

# LOST PINES NATURE TRAILS MANAGEMENT PLAN



Prepared by the Friends of the Lost Pines Nature Trails with assistance from the National Park Service's Rivers, Trails, and Conservation Assistance Program

March 31, 2016

## **THE FRIENDS OF THE LOST PINES NATURE TRAILS MISSION STATEMENT**

The Friends of the Lost Pines Nature Trails is an organization for the cooperative management of cultural and natural resources, providing recreational and educational opportunities to residents and visitors alike, and striving to be a model for other publicly accessible riverside properties on the Colorado River in Bastrop County.

As of the date of this Management Plan, the following entities have participated in the management and planning of the Lost Pines Nature Trails (LPNT), along with numerous citizens not affiliated with groups:

Bastrop County

Bastrop County Audubon Society

Bastrop County Chamber of Commerce

Bastrop County Economic Development

Bastrop County Historical Visitor Center

Bastrop County WCID#2

Bastrop River Company

Bluebonnet Electric Cooperative

Environmental Stewardship

City of Bastrop

Keep Bastrop County Beautiful

Lone Star Disposal

Lost Pines Chapter, Texas Master Naturalists

Lower Colorado River Authority

Pines and Prairies Land Trust

Rising Phoenix Outfitters

Tahitian Village Property Owners Association

Texas Aggregates

Texas Parks and Wildlife – Game Wardens and Urban Wildlife Division, Urban Wildlife Program

## Project Background

### The Site

Lost Pines Nature Trails (LPNT) is the name bestowed on an approximately 28.5-acre site on the Colorado River in Bastrop County just outside the city limits of Bastrop. For more than 40 years, it has historically served as a river access park where people from the area have come to swim, fish, put in and take out boats, and recreate in various ways.

The 30 acres are bounded on the north by Riverside Drive and on the south by the Colorado River. Abutting the LPNT on the upstream side is the 65-acre Colorado River Refuge (CRR), and on the downstream end, it abuts the Pine Forest Golf Club. The Tahitian Village subdivision lies to the north of the site, though the blocks closest to the LPNT consist of streets with platted lots but few houses, along with some golf holes.

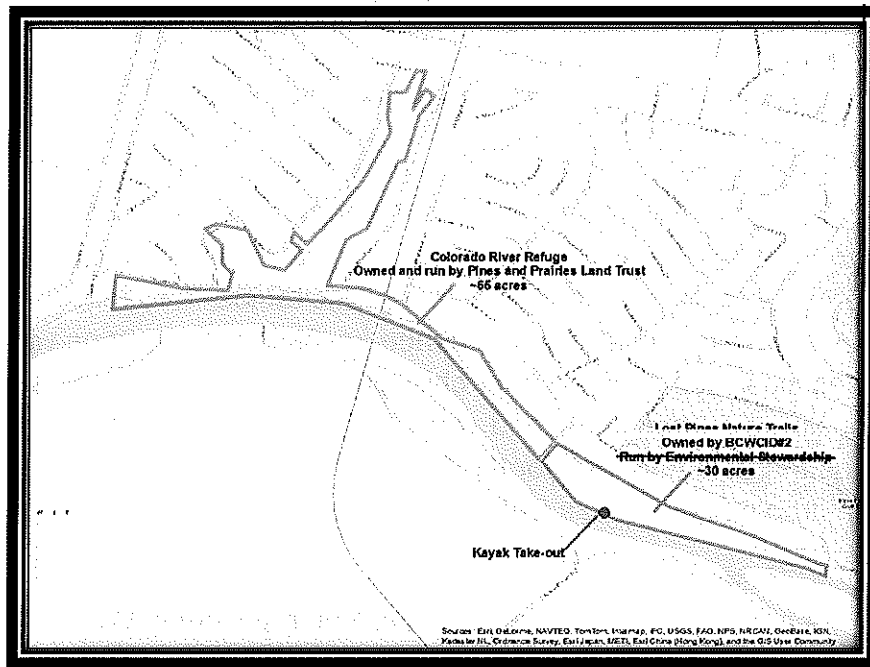


Figure 1: Location Map of the Lost Pines Nature Trails and Colorado River Refuge

About 63 percent of the 28.5 acres is comprised of soils characterized as “frequently flooded”, although the floods of 2015 covered the entire site, coming all the way up and over Riverside Drive. Vegetation cover consists primarily of Central Texas Floodplain - Hardwood Forest (63%) and Central Texas Floodplain – Herbaceous Vegetation (17%). See Figure 2 that follows; a more thorough description of vegetative habitat is found in the Appendix B: Wildlife Habitat Plan. A small portion has been determined to be potential habitat for the endangered Houston Toad.

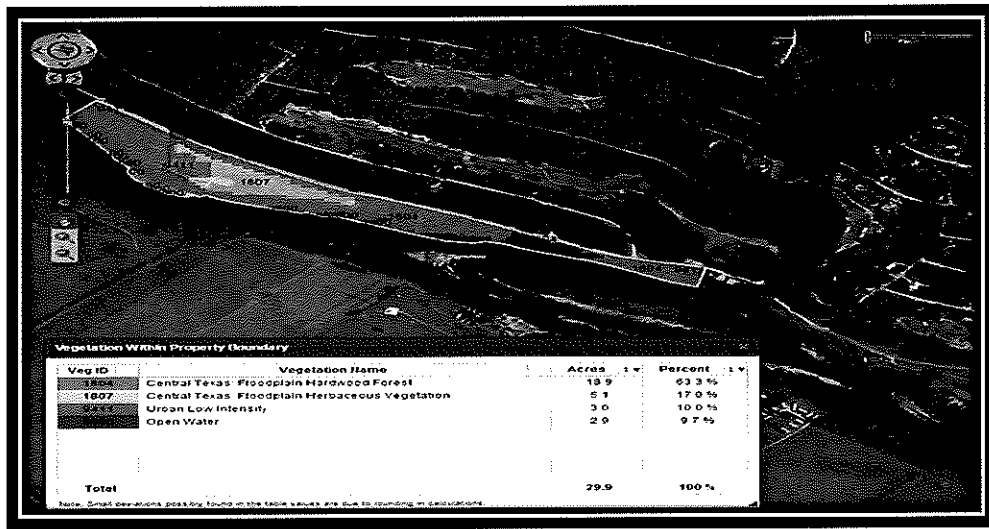


Figure 2: Vegetation Types  
 Source: Texas Forest Service

As of 2015, site improvements for recreation and nature education include a main entry road (paved) with two parking areas, a secondary entry road to access a hardened one-lane boat launch, 6 picnic tables, 1.13 miles of trails used by hikers and mountain bikers, a canoe-kayak launch location with drop-off road, benches clustered in an area for children’s educational events, portable toilets, dumpster and trash cans, and various signage. The canoe/kayak access site serves as the take-out point for the 6-mile El Camino Real Paddling Trail that begins at Bastrop’s Fishermen’s Park.

#### Ownership and History

The LPNT property is presently owned by the Bastrop County Water Control and Improvement District #2 (BCWCID#2) which allows but does not fund or manage public use. Both the 28.5-acre LPNT and the 65-acre CRR were once proposed as property owner association open space or reserve land for the Tahitian Village development. In 1988, the Tahitian Village Property Owners Association transferred title of the 94.5 acres of reserve lands on the river to BCWCID#2, a special district created to develop roads and utilities for the subdivision. In 2004, BCWCID#2 transferred title to the 65 acres now called the Colorado River Refuge (CRR) to Pines and Prairies Land Trust (PPLT), for one dollar.

PPLT began improving the refuge with trails, parking, signage, and restoration of a quarry by obtaining funding from Texas Parks and Wildlife’s (TPWD) Recreation Trail Fund, the National Park Service’s Challenge Cost Share

Funding, Lower Colorado River Authority, donations from aggregate companies, and in-kind work from volunteers. PPLT engages volunteers from the Texas Master Naturalists; Lost Pines Chapter (LPTMN) to conduct regularly guided hikes and educational events, especially for homeschooled youth. PPLT has improved the site over the last 12 years, lengthening the concrete accessible trail and adding a picnic table with a river view.

In 2007, a new environmental non-profit was formed with a focus on protecting the Colorado River and other natural resources in the Lower Colorado River Basin. Environmental Stewardship developed a partnership with BCWCID#2 to seek improvements to the 28.5-acres, now called Lost Pines Nature Trails. In 2007-2008, Environmental Stewardship helped obtain funds from TPWD's Rec Trails Fund and LCRA to construct trails for hiking and biking, improve the paddle trail launch site, improve parking, and add signage. There were also plans to restore wetlands that had been quarried and then later damaged by off-road vehicle use.

After numerous flood events and the lack of on-going management, the LPNT site and its 8-year-old initial improvements became degraded to the point where numerous people in Bastrop County became concerned. In June 2014, Keep Bastrop County Beautiful (KBCB) convened a group of civic organizations, businesses, governmental representatives, and citizens to consider how to clean up the neglected site, repair damaged facilities, and manage it sustainably. Many short-term solutions were undertaken by the participating entities in the summer of 2014 with the leadership of KBCB (see section on Operations and Maintenance).

The group sought planning assistance from the National Park Service's (NPS) Rivers, Trails and Conservation Assistance Program and was awarded a year and a half of assistance, beginning in October 2014.

#### Issues

At a meeting in November 2014, the group created the following list of issues that need to be addressed:

| Top Issues Identified November 2014  |
|--|
| Vehicles: not controlled, confined to parking lots only, mudding, driving in river, off-roading; ATVs, golf carts – 10 votes |
| Rules: aren't posted clearly or enough; aren't clearly identified – 9 votes  |
| Sustainable funding (needed, lack it now) – 7 votes  |

|   |
|---|
| Trash (collection, regular removal, disposal) – 6 votes   |
| Lack of law enforcement (need consequences, more patrol, security) – 4 votes                            |
| Overnight camping is undesirable – 2 votes  |
| Riverside Drive condition (sometimes in disrepair, trash on it, need more exits in disasters) – 2 votes |
| Second boat ramp not improved – 2 votes   |
| Vandalism – 2 votes   |
| Flooding, floodplain regulations impact amenities – 1 vote  |
| Other Brainstormed Issues   |
| Squatters (using bathroom, doing things where they can't be seen); riff-raff                            |
| Safety  |
| Loud partying   |
| Lack of long-term ownership, lack of management commitment  |
| Lack of publicity about and knowledge of the park's existence   |
| Classroom facility needs constant rehab   |
| Volunteer maintenance not consistent  |
| Lack of electricity   |
| No restroom facilities  |
| No clear signage for trails and boat ramps  |
| Litter  |
| Lack amenities  |
| Lack of patrol  |
| Excessive drinking  |
| Noxious vegetation control needed for giant ragweed, poison oak/ivy                                     |
| Accessibility (general)   |

Since the brainstorming exercise, the volunteer management and government partners have worked on many of the identified problems.

