholder targets in Texas. (Discovery Phase)

Objective 1: Determine target audiences and priorities.

Objective 2: Conduct research to determine knowledge (pre-awareness) and attitudes of nature benefits.

Objective 3: Seek Texas-specific research evidence about the benefits of nature for health and education.

Objective 4: Establish baseline data using research results.

  Action: Consider measurable data for baseline and future evaluation such as the number of certified wildscapes or school habitats, the number of schools using outdoor education curriculum, or the number of state, municipal, county parks and nature preserves by acreage available in the state of Texas.

Objective 5: Inventory existing resources/organizations that will adopt the brand and marketing campaign.

GOAL 3: Develop the brand and marketing plan. (Development Phase)

Objective 1: Develop a phased brand and marketing plan through the ad agency under the guidance of the structural entity.

  Action 1: Test existing or new brands among target audiences.
  Action 2: Test creative design and development of messages with target audiences.
  Action 3: Identify effective media, materials and efforts.
  Action 4: Leverage existing resources.
  Action 5: Determine a phased timeline for implementation.

Objective 2: Develop a fundraising, sponsorship and grant development plan to underwrite the marketing campaign strategy.

GOAL 4: Launch a two-year integrated marketing campaign strategy. (Implementation Phase)

Objective 1: Consider multiple deliverables such as:
- Public relations efforts
- Traditional media: print, TV, radio
- Non-traditional media: online, social media
- Tools and resources for schools, state agencies, park and recreation departments
- Youth marketing tactics
- Experiential marketing tactics
- Events, trade shows and promotion
- User-generated content
- Evaluation, analytics, reporting

GOAL 5: Evaluate effectiveness. (Evaluation Phase)

Objective 1: Conduct a post-survey to targeted groups to determine if attitudes, perceptions or awareness levels have changed.
Objective 2: Determine what success metrics have been achieved and what work remains to be done to accomplish the goals.

Marketing Implications
Specific marketing implications by stakeholder group, based on currently defined success metrics and background knowledge, include:

Health
- Survey and/or conduct focus group research to determine research needs and what resonates with the health-care professionals as easy to communicate to patients.
- Engage health-care professionals as advocates for the message and call to action, through speaking engagements at professional conferences and journal articles.
- Provide materials for health-care professionals to use with patients that promote the medical benefits of nature and support “doctor subscribed” messaging.

Education
- Encourage the use of a central brand on school habitat kits.
- Include workforce development and career awareness in nature-based curricula.
- Create video programming to educate students and teachers about nature and natural resources through the new PBS in-school system.
- Utilize promotional materials and outreach to increase awareness of the educational benefits of nature.

Access
- Study targeted groups of private landowners, state and local government, designers and planners, nonprofits, community and neighborhood associations, and volunteer groups to better reach these audiences.
- Create a template for “facility field kits” to drive repeat traffic to facilities. The kits would help facilities reach and motivate their target area and to encourage repeat visits from users.

Community
- A brand and ad campaign targeting consumers is at the core of the Community Stakeholder Team’s most critical implementation goal, with recommended steps closely resembling the outline provided under the Development Phase of the Marketing Recommendations.
- Facilitate regional partnerships through the Texas structural entity, and determine a target list of organizations in each community that will best reach children and families.
- Create materials specifically targeting local leaders and communicating economic impact and ease of adoption. Topics might include nature tourism, career opportunities and fun, easy ideas for playing and exploring in nature in backyards, schoolyards, neighborhoods or local parks.

An inclusive brand enables supporting agencies and private industries to “rally” around a common mission.
Stakeholder Team Report: POLICY AND LEGISLATION

The Texas Children in Nature Strategic Plan identifies goals and objectives that can be advanced through policy measures undertaken at every level of government: state, county, municipal and school districts.

Although recognizing the importance of engaging the private sector and every level of government to implement the plan, the Policy and Legislation team chose to identify a list of policy recommendations that were relevant to the 82nd Texas Legislature in order to be responsive to the interests of the legislators who requested the creation of the plan. The recommendations are intended to support outdoor learning and Texas natural resource education.

The team identified the following criteria for inclusion on this list of policy recommendations:

- Revenue-neutral fiscal impact on state budget for the biennium, given that the state is facing a record fiscal deficit
- Aligns with goals of communities, partners and state agencies
- Advances Texas Children in Nature Strategic Plan
- Achievable during the 82nd Texas Legislature, or lays the groundwork for long-term impact

Strengths and Weaknesses

Strengths
A number of existing state initiatives and programs are relevant to the goal of increasing the time that Texas children spend outdoors, including initiatives in children’s health, physical activity, obesity prevention and outdoor learning.

Weaknesses
A dire fiscal prognosis affecting all levels of government precludes new or increased expenditures.

Recommendations
1. Support outdoor and natural resource education programs in Texas schools. Encourage the continuation of existing outdoor learning and Texas natural resources education, and encourage new use by willing teachers and school systems. It will be important to preserve existing programs and services related to field investigations and outdoor learning experiences, and as fiscal conditions improve it will be important to invest in these areas. If funding opportunities from federal or other sources are established to advance natural resource literacy, they should be pursued.

2. Encourage state agencies to incorporate strategies identified in the Texas Children in Nature Strategic Plan in the development and implementation of programs. This could be accomplished through the adoption of a non-binding resolution or other measures encouraging outdoor learning and Texas natural resources education without mandating it.

3. Address the perception that liability concerns are an obstacle to accessing nature by raising public awareness about tort liability immunity available under Texas’ recreational use statute. While risk of tort liability is perceived to be an obstacle preventing access to natural areas, Texas currently has a recreational use statute that grants broad immunity for public lands and private lands suitable for agriculture including forestry, farming, ranching, horticulture, etc. Efforts to increase awareness and understanding of these protections should be undertaken.

4. Support efforts to establish a stable funding source for land acquisition for natural areas in close proximity to population centers. As Texas continues to urbanize, the need for natural areas close to urban population centers will increase. While it may not be possible to establish a stable funding source for this purpose in this legislative session, efforts to lay groundwork to that end should be supported.

5. Support measures to fund the state park system and local park grants program. As funding reductions are sought in state agencies, it will be important to preserve existing effective programs and services.

6. Recognize and encourage model programs and initiatives. Counties, municipalities and school districts are in a position to develop model programs and initiatives. A state recognition program would bring outstanding examples to the attention of others in the state.
### Glossary

**Brand/Branding**
The immediate image, emotion or message people experience when they think of a company or a product.

**Community**
People linked by geography, self-identification and/or purpose. For the plan, this may include where people live and work, self-identification, schools, faith-based or interest-based organizations.

**Culture**
Shared system of values, beliefs, attitudes and traditions that influence perception and behavior; unique features helping to define a community.

**Ecotourism**
Responsible travel to natural areas that conserves the environment and improves the well-being of local people, uniting conservation, communities and sustainable travel.

**Educational cooperatives**
Partnerships providing formal and informal education opportunities.

**Educational tourism**
Field trips and visits to areas focused on learning opportunities.

**Encourage**
Introduce, contribute, give tools, educate, promote, support, lead, mentor, influence and provide opportunities.

**Environmental education**
Creating the opportunity to learn how the world and its ecosystems work together and how people interact with, affect and participate in the sustainability of those systems.

**Formal education**
Learning experiences with a defined curriculum, learning objectives and outcomes, generally occurring within a structured system such as a school.

**Informal education**
Learning experiences outside of the formal education system.

**Interpretation**
A communication process that forges emotional and intellectual connections between the intertests of the audience and the meanings inherent in the resource, typically occurring as a voluntary experience.

