



Twin Buttes Reservoir Recreation Use Plan

2012



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INTRODUCTION

Twin Buttes Dam and Reservoir consist of approximately 12,858 acres of land, of which 9,800 acres are included in the conservation pool. The reservoir and surrounding land is part of the San Angelo Project administered by the U.S. Department of Interior; Bureau of Reclamation. The reservoir was created by the construction of Twin Buttes Dam in 1963 in Tom Green County, Texas. The Middle Concho River and Spring Creek form the North Pool, while the South Concho River forms the South Pool, and the two pools of the lake are connected via an equalization channel. The recreation area is managed by the City of San Angelo via a contract with the Bureau of Reclamation. The reservoir provides flood control, irrigation, and municipal drinking water, while the surrounding land and shoreline allows for many recreational opportunities such as fishing, hunting, and camping.



Challenges the area faces are fluctuating water levels due to drought conditions, management of mesquite, salt cedar, and willow baccharis, road maintenance and vehicular management, managing litter and illegal dumping, and maintaining public safety of multiple user groups. On the positive side, the open space that Twin Buttes affords is a tremendous natural resource, essentially in the City of San Angelo's backyard, that could be a fantastic public recreation area given some improvements and management actions. This plan aims to explore the different options available for the future of Twin Buttes Reservoir Recreation Area through review of case studies of successful park models, public input, and best practices in natural resource management.

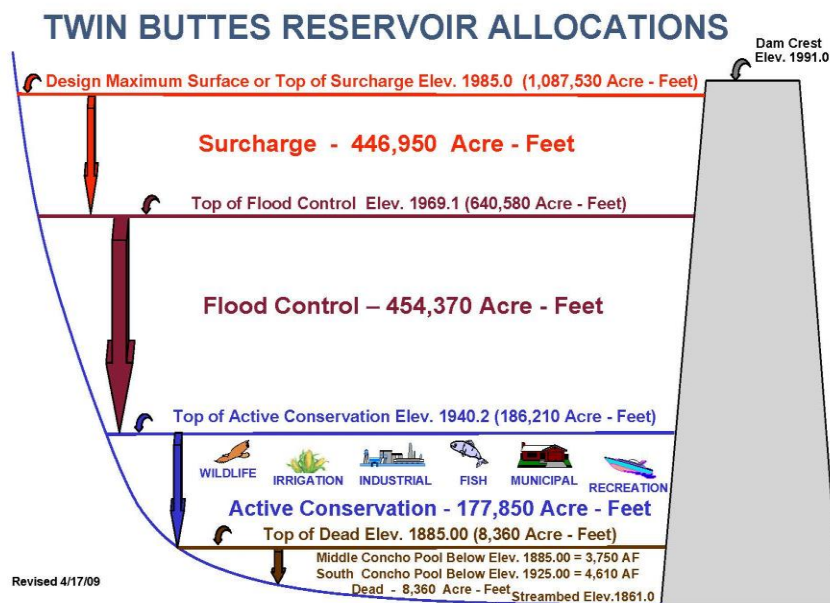


ASSESSMENT OF NATURAL AND CULTURAL RESOURCES

Water Bodies

Twin Buttes Reservoir is the centerpiece of the Recreation Area, designed and constructed for 640,568 acre feet of total storage capacity (including flood control) inundating 23,508 acres of land. The San Angelo Project would consist of approximately 9,800 water surface acres, 3,060 land acres, and 55 miles of shoreline if the lake was filled to conservation pool level of 1,940 ft. At the time of this publication, current pool elevation was 1,890.12 ft. with the reservoir being 4.1% full at 7,705.27 acre-feet of water.

The reservoir has only been above elevation 1,930 ft. twice since 1980, and approximately 5,900 surface acres are inundated at this elevation, potentially opening up additional lands for interruptible uses.



Spring Creek and the Middle Concho River flow into the North Pool of the reservoir, which is the largest, main pool of the reservoir complex. The South Concho River flows into the South Pool of the reservoir, which is the smaller and shallower pool and is most affected by evaporation. This evaporation loss has contributed to a decision (at the time of this publication) to pump the remaining water out of the South Pool into the North Pool to salvage the remaining water from evaporation. Given the reservoir's main function of providing drinking water – the conservation of water is a priority – and this presents challenges to recreational use which will be explored further in this plan.

Vegetation

The Twin Buttes Reservoir Recreation Area is located in Tom Green County which lies at the crossroads of the Edwards Plateau and the Rolling Plains eco-regions in Texas shown in the Gould Ecoregions of Texas map below. The Recreation Area falls within the Plains eco-region and has plants such as buffalo, grama, wheat, and Indian grasses, as well as mesquites, salt cedars, willow baccharis, ashe juniper, cat's claw acacia, prickly pear, cacti, and yucca. The river and creek bottom areas house pecan trees, and some oak trees.

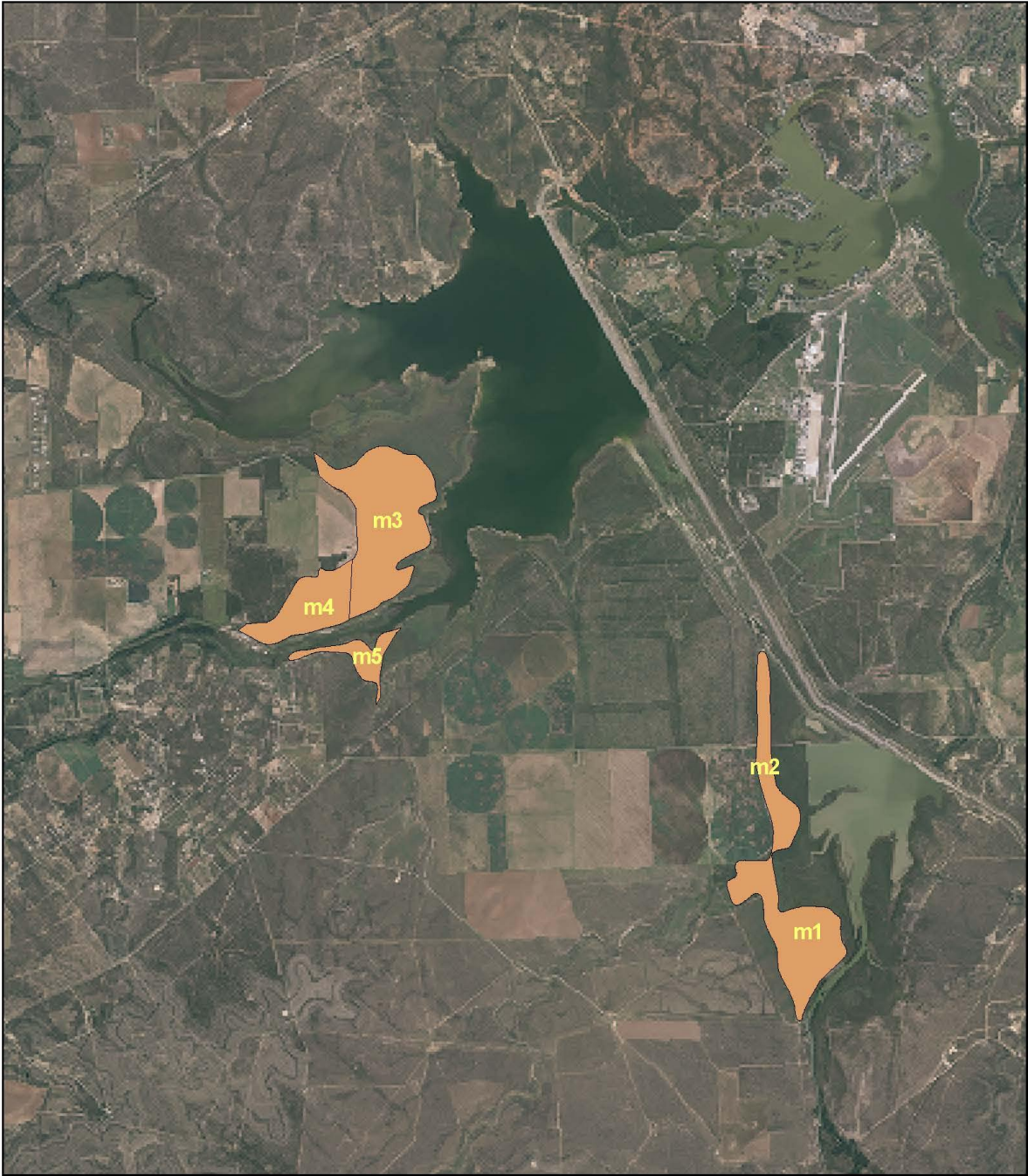
The primary vegetation in the Recreation Area is by far mesquite, which poses problems when unchecked. Mesquite trees are very hardy, drought tolerant plants that can draw water up from the water table using their very long tap roots. The overgrowth of mesquites obviously poses a problem in an arid area with a reservoir designed to hold water.

Additionally, salt cedar is prominent in the Twin Buttes Reservoir Recreation Area, and is an invasive species with a similar long tap root that draws water from the water table. Willow baccharis is another aggressive invader species found in the Twin Buttes area that has little value for wildlife or livestock and competes with other more desirable vegetation. Mesquite, salt cedar, and willow baccharis continue to invade new areas of the Recreation Area as the reservoir levels drop due to drought conditions.