## Vision and Goals for the LPNT

### VISION STATEMENT

The Friends of Lost Pines Nature Trails desire sustainable development that provides visitors and residents an attractive, sustainable, and affordable river access and trail park emphasizing natural resource management and appreciation and resource-based recreation.

### GOALS

- To create a family-friendly atmosphere by giving the site a consistent management presence and a clean, attractive appearance.
- To develop and maintain visitor amenities that support river recreation activities, including boating, paddling, fishing, and swimming.
- To develop and maintain trails for hiking, biking, and nature lessons.
- To develop and maintain visitor support facilities/amenities including picnic tables, clean restrooms, trash collection, off-grid utilities, and signage for entrances, safety, rules, etiquette, and directions.
- In undertaking any improvement, wherever practical, to use renewable resources, including solar, and employ the principles of the Sustainable Sites Initiative™ program
- To manage vehicle access with designated, maintained parking areas and roads, ensuring that the river bed and banks and natural areas are protected from illegal vehicle use.
- To publicize the site for the designated activities and purposes.
- To offer, through partnerships, educational and recreational programs and outings.
- To develop and implement a vegetation management plan to promote a healthy ecosystem, prevent erosion and runoff, and make the site attractive and safe.
- To assure the security of the sites to protect resources and visitors.
- To develop budgets and implement sustainable funding strategies to support the stated mission, vision, and goals of the Friends of Lost Pines Nature Trails, to include securing, developing, operating, maintaining, repairing, and promoting the natural resource-based recreational and educational opportunities of the property.

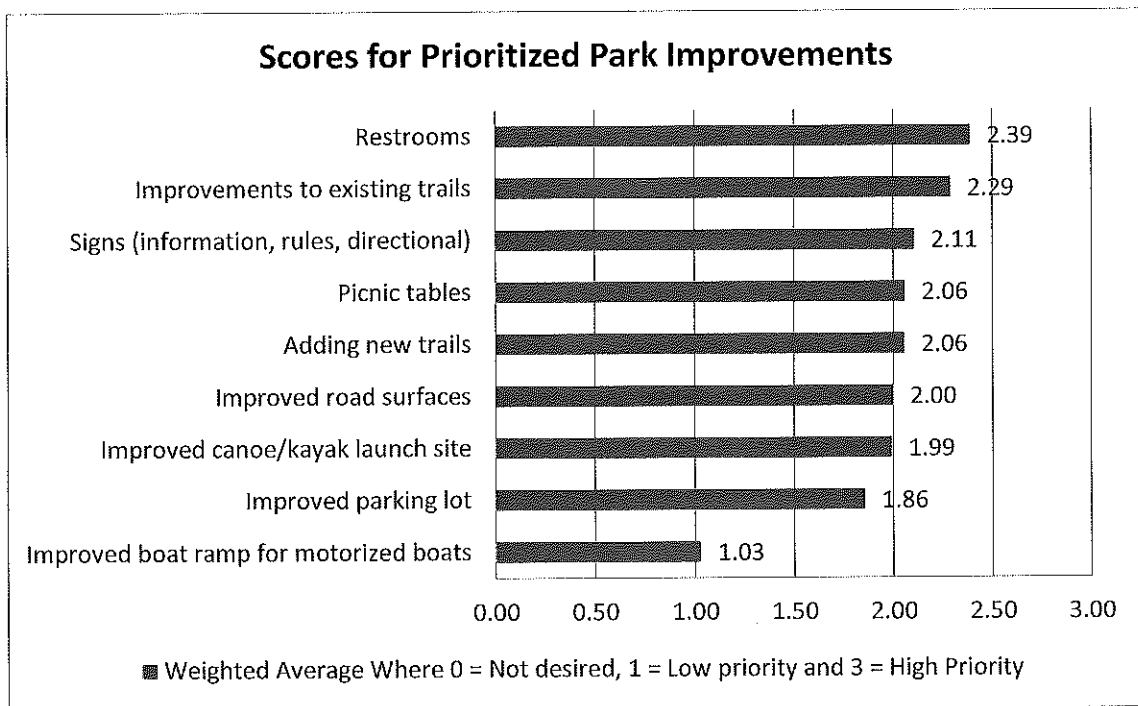
### Capital Improvements

At the moment, the Friends of the LPNT are postponing the implementation of major capital improvements to the LPNT site for several reasons. First, as long as the site does not have an owner/manager with a suitable budget, appropriate improvements are those that can be cared for by volunteers. Second, the site lies primarily in a floodplain where improvements and may not be permitted and, if

allowed, they may need regular repair or replacement if destroyed by flooding with a dedicated contingency to address the repair or replacement. Third, many share a philosophy that the site be managed as a minimally developed natural area for trail use, river access, and nature education.

#### Survey Supported Improvements

A community survey was conducted in April 2015. The full results are included in Appendix A to this planning document. The following table shows the facilities that were identified as most desired by the survey respondents (N=344). The score takes into account three priority levels or not desired choices. The highest desire is for restrooms, followed closely by trail improvements. The list offered to survey respondents primarily reflects the current uses and the philosophy of the partners and volunteers that are maintaining the site as a natural area with trail and river access.



#### Committee Supported Improvements

The Friends of the LPNT met off and on during 2014 and 2015 and discussed various improvements that they were interested in pursuing and could expect to obtain funds or in-kind services to implement. Amenities and improvements considered included: gates to close the park at night and during and after flood events; improved signage; a pavilion for the outdoor classroom; solar-powered waterless evaporative toilets; and "iron rangers" (lock boxes for securing donations on site).



### Recommendations for Future Improvements

The Friends are making different recommendations for improvements depending on whether they would be implemented under the current ad hoc management and at a future time when/if management and ownership are changed. The table below indicates those time frames as short- and long-term, with no particular year specified. The estimates are very general and in 2015 dollars.

| Improvement                                   | Short-Term | Long-Term | Cost Estimate |
|---|------------|-----------|---------------|
| Pavilion – outdoor classroom                  | ✓          |           | \$10,000      |
| Signage and kiosks                            | ✓          |           | \$5,000       |
| Gate with solar-powered automatic gate opener |            | ✓         | \$6,000       |
| Double restroom – solar-powered Enviro Loo    |            | ✓         | \$23,000      |
| Entrance sign                                 |            | ✓         | \$8,000       |
| Totals  |            |           | \$52,000      |

### Operations and Maintenance

The following sections describe the various efforts that have been undertaken to care for the LPNT since 2014.

#### Volunteer Operations and Maintenance

The engagement of volunteers in caring for the Lost Pines Nature Trails has been in place for years, beginning with caring for the trail improvements made in 2007 with Environmental Stewardship's grant management. The primary source of volunteers has been the Lost Pines Master Naturalists (LPMN). The master naturalists do trail maintenance, trash clean-up, recycling, bridge repairs, mowing in high use areas, debris and mud removal, installation of signs, and repair of benches, picnic tables, and other site improvements damaged by flooding, vandalism, and illegal off-road vehicle use. Various other groups have also contributed; however, the LPMN has taken the lead role in identifying the maintenance needs and finding volunteers and partner organizations to get the

work done. In addition to the volunteer labor, the Tahitian Village Property Owners Association pays for portable toilets and dumpster rental and service.

#### Major Repairs in 2014-2015

In early summer 2014, a number of community partners became alarmed at the conditions of the LPNT. The kayak outfitter companies that use the LPNT for picking up customers after paddle trips reported that the conditions of disrepair and site user behavior were negatively affecting business as well as the impression of tourists to Bastrop County's Colorado River. Keep Bastrop County Beautiful convened the partners, and restoration actions began. Through an Interlocal Agreement with Bastrop County WCID#2, Bastrop County was able to commit \$16,000 worth of equipment and supplies to upgrade the roads and parking areas, some of which were eroded to the point of limiting vehicle access. During the same period, on one work weekend, over 85 volunteers removed 400+ lbs. of trash from the river. A full write-up of the work done to re-open the park in October, 2014 can be found here:

<http://txmn.org/lostpines/2014/11/05/rockin-re-launch-of-the-crr/>.



In January 2015, the County offered to help once again with a proposal to provide equipment and workers if the Friends could raise \$10,000 for materials. The Friends raised \$10,280. The tasks undertaken that month included additional road improvements, filling in potholes, installing a gate to keep vehicles out of the river, and repairing or replacing the cable and bollard fencing along Riverside Drive and in the parking lot area.

## Rules, Regulations, Security and Patrol 2015

To address the issues related to visitor behavior, the Bastrop WCID#2 Board adopted some park rules, effective July 16, 2015. With the rules in place and posted, any citizen can notify law enforcement if the rules are being violated. The full set of rules is shown in Appendix B; the following represent the highlights.

- Hours of Operation: May 1 – October 31: 7 a.m. to 8 p.m. November 1 – April 30: 8 a.m. to 5 p.m.
- No fireworks, weapons, or discharging of firearms
- No hunting; no harming wildlife (fishing with a license is allowed)
- No fires other than in BBQ pits and fire rings
- No overnight camping
- No dumping, littering, or household garbage disposal
- No off-road motor vehicle use (no mudding, no driving in the river, no harm to landscape, etc.)
- No glass
- Pets must be on 6 foot leash; clean up pet waste
- No disorderly or nuisance conduct
- Parking near kayak launch is limited to 30 minutes for loading and unloading
- Follow state boating safety regulations (use of PFDs).

The Master Naturalists and Tahitian Village POA have been opening and closing the gates at the site since the rules and the gate were in place. In the initial days of physically locking the park at closing times, Texas Parks and Wildlife game wardens joined the volunteers for the closing procedure. Because visitors had been used to staying as long as they wanted, including overnight, it was an educational process to notify folks of the new rules and closing hours.

After the partners met in summer 2014 to repair the site and have a greater management presence, both state game wardens and the Bastrop County sheriff's department began to increase their patrolling at the park and along adjacent Riverside Drive to ward off illegal and nuisance behavior. Neighbors of the park report that the sheriff's office quickly sends officers when they call about problems seen or heard at the park.

## Wildlife Habitat Management

Texas Parks and Wildlife urban wildlife biologist for the area has been a partner on the team that began discussing how to manage the Lost Pines Nature Trails

property. Kelly Simon wrote recommendations for managing the site to improve its habitat for wildlife. The full wildlife management plan can be found in Appendix C.

The wildlife plan acknowledges the value of the LPNT site due to its location on the Colorado River and the healthy riparian buffer that exists there. This habitat along the river harbors an incredible variety of wildlife. A survey by the U.S. Fish and Wildlife Service in riparian zones of the Pineywoods and Post Oak Savannah regions recorded 273 species of birds, 45 mammals, 54 reptiles, 31 amphibians, 116 species of fish and innumerable invertebrates.