**Interpretive elements**
Those elements that help site users connect to natural resources in ways that help them better understand their relationship to the resource and how resources work together. These elements may be in the form of signage, exhibits, interpretive trails, interactive displays, brochures, programs and other mediums which help to connect the person to the resource.

**Marketing**
The activity and processes for creating, communicating, delivering and exchanging offerings that have value for customers, clients, partners and society at large.

**Natural areas**
Those areas that include natural features and natural components as a majority.

**Natural play**
Free and structured play occurring in areas with predominantly natural features and/or components.
Natural play areas/playgrounds
Those playgrounds complementing built components with natural features such as gardens, wildlife habitats, elevated landforms, sand, water, and natural and built portable materials (“loose parts”) for imaginative/constructive play and nature study.

Natural resource literacy
The ability to understand, analyze and address major natural-resource opportunities and challenges.

Nature-based activities
Activities immersed in the resource, engaging in nature, discovering and observing, including structured and unstructured play.

Nature-based experiences
Those experiences occurring and embedded in nature.

Nature tourism
Tourism based on an area’s natural attractions, such as wildlife viewing, hunting, fishing, photography and visiting parks.

Outdoor classroom
An outdoor natural area where gaining knowledge and building skills in most subject areas can take place.

Outdoor education
Education that occurs in or relative to the outdoors and may include such activities as leadership skills, outdoor living skills and survival in the outdoors.

Pocket parks
Small parks created by governments or developers; “button parks” is a new term being coined to denote community-created areas that “people can sew on themselves.”

Points of access
Entrance and exit points for trails and natural areas, viewing areas, etc. that can be easily and safely accessed by the public.

Pre-service teachers
Students in a teacher education program, at a college or university, preparing for professional-level teaching positions.

Stewardship
Informed, responsible action and/or behavior on behalf of natural and cultural heritage, the environment and future generations.

Universal design
A broad-spectrum solution that produces buildings, products and environments that are usable and effective for everyone regardless of physical ability.

Value
Understand, hold dear, give priority to, appreciate.

Wildlife cooperatives
Landowners joined together with common objectives and goals to manage wildlife habitat on a much larger scale than they could independently; especially helpful on smaller properties where many management practices are not feasible or on properties where landowners do not have enough land to manage for certain species of wildlife.

Wildscape
Altering and maintaining the habitat to provide all three basics for wildlife—food, shelter and water—arranged in a way that is easily accessible to wildlife, sustainable and consistent with the natural landscape.
The Texas Partnership for Children in Nature

*Steering Committee member

Paige Abernathy*  
Chief Nutrition Coordinator  
Texas Department of Agriculture  
Health Team

Robert Armistead  
Immediate Past President  
Texas Recreation and Park Society  
Community Team

Kimberly Avila Edwards, MD, FAAP*  
Pediatrician  
Dell Children’s Medical Center  
Health Team Co-Chair

Carole Baker  
Director Intergovernmental Relations  
The Subsidence District  
Marketing Team

Dr. Leng Bang, MD  
Psychiatrist  
Baylor College of Medicine and  
Texas Children’s Hospital  
Health Team

Beth Banks  
Natural Science Education Supervisor  
LCRA’s Natural Science Centers  
Lower Colorado River Authority  
Education Team

Glenda Beasley*  
Marketing Manager  
Texas Parks and Wildlife Department  
Marketing Team

Rebecca Benz  
Executive Director  
Campfire USA, Balcones Council  
Access Team

Dr. Chris Boleman  
Program Director  
Texas AgriLife Extension Service  
4H and Youth Development  
Education Team

Rob Borowski*  
Project Director  
Childhood Obesity Prevention and Wellness  
Texas Impact  
Community Team Co-Chair

Hayden Brooks*  
President, American Realty  
Community & Marketing Teams Co-Chair

Kirby Brown*  
Vice President of Public Policy  
Texas Wildlife Association  
Policy & Legislative Team Co-Chair

Jody Carton  
Executive Director  
Trinity Basin Conservation Foundation  
Access Team

Jim Cathey*  
Assistant Professor  
Extension Wildlife Specialist  
Texas AgriLife Extension Service  
Education Team Co-Chair

Jamie Clark  
Maternal and Child Health  
Texas Department of State Health Services  
Health Team

Maria Conroy*  
Vice President of Education and Research  
Dallas Arboretum  
Education & Access Teams

Tamberly Conway  
Conservation Education Coordinator  
National Forests and Grasslands in Texas  
U.S. Forest Service  
Community Team

Allen Cooper*  
Senior Manager  
State Education Policy Initiatives  
National Wildlife Federation  
Policy & Legislative Teams Co-Chair

Kiki Corry*  
Project WILD Coordinator  
Texas Parks and Wildlife Department  
Education Team Staff Liaison

Doug Cox  
Regional Partnership Program Manager  
Corps of Engineers  
Access Team

Dr. Pauline Dow*  
Chief Academic Officer, Ysleta ISD  
Education Team

Kelly Dziekan  
Marketing Research Manager  
Texas Parks and Wildlife Department  
Marketing Team

Carolyn Evans  
Executive Director  
Cibolo Nature Center  
Access Team Co-Chair

Sally Evans  
Educator, Texas Master Naturalist  
Texas Association of Environmental Educators  
Education Team

Dr. Diana Everett  
Executive Director  
TAHPERD - Texas Association for Health, Physical Education, Recreation and Dance  
Health Team

Dr. Joe Frost*  
Parker Centennial Professor Emeritus,  
College of Education, Department of  
Curriculum and Instruction  
University of Texas at Austin  
Education Team

Ernie Gammage*  
Outreach and Education Senior Director  
Texas Parks and Wildlife Department  
Access Team Staff Liaison

Yuridia Patricia Gandy  
Environmental Science Teacher  
College & Career Readiness  
Hidalgo ISD/College & Career Readiness  
Education Team

Jaime Gonzalez*  
Community Education Manager  
Katy Prairie Conservancy  
Community Team

Kevin Good  
Special Assistant, State Parks  
Texas Parks and Wildlife Department  
Policy & Legislative Team

Dr. Jane Gray  
Director of Psychology  
Director of Psychology Training;  
Adjunct Assistant Professor  
Texas Center for the Prevention and  
Treatment of Childhood Obesity; Texas Child  
Study Center; UT-Austin Department of  
Educational Psychology  
Health Team

Darren Grissom  
Director of Programs, Texas PTA  
Community Team

Michelle Haggerty  
Coordinator, Texas Master Naturalists  
Texas Parks and Wildlife Department  
Community Team

Sara Harris  
VP of Community Outreach  
Emmis Communications  
Marketing Team

Nancy Herron*  
Outdoor Learning Programs Manager  
Texas Parks and Wildlife Department  
TPCIN Coordinator; Health Team Liaison

Tracy Hollis  
Director-Grand Prairie ISD Natural Science  
Education Center and K-12 Environmental  
Education Programs, Grand Prairie ISD  
Education Team

Karen Howden  
President, Texas Outdoor Education Assn.  
Education Team

Laura Huffman  
State Director, The Nature Conservancy  
Access Team

Celia Hughes  
Executive Director  
VSA Texas  
Education Team
Citations

3. Institute of Medicine of the National Academies, Nyberg K, Burns AC, Parker L, editors. Institute of Medicine. October 21, 2009. Obesity is defined as having a body mass index at or above the 95th percentile. Childhood Obesity Prevention in Texas. Workshop Summary.
44. The Outdoor Foundation. 2010. Special Report on Youth.
47. Grow Outside, American beliefs associated with encouraging children’s nature experience. Institute for Learning Innovation.
The Legislature  
State of Texas  

September 28, 2005

Mr. Robert Scott  
Commissioner of Education  
Texas Education Agency  
1701 N Congress Avenue  
Austin, TX 78701

VIA INTERAGENCY MAIL  

RE: Partnership for Children in Nature

Dear Commissioner Scott:

Today's children spend less time in nature than any other generation in human history. Over the past 20 years, the time children spend outside has fallen by 50 percent, while the time spent in front of electronic media has grown to more than six hours daily. During the same time period, the rate of obesity among children has more than doubled, and the rate of childhood diabetes has increased. Children are also losing many of the documented benefits of learning and playing in nature, such as improved academic achievement, more vigorous and cooperative play, and reduction of attention deficit symptoms.