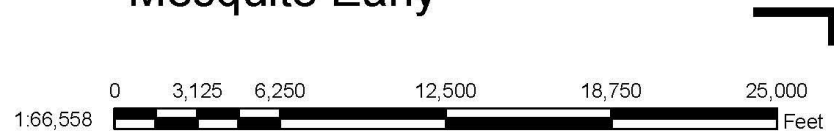


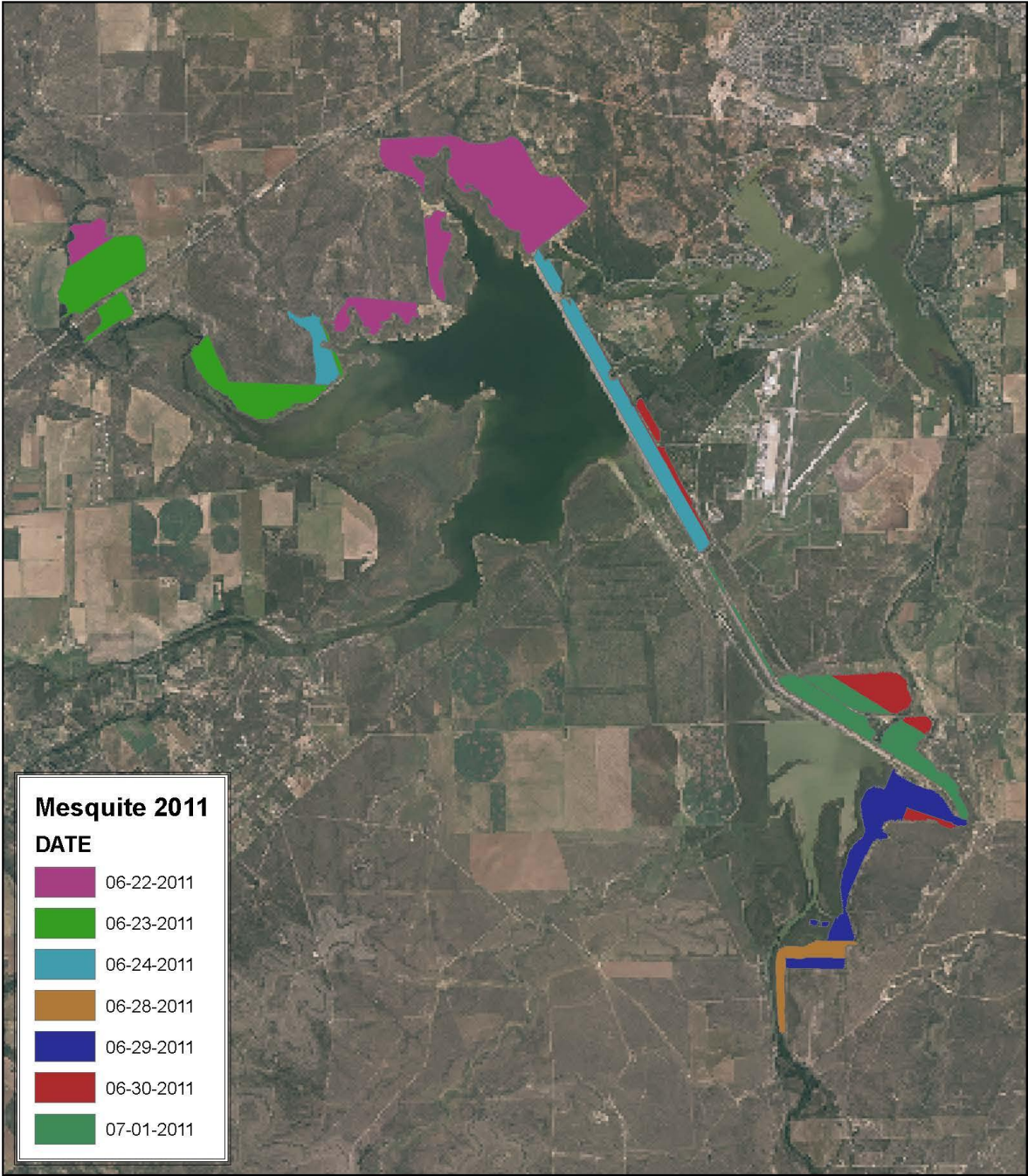
The Upper Colorado River Authority, in coordination with the Bureau of Reclamation, has engaged in herbicide spraying of these brush species to maintain the water storage capacity of the reservoir and water flow of tributaries. The following maps show areas surrounding Twin Buttes Reservoir that have been sprayed with herbicide to control this vegetation.



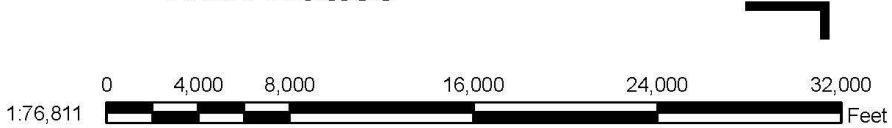


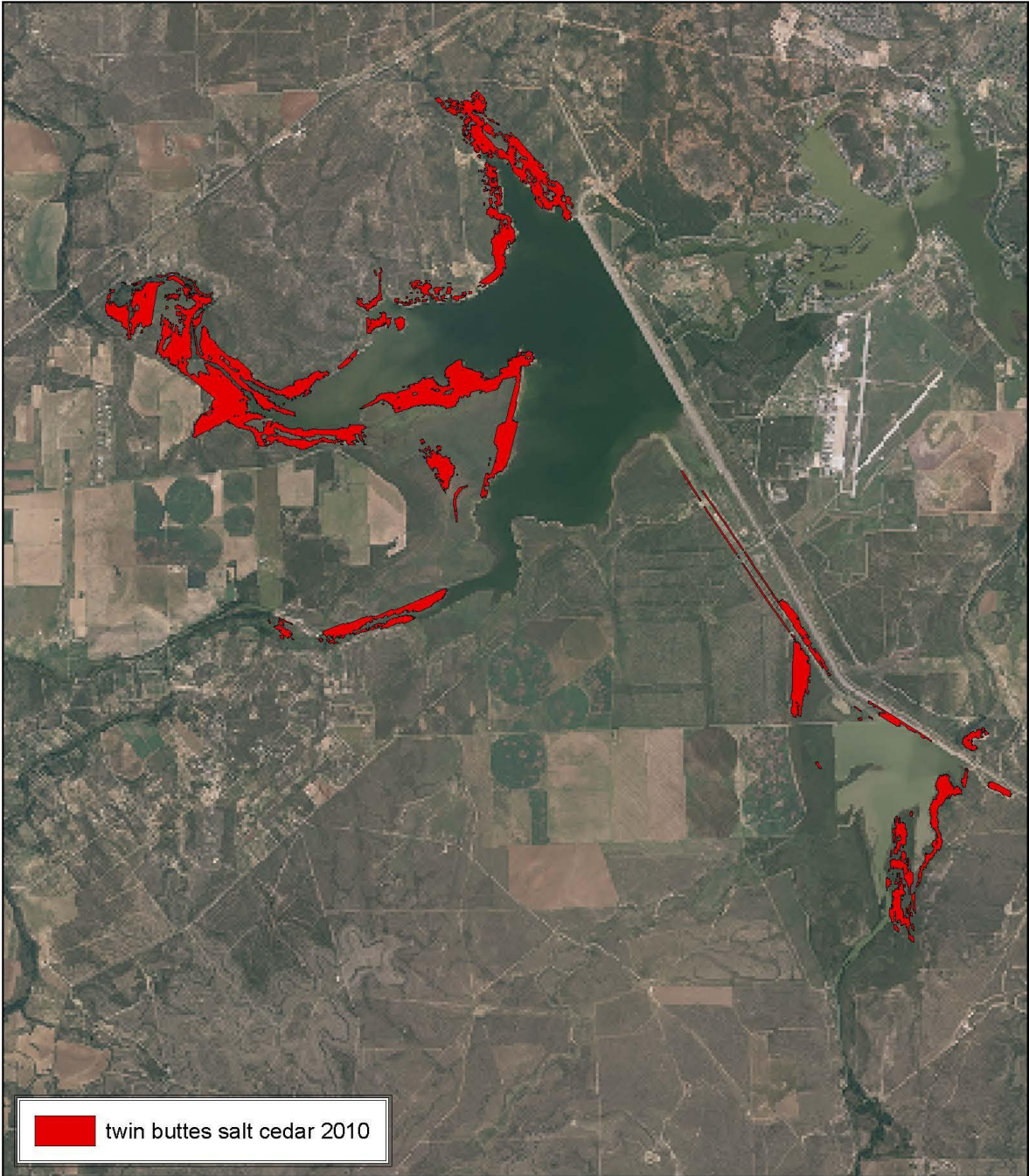
Mesquite Early





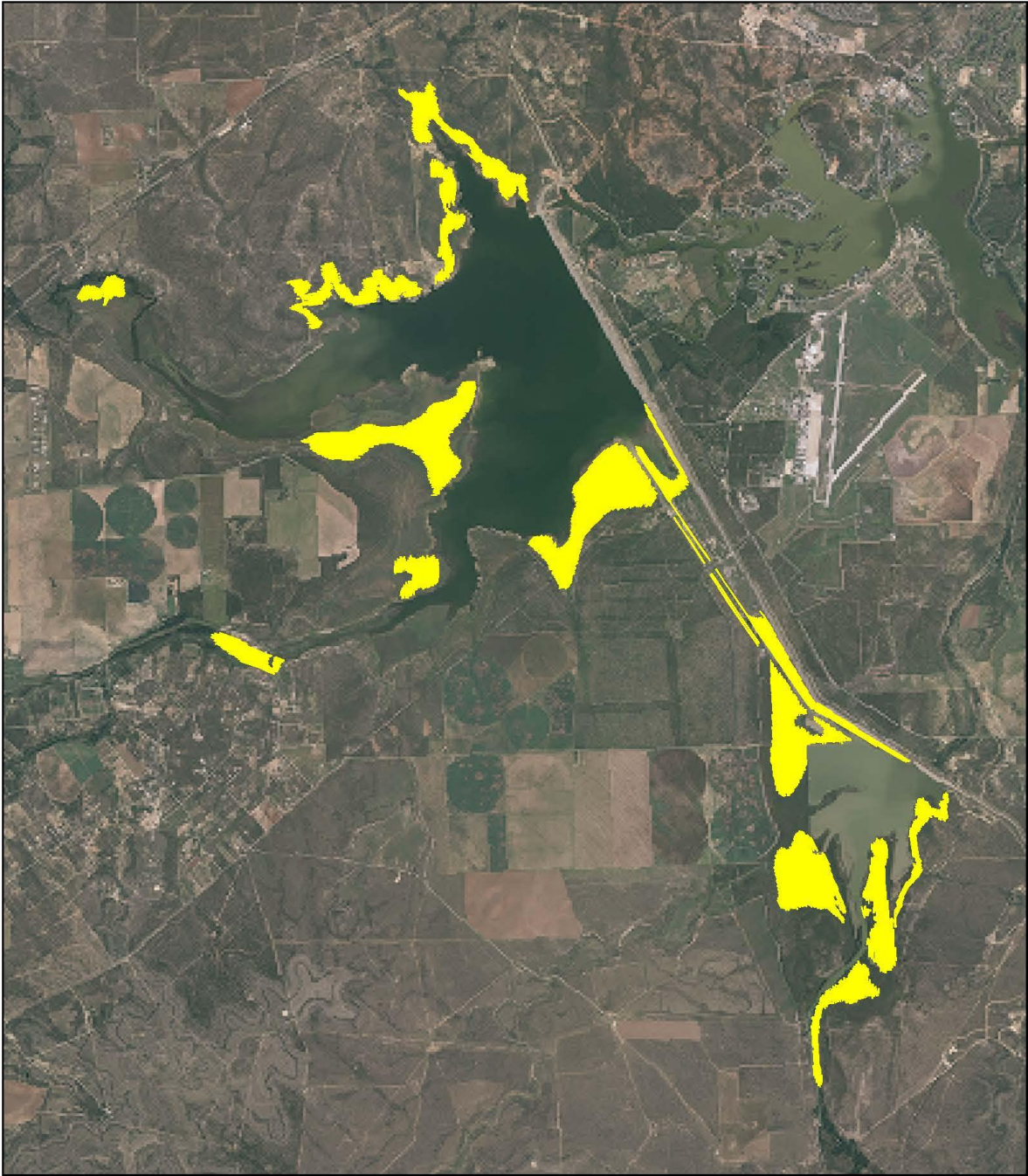
Twin Buttes





Salt Cedar 2010





Willow Baccharis 2010



Wildlife

Common wildlife of the Rolling Plains eco-region and Twin Buttes Reservoir Recreation Area include key hunting species such as whitetail deer, Rio Grande turkey, mourning dove, quail, and feral hogs. Small mammals such as foxes, bobcats, rabbits, skunks, and squirrels also call the area home. Reptile species that inhabit the Twin Buttes area include the Texas horned lizard and the western diamondback rattlesnake.