Simon provided a number of recommendations to improve wildlife habitat. The following are some highlights:

- Long-term planning should be done before implementing vegetation control and manipulation. Consider vegetative cover requirement for those species desired for management.
- Cover strips should be as continuous as possible to provide travel lanes that connect larger areas of cover.
- Providing several different types and arrays of cover benefits more species of wildlife than a habitat of limited types, amount, and distribution of cover.
- The plan identifies a number of native riparian plants that are desirable for wildlife and bank stabilization. These should be preserved and/or re-established.
- Habitat with a variety of plants produces greater variety of cover and foods throughout the year. Plants that produce fruit, nuts, seeds, berries, buds, foliage and nectar during different seasons of the year are important to wildlife.
- A mix of deciduous and non-deciduous trees and plants provide year-round cover, along with vegetation of varying shapes, heights, and densities.
- Dead tall trees (snags) provide nesting cavities and loose bark for insect food. They should be left in places where they aren't likely to fall on visitors.
- Planting a mixture of native grasses and native wildflowers in open areas will compliment woody cover and provide habitat for insects and feeding and nesting areas for birds and small mammals.

In addition to Simon's report, the County's habitat conservation plan manager shared with the Friends ideas of work that could be done to improve habitat for

the endangered Houston Toad. That could include seeding, vegetation restoration and adding bollards and cabling to protect the habitat area from vehicles driving in toad habitat. There should also be certified monitors on site to observe work that could harm habitat, like scraping the surface, digging, and more. There may be construction activities that require a U.S. Fish and Wildlife Section 10 permit for “incidental take” to minimize or mitigate effects.

### Management Options

The partners that convened in summer 2014 agreed to identify themselves collectively as the Friends of Lost Pines Nature Trails. In this year and a half of deliberations, the Friends have considered a number of the individual group partners as potential short and long-term managers of the LPNT.

The pros and cons of each entity are shown below as benefits and drawbacks to their management.

| Partner                       | Benefits  | Drawbacks  |
|-------------------------------|---|--|
| Bastrop County WCID#2         | <ul style="list-style-type: none"> <li>• Currently the owner of the property</li> <li>• As a special district, it is a governmental entity with fee collecting authorities</li> <li>• Has a history of authorizing Interlocal agreement and grant applications for the property through partnerships</li> <li>• Has staff and income (for its other duties)</li> </ul>  | <ul style="list-style-type: none"> <li>• May not have legal authority to spend funds on recreation but maybe able to amend its charter.</li> </ul>   |
| Lost Pines Master Naturalists | <ul style="list-style-type: none"> <li>• Is already a 501(c)3 tax-exempt non-profit</li> <li>• Board has indicated strong interest in being the primary LPNT manager.</li> <li>• Master naturalist volunteers have been shouldering the bulk of the site's maintenance for years.</li> <li>• Maintaining the LPNT is complementary to the mission of the Texas Master Naturalists, which is (in part) to provide service “dedicated to the beneficial management of natural resources and natural areas within their communities”.</li> </ul> | <ul style="list-style-type: none"> <li>• There is no precedent in Texas for master naturalist chapters to own property.</li> <li>• The chapter doesn't have a consistent source of income.</li> <li>• They do not have staff but rely on volunteers.</li> <li>• The cost of purchasing liability insurance for managing the site could be burdensome.</li> </ul> |

| Partner                       | Benefits  | Drawbacks  |
|-------------------------------|---|--|
| Pines and Prairies Land Trust | <ul style="list-style-type: none"> <li>• The organization already owns and manages the 65-acre tract immediately adjacent to LPNT.</li> <li>• The two sites have shared connected trails and trailheads.</li> <li>• As a land trust, owning and managing land for conservation is the organization's mission.</li> <li>• PPLT may wish to place a conservation easement on the tract if another owner/manager is identified.</li> </ul>   | <ul style="list-style-type: none"> <li>• Owning and managing land for recreation is not its mission but can be a secondary use.</li> <li>• The organization is required to manage the property as a wildlife refuge, which can put public access as a secondary concern. The current Board has expressed a possible interest in handing off the Colorado River Refuge if an appropriate owner is found.</li> </ul> |
| Bastrop County                | <ul style="list-style-type: none"> <li>• The County has already been providing most of the heavy repairs (e.g. roadwork, bollard installation).</li> <li>• The County owns and manages one park and seems to be considering a County Parks Department; LPNT would make an excellent county park.</li> <li>• The County receives income from taxes and can issue bonds and has demonstrated success in obtaining grants.</li> <li>• The County has law enforcement staff for patrolling the site.</li> </ul> | <ul style="list-style-type: none"> <li>• Two fires and several floods in recent years have impacted the County's budget.</li> <li>• A new department needs to have funds identified in the annual budgeting process beginning in spring and being adopted by September.</li> </ul>   |
| City of Bastrop               | <ul style="list-style-type: none"> <li>• City park plans have identified river access as a priority.</li> <li>• LPNT is the take-out for the TPWD paddle trail that begins at Fishermen's Park.</li> <li>• City already has a parks department, staff, and a park system.</li> <li>• The city limits are very near if annexing is needed to justify taking a role in managing or owning the LPNT.</li> <li>• The City receives income from taxes and can issue bonds.</li> </ul>                            | <ul style="list-style-type: none"> <li>• The site is currently outside the city limits.</li> </ul>   |

## Funding Options

### Governmental Support

The Friends of LPNT are recommending the management of the LPNT be placed under a governmental entity, namely Bastrop County with partnerships with the Lost Pines Master Naturalists and Tahitian Village POA. Ideally, the Bastrop County WCID#2 might contribute some funding or in-kind support to help the County in its initial start-up of ownership and management. The primary reason for this is because government funding is considered the most sustainable way to keep the LPNT managed in perpetuity. If this recommendation can be accomplished, the funding for management would come through the annual governmental budgeting process. Funding for capital improvements would likely be sought from public and private grant programs that fund recreational facilities, educational facilities and programs, and environmental restoration and habitat management. A variety of grant funding opportunities can be found in Appendix D: Grant Sources. It is also anticipated that flood damage repairs may be covered by the Federal Emergency Management Agency when a flood event is officially declared a disaster.

### Community Support

The many partners that make up the Friends group have already shown their willingness to contribute to the needs of the LPNT both from their own non-profit budgets and by fundraising from businesses in the area. The Lost Pines Chapter of the Master Naturalists have allocated funds for the volunteer maintenance work as well as pledged volunteers to on-going service work. The Tahitian Village Property Owners Association has also committed funds and volunteers. While it appears at present that both of these groups will continue their involvement, that is dependent on their board votes and their budgets into the future.

### Fees and/or Donations

The community survey conducted in 2014 indicated that respondents were willing to pay fees to enter the park (average response was \$4.38 per vehicle). The Friends, however, included in their goals for the site a desire that it remain open to the public for free. There was some research conducted into the use of an "iron ranger", a sturdy lockbox with a place to receive money through a slot. The Friends would like to see such a box installed securely at the site but have it labeled for donations, rather than a mandatory fee.

The other "willingness to pay" question was directed toward a fee being added to each rental at the local boat rental companies. The average of respondents' replies was \$3.73 per person. There have been discussions at Friends' meetings about the boat rental operators' willingness to collect fees. The operators are supportive partners in the Friends group and have shown interest in a smaller amount added to the price (e.g. \$1.00). The operators expressed a preference for making a donation to the LPNT management.

Donation efforts have had some success and should be continued as partners to any management strategy. Keep Bastrop County Beautiful has collected donations for specific matching funds to help the County with supplies to make repairs. Another effort was done through GoFundMe to help with repairs from the most recent flood-damage.



## Appendix A: Community Survey

The Friends of the Lost Pines Nature Trails wanted to learn the community's opinions on the 30-acre site on the Colorado River. An on-line survey was designed to gauge user experience, perception of park, and desires for the future. The survey was announced in various area newspapers, social media, websites, and through the partners' communication methods. It was open for the month of April 2014. There were 344 respondents, and their results have been captured below.

### Park Visitors & Experience

Respondents were first asked "Have you ever been to the Lost Pines Nature Trails park?" For those who answered yes, they were asked "In the last 12 months, please estimate how many times you have been there." The majority of survey respondents (66%) claimed to have visited the park previously as Figure 1 demonstrates. Thirty percent of respondents have never been to the park before. Of the previous park visitors, the average number of times they visited the park in the past 12 months was 14.5. Respondents were also asked if they had visited the park since the summer of 2014. That was the time when Bastrop County workers and the volunteers undertook major clean ups and road paving. As Figure 2 displays, 73% of respondents have visited the park since the site became actively managed.

Figure 1: Ever Visited the LPNT Park

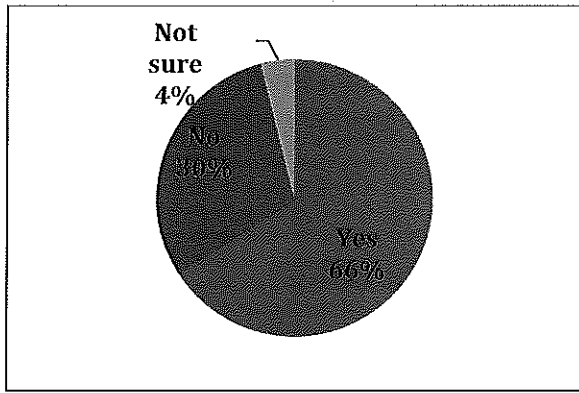
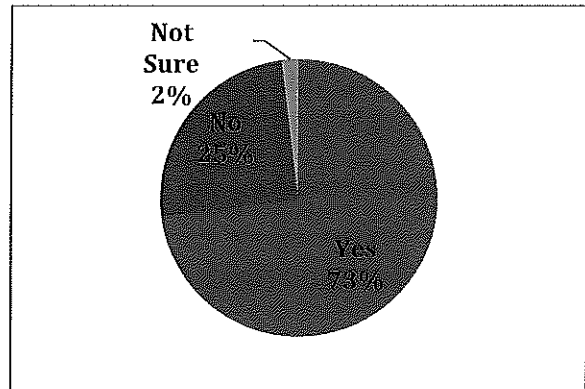
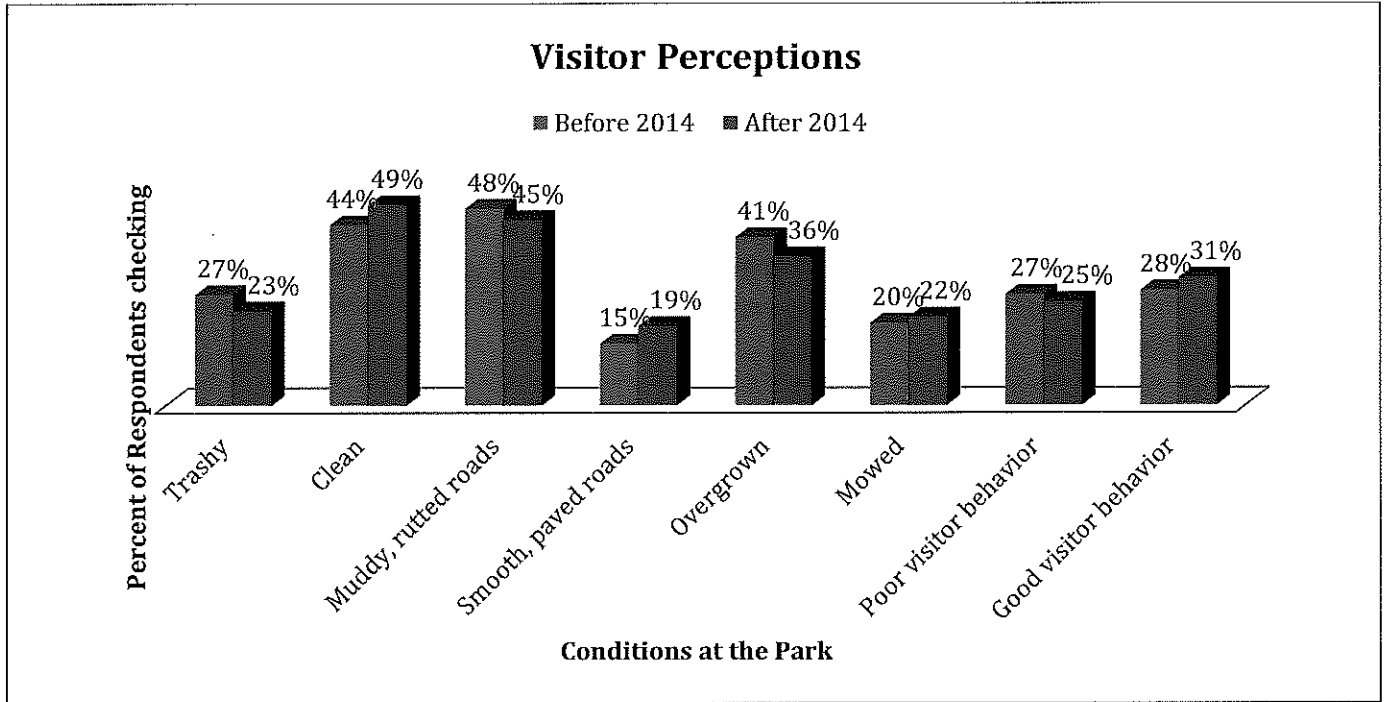