On a national level, this generation change has meant steadily declining park visitation numbers and hunting and fishing license sales. Fortunately, Texas has not yet experienced these trends. However, as Texas continues to urbanize, demands on Texas natural resources will increase, and it will become even more important that the total generation of Texans understands how to utilize and conserve Texas natural resources.

As you are aware, SB 205 (Texas Partnership for Children in Nature) was filed during the 81st Legislative Session to address some of these issues. While SB 205 had bipartisan support and passed the Full Senate (31-6), it died in the House Natural Resources Committee with a vote of 1-0, after over two hours of debate on the day of this session. The Legislative Budget Board concluded that SB 205 would have had an insignificant fiscal impact to the state or local government. In addition, if the No Child Left Behind Act currently pending before Congress is passed in its current form, SB 205 would have helped Texas bring in federal dollars with no state matching requirement.

We spoke today to reject the Texas Parks and Wildlife Department, in partnership with the Texas Education Agency, implement the Texas Partnership for Children in Nature administratively. Similar to SB 205, the proposed Texas Partnership for Children in Nature would be a public-private partnership to promote the well-being of Texas children by developing a plan to provide children with opportunities to spend more time outdoors and better understand Texas natural resources. The Partnership would consist of a committee composed of representatives from private sector organizations and state agencies, including Texas Parks and Wildlife, Texas Education Agency, Texas Department of Agriculture, and the Texas Department of State Health Services. The Partnership would be charged with developing a plan to promote "healthy children in a healthy world" by integrating coordinated school health initiatives with increased opportunities for developing outdoor skills, scientific study, and outdoor play for children, and increasing understanding of Texas natural resources.

The Partnership concept is supported by a number of private sector organizations including the Texas Wildlife Association, the National Wildlife Federation, Texas PTA, American Diabetes Association, Texas Pediatric Society, Texas Center for Children, American Heart Association, the Partnership for a Healthy Texas, SPAST, and the Kidz Foundation, Texas Impact, Autism Children in Nature Collaborative, and the Sustainable Food Center.

As you can see from the signatures below, the Partnership continues to have bipartisan supporters. Please let us know how we can best assist you. We look forward to working with you.

Very truly yours,

[Signatures]
Appendix G. Scoring Criteria

TPWD LOCAL PARK GRANT PROGRAM
OUTDOOR RECREATION GRANT
PROJECT PRIORITY SCORING SYSTEM
(Effective January 2008)

All Outdoor Recreation Grant Program applications submitted to TPWD are evaluated for program eligibility and prioritized with the criteria, rating factors, and points shown in the following “Project Priority Scoring System.” Each site of a multiple site project will be scored individually using the “Project Priority Scoring System,” and individual site scores will be weighted on a pro-rata share of the total project score.

A project’s priority ranking will depend on its score in relation to the scores of other projects under consideration. Scored applications are presented to the Texas Parks and Wildlife Commission for approval. Funding of projects will depend on the availability of funds.

Projects which have been considered twice by the Parks & Wildlife Commission without significant alterations to raise the project score shall be withdrawn from further consideration.

1. SPONSOR ELIGIBILITY

Sponsor is in full compliance with previously approved projects and the Recreation Grants Branch – Local Park Grant Program Manual

YES. If yes, the application will be scored and presented for award consideration.

NO. If no, the application will not be scored or considered further.

NA. No previous grant funding received.

2. MASTER PLAN

Total Range: 1-15 points

Project Sponsor has locally adopted TPWD approved, parks, recreation and open space master plan that addresses outdoor recreation needs. (5 points)

Project meets 3 of the top 3 priorities identified in the TPWD approved master plan (10 points)
Project meets 2 of the top 3 priorities identified in the TPWD approved master plan (6 points)
Project meets 1 of the top 3 priorities identified in the TPWD approved master plan (3 points)

3. RECREATION DIVERSITY

Total Range: 1-10 points

Project will provide a diversity of park and recreation opportunities and facilities within the sponsor’s jurisdiction or intended project service area.
1 point will be awarded for each type of significant recreation category addressed in the proposal, up to 10 points, if and only if, the recreation elements are identified as a need in a locally adopted parks, recreation and open space master plan or by a documented public input process if the Sponsor does not have an adopted plan.

**RECREATION DIVERSITY CATEGORIES**

- Campgrounds
- Sports fields & courts
- Playgrounds
- Picnic areas – tables and pavilions
- Golf courses
- Swimming facilities
- Trails
- Passive recreation – overlooks, gardens
- Amphitheater
- Natural area
- Fishing/hunting facilities

# of categories addressed: _____

**4. WATER-BASED RECREATION OPPORTUNITIES**

**Total Range: 6 points**

Project will provide improved water-based park and recreation opportunities.

Project provides for the development of direct and appropriate park and recreation opportunities which do not degrade the resource along existing quality natural water bodies according to the following ranking (only the highest ranking water body will receive points) (1 – 6 points):

- Gulf Coast or Lake (6 points)
- Bay or Estuary (5 points)
- River (4 points)*
- Stream – continuous flow (3 points)
- Pond (2 points)**
- Wetland (1- 3 points, based on size/quality)

*Only water bodies so named as “rivers” may receive points under this category. All others, e.g., creeks, brooks, bayous, branches, etc., are considered “streams.”

**“Ponds” are generally man-made and no larger than five surface acres. Points will not be awarded for constructing ponds under this category.

**5. GEOGRAPHIC DISTRIBUTION / INNOATIVE USE**

**Total Range: 1-10 points**

Project will improve the geographic distribution or innovative use of park and recreation lands and facilities in the project’s intended service area or within the sponsor’s jurisdiction.

A. Project provides the first public park in the sponsor’s jurisdiction or intended service area (10 points); or

B. Project provides significantly new and different recreation opportunities (other than school facilities) in the sponsor’s jurisdiction or intended service area (1 - 10 points). Points awarded based on significance to the community and originality, and calculated based on:
**New & different costs**  \( \times 10 = \) \_

\[
\text{Total construction costs}
\]

In order to qualify for points under 5B, the need for “new and different” recreation elements must be supported in the Sponsor-adopted parks, recreation and open space master plan or through a documented public input process if the Sponsor does not have an adopted plan.

6. **RECREATION vs. SUPPORT COSTS**

   **Total Range:** 1-20 points

Project maximizes the use of development funds for basic park and recreation opportunities.

\[
\text{Direct recreational facilities costs} \times 20 = \_
\]

\[
\text{Total construction costs}
\]

“Direct Recreational Facilities Costs” include only facilities related directly to recreation as opposed to support facilities, except that trees and drip irrigation may be included as recreational items. “Total Construction Costs” include park and/or recreation as well as support/infrastructure facilities, contingency, and all required program sign costs in excess of $1,000.

7. **SPECIAL POPULATIONS**

   **Total Range:** 15 points

Project improves park and recreation opportunities for low income, minority, and/or elderly citizens.