The reservoir provides habitat for several species of fish that have been stocked over the years - Largemouth bass, White bass, White crappie, Sunfish, Channel, Flathead & Blue catfish. The reservoir also provides critical stop-over habitat for migrating bird species such as ducks, pelicans, grebes, wrens, herons, and hawks.

All of the wildlife present affords great viewing opportunities for nature lovers and photographers, as well as great public hunting opportunities for San Angeloans and visitors to enjoy.



Cultural Resources

There are approximately 200 archeological sites recorded within the boundaries of the Twin Buttes Project. A complete archeological study was done in 2001 (Twin Buttes Archeological Report, David L. Nickels and Raymond P. Mauldin,) which provides a unique picture and history of the lives of earlier inhabitants from both the prehistoric and historic periods. The remains of early historic structures and farmsteads are found all around the reservoir. Historic Indian Tribes such as Comanche, Apache, and Kiowa frequented the area. Prehistoric Indian sites representing over 10,000 years of occupation are common, and unique paleontological sites show evidence of life from before the first humans arrived. These sites are all extremely important, and protecting them is not only very beneficial to the community, but is also required under several Federal and State laws.



One of the more easily-identifiable sites is in an area that is frequented by recreationists on a rock cliff overlooking the Middle Concho River. The site is home to bedrock mortar holes that were used by early inhabitants to grind things like seeds, mesquite beans, corn and nuts. Currently this site is not protected from vehicular traffic and is not interpreted to the public via signage or other form of map or brochure material.

The best way to protect and preserve these valuable sites is to educate the public on their importance. Wherever possible, cultural and historical resources should be incorporated into future projects. Well researched interpretive signs and brochures would not

only engage the public in protecting these valuable sites, but could also significantly enhance the recreational experience of those using the park. These interpretive efforts would not only educate on the historical importance of the sites, but would also provide information about the penalties for damaging these resources. For example, metal detector use is not allowed on federal property except in limited situations where a permit is issued and the

impacts to the area have been previously evaluated under guidelines of the National Environmental Policy Act. Additionally, off road vehicles can cause extreme damage to archeological sites. There is also the very real prospect that human remains associated with these sites may be exposed by erosion and recreational activities. The Native American Graves Protection and Repatriation Act established very specific requirements for protection and repatriation of Native American human remains that might be encountered, and this information should be conveyed to the public.



ASSESSMENT OF CURRENT RECREATION USE

Currently there are many different types of recreational activities that are popular at Twin Buttes Reservoir Recreation Area. This section highlights the various activities and identifies any organized groups associated with the activity currently - whether a legal or illegal use as defined by the Bureau of Reclamation.

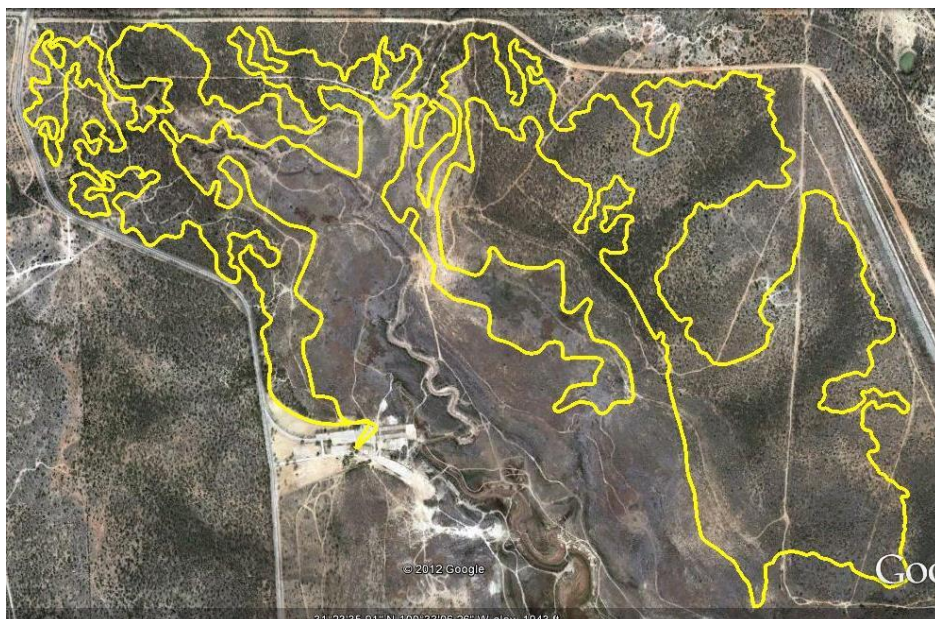
All-Terrain Vehicle (ATV) Trail Riding

There is an organized group of motorized trail riders known as the San Angelo Dirt Riders, who are very invested in the future of the Twin Buttes Recreation Area. The group has built a network of single-track motorized trails for all-terrain vehicles (ATVs) or motorcycle “dirt bikes” and works to maintain them and self-police them. The group has also built trail signage and installed them on the trails to direct visitors, as well as collected GPS coordinates to create a trail map available on the group’s website. The trail map has also been provided to city officials for emergency management and to address any 911 calls that may come from the parks’ trails.

The San Angelo Dirt Riders group has initiated clean-up events on their own, to address the litter and dumping problem in areas of the trail network, but many members are frustrated by the lack of area management and the continued occurrence of more dumping after they have just cleaned up an area. The Dirt Riders support safe and regulated trail riding, and are in favor of instituting common sense rules such as riding with helmets and no drinking and driving.

There are visitors who ride ATVs or dirt bikes in other areas of the park, and not on the designated trails, and this could pose a problem for public safety. For instance, an ATV rider could collide with a trail runner, or the few visitors that have been witnessed racing around the parking lot could collide with a vehicle or other visitors in the parking lot.

Legally, Reclamation lands are closed to all off road vehicle (ORV) use unless an area is specifically designated as an ORV area. If the City of San Angelo wishes to develop a designated ORV use area at this location, coordination with Reclamation should begin. The following map shows the current trail system developed by the San Angelo Dirt Riders group.



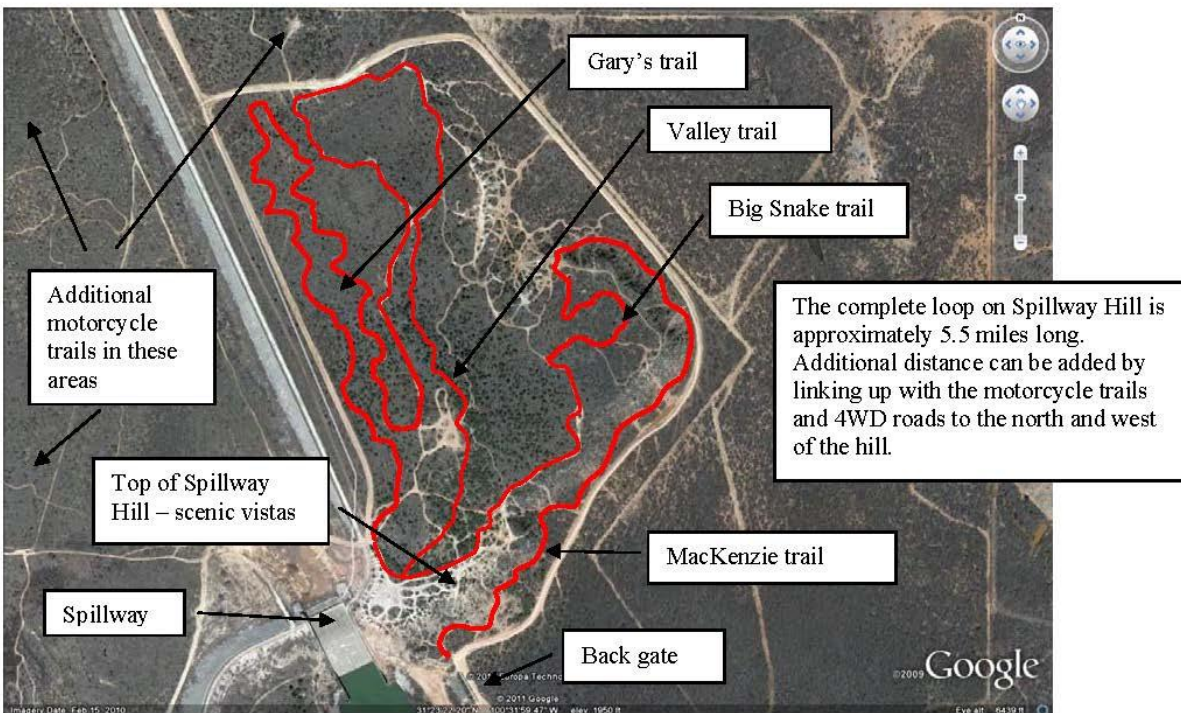
Trail Running & Mountain Biking

Trail running and mountain biking are two other popular activities that occur mainly in a specific area of the Twin Buttes Recreation Area known as “Spillway Hill” near the reservoir’s spillway and the boundary with Middle Concho Park. The trail running and mountain biking community has built the trail network in this area and has collected GPS coordinates and created a trail map to share with the running and biking community.

The Spillway Hill trails are not signed on the ground, but are marked on the following map and add up to a 5.5 mile loop. The problem with Spillway Hill is that motorized traffic is not restricted and the area currently sees a lot of full-size vehicle “rock-crawling” or off-road driving. It is evident on the map that there are other trails or roads that cross the running and biking trails, posing a problem for public safety.

There are organized groups in the trail running and mountain biking community and they are the San Angelo Road Lizards Running Club (www.roadlizards.org) and the San Angelo Bicycling Association (www.sanangelobicycleassociation.com.) The Road Lizards Running Club hosts races within Twin Buttes Recreation Area at various times of the year in the Spillway Hill trail area and both groups have hosted clean-ups of the trails they use.