Figure 2: Visited Park Since Summer 2014



Survey respondents were asked "How would you describe the conditions at the park?" The responses about their perceptions of some of the park's conditions have been captured in Figure 3. Responses have been categorized between those respondents that visited the park before the summer of 2014 (captured in blue) and those that have visited the park since summer of 2014 (captured in red). A significant cleanup effort was performed by volunteers that summer, and the County worked on mowing and resurfacing roads and parking lots. Figure 3 helps illustrate the positive change in visitor perceptions since visiting after cleanup efforts. Visitors that came after the summer of 2014 experienced improvements in all of the indicators. Only 23% perceived the park as trashy; almost half (49%) perceived the park as clean; and 31% experienced good visitor behavior. There is still room for improvement, however. Forty-five percent of visitors still claimed that road conditions were poor; 36% said it was overgrown and 23% of respondents complained of the park being trashy.

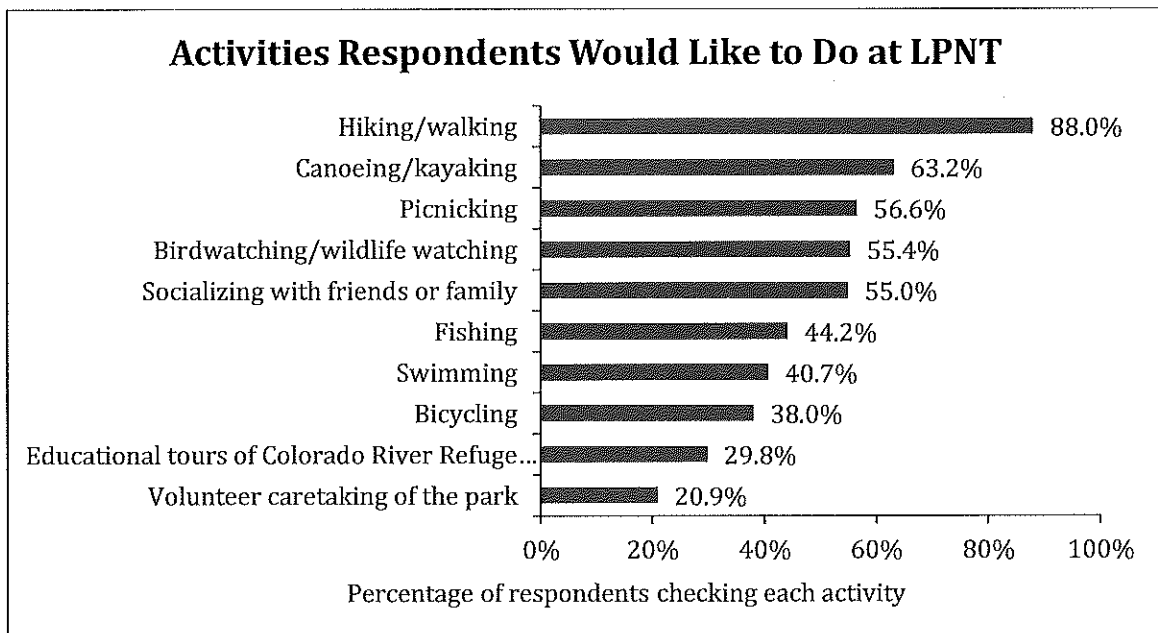
Figure 3: Perceptions of Park



Community Desires

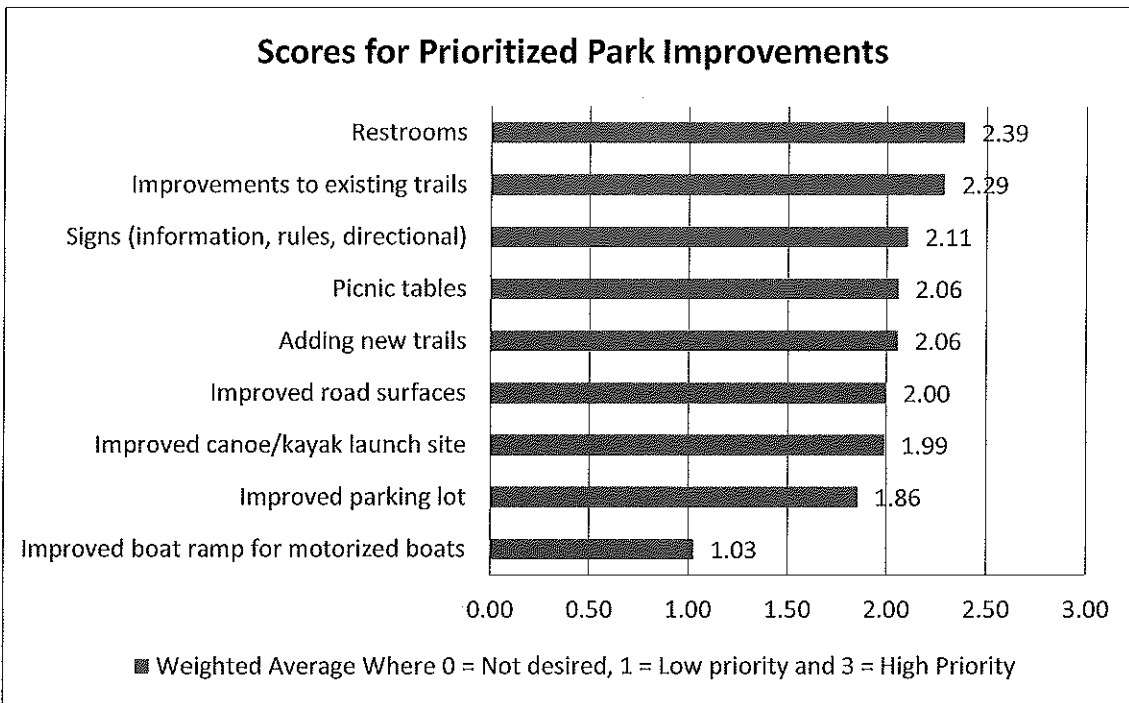
A goal of the survey was to better understand what activities respondents from the community would want to do at the park. Respondents were able to check more than one... "all that apply." In Figure 4, desired activities shown represent a nice variety of different activities. The most desired activities are those already offered at the site: hiking/walking, canoeing/kayaking, picnicking, bird/wildlife watching, and socializing with friends/family. The Friends chose not to ask about activities not thought to be in keeping with a site manager to protect natural resources.

Figure 4: Desired Activities



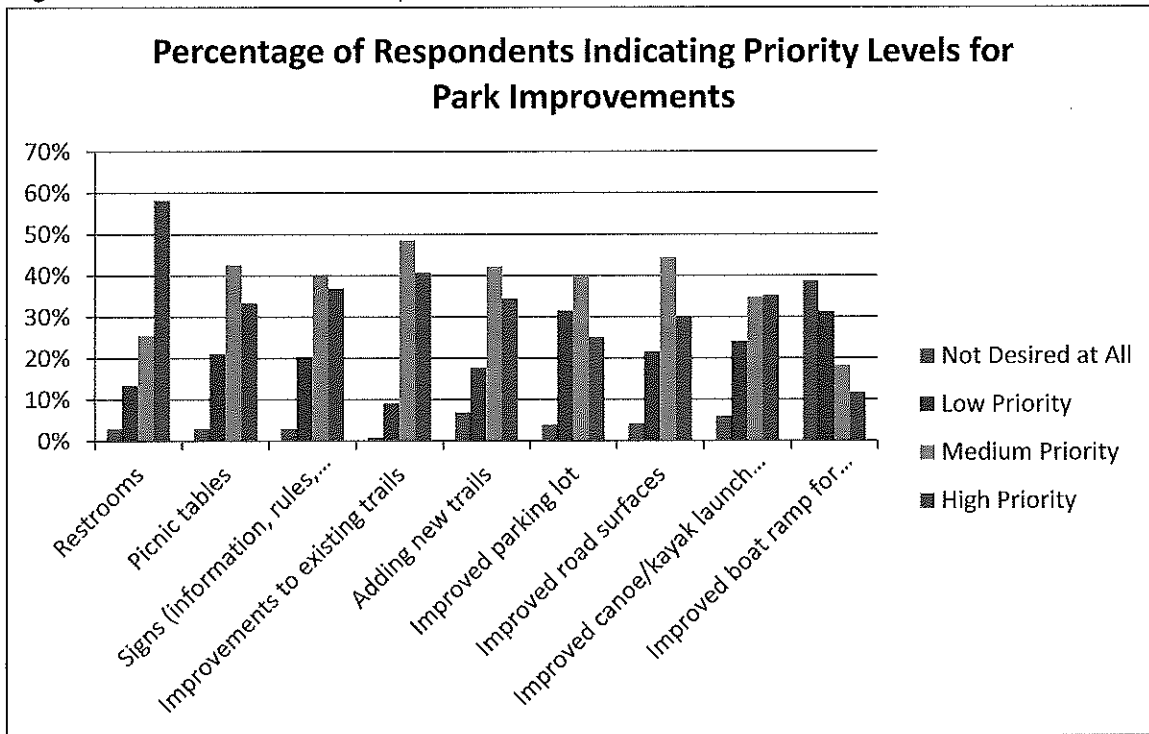
Respondents were asked "What park improvements would you like to see at Lost Pines Nature Trails park?" The choices for each improvement ranged from "Not desired at all" to "High priority". The answers shown in Figure 5 were weighted by averaging answers where High = 3, Medium = 2, Low = 1 and Not desired = 0. The weighted average produced scores that take into account input from those who don't want the improvement along with those who picked low and medium as well as high. These scores range from 1.03 (barely "Low") to 2.39 (the highest rated priority). The highest rated improvement is restrooms. The survey did not give respondents a chance to comment on whether portable toilets suffice or what quality of restrooms is desired. This question was asked of all respondents (including the 30% who have not been to the site); therefore, it is possible that some checked a desire for improvements that have already been made to some extent or are not aware of the conditions of facilities that are there now.