A. Project improves opportunities for low income citizens (income defined by the 2000 U.S. Census Income by Place and Median Household Income by State). (1 – 5 points)

\[
\text{Low income} \% \times 5 = \_
\]

B. Project improves opportunities for minority citizens (based on most recent U.S. Census figures for the service area). (1 – 5 points)

\[
\text{Minority} \% \times 5 = \_
\]

C. Project improves opportunities for elderly citizens (1 point for each related facility or activity that is identified as a needed or desired recreation opportunity for this special population in a locally adopted master plan or by a documented public input process if the Sponsor does not have an adopted plan). (1 – 5 points)

\[
\# \text{ Appropriate elderly activities: } \_
\]
8. PARTNERSHIPS
Total Range: 1-20 points

Project involves matching funds from sources other than the sponsor and/or additional outside cooperation not involving match.

A. Project involves the contribution of resources from other public or private entities, including publicly owned non-parkland, which serves as all or part of the sponsor’s matching share of funds. Points are awarded on a percentage basis, dependent on the amount of matching funds provided by outside sources. (1 – 15 points)

\[
\text{Matching funds provided by others} \times 15 = _____
\]

Total matching funds

and/or,

B. Project involves cooperation between the project sponsor and other public or private entities where resources are contributed to the overall project for non-grant assisted facilities (Example: The county constructs roads/parking facilities for the city, but no grant funds are requested for roads/parking; 1 point per documented activity). (1 - 5 points)

# Documented activities: _____

9. LAND ACQUISITION
Total Range: 1-30 points

Project provides for the ACQUISITION AND PRESERVATION/CONSERVATION of park and recreation lands, including publicly owned non-parkland, which consist of regionally representative natural resources or provide desirable wetlands, open space, water access, or needed parkland. Only the highest rank-order category below for which the criteria are met for the project will be allowed for scoring credit.

A. Project provides for the acquisition and preservation/conservation of a federal, state, or local government identified area which is recognized in an acceptable, published planning document for having valuable or vulnerable natural resources, ecological processes, or rare, threatened, or endangered species of vegetation or wildlife (5 - 30 points, based on quality and/or acreage); or

B. Project provides for the acquisition and preservation/conservation of a significant wetland area (5 - 25 points, based on quality and/or acreage; or

C. Project provides for the acquisition and preservation/conservation of natural open space land or water for human use and enjoyment that is relatively free of man-made structures (including creek corridors, floodways, natural drainage basins, and areas which may be enhanced for native habitat), 2 acres or larger in size, which is identified in an acceptable, published and adopted local jurisdiction-wide open space plan (5 - 20 points, based on quality and/or acreage; or

D. Project proposes the acquisition of land which would provide needed public access to park and recreational waters, according to the following ranking (only the highest ranking water body will receive points). (See definitions under criteria 4.) (1 - 5 points)

Gulf Coast or Lake (5 points)
Bay or Estuary (4 points)
River (3 points)
Stream – continuous flow (2 points)
Pond (1 point)

or,

E. Project provides for the acquisition of needed recreational land proposed for future development. (1 - 10 points)

10. RENOVATION OR ADAPTIVE REUSE
Total range: 1-25 points

Project provides for the renovation or adaptive reuse of an existing obsolete park and recreation area or facilities.

\[
\text{Renovation cost} \times 25 = \_
\]

Total construction cost

11. ENVIRONMENTALLY RESPONSIBLE ACTIVITIES
Total Range: 1-10 points

Project promotes environmentally responsible activities and development.

Points for this category will be awarded based on the diversity, innovative nature and/or cost of the project elements. Examples of eligible activities include: the use of xeriscape/native plant materials for landscaping, drip or treated effluent irrigation systems, energy efficient lighting systems, recycled materials for facility construction, environmental education and interpretation, significant native tree plantings where no trees exist, alternative energy sources, water catchment systems, etc. (1 - 10 points)

# Environmentally responsible activities/development: _____

12. LINKAGE
Total range: 1-3 points

Project provides a significant linkage to other parks and recreation areas, neighborhoods, or public facilities (through means other than streets and sidewalks), based on the number and significance of the linkage(s). Trails and green corridors are allowable linkages, for example.

# Significant linkages: _____

13. CULTURAL RESOURCES
Total range: 1-3 points

Project provides park and recreation opportunities which enhance and encourage an appreciation and preservation of site-based cultural (historical and archaeological) resources through interpretation facilities or preservation strategies.

Points are awarded based on the number and significance of the site-based resource(s).

# Site-based resources: _____
ADDitional Scoring Criteria:

14. TPWD Land and Water Resources Conservation and Recreation Plan
   Total Range: 1-5 points

   In 2010, TPWD updated the *Land and Water Resources Conservation and Recreation Plan* (2005 Plan). In order to make changes to the Priority Scoring System, public hearings must be held, followed by approval by the TPWD Commission. In the interim, applicants should use the 2005 Plan to address the above scoring criteria.

   The project supports the TPWD 2005 *Land and Water Resources Conservation and Recreation Plan* (2005 Plan). Sponsor must specifically address how the project meets the goals of the 2005 Plan in the Project Narrative. Points will be awarded based on evidence in the project proposal of the extent to which the proposal meets one or more of the following goals of the 2005 plan:

   - **Goal 1:** Improve access to the outdoors.
   - **Goal 2:** Conserve, manage, operate, and promote agency sites for recreational opportunities, biodiversity, and the cultural heritage of Texas.
   - **Goal 4:** Increase participation in hunting, fishing, boating and outdoor recreation.

   Additional priority will also be given based on the extent to which the proposed project will stimulate sustainable economic impact, and will lead to the development or support of a conservation constituency (i.e. nature tourism participants thus creating new customers of outdoor, conservation-related recreation).

   [http://www.tpwd.state.tx.us/publications/pwdpubs/pwd_pl_e0100_0867/](http://www.tpwd.state.tx.us/publications/pwdpubs/pwd_pl_e0100_0867/)

15. Post Completions:
   Sponsor has not sufficiently addressed issues related to post completion inspections of previously funded projects (-5 points)

16. Application materials:
   A complete application was received by the application deadline (5 points)
All TRPA Small Community Grant Program applications submitted to TPWD are evaluated for program eligibility and prioritized with the criteria, rating factors, and points shown in the following "Project Priority Scoring System." Multiple-site projects will be scored individually, and site scores will be weighted on a pro-rata share of the total project score.

A project’s priority ranking will depend on its score in relation to the scores of other projects under consideration. Scored applications are presented to the Texas Parks and Wildlife Commission for approval. Funding of projects will depend on the availability of TRPA funds.

Projects which have been considered twice by the Parks & Wildlife Commission without significant alterations to raise the project score shall be withdrawn from further consideration.

I. SPONSOR ELIGIBILITY

Sponsor is in full compliance with the “Grant Administration and Eligibility Guidelines for all Grant Programs Administered by the Texas Parks and Wildlife Recreation Grants Branch.”

YES. If yes, the application will be scored and presented for award consideration.

NO. If no, the application will not be scored or considered further.

NA. No previous grant funding received.

II. POPULATION

Not a range: 3 points

Sponsor population is 2,500 or less.

III. GEOGRAPHIC DISTRIBUTION / INNOVATIVE USE

Total Range: 1-10 points

Project will improve geographic distribution or innovative use of park and recreation lands within the project’s intended service area or within the sponsor’s jurisdiction.

- Project provides the first public park in the sponsor’s jurisdiction area (10 points); or
- Project provides significant new and different recreation opportunities (other than school facilities) at the proposed site(s) (1-3 points, with 1 point per opportunity, based on significance to the community and originality). In order to qualify for points under 3B, the need for “new and different” recreation elements must be identified by a documented public input process.