Image #3: Spillway trails



The San Angelo Bicycling Association has developed a map of their mountain biking trail course that is included below. Most of the mountain biking trails are the same trails that the running club uses and since these two uses are compatible uses, there are little problems. However, some of the mountain biking course travels along other

dirt roads and trails where vehicle access is not restricted, thus causing a potential problem. The group's map denotes one portion of the trail on the west side as a single-track trail (meaning narrow and one-directional), yet this trail is not signed on the ground, thus a new visitor would not be aware of the direction they are supposed to travel unless they had prior access to the group's map.



Hunting

Hunting is allowed at Twin Buttes Recreation Area but is restricted to only bow hunting and hunting with a shotgun (no slugs). No other sorts of firearms may be fired at Twin Buttes and no firearms may be discharged outside of designated hunting seasons. Currently, no permit structure is in place which means hunters do not have to register with the city and do not have to pay any fees to hunt. Hunters are required to follow all state regulations which are in the Parks & Wildlife Code and all federal regulations specific to Bureau of Reclamation land which are 43 CFR Part 423 and Part 429.

Most hunters are likely law-abiding recreationists, and the many who turned out for public meetings expressed their disdain for those few hunters who are not following the rules. After spending a few minutes browsing the posts on the local bow hunting thread, www.texasbowhunter.com, it is evident that there is much confusion as to what the hunting regulations actually are at Twin Buttes Recreation Area. Since it isn't managed by a traditional

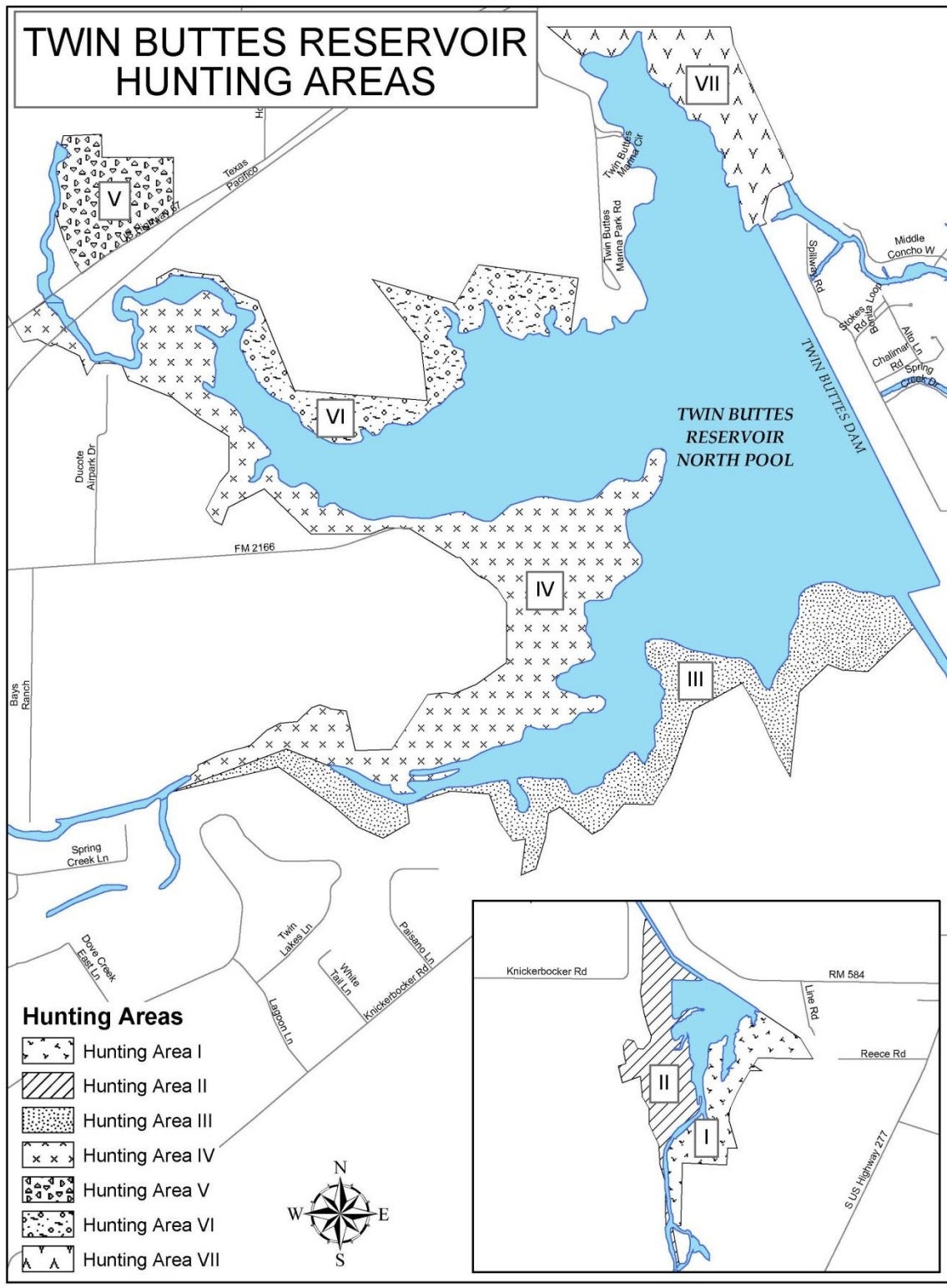
agency such as the Texas Parks & Wildlife Department, or managed in a traditional way with a permitting system, there is a sense of “anything goes” prevalent throughout the comments listed on the website thread.

The city has established designated hunting areas within the park, which is essentially the entire park, except for the main entrance area off of Twin Buttes Marina Road. The designations merely delineate the areas for reference purposes, and the regulations don’t differ between the areas. There are also no markings or signage on the ground to delineate where one area ends and another area starts unless there is a geographical boundary such as Spring Creek. This could pose a potential problem if a hunter was near the boundary of a hunting area and the public area near the boat ramps and fired in the direction of the boat ramps.

Waterfowl hunting is also a popular activity at Twin Buttes Reservoir; however as water levels shrink, the opportunities are diminished. There are two local organized Ducks Unlimited chapters in San Angelo – the San Angelo chapter (www.facebook.com/pages/San-Angelo-Ducks-Unlimited-Chapter), and the Angelo State University chapter (www.facebook.com/angelostateducksunlimited.) The San Angelo chapter has already offered their assistance for future volunteer labor projects such as installing floating docks at the South Pool for ease of launching small boats and kayaks.



TWIN BUTTES RESERVOIR HUNTING AREAS



- Hunting Areas**
- Hunting Area I
 - Hunting Area II
 - Hunting Area III
 - Hunting Area IV
 - Hunting Area V
 - Hunting Area VI
 - Hunting Area VII



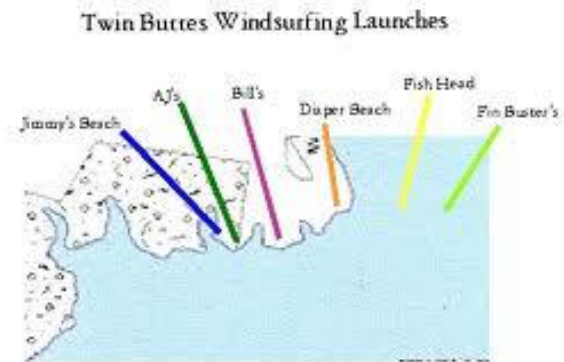
Fishing

Fishing is a popular activity at Twin Buttes Reservoir, but as water levels shrink the opportunity to launch boats is limited. Currently, all boat ramps are dry so only small craft such as flat-bottom boats or canoes or kayaks can be launched into the water to fish deeper areas of the reservoir. Shoreline fishing is still available on both the North Pool and the South Pool of the reservoir, however as the water recedes, the visitor has to drive farther and farther in the dry lake bed to reach the shore.

Fishermen must follow all state fish and game regulations. There is an organized group of fishermen in the San Angelo area, the Concho Bass Club, which utilizes Twin Buttes Reservoir for some of its fishing tournaments. This group has many members who are concerned and invested about the future of Twin Buttes Recreation Area.

Windsurfing

Unbeknownst to many area residents, there is a small, dedicated group of windsurfers who utilize Twin Buttes Reservoir for this recreational activity. Windsurfers particularly enjoy the South Pool of Twin Buttes Reservoir for its gradually sloping shorelines (for ease of launching) and for the favorable winds that are present there. Low water levels are also a challenge for the windsurfing community, because as water levels drop, access to launching spots becomes more of a challenge to get to. The following map shows the desirable launching spots for windsurfing enthusiasts at the North Pool at the end of Twin Buttes Marina Road.



An additional issue for the windsurfers is the fact that the waters of the South Pool have been pumped to the North Pool during the summer months of the current drought situation. This was conducted to decrease evaporation losses and utilize the remaining water in the South Pool. The San Angelo Project's authorizing legislation lists recreation and wildlife benefits after irrigation, municipal, domestic and industrial use, and therefore recreation activities are subject to a lower priority and would be impacted by available water supply demands of the project.

Kayaking

Kayaking the reservoir is a popular activity and is often enjoyed in tandem with other recreational activities such as fishing or waterfowl hunting. Currently, there are no specific facilities for launching a kayak, a visitor can drive down to the shoreline and put in virtually anywhere they see fit.



Geocaching

Geocaching is a unique recreational activity where a person uses a GPS unit and coordinates found online to participate in a "treasure hunt" of sorts to find "caches" placed by others, often in park areas. Once the cache has been found, the participant often signs their name in a logbook in the cache box and/or takes out or places small

trinkets in the box for others to find. Geocaching enthusiasts are often also advocates for parks (like other recreationists) and often pick up trash along their adventures.

The activity has become very popular in recent years and the Twin Buttes Recreation Area has no shortage of caches. According to several area geocaching websites, there are anywhere from 40-60 caches located in the Twin Buttes Recreation Area.

Camping

Primitive camping is another recreational activity that is fairly popular at Twin Buttes Recreation Area, however with limited management there have been some challenges. There currently are no designated campsites, nor are there any facilities such as hook-ups or restrooms. There are a few scattered picnic tables available off the main Twin Buttes Marina Road that could be used as a “campsite” but most are in poor condition.

Many visitors enjoy the primitive nature of the camping experience at Twin Buttes, however with little management or directional signage campers can set up camp virtually anywhere – within hunting areas, right on the water’s edge in prime windsurfing launch spots or fishing spots, or too close to motorized ATV trails.