Figure 5: Park Improvements Desired



Another way of considering community desire for improvements is a percentage of respondents that indicated each category of priority or not desired. Figure 6 represents this analysis with percentages graphed as bars for each category.

Figure 6: Priorities for Park Improvements



The next question asked respondents was “What management activities would you like to see at Lost Pines Nature Trails park?” As with the question about facility improvements, the range of answer choices is on a scale of Not at all to High priority. The weighted average scores for the ten activities offered ranged from 1.29 to 2.36, with the highest priority being more trash pick-up/removal. As mentioned before, there were respondents who had not been there at all, or hadn’t been there since the partners’ management activities were undertaken. They may not realize there is a dumpster that is emptied regularly, and daily volunteers do upkeep now. However, the scores do allow managers to be aware of what is important to the community, whether they are users of the site or just aware it is there for the public.

Figure 7: Prioritized Management Activities

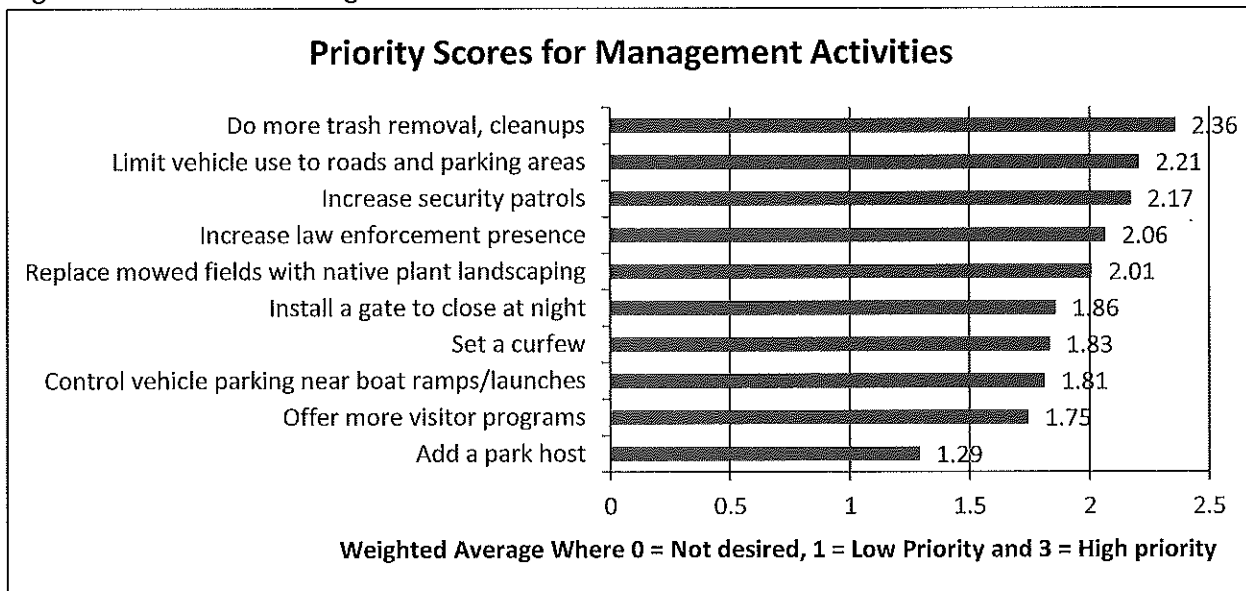
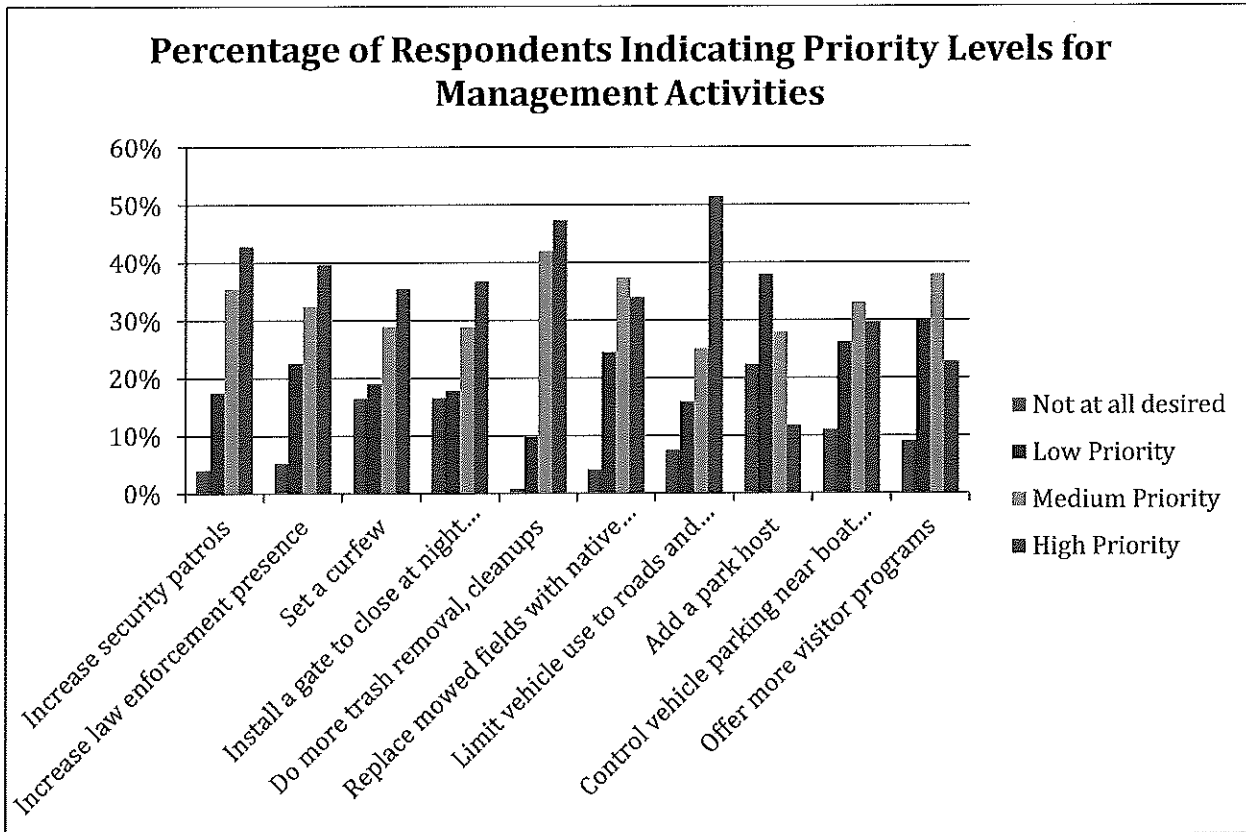


Figure 8 provides another way to view respondents' preferences for management activities. This analysis allows one to see the highest "highs" and the greatest "opposition" – not desired at all. It is clear that a segment of the respondent pool does not favor restrictions like curfews, gates, and park hosts. As with the merged scores in Figure 7, some of the high priority items indicated here include: limit vehicle use to roads and parking areas, doing more trash removal, cleanup, and increasing security patrols.

Figure 8: Priority Management Activities



### Willingness to Pay

The Friends of Lost Pines Nature Trails have expressed a strong desire to keep the LPNT open to the public without charging a fee, however, with the recognition that managing a park requires financial resources, the Friends agreed to ask two questions to determine how much survey respondents would be willing to pay if park entrance and/or boat/kayak rental fees were collected. The first question stated "Managing a park requires financial resources. Currently the Lost Pines Nature Trails park does not charge an entry fee. If a fee was charged to help maintain and improve the park, please indicate the MAXIMUM amount (in dollars) you would be willing to pay per vehicle." Respondents claimed that they would be willing to pay an average of \$4.38 per vehicle entering the park.

Next, respondents were asked "Have you ever rented a canoe or kayak to paddle the Colorado River in Bastrop County?" Thirty-five percent of respondents answered that they have rented canoes or kayaks in the past. The next question stated "Currently the Lost Pines Nature Trails park does not charge any user fees to customers who rent canoes or kayaks from commercial outfitters. If a user fee was charged to boat renters to help maintain and improve the park, please indicate the

MAXIMUM amount (in dollars) you would be willing to pay per person.” Respondents indicated a willing to pay, on average, \$3.73 per person.

Additional Comments

The survey gave respondents a chance to answer this open-ended question: “Is there anything else you would like to tell us about making the Lost Pines Nature Trails park a better place to visit?” Eight-four respondents offered comments. The following are categories that received more than one answer.

| Category   | Number of Responses |
|--|---------------------|
| Keep it free   | 17                  |
| Good work, liked the site  | 16                  |
| Unsafe, more security/patrol/surveillance  | 9                   |
| Undesirables go there  | 8                   |
| More trails (several kinds mentioned)  | 5                   |
| Create annual pass   | 4                   |
| Need to promote the site   | 4                   |
| Charge boat renters a fee  | 3                   |
| Nature programming/signs   | 3                   |
| Facilities desired (camping, shade shelters, restrooms, children’s play area, cabins | 1-2 each            |

Samples of some longer comments are included below:

“I live so close to here that it would be easy to get the family involved in family activities here. Some of my most fond memories as a child were taking nature lessons about various things..... I know there are MANY children living in Tahitian whose parents would be interested, and it would be a great way for the park to earn some money to maintain the park.”

“You've really done a wonderful job at improving the park and I can speak for a lot of Tahitian folks "we tip our hats off to you!" Previous to you coming in, the park was really trashy and there was really scary people hanging out and I was actually fearful for my wife’s and grandkids safety. Kudos!”

“I use the park daily when weather permits it... paying a fee would be costly.....I have had to pick up after people who should know better....”

“Basic maintenance could be performed by volunteers. I wouldn't make it cost to launch or recover a human powered boat. .... Adding a fee would discourage park use..... Gating the place off with

hours of operation would prevent ..... paddlers traversing the Colorado at night ... Some type of cameras to observe entrance and exit would be inexpensive and a way to track visitors versus vandals.”

“Thank you for caring enough to take care of it ..... While I rarely use it, I know many people need and will use it. The idea of a park host in an on-site RV is an excellent suggestion! The more surveillance the better.”