# New and different opportunities: _____
IV. RECREATION vs. SUPPORT COSTS
Total Range: 1-10 points

Project maximizes the use of development funds for basic park and recreation opportunities.

Maximum of 10 points, based on percentage as shown below

\[
\text{Direct recreational facilities costs} \times 10 = _____
\]

“Direct Recreational Facilities Costs” include only facilities related directly to recreation as opposed to support facilities, except that trees and drip irrigation may be included as recreational items. “Total Construction Costs” include park and/or recreation as well as support/infrastructure facilities, contingency, and all required program sign costs in excess of $1,000.

V. SPECIAL POPULATIONS
Total Range: 15 points

Project improves park and recreation opportunities for low income, minority, and/or elderly citizens.

A. Project improves opportunities for low income citizens (income defined by the 2000 U.S. Census Income by Place and Median Household Income by State). (1 – 5 points)

\[
\frac{\text{Low income} \times 5}{100} = _____
\]

B. Project improves opportunities for minority citizens (based on most recent U.S. Census figures for the service area). (1 – 5 points)

\[
\frac{\text{Minority} \times 5}{100} = _____
\]

C. Project improves opportunities for elderly citizens (1 point for each related facility or activity that is identified as a needed or desired recreation opportunity for this special population by a documented public input process). (1 – 5 points)

# Appropriate elderly activities: _____

VI. PARTNERSHIPS
Total range: 1-10

Project involves documented matching funds from sources other than the sponsor and/or additional outside cooperation not involving match.

Maximum of 10 points as awarded below:

A. Project involves the contribution of land (including publicly owned non-parkland), cash, labor, equipment or materials from other governmental, educational, or private sector entities that serves as all or part of the sponsor’s matching share of funds.
Maximum of 5 points awarded based upon percentage of matching funds provided by others.

\[
\text{Matching Funds Provided by Others} \times 5 = \_
\]

\[
\text{Total Matching Funds}
\]

and/or,

\text{B. Project involves cooperation between the project sponsor and other public or private entities where resources are contributed to the overall project for non-grant assisted facilities.}

Maximum of 5 points awarded based on the type and number of documented significant contributions, e.g., the county constructs roads/parking facilities for the sponsor, but no grant funds are requested for those facilities.

\[
\# \text{ Documented contributions} = \_
\]

\text{VII. RENOVATION OR ADAPTIVE REUSE}

\text{Total range: 1-10 points}

\text{Project proposes the renovation of existing obsolete facilities.}

Maximum of 10 points awarded based on the percentage of construction dollars allocated for renovation.

\[
\frac{\text{Renovation cost}}{\text{Total construction cost}} \times 10 = \_
\]

\text{VIII. ENVIRONMENTALLY RESPONSIBLE ACTIVITIES}

\text{Total Range: 1-5 points}

\text{Project promotes environmentally responsible activities and development.}

Points for this category will be awarded based on the diversity, innovative nature and/or cost of the project elements. Examples of eligible activities include: the use of xeriscape/native plant materials for landscaping, drip or treated effluent irrigation systems, energy efficient lighting systems, recycled materials for facility construction, environmental education and interpretation, significant native tree plantings where no trees exist, alternative energy sources, water catchment systems, etc. (1 - 5 points)

\text{IX. ADDITIONAL SCORING CRITERIA:}

\text{A. TPWD Land and Water Resources Conservation and Recreation Plan}

\text{Total Range: 1-2 points}

\text{The project supports the TPWD Land and Water Resources Conservation and Recreation Plan (Plan). Sponsor must specifically address how the project meets the goals of the Plan in the Project Narrative. Points will be awarded based on evidence in the project proposal of the extent to which the proposal meets one or more of the following goals of the plan:}

- Goal 1: Improve access to the outdoors.
• Goal 2: Conserve, manage, operate, and promote agency sites for recreational opportunities, biodiversity, and the cultural heritage of Texas.

• Goal 4: Increase participation in hunting, fishing, boating and outdoor recreation.

Additional priority will also be given based on the extent to which the proposed project will stimulate sustainable economic impact, and will lead to the development or support of a conservation constituency (i.e. nature tourism participants thus creating new customers of outdoor, conservation-related recreation).

http://www.tpwd.state.tx.us/publications/pwdpubs/pwd_pl_e0100_0867/

B. Compliance:

Sponsor is not in compliance with previously funded projects (-5 points)

C. Application materials:

A complete application was received by the application deadline (5 points)
PROJECT PRIORITY SCORING SYSTEM
(Effective January 2008)

All Outdoor Recreation Grant Program applications submitted to TPWD are evaluated for program eligibility and prioritized with the criteria, rating factors, and points shown in the following “Project Priority Scoring System.” Each site of a multiple site project will be scored individually using the “Project Priority Scoring System,” and individual site scores will be weighted on a pro-rata share of the total project score.

A project’s priority ranking will depend on its score in relation to the scores of other projects under consideration. Scored applications are presented to the Texas Parks and Wildlife Commission for approval. Funding of projects will depend on the availability of funds.

Projects which have been considered twice by the Parks & Wildlife Commission without significant alterations to raise the project score shall be withdrawn from further consideration.

1. SPONSOR ELIGIBILITY

Sponsor is in full compliance with previously approved projects and the Recreation Grants Branch – Local Park Grant Program Manual

YES. If yes, the application will be scored and presented for award consideration.

NO. If no, the application will not be scored or considered further.

NA. No previous grant funding received.

2. ACQUISITION

The project proposes to acquire land for one or more of the following purposes as evidenced in the application:

(Points will be awarded based on how well the project elements meet the scoring criteria).

___ significant natural areas - points based on the acreage and quality *(see definition below) (1-4 points)
___ green corridors/provides connectivity to existing protected areas (1-4 points)
___ as density increases in our urban centers, it is important to acquire land that will serve as “pocket” parks and/or acquiring in-holdings to complete existing parks (1-2 points)
___ for intensive use recreation facilities (i.e. athletic complexes) (1-2 points)
___ for future conservation and recreation purposes (land banking for future need) that initially provide limited public access (1-4 points)
for expansion of existing parks and conservation areas (1-2 points)

- demonstrates adaptive reuse for recreation or conservation of lands which have limited use in their existing state (1 point)

- proximity to areas of high population (urbanized) density (1 point)

*Natural Areas*: Areas that are significant for their relatively undisturbed ecosystem which exhibit regionally representative geological, floral, faunal, or hydrological features. Further, these areas have the potential to serve regional or statewide recreation needs. Natural areas can serve as greenbelts/open spaces, locations for passive activities, preservation areas for unique natural features, and interpretive sites which highlight or explain ecosystem processes.

3. DEVELOPMENT

Project proposes development of one or more of the following:

(Points will be awarded based on how well the project elements meet the scoring criteria).

- neighborhood parks (1-3 points)

- nature centers (natural resource based sites that are developed for outdoor recreation and education purposes) NOTE: Indoor facilities are not eligible under this program. (1-2 points)

- parks and conservation areas of regional significance as the project is a component of a comprehensive or park and recreation master plan for 1 or more political jurisdictions. (1-2 points)

- green construction/sustainability (1 point)

- multi-purpose recreation facilities (1 point)

- outdoor aquatic recreation (1 point)

4. RESTORATION

Project provides for the renovation of existing recreation and conservation infrastructure which is no longer usable for its intended purpose (renewal or revival of existing facilities):

(Points will be awarded based on how well the project elements meet the scoring criteria).