Horseback Riding

The popularity of the Twin Buttes Recreation Area for horseback riding is unknown, though it can be surmised due to the property’s large size, that some equestrian owners do use the area for horseback riding. There was one equestrian owner who participated in a public meeting who expressed the idea that equestrian trails at Twin Buttes would be beneficial for the equestrian community. The nearby San Angelo State Park is very popular for horseback riding and the terrain of the two properties are similar, thus horseback riding could be popular at Twin Buttes, however the current use of the property for this activity is undetermined at this time.



CHALLENGES

There are several challenges that the City of San Angelo faces in regards to management of the Twin Buttes Recreation Area. There have been periods of time where the area was more controlled, with a manned entrance station, restroom facilities, and camping areas. But in the most recent two decades facing budget cuts and limited political will, the area has been largely “left alone” with little oversight and little maintenance. Restroom facilities were removed and all that remains currently are a few covered picnic tables in poor condition.

Litter and Illegal Dumping

Because of little oversight and no controlled access, litter and illegal dumping has become a big problem at Twin Buttes Recreation Area. There are many areas where people have driven into the area and dumped a truck load of contents onto the ground or down into ravines and creek beds. Items such as couches, mattresses, televisions, plastic swimming pools, sheetrock, carpet, and general trash have all been spotted in various areas of the recreation area.



Local stakeholder groups such as the San Angelo Dirt Riders have maintained trails for OHV riding in the north section of the recreation area, and have held volunteer clean-ups of the area, only to see more dumping occur a few weeks later. The group is frustrated because with unlimited use of vehicles in the area and uncontrolled access, the dumping problem will continue to the detriment of their hard work and stewardship.

Additionally, some hunters have been bringing in material such as wooden pallets and brush from their home, to build permanent hunting blinds. Permanent blinds are not allowed on public hunting lands, and any material brought in from outside constitutes illegal dumping and/or abandonment of property. The only blinds that are allowed per federal regulations are temporary blinds that are carried in and out each day.

Trash from some general visitors, some fisherman, and fireworks use, is also a problem in the recreation area. While there are some trash cans still in the area, they are only emptied on a limited schedule, allowing for the possibility of some overflow and/or the windy conditions to blow the litter out of the receptacles and into the brush. Plus, as the water recedes, fisherman are traveling farther and farther away from the existing receptacles and a few who exhibit irresponsible behavior are leaving their trash near the water’s edge instead of packing it out in their vehicle to the nearest trash can.

The recreation area also has some historical use of personal fireworks use by visitors. The area has become over the last two decades as “the place to shoot fireworks” due to its large open areas and lack of regulations. The litter from the fireworks is a tremendous problem because it often produces such small pieces of paper and litter that is difficult to pick up out of the grass and brush. City officials have attempted to alleviate the problem by placing a dumpster in the parking lot for visitors to use for



their fireworks trash and other trash, but to no avail. The previous photograph shows the parking lot littered with fireworks trash and a fairly empty dumpster sitting amongst it all.

Illicit Activities

There have been reports by stakeholder groups and city staff that there are illicit and illegal activities occurring in the recreation area due to its isolation and lack of oversight. Suspicious looking vehicles have been spotted hanging around in the parking lots, only to drive away quickly when law enforcement arrives to patrol the area. Drug paraphernalia has also been spotted in the parking lot areas of the park.

Additionally, while not a common occurrence, human remains were found near the south shore of the North Pool in 2008 in relation to an earlier homicide in San Angelo. The remoteness of the location and lack of “closing time” with gated entrance, and lack of on-site management and law enforcement creates an environment where this kind of criminal activity can take place. If the recreation area had controlled access with an entrance fee required, then this type of activity would be reduced if not eliminated.

Little Vehicular Management

There is one main paved road that enters the Twin Buttes Recreation Area from the north and it is Twin Buttes Marina Road. From that main road, a maintained dirt road veers east back towards Middle Concho Park where the dividing property line is at the dam and spillway. There is also a maintained dirt road that enters the recreation area in the south portion near the South Pool, but it branches out into many unmaintained dirt “road” trails. Other than the paved road and the two maintained dirt roads, there are no other official roads within the recreation area, yet there are numerous dirt roads and trails that vehicles and OHV’s have created all over the property. In some areas, dirt roads split around trees only to come back to each other, or some roads dead end into brush that has overtaken the previous “road”, thus a new one is created adjacent to the old path. This unfettered vehicle access has created problems such as a maze of dirt roads with no clear direction or signage for visitors, plus it has created paths to the backcountry areas where there are no witnesses and dumping can occur. Additionally, in areas where the unfettered vehicle access overlaps the areas of active recreation such as OHV trails, mountain bike trails, and running trails, there is a potential for accidents that could be fatal.

Reclamation Manual LND 01-03 – Recreation Program Management provides guidelines to ensure effective management of public outdoor recreation on Bureau of Reclamation lands and water bodies. This Directive and Standard (D&S) benefits Reclamation because it establishes the roles, responsibilities, and direction that provide consistency in planning, developing, and managing public outdoor recreation resources on Reclamation lands and water bodies.

Section 22 of this D&S states “Off-Road Vehicle Use. Reclamation lands will be closed to off-road vehicle (ORV) use unless, through an approved planning process, a Reclamation area is designated as limited or open to off-road vehicle ORV use and conditions of use are specifically described. The process of determining whether an area, road, or trail is designated as open to ORV use, open to limited use, closed to use, and the level of use allowed will include a combined public involvement process, National Environmental Policy Act (NEPA) process, and the development of planning documents. For more information concerning the rules, regulations, and procedures for use of ORVs on Reclamation lands, see 43 CFR part 420; EO 11644, dated February 8, 1972; and EO 11989, dated May 24, 1977.”

Low Water Levels

Low water levels and continuously receding shorelines are a major challenge not only for the city's drinking water supply, but also for recreational use. Currently, at the time of this publication, all 4 boat ramps into the reservoir are unusable due to low water levels. Because the water has receded so much, the boat ramps have essentially become vehicle ramps into the area that was once covered by water. Vehicles are not contained in any manner and can drive wherever there is a blazed trail or road, or wherever they decide to blaze a new road. Most visitors are driving directly to the water's edge to be able to fish or launch kayaks, but then they are also driving along the shorelines creating concentric rings of trails/roads around the lake that can be viewed on satellite or aerial imagery.



Low water levels not only create access problems for fishermen and kayakers, they also present access problems for windsurfers. A low grade slope or “beach area” is preferred for a windsurfing launch area and as the water recedes it creates unmanageable slopes in some areas, making access more difficult for this type of recreational activity. Additionally, low water levels crowd more users into a smaller space than before, creating the potential for conflicts among user groups vying for diminishing recreational space on the water.

Low water levels also contribute to stress on wildlife, which have to venture farther and farther to access water. Additionally, as the water level decreases it makes the area less desirable habitat for migratory bird species, and it may affect the number of birds that stop over. This would decrease the amount of viewing opportunities for birders and photographers and would decrease the amount of hunting opportunities for duck hunters.

Stakeholder Group Conflict

Stakeholder group conflict can and does occur at Twin Buttes Reservoir, just as it does in any recreation area with competing groups utilizing a limited amount of space. Most of the time, stakeholder groups get along fine, and the organized groups who utilize Twin Buttes have defined their own unofficial areas for their particular activity. However, there have been instances where a few irresponsible individuals participating in one of these activities in an inappropriate way has caused conflict for other stakeholder groups. It is inevitable that some of these individuals will be associated with a specific stakeholder group given the activity they are participating in, even if they are not formally part of the organized group or following its accepted behaviors or ethics. For instance, a person discharging firearms will probably be associated with hunters, a person riding an ATV haphazardly will be associated with the trail riders, and a kayaker seen littering will be associated with kayakers, when in reality the majority of the group of recreationists cannot be characterized by these few individuals.

More specifically, there have been reports of dirt bike riders or ATV riders who are not associated with the organized San Angelo Dirt Riders racing in circles around the parking lots or riding off designated trails in certain areas, creating a danger to themselves and other visitors. The Dirt Riders group does not endorse this type of behavior and wants controlled access to the area, and rules established and enforced for safe operations of all-terrain vehicles on designated trails. Creating designated areas for activities, such as a designated ORV area, through the proper planning process with Reclamation is something that each stakeholder group should coordinate with the City of San Angelo.

Additionally, there have been reports by city staff of hunters bringing in materials to construct permanent hunting blinds in the recreation area which is a violation of federal regulations. These hunters are essentially trying to stake out their “own area” by creating permanent blinds and this creates conflicts amongst hunters in this public hunting area, in addition to being against federal regulations. The unfettered access hunters have via full-sized vehicles also has the potential to create conflict between hunters on foot or bow hunters positioned in tree stands. There have been a few reports of people driving vehicles right past other hunters that are quietly staked out, only to have the wildlife scared away by the vehicle noise.

There are also reports of firearms being discharged outside of designated hunting seasons, and much evidence of skeet and trap shooting debris, which are also associated with the hunting group, whether a fair association or not.

Essentially, the irresponsible users as a group should be eliminated – so that the rest of the law-abiding and stewardship oriented groups can enjoy the area through their recreational activity of choice.



Public Safety

While there currently is not a huge problem of conflict amongst stakeholder groups, there is a great potential for conflict between motorized and non-motorized use of the area, whether it be full size vehicles, ATV’s, and boats, or trail runners, mountain bikers, and kayakers. The potential for a fatal incident exists given the lack of control of full-sized vehicular traffic and reports of full-size vehicles attempting to drive on established ATV trails or running/biking trails. This potential stakeholder conflict then becomes a public safety issue.



Best management practices in park management would support separation of motorized and non-motorized recreational activities wherever possible. On a reservoir for example, motorized boats would be serviced by a boat ramp and most of their boating would take part in the main body or center of the reservoir. Kayaks and canoes could be launched at the same ramp that motorized boats use, but they do not need the same amount of depth of water to launch. They are more likely to paddle on the edges of the reservoir or in secluded or shallow water arms of the reservoir, thus they would be better served by a separate launching dock in a less crowded area.

Additionally, motorized and non-motorized trail use should be separated if trail conditions do not allow for the integration of the two types of activities. There are some multi-use trails operated by the U.S. Forest Service that allow motorcycles or ATV’s as well as equestrian, hiking, and mountain biking. The trail conditions must provide a greater width for multi-use and longer lines of sight to prevent collisions, and most of these multi-use trails are old logging roads. The current trails at Twin Buttes are single track (meaning narrow for one-way traffic only), and have lots of sharp curves and hills which make them unfit candidates for mixing motorized and non-motorized uses on the same trails.