“I didn't know it existed!”

### Demographics of Survey Respondents

Information on the respondents tells the Friends who is answering the survey and how the respondent pool represents the population in the area. Figure 9 represents the variety of different towns in which survey respondents reside. The majority (69.4%) of respondents come from the City of Bastrop. More than 20% of respondents come from other towns in the Bastrop County including Cedar Creek (7.2%), Smithville (6%), Elgin (4%), Paige (1.6%), and Red Rock (1.6%). Respondents from Austin (6%) also had a good representation. There were a dozen other Texas locations that only had 2-3 respondents and were combined in the “Other” category at 3.4%.

Figure 9: Respondents' Residence

| Zip Code | Town/City   | Percentage |
|----------|-------------|------------|
| 78602    | Bastrop     | 69.4       |
| 78612    | Cedar Creek | 7.2        |
| 78957    | Smithville  | 6          |
| Multiple | Austin      | 6          |
| 78621    | Elgin       | 4          |
| 78659    | Paige       | 2.4        |
| 78662    | Red Rock    | 1.6        |
| Multiple | Other       | 3.4        |

The demographics of the survey respondents compared to the demographics of Bastrop County (American Community Survey 2009-2013) have been displayed in Figures 10 – 12. Even though roughly 10% of the survey respondents are not from Bastrop County (as shown in Figure 9), it is still interesting to see how closely the demographics of survey respondents align with local demographics and which, if any, populations are underrepresented. Survey respondents were disproportionately female, white and middle-aged (40-64). The true demographics of Bastrop County, however, are less homogenous. According to U.S. Census data (ACS 2009-2013), Bastrop County is almost evenly split between female (49%) and male (51%), is only slightly above half white (57%), and doesn't have as old of a population as the survey respondents suggest (median

age is 38.3 years old. What this suggests is that survey respondents do not accurately represent all of Bastrop County's populations.

Figure 10: Gender

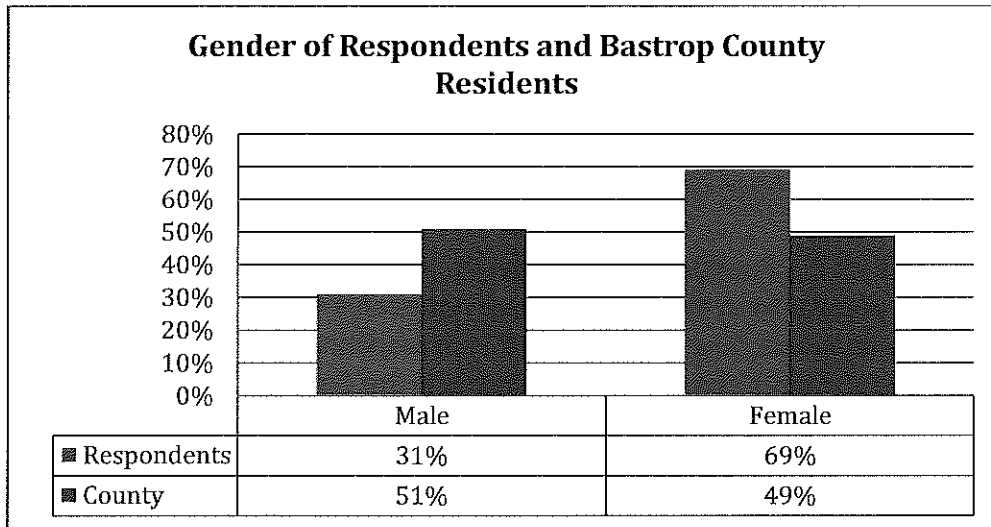


Figure 11: Ethnicity

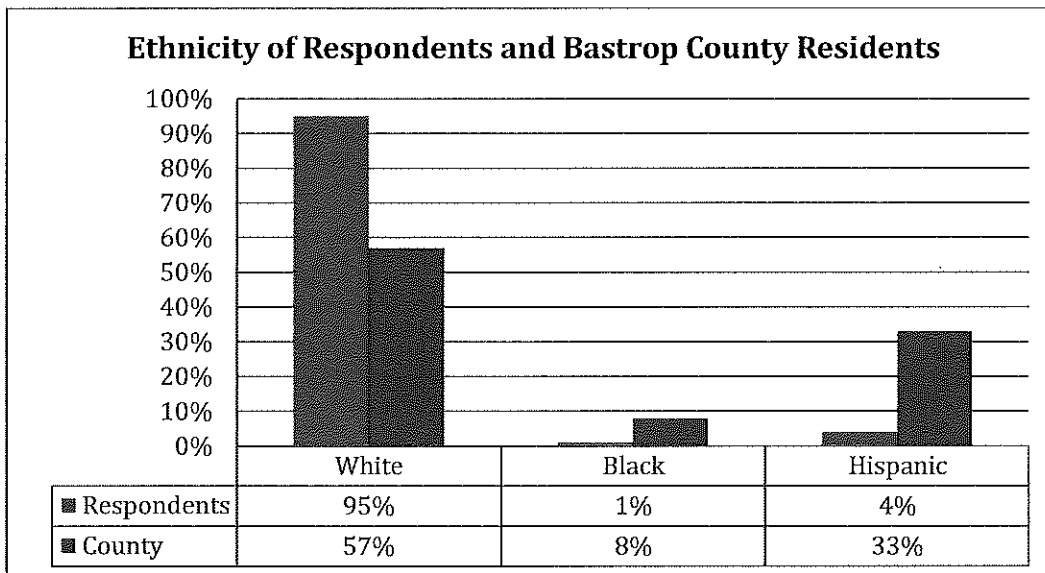
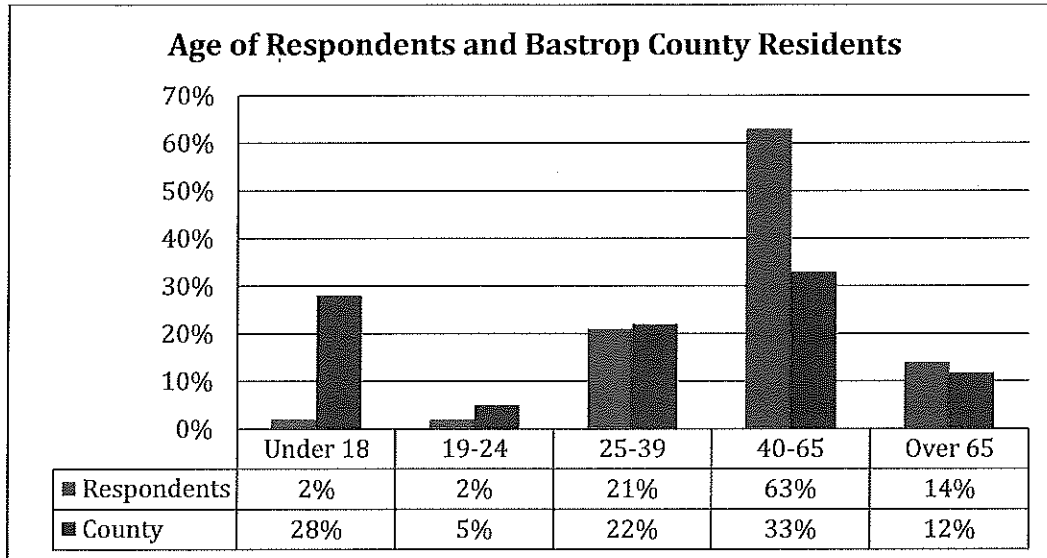




Figure 12: Age



## Appendix B

### PARK RULES AND REGULATIONS

Bastrop County Water Control and Improvement District #2 (BCWCID #2) hereby promulgates the following rules and regulations relating to the use and enjoyment of the Lost Pines Nature Trails (LPNT) and all parkland (Park) under BCWCID #2's jurisdiction.

#### Hours of Operation

The hours of operation of LPNT and Park shall be as follows:

|                             |                           |
|-----------------------------|---------------------------|
| May 1 through October 31    | 7:00 a.m. until 8:00 p.m. |
| November 1 through April 30 | 8:00 a.m. until 5:00 p.m. |

No unauthorized person, vehicles, or watercraft shall enter into or remain within LPNT or Park at any time other than the aforementioned time.

#### Use of LPNT and Park

Subject to these Rules and Regulations, all members of the public shall be allowed access to and use of LPNT and the Park. Access and use shall be for recreational purposes only.

#### Diving, Climbing and Jumping

Diving, climbing, and jumping on from or into the Colorado River is strictly prohibited.

#### Explosives and Fireworks

No person may possess within LPNT or the park gunpowder or other combustibles, explosives, or fireworks without SPECIFIC APPROVAL from BCWCID #2. This provision does not apply to gasoline and other petroleum products in fuel tanks of motor vehicles, or to petroleum products intended to be used as fuel for cooking.

#### Wildlife

No person shall willfully harm, harass, trap, confine, catch, or possess any wildlife within LPNT or the Park. This prohibition does not apply to fishing by individuals who possess a valid fishing license issued by the Texas Parks and Wildlife Department.

#### Hunting and Weapons

**Hunting is prohibited within LPNT and the Park and the discharge of any weapon is strictly prohibited in LPNT and the Park.** "Weapon" means a rifle, bow and arrow, crossbow, club, handgun, firearm, illegal knife, shotgun, short-barrel firearm, gas gun or gas pistol, BB gun or BB pistol, pellet gun or pellet pistol, zip gun, sling or sling shot, and includes those objects defined as weapons or prohibited weapons in Chapter 46 of the Texas Penal Code.

The prohibition on the discharge of handguns, firearms, and shot guns in this paragraph does not apply to law enforcement authorities.

Knives with a blade of 4 inches or longer are not allow in LPNT or the Park. This includes swords, machete, large hunting knives, etc.

#### Landscaping

**No visitor to LPNT or the Park shall introduce any type of vegetation into the Park or LPNT.** No person shall willfully destroy or remove any tree, shrub, vine, wildflower, grass, fern, moss, leaves, cones, or dead or downed wood within LPNT or the Park.

#### Fires

Fires are PROHIBITED within LPNT and the Park. No person may light, build, or maintain a fire within LPNT or the Park other than within furnished barbecue pits or fire rings.

This rule does not apply to the lighting, burning, or smoking of a cigar, cigarette, or pipe used for the smoking of tobacco.

#### Camping

Camping in LPNT and the Park is PROHIBITED.

#### Garbage Disposal

Trash, garbage, refuse or other waste or pollutants of any kind shall not be disposed of in or near the Colorado River. All waste shall be disposed of in an appropriate manner. Visitors may take their refuse, trash, or garbage with them or use the trash receptacles located throughout LPNT and the Park.

#### Vehicles

It is PROHIBITED to operate any vehicle within LPNT or the Park in a manner which damages or unreasonably disturbs the land, wildlife, or vegetation.