**NOTE**: Program legislative code does not allow funds to be used for basic facility maintenance

- restoration of existing infrastructure based on percentage of the budget dedicated to restoration (1-10 points)

- wildlife habitat (removal of invasive species/significant planting of native species resulting in the restoration of wildlife habitat) based on percentage of the budget (1-10 points)

- adaptive reuse of existing structures and facilities to provide new or different recreation opportunities e.g. the use of an existing slab from a demolished building as a recreation court, the reuse of a bridge for recreation purposes, remediated brownfield, etc. Based on a percentage of the total budget. (1-5 points)
5. TRAILS/CORRIDORS/GREENWAYS

Project proposes the development of one or more of the following:

(Points will be awarded based on how well the project elements meet the scoring criteria).

___ major linear (1 mile or longer) (1-6 points)
___ connects or extends existing trail system or wildlife corridors (1-5 points)
___ major loop of 1 mile or more (1-4 points)
___ neighborhood/loop trails (typically 1 mile or less) (1-4 points)
___ non-motorized off-road (1-2 points)
___ paddling (1-2 points)
___ interpretive nature (1-2 points)

6. SPORTS FACILITIES

Project proposes the development of one or more of the following:

___ large, intensive-use sports facilities i.e. tournament type (7 points)
___ competitive or practice facilities in close proximity to users (3 points)

7. UNDERSERVED POPULATIONS

Project provides for one or more of the following:

___ a more equitable distribution of facilities based on geographic distribution. Please provide a map showing the current distribution of parks in your entire service area to support a need in a particular location. (4 points)
___ improves park or recreation opportunities for low income citizens based on population of the service area as evidenced by economic demographic information of the service area. (2 points)
___ improves park or recreation opportunities for minority citizens based on population of the service area. Must be supported by demographic information of the service area. (2 points)
___ improves park or recreation opportunities for elderly citizens. Activities intended to serve this population must be supported by the locally adopted master plan or other public input process. (2 points)

8. JOINT EFFORTS/PARTNERSHIPS

___ Project involves public-public or public-private cooperation based on the percentage of the budget contributed by partners (1-5 points).

___ Number of partners involved in the project (not necessarily monetary in nature). The role of the partners must be explained. Please note that no programming-only related partnership points will be awarded.
   Three partners (1 point)
   Four partners (2 points)
   Five or more partners (3 points)
9. MASTER PLAN

___ Project Sponsor has a locally adopted and TPWD approved, parks, recreation and open space master plan that addresses outdoor recreation needs. (5 points)

___ Project meets one or more of the top five priorities as outlined by a locally adopted and TPWD approved, parks, recreation and open space master plan. (5 points)

Please note that this is NOT a range, 5 points will be awarded if the project elements listed is one of the top five priorities identified in your master plan.

10. THREAT

To what extent will this project reduce a threat to the public availability of a conservation or recreation opportunity?

___ No evidence presented. (0 points)

___ Minimal threat; opportunity appears to be in no immediate danger of loss in the next 36 months. (1 point)

___ Actions under consideration could result in the opportunity becoming unavailable for public use. (2 points)

___ Actions will be taken that will result in the opportunity becoming unavailable for future public use or a threat situation has occurred (or is imminent) and has led to a land trust acquiring rights to the land at the request of the applicant. (3 points)

Examples of threat to be discussed in the narrative:

- Project acquires important conservation or recreation property that is threatened by imminent loss and/or development.
- Project is taking advantage of a time sensitive economic opportunity (i.e. loss of potential funding partner if they do not act quickly)
- Project is addressing a significant safety hazard or needed restoration or threatened by loss of facility.

11. TEXAS PARKS AND WILDLIFE LAND AND WATER RESOURCES CONSERVATION AND RECREATION PLAN

(up to 10 points)

___ Project supports the TPWD Land and Water Resources Conservation and Recreation Plan (Plan). Sponsor must specifically address how the project meets the goals of the Plan in the Project Narrative. Points will be awarded based on evidence in the project proposal of the extent to which the proposal meets one or more of the following goals of the plan:

- Goal 1: Improve access to the outdoors.
- Goal 2: Conserve, manage, operate, and promote agency sites for recreational opportunities, biodiversity, and the cultural heritage of Texas.
- Goal 4: Increase participation in hunting, fishing, boating and outdoor recreation.
Additional priority will also be given based on the extent to which the proposed project will stimulate sustainable economic impact, and will lead to the development or support of a conservation constituency (i.e. nature tourism participants thus creating new customers of outdoor, conservation-related recreation).

http://www.tpwd.state.tx.us/publications/pwdpubs/pwd_pl_e0100_0867/

12. POST COMPLETION INSPECTIONS

___ Sponsor has not sufficiently addressed issues related to post completion inspections of previously funded projects (-5 points)

13. APPLICATION MATERIALS

___ A complete application was received by the application deadline (5 points)

14. URBAN BIOLOGIST CONSULTATION

___ Applicants have consulted with a TPWD Urban Biologist regarding the proposed site plan 30 days prior to the application deadline and comments are included in the application materials. (5 points). Contact information for TPWD Urban Biologists is found in Appendix O.

15. HISTORICAL/CULTURAL RESOURCE:

___ Project provides park and recreation opportunities which enhance and encourage an appreciation and preservation of site-based (cultural, natural, historical and archaeological) resources through interpretation, facilities or preservation strategies. (2 points)
Appendix H. Master Plan Guidelines

Texas Parks and Wildlife Department
Local Park Grant Program
Park, Recreation and Open Space
Master Plan Guidelines

The following guidelines have been developed to help local governments prepare park, recreation, and open space master plans in accordance with the Local Park Grant Programs Manual. Points may be received through the applicable “Project Priority Scoring System” for projects which meet priorities identified in Department-acceptance, locally-endorsed parks, recreation, and open space master plans.

Please note that a master plan is not required to participate in the grant program, nor does Texas Parks & Wildlife Department acceptance of a plan guarantee that points will be awarded for any project.

At a minimum, all master plans and/or updates must meet the requirements below for acceptance. For questions or assistance, please contact the Recreation Grants office at 512/389-8175.

Submit plans and/or updates to Recreation Grants for review as early as possible, but no later than sixty days before the application deadlines:

Because of the large number of review requests, early submission of master plans for review and approval is strongly encouraged.

It is also recommended that plans be reviewed by Recreation Grants prior to submission to the applicable governing body for final approval to preclude the sponsor from having to obtain additional approval from the governing body in the event the review finds changes to the plans are needed. Plans must be approved or submitted or postmarked in an approvable format (including resolution of adoption) by the deadlines to be eligible for project priority points.

Please provide the name and address of the contact person in the local government submitting the plan as well as the name and address of the preparer, if other than the sponsor.

The following documentation is required for acceptance by Recreation Grants:
PROOF OF ADOPTION

Once plans are complete, the applicable governing body (city council, county commissioner’s court, district or authority board) must pass a formal resolution (or ordinance) adopting the plan and list of priority needs.

JURISDICTION-WIDE PLAN

Plans must be comprehensive and include the sponsor’s entire area of jurisdiction, i.e., the entire city, county, or district, etc. Plans may be broken into planning areas, regions, districts or precincts, as needed for larger communities or counties. All planning areas, regions, districts, or precincts must be included in the plan as partial plans are unacceptable.

Plans must address the present and future needs of the community or area, not merely short-term needs. Plans that justify only one grant project will not be accepted.