The use of firearms on the property for anything other than legal hunting purposes poses a significant risk to public safety and needs to be addressed by city staff. There are many piles of shotgun shells across the property, pieces of clay shooting discs on the ground, and holes shot through what little signage there is within the recreation area. This evidence coupled with reports of people hearing gunshots on holidays such as the Fourth of July, or gunshots throughout the day outside of hunting seasons, identifies that there is a problem with people discharging firearms illegally within the recreation area. Some of the areas where shotgun shell litter is present are very near areas where other active recreation is taking place such as the running trails, posing a danger to public safety.



SUCCESSFUL PARK MODELS

There are several successful park models in the United States, and their positive attributes will be analyzed in this plan and correlated with the challenges at Twin Buttes. Additionally, the consultant personally interviewed the Park Superintendent for another reservoir recreation area that is operating on Bureau of Reclamation land in the same Oklahoma-Texas Area district – the Quartz Mountain Arts & Conference Center and Nature Park – to gather insight into their park model and management challenges. Those findings will be explored further in this section.

TEXAS STATE PARK MODEL

The Texas State Park System, while faced with financial constraints, is still one of the model systems of park management systems in the country. The agency does a phenomenal job of balancing conservation, visitor use, wildlife habitat, interpretation of historic sites, and active and passive recreation throughout the properties they manage. The model can be broken down into several aspects which all contribute to the success of the model.

Vehicle control

To preserve the park's resources, protect wildlife habitat, and maintain public safety, vehicle traffic and parking is strictly controlled in the state park model. Paved or maintained dirt roads direct park visitors to the various recreation areas, campgrounds, boat ramps, parking areas, etc. Signage informs visitors that parking is only allowed on the pavement or in designated areas for parking, especially in campground areas where the impact is the greatest. Wooden bollards or stone boulders are used to line roadways or delineate parking areas in parts of the park where it is necessary to control traffic physically.

As far as driving vehicles "off-road" or on designated "off-road" trails, there is currently only one park – Eisenhower State Park - where this is allowed in the state park model. However, the Texas Parks & Wildlife Department recognizes off-road trails as a need in the state and has made efforts to increase opportunities for this recreational activity to occur safely and in non-sensitive areas. Currently, across the state there are 13 different parks at the commercial, county, and national level that are supported by Texas Parks & Wildlife and more sites are being studied and developed every year.

Designated use zones

Best management practices in the state park model call for designated use zones in park planning and management of resources. Camping areas where intensive use will take place are located in the least sensitive areas and away from critical wildlife areas such as nesting sites or fragile watering holes. Day-use areas, where visitors come for the day to enjoy the park but do not stay overnight, are normally located in separate areas from where the overnight camping areas are located. The separation of the two groups diminishes the amount of vehicle traffic that is coming through the campground areas since the day-use visitors are directed to other areas. This in turn creates a quieter environment for the overnight campers and allows the roadways to be used for walkers and children biking, etc.

The state park model also allows for designated hunting areas within some state parks and in other state properties such as Wildlife Management Areas (WMA). The designated hunting areas are located away from camping areas and day-use areas for public safety reasons and any trails that cross the hunting area are temporarily closed. In parks not large enough for separate hunting areas away from camping and day-use areas, the entire park is temporarily closed for the duration of the hunt (usually weekend periods.)

Controlled access

Controlled access via manned gates or “Iron Rangers” (self-pay stations) is a hallmark of the state park model. All state parks have defined entrances with gateway signage that welcomes the visitor to the park. Some entrances have more elaborate stone columns and signage while others have more simple wooden signs, but all have entrance signage. This lets the visitor know they are entering a “managed” area.



In addition to the entrance signage there is almost always a gate that can be closed and locked at night at the park’s closure time for any visitors not staying overnight to camp. The locked gate provides security for campers in some cases where parks are near urban areas, but more importantly prevents any unregistered visitors from entering the park. If visitors are to arrive late, after the gate has been locked, then arrangements are usually made at the time of campground reservations for the visitor to be given the access code to the gate.

Whether there is a physical gate or not, there is almost always an entrance station that is manned at certain hours to collect camping and entrance fees. If the entrance station is closed, there is signage that directs the visitor to either pay at a self-pay station (known as “Iron Rangers”) or to proceed to a campsite and then return in the morning to pay the fees. When physical rangers (or volunteers) come back on duty they then monitor the “Iron Rangers” and verify that those visitors in the park have registered and paid any fees due.

The key here is that the use of gates, manned entrance stations, or self-pay stations (that are still monitored), are all methods for controlling access to the park which aids in eliminating negative behaviors or illegal activities.

Park Host Program

The park host concept has become even more popular in the last several decades as publicly-funded budgets for parks have dwindled. It is a major component of the successful Texas state park model, as well as in other states and at the national level. Essentially, a park host program uses volunteer labor to perform park operation duties that were traditionally performed by paid park staff.

The “Park Host” is usually a retired couple who own their own recreational vehicle (RV) and, in exchange for a free campsite and hook-ups (plus sometimes phone line, wireless internet, cable TV, or laundry), performs duties such as collecting camping fees, cleaning restrooms, manning entrance stations or visitor centers, and reporting incidents or illegal activities to the appropriate authorities.

This volunteer labor is invaluable to the park systems as the camp hosts are the “eyes and the ears” on the ground since they are living in the park 24 hours a day and 7 days a week for a period of time. Having this type of watchful eyes on the property reduces unwanted behaviors in the park such as littering or discharging of firearms.



Public hunting program

The success of the Texas state park model can also be contributed to the public hunting program that is offered throughout park properties, wildlife management areas, and leased private properties across the state. Carefully managing the wildlife resources contributes to a healthy ecosystem and hunting is a management tool that the public can participate in.

A Texas hunting license and a public hunting permit (annual permit \$48) are required to utilize the public hunting lands which provide access to nearly a million acres of land for hunting, fishing, and camping during operational hours. Permit holders have access to over 200 different areas, with many areas open year round, and can hunt a wide variety of species including: deer, dove, feral hogs, quail, squirrel, turkey, waterfowl, and other legal game.



The public hunt drawing system is for the most coveted properties or special game such as bighorn sheep, alligator, or exotic animals. There are special draws for both adult hunts and youth-only hunts. The funds from permit fees go back to manage the wildlife resources so species will be around for future generations to hunt also.

Litter management

The Texas state park model handles litter management differently than most local and regional parks in the state, in that individual trash cans are rarely used throughout the parks, except in restroom or concession areas. Most campground areas and day-use areas have a large dumpster in the area for visitors to put their trash in after they collect it themselves in their own trash bag. The system relies on the “pack it in, pack it out” ethic (at least to the dumpster) and works fairly well. There are always those few people who still litter, but most people manage their own trash and dispose of it properly at the end of their visit.

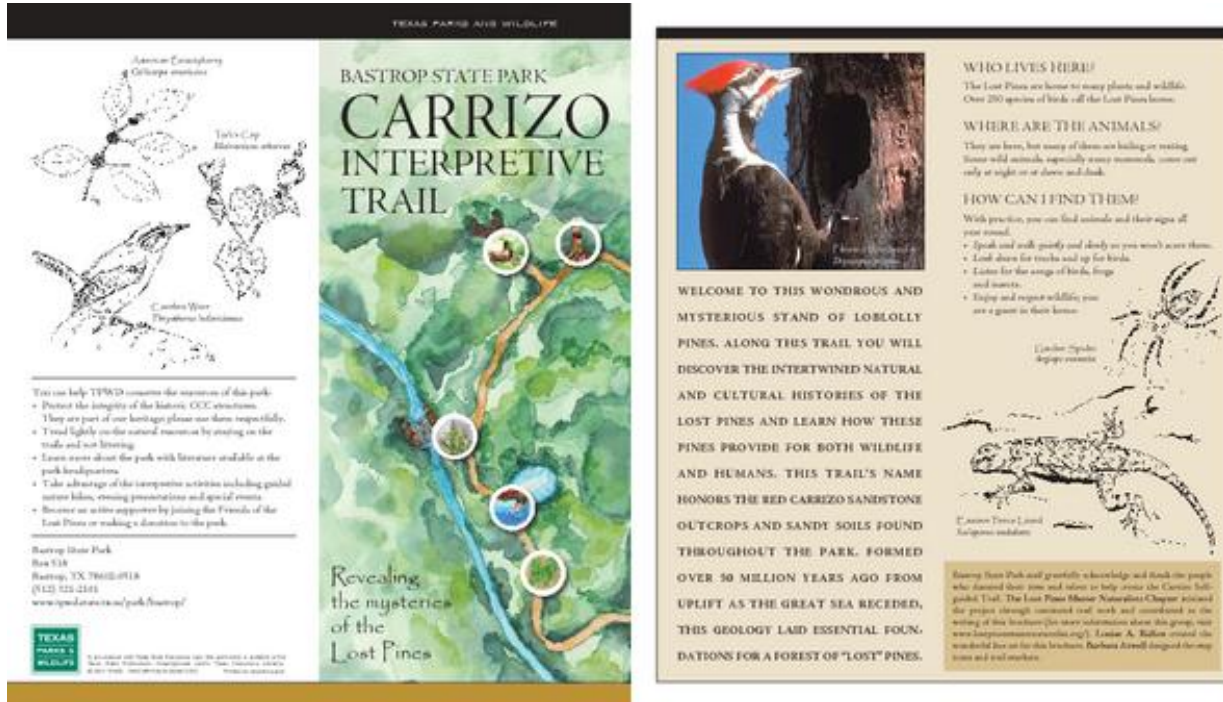
The dumpster system reduces labor costs significantly because the agency doesn’t have to pay staff to do the time-consuming task of collecting trash from individualized trash cans at each campsite or picnic site. Instead the dumpsters are a contracted service and are emptied on a regular schedule by the waste company. In addition to labor savings, the agency saves on the purchase of trash bags for individual cans. In the state park model, campers and visitors are responsible for bringing their own trash bags and collecting their own trash and disposing of it in the provided dumpsters.

Interpretation and Recreation

Interpretation and recreation is an important component of the Texas state park model because it is the means by which a caring constituency is continuously developed and fostered over time. Park staff are continuously working to educate the public on rules and regulations and to engage them in conservation of the resources through various interpretive activities.

Interpretive signage can be found in every state park and varies; from describing wildlife or plant species native to an area, to identifying historical features or artifacts. Interpretive programs also are an important feature of the

state park model, though numbers of programs have been reduced in recent years due to budget cuts. Many interpretive programs are in the form of “ranger talks” or guided hikes, where a park ranger or a volunteer (possibly a Park Host) educates visitors on the local flora and fauna, historical significance of an area, or “Leave No Trace” – a conservation ethic program.