Pursuant to Section 90.002 of the Texas Parks and Wildlife Code, the operation of motor vehicles in or on a protected freshwater area is PROHIBITED. Mudding, mud dogging, mud running, mud racing, and vehicle off-roading are PROHIBITED.

No person shall operate a vehicle within LPNT or the Park without prior approval from BCWCID #2. No person shall operate a vehicle within LPNT or the Park except on the roads or parking lots within LPNT or the Park. No person shall park a vehicle on any road within LPNT or the Park except in the designated parking area. No person shall operate or park a vehicle on any walkways or paths within LPNT or the Park. This paragraph does not apply to BCWCID #2 personnel or licensed peace officers.

“Vehicle” means every device in, upon, or by which any individual or property may be transported or drawn upon a road, except a device moved by human power.

No person shall cause a vehicle to remain within LPNT or the Park after closing unless permission is granted by BCWCID #2. Vehicles remaining within LPNT or the Park without approval may be towed and placed in storage by a licensed peace officer at the owner’s expense.

Parking within the river access area (actual take-out area) is only permitted for the purpose of loading and unloading watercraft. Parking is limited to 30 minutes in this area.

Improperly parked vehicles may be towed at the owner’s expense.

#### Glass Beverage Containers

No person shall use or possess any glass containers in LPNT or the Park.

#### Pets

Visitors shall not bring animals or pets into LPNT or the Park except for horses, dogs, and cats. Dogs and cats must be restrained at all times by a leash not exceeding 6 feet in length. Dogs and cats shall not be allowed to chase or harm any waterfowl or wild animals within LPNT or the Park.

**IT IS THE VISITOR’S RESPONSIBILITY TO REMOVE HIS/HER PET’S WASTE FROM LPNT AND THE PARK AND DISPOSE OF SUCH WASTE IN THE APPROPRIATE TRASH RECEPTACLES LOCATED THROUGHOUT LPNT AND THE PARK.**

“Pet” means a domesticated animal.

#### Nuisances/Disorderly Conduct/Removal from Premises

If such person fail(s) to leave as instructed, then a licensed Peace Officer shall escort the person(s) from LPNT or the Park, and if necessary, make arrests where appropriate.

#### Dumping, Littering, and Destruction of District Property

The disposal of rubbish in any manner other than by depositing it in trash cans provided for this purpose; the willful destruction of, damage to, or theft of BCWCID #2 property; and the creation of any hazard to persons or things within LPNT or the Park is PROHIBITED. No person shall bring any trash, refuse, or waste material into LPNT or the Park.

#### Solicitation and Sale of Goods and Services

The solicitation or the sale of goods and services within LPNT or the Park is PROHIBITED.

## Enforcement

All visitors shall abide by these Rules and Regulations and shall assist BCWCID#2 in their enforcement.

Law enforcement authorities shall be authorized to remove any person who violates any of the Rules and Regulations stated herein from LPNT or the Park. Where applicable, violators shall be subject to civil and/or criminal prosecution.

## Safety

The safety and well-being of visitors is the primary goal of BCWCID #2. LPNT and the Park are maintained to provide as much safety as reasonably can be expected. However, all visitors should recognize that there are associated risks inherent with all parks and rivers, and these risks are assumed by visitors.

## Indemnification

**Every visitor does hereby agree to defend, indemnify and hold harmless BCWCID #2 and its Board of Directors from and against any such claim for injury or damage to the visitor, his property, employees, agents, customers or guests, whether the injury or damage results or is claimed to have resulted from any negligence of BCWCID #2 or its Board of Directors.**

Below is a list of safety rules to be followed by all visitors:

1. No water craft shall be left unattended in the water at any time.
2. No water craft shall be stored in the water.
3. All recreational boats including canoes and kayaks must have one wearable U.S. Coast Guard-approved life jacket, also known as a personal flotation device (PFD), for each person on board.
4. All children under the age of thirteen (13) shall be accompanied by an adult or guardian while in any water craft.
5. Each occupant on a personal watercraft (jet skis, wave runners, etc.), regardless of age, must wear a life jacket.
6. Feeding and interaction with wildlife and/or waterfowl is prohibited.
7. Any person witnessing any concerning action or discovery of any concerning situation should immediately notify a licensed peace officer or a member of the Board of Directors.

This is by no means an exhaustive list of safety rules and every visitor should exercise caution and common sense when a question arises regarding safety issues relating LPNT, the Park, and waterways.

### Modifications

These Rules and Regulations may be amended from time to time by the Board of Directors of BCWCID #2. The current Rules and Regulations may be obtained at the BCWCID #2 Office.

### Effect on Existing Law

These Rules and Regulations are in addition to, and not in lieu of, all federal, state, and local laws, rules, and regulations applicable to LPNT, the Park and waterways.

### Posting

Notice of these Rules and Regulations shall be conspicuously posted at or near the entrance of LPNT and the Park. A complete list of the current Rules and Regulations may be obtained at the BCWCID #2 Office.

### Effective Date

These Rules and Regulations shall become effective on July 16, 2015. All previous Rules and Regulations are superceded and repealed effective the same date.

### Severability

The provisions of these Rules and Regulations are severable. If any part of these Rules and Regulations should be held invalid or unconstitutional, it shall not affect the validity of the remaining provisions.

## Appendix C



### TEXAS PARKS AND WILDLIFE DEPARTMENT

### WILDLIFE & HABITAT MANAGEMENT RECOMMENDATIONS

|                         |                                 |                          |                                      |
|-------------------------|---------------------------------|--------------------------|--------------------------------------|
| <b>Tract Name:</b>      | <u>Lost Pines Nature Trails</u> | <b>County:</b>           | <u>Bastrop</u>                       |
| <b>Owner:</b>           | <u>Bastrop County WCID#2</u>    | <b>Manager:</b>          | <u>Lost Pines Master Naturalists</u> |
| <b>Mailing Address:</b> | <u>P O BOX 708</u>              | <b>Property Address:</b> | <u>375 RIVERSIDE DR</u>              |
| <b>Phone:</b>           | <u></u>                         | <b>Phone:</b>            | <u></u>                              |

**OBJECTIVE:** Enhance property for the purpose of flood mitigation and outdoor recreational use for the benefit of county residents. Compatible uses include trail walking, nature and wildlife viewing and photography, ecological education, and paddling sports.

**IS PROPERTY LEASED FOR HUNTING?** Yes( ) No(x)

**CONSULTATION IS WITH:** Owner( ) Lessee( ) Manager(x)

**LOCATION OF PROPERTY:** Please see attached map; Bastrop County along Colorado River in Tabitian Village Subdivision

**IS ACREAGE UNDER HIGH FENCE?** Yes( ) No(x)

**TOTAL ACRES:** 28.483

#### CURRENT HABITAT DESCRIPTION

##### General

Riparian habitat; bottomland hardwood. Within the flood plain of the Colorado River. Adjacent to the Lost Pines ecosystem, but vegetation primarily represents riparian areas of the Post Oak Savannah.

##### Vegetation

Commonly Associated Plants of the Post Oak Savannah region include Blackjack oak, eastern redcedar, mesquite, black hickory, live oak, sandjack oak, cedar elm, hackberry, yaupon, poison ivy, American beautyberry, hawthorn, supplejack, trumpet creeper, dewberry, coral-berry, little bluestem, silver bluestem, sand lovegrass, beaked panicum, three-awn, spranglegrass, tickclover. Some crossover of plants of the Lost Pines ecosystem may be present.

##### Soils

Bosque-Smithville-Norwood. Nearly level soils that have a loamy surface layer and moderately permeable lower layers.

## **PAST HISTORY OF LAND USE AND WILDLIFE**

The area has been retained as “green space” for flood mitigation and recreational use. The area is adjacent to a moderately dense, forested residential neighborhood to the north. The land to the south and on the opposite bank is primarily used for agricultural purposes, including cattle grazing and farming (commercial pecan orchard). Historically, (prior to the most recent management), control and management of the area has been minimal and generally ad hoc for acute damage. Use by area residents had been declining, and use by people for illegal or incompatible activities, including illegal activities and off-roading, had been increasing. For these reasons, local homeowners, outdoor enthusiasts, NPO’s, and county officials had been working together to increase beneficial use, especially trail walking, wildlife and nature watching, kayaking and other paddling sports, and other compatible outdoor activities.

## **BACKGROUND**

Riparian zones throughout most of the Pineywoods and Post Oak Savannah regions of Texas are mainly bottomland hardwood forests. These forests are subject to frequent flooding. This habitat along the Colorado River supports remnant bald cypress and water tupelo in addition to pecan, sycamore, cottonwood, and cedar elms. Bottomland hardwood forests harbor an incredible variety of wildlife. A survey by the U.S. Fish and Wildlife Service recorded 273 species of birds, 45 mammals, 54 reptiles, 31 amphibians, 116 species of fish and innumerable invertebrates. This amazing variety of wildlife includes such resident birds as the red-shouldered hawk, barred owl, and pileated woodpecker, as well as numerous neotropical migratory birds such as Northern parula, prothonotary warbler, and Kentucky warbler. Game birds include wild turkey, mallard, and wood duck. Mammals include beaver, swamp rabbit, river otter, bobcat, and white-tailed deer.

The Lost Pines Nature Trails area is located in what is called a “riparian buffer.” This is very valuable, both from a wildlife habitat perspective and a water conservation perspective. A properly functioning riparian buffer will be accomplishing the following things:

- Banks and channels will become more stable with the right kinds and amounts of vegetation resulting in less erosion
- The high energy of flood flows will be dissipated by riparian vegetation, especially woody vegetation
- Water velocity will be slowed down, allowing more sediment to drop
- Sediment will be trapped and stabilized by riparian vegetation
- Excess nutrients, will be utilized by riparian vegetation; contaminants or pathogens (if any) will be broken down or destroyed by microbial activity in riparian areas
- Organic materials will be trapped by riparian vegetation providing a more favorable situation for additional plant establishment
- Riparian banks and floodplains, when properly vegetated will act as a sponge to absorb and store a portion of flood flows. This water will then be released slowly to improve the hydrology of the stream after a runoff event
- The diversity of vegetation will provide improved habitat for wildlife and aquatic species

(From Riparian Notes Number 1, December, 2003 Steve Nelle, NRCS, San Angelo, Texas)



## **GENERAL HABITAT MANAGEMENT RECOMMENDATIONS**

**GENERAL** A general knowledge of the plant species (weeds-forbs-grasses-brush-trees, etc.) present on the land is vital to the development of a wildlife habitat management plan. The quality of habitat for individual wildlife species will be limited by the presence or absence of many of the native plant species found in this part of the state. The geologic formations and soils found on your property dictate the composition and variety of plants present. It is the degree of utilization and your present land use that will influence the quality of habitat for wildlife. The number of different species, their density, distribution, seasonality, and their configuration on the landscape will determine for the most part what potential your land has for producing and sustaining wildlife species you want to managing for.

Habitat can be defined as that unique combination of food, cover, water, and space and its configuration in the environment that allows animals to exist. Each species has its own habitat needs for survival and reproduction. It is that special combination, degree, and ratio of those individual components, as they occur on the landscape and are influenced by your management, that will determine the carrying capacity of the land for wildlife.