Regional (multi-jurisdictional) Park, Recreation and Open Space Master Plans may be submitted to the Department for review. This plan may be utilized by those communities located within the planning region. In order for any application to be eligible for priority planning points the project sponsor must adopt the regional plan by resolution. The plan must also include all of the required master plan elements for each community wishing to utilize the regional plan; or the project sponsor must submit a supplement, by the applicable master plan deadline, that includes any required information pertaining to their community that is not included in the regional plan. Please compare the regional plan’s elements to the following plan content list to determine if supplemental information will be required by the Department.

PLAN DURATION

Plans must cover at least a ten year period. Plans must be updated every five years to remain eligible. At a minimum, updates should include a summary of:

- Accomplishments
- New public input
- Most recent inventory data
- Updated needs assessment
- Priorities
- New implementation plan
- Demographics
- Population projections
- Goals and objectives
- Standards, and
- Maps
Priorities should be updated as high priority items are accomplished and lower priorities move up. An updated inventory will also be required. A new resolution is not required when updating priorities; however, changing the order or adding new priorities does require a new resolution.

A completely new plan is required every ten years.

**PLAN CONTENTS**

All master plans must meet the following minimum requirements.

**I. INTRODUCTION**

This section should discuss the unit of government for which the plan is created. Include socio-economic data; demographics on ethnicity, age, and income; current and projected population figures and their source; growth or non-growth patterns; and the government’s or agency’s role in providing parks and recreation opportunities.

**II. GOALS AND OBJECTIVES**

Identify your parks and recreation service goals and follow with specific objectives for each goal. These should be given careful thought. State the time period of the plan.

**III. PLAN DEVELOPMENT PROCESS**

This section is very important so that we can understand how you identified and prioritized your needs. Include who wrote the plan and when the process began. Briefly but thoroughly discuss planning committees utilized and public input received through hearings, meetings, and surveys. **You must also provide public input documentation.** Acceptable documentation includes a copy of the public meeting notice, sign-in sheet, and the minutes for the public meeting certified by an official sponsor representative. If a public survey is completed, an explanation of how the survey was distributed along with a copy of the survey results will be required. Please contact us if you have any questions regarding acceptable public input documentation.

**IV. AREA AND FACILITY CONCEPTS AND STANDARDS**

This section of the plan is also very important and contributes directly to the assessment and identification of needs. You cannot properly identify needs without establishing local standards and concepts. Area/Facility standards should be determined locally. Local standards are influenced by preferences and available economic and natural resources.

**V. INVENTORY OF AREAS AND FACILITIES**

Assess what parks, recreation and open space areas and facilities are currently within your system. You should also include school and private recreational facilities that are
open to the public. If inventory data are broken out by park, include a summary table for all parks and facilities. This inventory information is essential for assessing needs.

VI. NEEDS ASSESSMENT AND IDENTIFICATION

The following three approaches may be employed in determining parks and recreation needs: (1) demand-based, (2) standard-based, and (3) resource-based. Or a combination of these approaches may help you more accurately assess your needs.

The demand-based approach relies on information gathered from participation rates, surveys, and other information that indicates how much of the population wants certain types of facilities.

The standard-based approach uses established standards to determine facilities and park areas needed to meet the needs of a given population size. The standards may be based on demand studies, the professional judgment of park and recreation planners and designers, etc.

The resource-based approach examines the assets and resources of the area for open space, parks and recreation facilities, and defines how these resources can be utilized. For example – the availability of a lake or river within an area is a resource which can be utilized in developing a park system.

Sponsors with large jurisdiction areas may wish to divide their jurisdiction into planning areas, regions, districts or precincts. Specific needs can then be assessed and identified within each planning unit.

Clearly identify needs and explain the methodology for determining them. Consider both outdoor and indoor recreation needs, if applicable.

VII. PLAN IMPLEMENTATION AND PRIORITIZATION OF NEEDS

A priority list of needs should be ranked in order from highest to lowest priority and state when the needs will be met.

If your plan is broken into specific planning areas, regions, districts or precincts, you may prioritize needs within each of the planning regions.

Separate priority lists may be provided for indoor and outdoor needs. Lists must be area and/or facility specific, and be ranked according to priority order. It is the option of the sponsor to present the priority lists as park/site-based or recreational element-based. However, be aware that there are more points available in the current scoring system if priorities are compiled by recreational elements, and separated by indoor and outdoor.

Example of recreational facility-based priority lists:
Outdoor Priorities:
#1 = Trails
#2 = Picnic Tables
#3 = Pavilions
#4 = Adult softball fields
#5 = Tennis courts, etc.

Indoor Priorities:
#1 = Indoor pool
#2 = Gym and basketball court
#3 = Walking track
#4 = Arts and crafts room
#5 = Meeting room, etc.

Specific areas intended for open space acquisition and preservation should be located on a map, identified as a need, discussed, and prioritized in your plan.

Where appropriate, renovation/redevelopment needs must be discussed and may be ranked as a priority.

Renovation is defined as “to renew, make over…” Work on existing facilities to completely renew, update, or modernize such facilities so the finished product will meet present-day standards and be comparable with newly constructed similar facilities is classified as renovation.

Redevelopment means the removal of obsolete facilities and construction of new ones.

Repairs and/or maintenance may be listed as a priority, but are not eligible for grant assistance.

Identify resources for meeting your needs (e.g., city funds, in-house labor, bonds, grants, donations, etc.), and include a proposed timeline for accomplishing the plan’s priorities.

VIII. ILLUSTRATIONS, MAPS, SURVEYS, ETC.

Required: City or County map, or map of jurisdiction, as appropriate.

Include maps, surveys, charts, plates, graphics, and photographs in the plan which help explain and support your planning process and conclusions.
## Appendix I State Parks Funded with LWCF