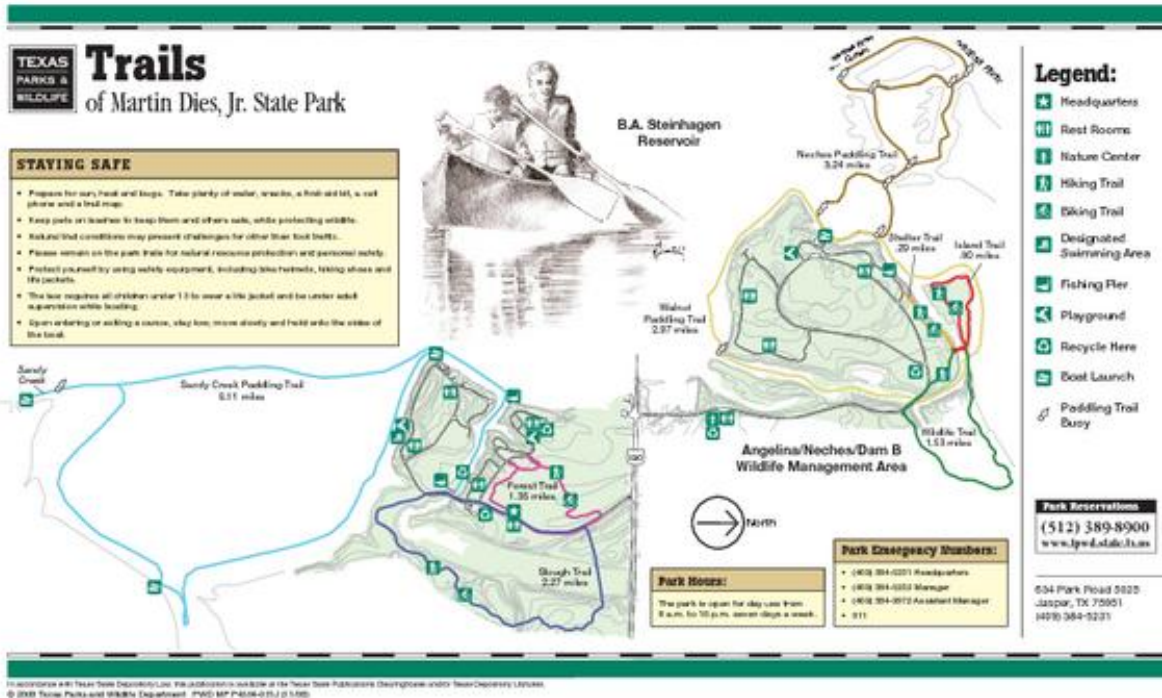


Recreation and recreational activities are the reason most people visit a park in the first place and thus are an important criterion in the Texas state park model. The model allows for as many recreational activities as possible to take place in one park without causing user group conflict or excessive impact on the natural resources. For instance, swimming, tubing, kayaking, paddle-boating, fishing, and picnicking would be available along a riverbank setting in a park, but turkey hunting along the same riverbank would not be allowed in the same spot when the other recreational activities are taking place. Likewise, primitive areas would likely host lower-impact recreational activities such as bird watching or backpacking, or hunting activities such as bow hunting or rifle hunting, that are away from the developed areas for higher-impact recreational activities such as campgrounds, restrooms, volleyball courts, etc.

Unified management structure, signage, rules, fees

Another aspect of the Texas state park model is the unified management structure and regulations structure that is evident at all parks across the system. The benefit to these unified structures is that park patrons know what to expect when visiting any park in the system. As soon as the visitor drives through the entrance they see the familiar signage and make the mental connections that they are entering a state park property, and that the rules and regulations are the same as the last state park they visited. This helps eliminate confusion amongst visitors about what is or isn't allowed, what the fees are, and what the behavioral expectations are for a certain park or area (i.e. park quiet hours or “Leave No Trace” in primitive areas.)

The unified management structure at each park also makes it easier for the public to understand who is the appropriate authority managing a certain park and to whom they should report incidents or illegal activities. In the state park model there is always a Park Superintendent position that lives on-site at the park so that they can respond to any emergencies or issues. An on-site superintendent also deters unwanted behaviors such as poaching, dumping, or vandalism since there is a greater chance someone will witness the illegal activity versus an area that is not monitored.



With a few exceptions across the system, the fee structure is unified in the Texas state park model. There is a day-use fee charged for entrance into any state park, around \$3-\$5 per person depending on the popularity and amenities in the park, and a campsite fee for overnight guests. Campsites vary from primitive walk-in sites with no amenities, to tent sites with water spigots, to full RV hook-ups and range from \$8 per site to \$26 per site. Across the system all categories of campsites offer the same amenities and are set-up similarly - with a parking pad, picnic table, lantern hook, water spigot and/or electrical hook-ups, and signed numbering system - offering additional familiarity for users.

Rules and regulations are also unified in the state park model which again, makes it easier for park visitors to know what to expect when arriving at any park in the system. If there are any additional rules to the standard regulations, or temporary rules for a certain time frame – like a burn ban – these will be clearly posted at entrances, visitor centers, restrooms, or in other areas where needed.

All of the criteria mentioned here, combine to make up the successful Texas state park model – and it is the combination that makes it so successful – without one or the other, the visitor experience would suffer.

OFF-ROAD VEHICLES (ORV) BEST MANAGEMENT PRACTICES

Quartz Mountain Nature Park

The Quartz Mountain Arts & Conference Center and Nature Park (www.quartzmountain.org) is a park property operating on leased land from the Bureau of Reclamation and is managed by a Board of Trustees through the State of Oklahoma's University system. The Quartz Mountain complex is located on the shores of Lake Altus-Lugert in Lone Wolf, Oklahoma. Quartz Mountain is included in this analysis because of its similarity to the Twin Buttes property with it being owned by the Bureau of Reclamation and with both areas hosting multiple recreational activities including an area for off-highway vehicle (OHV) trails.

The nature park has 8 different campground loops with tent sites, group sites, full RV hook-ups and cabins as well as a full-service resort right on the water. In addition to camping, there are 5 miles of trails for hiking, biking, and bird watching plus a Nature Center, paddle-boat rentals, and miniature golf. On the water, there is boating, fishing, water-skiing, kayaking, etc. Some of the unique offerings at Quartz Mountain are the rock climbing area, the off-road trail riding area, the performing arts center.

The off-road trail riding area – called Eagle's Roost - is seasonal due to the bald eagles that roost in the area. Access is restricted to the months of April 1 – October 31, 7 days a week from sunrise to sunset. Included in the off-road riding area are single track trails (meaning narrow and one-way only) and a sand dunes area for free riding. The off-road riding area's size fluctuates with reservoir levels - as the lake level goes up, the riding area shrinks, and as the lake level goes down, the riding area expands. The park superintendent and other paid park staff monitor the lake levels and adjust steel cable barriers accordingly – they are also keeping riders away from the water and the immediate shoreline to protect the water quality.



The off-road riding area has limited access hours and is controlled by a gate that is locked at night (by paid staff) after the area has closed. There is a parking area for regular vehicles and trailers and a portable restroom set-up. There is a fee - per off-road vehicle - per day of \$7.00 to use the area, and this is payable at a self-pay station ("Iron Ranger") or in the busy season to a paid staff member at the gate. The fees collected go to offset the costs of the ranger monitoring the area plus any new improvements to trails, restrooms, or parking areas.

Rules and regulations for the off-road riding area are determined by State of Oklahoma ORV laws and common sense safety which includes: requiring all passengers and drivers 18 and under to wear crash helmets, no more than one rider per vehicle (unless designed for two), no drinking and driving, and all off-road vehicles must have a 10 foot whip with an orange/red safety flag on it.

Barnwell Mountain Recreation Area

Barnwell Mountain Recreation Area (www.barnwellmountainra.com) is a 1,850 acre park dedicated strictly to off-road trail riding and camping located in East Texas near Gilmer, TX. The park is owned and operated by the Texas Motorized Trails Coalition (TMTCC), a 501(c)3 non-profit organization with 1,400 motorized trail enthusiasts-

members. The Barnwell Mountain Recreation Area is one of two motorized trail parks that the group has developed. The other – Escondido Draw Recreation Area is located in West Texas near Ozona, Texas and is still under development.

Barnwell Mountain Recreation Area has a 27+ mile single-track trail for motorcycles and many more miles of scenic trails and challenging hills for ATVs and OHVs. All of the trails are mapped, rated from easy to difficult, and marked with proper signage for ease of way-finding. The park has primitive campsites, 30-amp RV hook-ups, 2 cabins for rent, restrooms, showers, an air station, a pavilion, and on-site management.

All off-road vehicles must have the Texas Parks & Wildlife issued Off-Highway Vehicle (OHV) sticker displayed while in the park. All adults must sign a waiver and a rules sheet upon entrance into the park and minors must have a waiver signed by a parent or legal guardian and accompanied by an adult. Examples of rules and regulations include: all riders must wear a DOT approved helmet; no double-riding allowed except on vehicles specifically designed for 2 or more passengers; no public consumption of alcohol and no alcohol on the trails; no trail riding after 10:00 pm; and no trail blazing. Failure to follow the property's rules results in a 3 step discipline process that ends in suspension from the park.



The park has a \$30 entrance fee per vehicle and a \$5.00 per guest or passenger fee (no vehicle). Discounts are available for Texas Motorized Trails Coalition members, with a family membership costing \$60 per year. All fees go back to support the park and the trails. In addition to regular trail-riding, the park hosts many events and races throughout the year and is the meeting place for many organized groups from across the state. The park has become extremely popular and has contributed much economic impact to the surrounding communities due to the amount of tourists the park brings in. The local chambers of commerce and economic development corporations have a strong relationship with the TMTC Operations Board that oversees the operation of the park.

Black Mountain Off-Road Adventure Area

Black Mountain Off-Road Adventure Area (www.harlandcountytrails.com/blackmountain) is an 8,000 acre property located in Harlan County, Kentucky with over 150 miles of marked and rated trails. The park is open all day and all year long. ATV trails are rated at beginner, intermediate, and extreme and there are 5 levels of 4x4 trails and obstacle courses. There is also a commercial canopy tour now operating within the park as well, with discounts offered to permit holders who come to ride the off-road trails. Nearby to the park are numerous commercial businesses offering cabins, RV parks and campgrounds.

A general use permit is required for each vehicle entering Black Mountain Off-Road Adventure Area and can be purchased at either of the two trailheads (entrances to park) or the Harlan County Campground. An annual permit can be purchased for \$35.00 or a 31-day permit can be purchased for \$20.00. Family discounts are available for multiple vehicle permits.