**Cover** is an important component of wildlife habitat. Cover provides security from predation and exposure to disturbance from other environmental factors and weather and may also provide sources of food or nesting habitat for small mammals or songbirds. Although cover requirements are different for each wildlife species, all require it. Long-term planning should be made before any type of vegetative control or manipulation measures are implemented. Consideration must be given to the cover requirements for those species to be managed for. For every action you take on the land, there will be a reaction. Any vegetative manipulation practice will have an impact on resident wildlife species, either good or bad, depending on the type of treatment used, the degree of use, and location.

Consider the location and size of sensitive wildlife habitats that provide important nesting or roosting sites, feeding areas, desirable wildlife food producing plants, cover, water, and space needs. Wildlife can be displaced by disturbances from an area without adequate escape or security cover. The amount and distribution of cover on adjacent lands need to be taken into consideration when assessing cover needs of wide-ranging wildlife species such as deer or turkey. A small ranch would need a larger amount of security cover on a percentage basis than would a large ranch where the vastness of the area provides added security.

The best cover for a large species such as white-tailed deer is a pattern or mosaic of woody brush and trees interspersed with openings at an approximate 2 to 1 ratio of open area to woody cover. Clumps or strips of brush should be wide enough so that an observer (during the winter dormant period) cannot see through them to the other side. Cover strips should be as continuous as possible to provide travel lanes that connect larger areas of continuous cover. A habitat that provides several different types and arrays of cover benefits more species of wildlife that a habitat that has limited types, amounts, and distribution of cover.

**RIPARIAN VEGETATION:** Native plants are vital components of riparian systems, and provide food and shelter for wildlife as well as help stabilize banks and increase the water-holding capacity of the riparian system. Some excellent plants to preserve and re-establish along the Lost Pines Nature Trails banks and shores include:

|                   |                 |                       |
|-------------------|-----------------|-----------------------|
| Emory sedge       | Eastern gamma   | Indigobush amorphia   |
| Sawgrass          | Deergrass muhly | Black willow          |
| Bulrushes (most ) | Big sacaton     | Baccharis, seepwillow |
| Spikerushes       | Water willow    | Cottonwood            |
| Knotgrass         | Scouring rush   | Sycamore              |
| Bushy bluestem    | Spiny aster     | Little walnut         |
| Rabbitsfoot grass | Frogfruit       | Roughleaf dogwood     |
| Switchgrass       | Buttonbush      | American elm          |

## HABITAT MANAGEMENT FOR NONGAME WILDLIFE SPECIES

**Plant diversity** is an important component of good wildlife habitat. Habitats with a variety of plants (both annual and perennial, herbaceous and woody) that produce different cover types and foods throughout the year have greater habitability than those that do not. Habitat dominated by relatively few species is less likely to support high populations of wildlife. Plants that produce fruits, nuts, seeds, berries, buds, foliage and nectar during different seasons of the year are important to wildlife. The greater the variety - the better the habitat.

**Deciduous plants** provide cover, shelter, nesting sites and abundant food sources during the warm seasons but lose their leaves during winter months. Landscapes dominated by deciduous vegetation may become less habitable for many wildlife species after leaf drop in the fall and late winter when cover diminishes. Protection from predators diminishes. Evergreen or **non-deciduous** plants found in north-central Texas such as Ashe juniper, eastern red cedar, and liveoak provide year around cover, protection, and nesting sites throughout the year. Habitat containing both deciduous and non-deciduous plants is a desirable characteristic of good wildlife habitat. Habitat should contain varying degrees of shape, heights, and density of vegetation to meet the needs of different wildlife species. Tall trees restrict sunlight from reaching the ground and can be thinned or openings created to stimulate growth of understory shrubs and other herbaceous vegetation.

Dead tall trees often contain cavities or loose bark where insects hide or burrow into wood. These "**snags**" are important to many birds and small mammals for den and nest sites and food sources. Woodpeckers (downy, ladder-backed or red-bellied woodpeckers), flickers, wrens, chickadees, nuthatches, bluebirds, mice, flycatchers, screech owls, squirrels, lizards, and many other species use them, and they should be retained on the landscape. Several species of bats roost in interior cavities of snags or under loose bark. Snags can be created where surplus timber occurs in dense woodlands by "girdling" with a saw into the inner bark layers which will eventually kill the tree and produce dead standing timber. If undesirable woody species occur, a concentrated effort can be made to select individual tree of those species for girdling to kill them and at the same time provide standing habitat structure for wildlife.

Planting a mixture of **native grasses** and **native wildflowers** in open areas will compliment woody cover and provide habitat for insects and feeding and nesting areas for birds and small mammals. Most wildflowers should be planted during the fall on a prepared seedbed in full sunlight for spring germination and growth. Perennial and annual species will provide long-term vegetation once they are established and regrow each year with little or no soil disturbance.

Seeds should not be planted deep but rolled or pressed only 1/16 of an inch into the soil that has been tilled to a depth of one inch. Periodic watering and control of unwanted weeds and annual grasses may be required to establish wildflowers or native perennial grasses. Mixed plantings also help control water and wind erosion of the soil. The use of prescribed burning is a tool that can be used to help regenerate and restore meadows and prairies that are important habitats for many ground nesting birds and small mammals.

Many species of wildlife prefer low to mid-stages of **plant succession**. Plant succession is the natural process of recolonization of disturbed soil sites by plants. Annual weeds and grasses are the first plants that normally reappear and over time are replaced by perennial weeds and grasses or woody species adapted to the area (climax plant communities). Land management practices that set back climax plant communities and replace some of the climax species with other annual and perennial species may result in enhanced habitat for wildlife. Use of management tools such as grazing, fire, herbicides and soil disturbance by mowing, plowing or disking can be used to achieve lower stages of plant succession without planting new species.

#### **INDIVIDUAL PREPARING PLAN:**

**Kelly Conrad Simon**  
**Texas Parks & Wildlife Department**  
**PO Box 521**  
**Bastrop , TX 78602**  
**[Kelly.simon@tpwd.texas.gov](mailto:Kelly.simon@tpwd.texas.gov)**

**Date: October 1, 2015**

## Appendix D: Grant Sources

| Funding Source   | Purpose   | Application Deadline | Funding Available           | Match   | Eligible Organizations   | Length of Project                          |
|--|---|----------------------|-----------------------------|---|--|--|
| National Park Service Rivers, Trails & Conservation Assistance Program<br><a href="http://www.nps.gov/rtca">http://www.nps.gov/rtca</a>  | Community Partnerships conservation and outdoor recreation  | August 1             | In kind planning assistance | Assistance commitment letters from 3 Partners | State or local agencies, nonprofit organizations, or citizen groups. | 1 year, may extend to 2 <sup>nd</sup> year |
| Texas Parks and Wildlife (TPWD) Local Park Outdoor Recreation Grants, Non-Urban<br><a href="https://tpwd.texas.gov/business/grants/recreation-grants/about-local-parks-grants">https://tpwd.texas.gov/business/grants/recreation-grants/about-local-parks-grants</a>   | Development of public recreation areas and facilities   | October 1            | \$500,000                   | 50%   | Political subdivisions of Texas under 500,000 population             | Expect to complete in 2 years              |
| Texas Parks and Wildlife (TPWD) Local Park Small Community Grants, Non-Urban<br><a href="https://tpwd.texas.gov/business/grants/recreation-grants/about-local-parks-grants">https://tpwd.texas.gov/business/grants/recreation-grants/about-local-parks-grants</a>  | Development of public recreation areas and facilities   | October 1            | \$75,000                    | 50%   | Political subdivisions of Texas under 20,000 population              | Expect to complete in 2 years              |
| Texas Parks and Wildlife (TPWD) Rec Trails Grants<br><a href="https://tpwd.texas.gov/business/grants/recreation-grants/recreational-trails-grants">https://tpwd.texas.gov/business/grants/recreation-grants/recreational-trails-grants</a>   | Development of trails for recreation, new and rehabilitated   | February 1           | \$200,000                   | 20%   | Political subdivisions and nonprofits                                | Expect to complete in 2 years              |
| Texas Parks and Wildlife (TPWD) Community Outdoor Outreach Program Grants<br><a href="https://tpwd.texas.gov/business/grants/recreation-grants/community-outdoor-outreach-program-co-op-grants">https://tpwd.texas.gov/business/grants/recreation-grants/community-outdoor-outreach-program-co-op-grants</a> | To build relationships with non-traditional constituencies who have been underrepresented in TPWD activities and programs | February 1           | \$5,000 - 50,000            | No funds but in-kind contributions            | Political subdivisions and nonprofits                                | Expect to complete in 1 year               |

| Funding Source   | Purpose   | Application Deadline     | Funding Available | Match    | Eligible Organizations  | Length of Project            |
|--|---|--------------------------|-------------------|----------|-------------------------|------------------------------|
| <b>LCRA Community Development Partnership Program</b><br><a href="http://www.lcra.org/community-services/community-and-economic-development/pages/community-grant-program.aspx">http://www.lcra.org/community-services/community-and-economic-development/pages/community-grant-program.aspx</a> | Support community and economic development and benefits the public  | February 1 & September 1 | \$25,000          | 20%      | Government Nonprofits   | 12 months                    |
| <b>National Fish &amp; Wildlife Foundation's Wildlife &amp; Habitat Conservation</b><br><a href="http://www.nfwf.org/fivestar/Pages/home.aspx">http://www.nfwf.org/fivestar/Pages/home.aspx</a>  | Projects that sustain restore, & enhance conservation of nation's fish & wildlife & plants & their habitats | Varies                   | \$20,000 – 50,000 | Partners | Governments, nonprofits | 1-2 years                    |
| <b>Waste Management Charitable Giving</b><br><a href="http://www.wm.com/about/community/charitable-giving.jsp">http://www.wm.com/about/community/charitable-giving.jsp</a>   | Lends support and services to conserve & maintain wetlands, etc.  | Year round               |                   |          | Nonprofits              |                              |
| <b>Wellis Fargo Foundation Part of National Fish &amp; Wildlife</b><br><a href="http://www.nfwf.org/Pages/default.aspx">http://www.nfwf.org/Pages/default.aspx</a>   | Focus on water quality and land conservation  | mid Dec                  |                   |          | Nonprofits              |                              |
| <b>Union Pacific Foundation Community Based Grants</b><br><a href="https://www.up.com/aboutup/community/foundation/grants/index.htm">https://www.up.com/aboutup/community/foundation/grants/index.htm</a>  | Improve & enrich quality of life  | August 15                |                   |          | Nonprofit               |                              |
| <b>Habitat Enhancement Grants</b><br><a href="http://www.co.bastrop.tx.us/default.aspx?name=ds.lphcp_grants">http://www.co.bastrop.tx.us/default.aspx?name=ds.lphcp_grants</a>   | To improve the habitat for the Houston Toad   | Anytime                  |                   | 50%      | Landowner               | 1 yr with extension possible |