<table>
<thead>
<tr>
<th>Park</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abilene State Park</td>
<td>$465,901.26</td>
</tr>
<tr>
<td>Atlanta State Park</td>
<td>$57,886.25</td>
</tr>
<tr>
<td>Atlanta State Park II</td>
<td>$134,324.77</td>
</tr>
<tr>
<td>Balmorhea State Park</td>
<td>$336,500.00</td>
</tr>
<tr>
<td>Bastrop State Park</td>
<td>$177,062.86</td>
</tr>
<tr>
<td>Bastrop State Park II Golf Course</td>
<td>$500,000.00</td>
</tr>
<tr>
<td>Bastrop State Park III</td>
<td>$823,500.00</td>
</tr>
<tr>
<td>Bastrop State Park IV</td>
<td>$690,720.96</td>
</tr>
<tr>
<td>Bastrop State Park V Granger Addition</td>
<td>$550,061.00</td>
</tr>
<tr>
<td>Bastrop State Park VI Acquisitions</td>
<td>$170,064.50</td>
</tr>
<tr>
<td>Big Bend Ranch State Park</td>
<td>$136,063.00</td>
</tr>
<tr>
<td>Big Bend Ranch State Park II</td>
<td>$1,260,000.00</td>
</tr>
<tr>
<td>Big Spring State Park</td>
<td>$18,651.00</td>
</tr>
<tr>
<td>Blanco State Park</td>
<td>$14,250.00</td>
</tr>
<tr>
<td>Brazos Bend State Park Addition</td>
<td>$49,007.35</td>
</tr>
<tr>
<td>Caddo Lake State Park</td>
<td>$178,543.00</td>
</tr>
<tr>
<td>Cleburne State Park</td>
<td>$281,800.00</td>
</tr>
<tr>
<td>Copper Breaks State Park</td>
<td>$525,605.89</td>
</tr>
<tr>
<td>Daingerfield State Park</td>
<td>$88,915.75</td>
</tr>
<tr>
<td>Davis Mountains State Park</td>
<td>$502,199.64</td>
</tr>
<tr>
<td>Devils River Ranch Acquisition</td>
<td>$1,337,738.09</td>
</tr>
<tr>
<td>Dinosaur Valley State Park</td>
<td>$140,505.11</td>
</tr>
<tr>
<td>Dinosaur Valley State Park II</td>
<td>$252,576.83</td>
</tr>
<tr>
<td>Eisenhower State Park</td>
<td>$277,190.14</td>
</tr>
<tr>
<td>Enchanted Rock SNA</td>
<td>$615,654.01</td>
</tr>
<tr>
<td>Fairfield Lake State Park</td>
<td>$1,223,930.00</td>
</tr>
<tr>
<td>Fanthorp Inn SHS Addition</td>
<td>$38,300.00</td>
</tr>
<tr>
<td>Fort Richardson State Park</td>
<td>$47,591.90</td>
</tr>
<tr>
<td>Fort Richardson State Park II</td>
<td>$170,748.00</td>
</tr>
<tr>
<td>Franklin Mountains Wilderness Park</td>
<td>$82,559.61</td>
</tr>
<tr>
<td>Galveston Island State Park</td>
<td>$445,630.50</td>
</tr>
<tr>
<td>Galveston Island State Park II</td>
<td>$1,145,188.81</td>
</tr>
<tr>
<td>Garner State Park Addition</td>
<td>$350,000.00</td>
</tr>
<tr>
<td>Garner State Park Addition II</td>
<td>$531,366.00</td>
</tr>
<tr>
<td>Garner State Park Addition III</td>
<td>$305,000.00</td>
</tr>
<tr>
<td>Goliad State Park</td>
<td>$54,900.00</td>
</tr>
<tr>
<td>Goliad State Park II</td>
<td>$128,300.00</td>
</tr>
<tr>
<td>Park Name</td>
<td>Amount</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Goose Island State Park</td>
<td>$216,037.75</td>
</tr>
<tr>
<td>Goose Island State Park II</td>
<td>$226,304.53</td>
</tr>
<tr>
<td>Government Canyon State Natural Area</td>
<td>$500,000.00</td>
</tr>
<tr>
<td>Government Canyon State Natural Area II Addition</td>
<td>$2,900,000.00</td>
</tr>
<tr>
<td>Hueco Tanks SHS</td>
<td>$164,700.00</td>
</tr>
<tr>
<td>Huntsville State Park</td>
<td>$22,853.85</td>
</tr>
<tr>
<td>Lake Arrowhead State Park</td>
<td>$38,058.55</td>
</tr>
<tr>
<td>Lake Arrowhead State Park II</td>
<td>$313,956.11</td>
</tr>
<tr>
<td>Lake Brownwood State Park</td>
<td>$238,550.00</td>
</tr>
<tr>
<td>Lake Brownwood State Park II</td>
<td>$525,185.01</td>
</tr>
<tr>
<td>Lake Casa Blanca State Park</td>
<td>$69,550.00</td>
</tr>
<tr>
<td>Lake Casa Blanca State Park II</td>
<td>$161,460.74</td>
</tr>
<tr>
<td>Lake Colorado City State Park</td>
<td>$259,480.70</td>
</tr>
<tr>
<td>Lake Corpus Christi State Park</td>
<td>$66,415.00</td>
</tr>
<tr>
<td>Lake Livingston State Park</td>
<td>$548,800.00</td>
</tr>
<tr>
<td>Lake Livingston State Park II</td>
<td>$1,145,600.00</td>
</tr>
<tr>
<td>Lake Somerville State Park</td>
<td>$114,111.43</td>
</tr>
<tr>
<td>LBJ State Park &amp; Historic Site</td>
<td>$748,348.00</td>
</tr>
<tr>
<td>Lockhart State Park</td>
<td>$47,283.48</td>
</tr>
<tr>
<td>Lockhart State Park II</td>
<td>$143,135.72</td>
</tr>
<tr>
<td>Longhorn Cavern State Park</td>
<td>$32,348.36</td>
</tr>
<tr>
<td>Lost Maples SNA Addition</td>
<td>$433,231.00</td>
</tr>
<tr>
<td>Lost Maples SNA Addition II</td>
<td>$137,750.00</td>
</tr>
<tr>
<td>McKinney Falls State Park</td>
<td>$1,589,729.46</td>
</tr>
<tr>
<td>Meridian State Park</td>
<td>$52,753.00</td>
</tr>
<tr>
<td>Meridian State Park II</td>
<td>$68,134.96</td>
</tr>
<tr>
<td>Mission Tejas State Park</td>
<td>$37,273.33</td>
</tr>
<tr>
<td>Mission Tejas State Park II</td>
<td>$25,900.00</td>
</tr>
<tr>
<td>Mission Tejas State Park III Addition</td>
<td>$615,061.50</td>
</tr>
<tr>
<td>Monahans Sandhills State Park</td>
<td>$48,919.70</td>
</tr>
<tr>
<td>Old Sabine Bottom WMA Addition</td>
<td>$288,410.00</td>
</tr>
<tr>
<td>Palmetto State Park</td>
<td>$85,716.44</td>
</tr>
<tr>
<td>Palo Duro Canyon State Park</td>
<td>$255,994.00</td>
</tr>
<tr>
<td>Palo Duro Canyon State Park II</td>
<td>$160,351.20</td>
</tr>
<tr>
<td>Palo Duro Canyon State Park III</td>
<td>$289,958.91</td>
</tr>
<tr>
<td>Palo Duro Canyon State Park IV &amp; Lake Whitney State Park</td>
<td>$285,000.00</td>
</tr>
<tr>
<td>Palo Duro Canyon State Park V Addition</td>
<td>$600,000.00</td>
</tr>
<tr>
<td>Palo Duro Canyon State Park VI Home Camp Acq.</td>
<td>$1,500,000.00</td>
</tr>
<tr>
<td>Palo Duro Canyon State Park VII Gaynor Ranch Addition</td>
<td>$1,860,000.00</td>
</tr>
<tr>
<td>Park/Location</td>
<td>Amount</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Palo Pinto Mountains State Park</td>
<td>$625,000.00</td>
</tr>
<tr>
<td>Pedernales Falls State Park (Blanco County SP Acq)</td>
<td>$465,439.87</td>
</tr>
<tr>
<td>Pedernales Falls State Park II</td>
<td>$499,013.00</td>
</tr>
<tr>
<td>Possum Kingdom State Park</td>
<td>$90,800.00</td>
</tr>
<tr>
<td>Possum Kingdom State Park II</td>
<td>$398,765.00</td>
</tr>
<tr>
<td>San Jacinto Battleground SHS</td>
<td>$220,004.22</td>
</tr>
<tr>
<td>San Jacinto Battleground SHS II</td>
<td>$56,052.57</td>
</tr>
<tr>
<td>State Park Boat Ramps (6 Sites: Atlanta, Bonham, Caddo, Cleburne, Eisenhower, Lake Whitney)</td>
<td>$76,351.67</td>
</tr>
<tr>
<td>Stephen F. Austin State Park</td>
<td>$262,201.44</td>
</tr>
<tr>
<td>Stephen F. Austin State Park II</td>
<td>$98,750.00</td>
</tr>
<tr>
<td>Tyler State Park</td>
<td>$237,646.88</td>
</tr>
<tr>
<td>Tyler State Park II</td>
<td>$297,825.36</td>
</tr>
<tr>
<td>WBC Estero Llano Grande State Park</td>
<td>$312,500.00</td>
</tr>
<tr>
<td><strong>TOTAL LWCF Grant Funds</strong></td>
<td><strong>$34,564,948.97</strong></td>
</tr>
</tbody>
</table>