Rules and regulations are in correspondence with Kentucky state laws for ATV laws and motorcycle laws. Examples of park rules include: a permit sticker is required for all vehicles; helmets are required; no consumption of alcohol before or while operating a motorized vehicle is allowed; firearms are prohibited; no littering (pack it in-pack it out); and removal or destroying of trees, shrubs, plants, or animals is prohibited.

Many events are held at the park and the economic impact from the park is evident by looking at the Convention & Visitor Bureau-operated website that lists all of the area’s lodging options, dining options, and local events. Trail maps, brochures, fee and regulation information is all readily available on their website as well.

Lake Meredith National Recreation Area

Lake Meredith National Recreation Area is located near Amarillo, Texas and in addition to the boating, fishing, camping, and hunting offered; the park also has two areas that are open to off-highway vehicles. Off-highway vehicles are defined in this park as motorcycles, four-wheelers, and dune buggies. The two areas are the Blue Creek area – vehicles can travel anywhere between the two cut-banks of the creek; and the Rosita Flats area (below 3,000 ft. elevation) where vehicles can travel within the Canadian River bed east of the Dumas bridge to Chicken Creek.



A Texas Parks & Wildlife issued OHV sticker decal is required on each vehicle in the OHV areas; otherwise there are no permits to enter the recreation area. Off-road vehicles are restricted to the two areas only, and are prohibited throughout the rest of the recreation area. Maps of the areas are available online or at the park entrance stations.

Best Management Practices Comparison

The following chart highlights the major components of each of the OHV areas for comparison and analysis. The Twin Buttes Reservoir Recreation Area column has “YES” under Public Consumption of Alcohol because while the organized San Angelo Dirt Riders does not condone this, there is no official rule established. Also, under “Designated Trails” Twin Buttes is listed as a “NO” because while the Dirt Riders have created designated trails there is no enforcement in the rest of the park and rogue riders and visitors in vehicles are blazing new trails.

	Permit/Fee	Texas OHV Decal	Access Hours	Helmet Required	Public Consumption of Alcohol	Designated Trails Only	Marked Trails
Barnwell Mountain Recreation Area	\$30.00 per vehicle \$5.00 per passenger	YES	8:00 AM Friday – 6:00 PM Sunday	YES	NO	YES	YES
Black Mountain Off-Road Adventure Area	\$20.00/31-day \$35.00/annual	N/A	NO	YES	NO	YES	YES
Lake Meredith National Recreation Area	NO	YES	NO	YES	NO	NO, within banks of creek and river	NO
Twin Buttes Reservoir Recreation Area	NO	NO	NO	NO	YES	NO	YES
Quartz Mountain Nature Park	\$7.00 per vehicle	N/A	April 1 – Oct. 31 Sunrise to sunset	YES	NO	YES except in free-riding Dunes Area	YES

HUNTING BEST MANAGEMENT PRACTICES

This section identifies best management practices for agencies that allow hunting on public park lands. Several types of agencies were considered and their best management practices are compared to those at Twin Buttes Reservoir Recreation Area. The following agencies were compared: National Forest, National Recreation Area, National Wildlife Refuge, a Texas state park, and a local municipal water district.

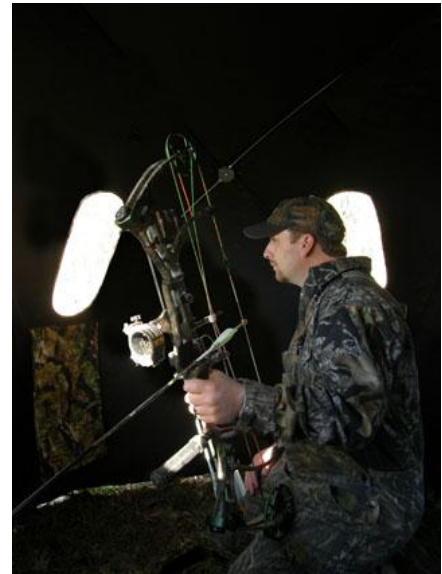
Across all agencies, hunting is managed fairly extensively, and public information about hunting is readily available via websites and ranger stations. All of the agencies analyzed work cooperatively with the Texas Parks & Wildlife Department to survey game and create bag limit recommendations individual to the site or to correspond with county-wide guidelines.

Currently at Twin Buttes Recreation Area no permit is required to hunt; all that is required is what is required by the state – a valid hunting license and proof of Hunter Education Course if applicable. In all but two of the

agencies analyzed, a permit is required to hunt – Lake Meredith National Recreation Area and the National Forest Lands in Texas (exclusive of Wildlife Management Area’s) are areas where a permit is not required. However, within the National Forest, if one chooses to hunt antlerless deer, then a permit is required.

Vehicle access to hunting areas is not currently limited at Twin Buttes, but in every other agency analyzed, vehicle access is restricted. The National Forest system and Lake Meredith National Recreation Area allow vehicle access via designated dirt roads into the interior of the public lands, but hunters must remain on the designated roads. Off-road vehicles (ORVs) are also not allowed in many of the hunting areas – there are 2 areas where ORV use is allowed in Lake Meredith NRA, and 1 multi-use trail in the Sam Houston National Forest. In the Laguna Atascosa National Wildlife Refuge, the Colorado River Municipal Water District, and San Angelo State Park, only walking in on foot is allowed.

All of the agencies analyzed require hunters to wear 400 square inches of fluorescent orange for safety with waterfowl, turkey, or archery hunters often being exempt. Currently, at Twin Buttes Recreation, no such safety rules requiring hunter orange are readily promoted.



However, TPWD still has jurisdiction over the hunting and fishing at Twin Buttes. State law requires that “All persons on public hunting lands (state, national forests, and grasslands) during daylight hours when hunting with firearms must wear at least 400 square inches of hunter orange material with orange headgear, and at least 144 square inches appearing on both chest and back.

Exempt from these requirements are:

- Persons hunting turkey, migratory birds, alligators, or desert bighorn sheep;
- Persons within the enclosed passenger compartment of a motor vehicle; or
- Persons within a designated campground, designated vehicle parking area, designated boat launching facility, or departmental check station”

All of the agencies allow the use of temporary, portable blinds that must be tagged with the hunter’s name and telephone number, and must be removed within 24-72 hours, depending on the agency. None of the agencies allow brush or wood materials to be brought into the park to create a blind, nor do they allow natural materials to be harvested in the park to create one. At Twin Buttes there is a problem with hunters bringing in materials to build blinds and there are semi-permanent blinds existing since the rules are not readily understood (federal regulations prohibit this.)

Baiting of wildlife is also not allowed at any of the agencies analyzed, yet it is a common practice at Twin Buttes Recreation Area. Legal weapons differ from agency to agency, with some being more restrictive than others depending on the level of other recreation activities that takes place in the area, or the amount of residences and other population centers nearby. All other agencies only allow the firing of weapons at legal game, and prohibit the discharge of firearms at any other time (i.e. no sighting guns in or target shooting.) Currently at Twin Buttes Recreation Area, only archery and shotgun hunting are allowed, and no other firearms are allowed, nor are firearms allowed to be discharged outside of hunting season. Visitor reports of gunfire throughout the year, and evidence of trap and skeet target shooting are left in many portions of the recreation area, suggesting that this rule is not well understood or basically ignored.

Reclamation Manual LND 01-03 provides guidelines for hunting, fishing, and trapping. Section 23 states: “Reclamation will provide for public use of lands in accordance with state and Federal laws and will allow public hunting, fishing, and trapping within statutory limitations pursuant to 43 CFR 423.32. Hunting, fishing, and trapping will be compatible with Reclamation project purposes and be conducted in a manner that protects the health and safety of the public and a managing entity’s infrastructure and personnel. Reclamation lands are generally open to hunting, fishing, and trapping unless closed, as deemed necessary, or designated as special use areas with restrictions. Any such closures or special use area designations related to hunting, fishing, and trapping will be in consultation with appropriate state game and fish agencies and will include a public involvement and NEPA process. Refer to 43 CFR part 24, Department of the Interior Fish and Wildlife Policy, for further guidance on hunting, fishing, and trapping on Federal lands, 43 CFR part 423, and EO 13443.”

	Permit & Fee	Application, Proof of Hunter Education & License		Limit on # of Permits	Hunting Season	Legal Weapons	Vehicle Access	Use of Blinds (temporary & portable only)	Wear Hunter Orange	Use of Bait	Wildlife to Hunt	Area closed to other Visitors during Hunt
Colorado River Municipal Water District (O.H. Ivie)	YES, \$100 Bow \$200 Gun	YES	YES		Designated weekends only	Bow Shotgun (no buckshot) Muzzleloader	NO (on foot only)	N/A	YES	N/A	Deer Turkey Quail	YES
Lake Meredith National Recreation Area	NO	NO app	NO		Varies by game, weekdays and weekends	Bow Shotgun Rifles Muzzleloader	YES (must stay on paved or dirt roads)	YES	YES	NO	Deer Dove Pheasant Teal Turkey Quail Rabbit Coyote Raccoon	NO
Laguna Atascosa National Wildlife Refuge	YES, \$75.00	YES	YES		Designated weekends only	Bow Muzzleloader Rifles Crossbow	NO (on foot or bicycle only)	YES	YES	NO	Deer Nilgai antelope Feral hog	YES
National Forests & Grasslands in Texas	YES, Free \$48.00 for WMAs	YES	YES	for antlerless	Varies by game, weekdays and weekends	Any legal weapon	YES (must stay on paved or dirt roads)	YES	YES	NO	Deer Quail Dove Turkey Rabbit Squirrel	NO
San Angelo State Park	YES, \$48.00	YES	NO		Varies by game, weekdays and weekends	Bow Shotgun Rifle Muzzleloader	NO (on foot only)	YES	YES	NO	Deer	YES
Twin Buttes Recreation Area	NO	NO	NO		Defers to TPWD seasons	Bow Shotgun (no slugs)	YES	YES	NO	YES	Defers to TPWD rules	NO

INNOVATIVE PARTNERSHIPS

Lake Bryan

This power plant cooling reservoir and surrounding park are owned and operated by Bryan Texas Utilities and is located 5 miles west of Bryan, Texas. The park has an 829 acre lake with a boat ramp for access to the lake for boating, fishing, and other water sports - and through a partnership with Texas A&M University – is the home for the rowing, sailing, and wakeboarding teams.

The park has 7 water and electric campsites for RV's that can be reserved and 125 acres of first-come, first-served tent and RV camping areas. There is a central dumping station and water fill-up station as well. There are public restrooms but no shower facilities. In addition to the overnight camping there are day-use areas with swimming beaches, picnic tables, 2 pavilions, a sand volleyball court, and a stage and special event area where large outdoor concerts are held.

Partnerships

The public-private partnership model has worked well at Lake Bryan and that is why it is included in this analysis. Bryan Texas Utilities (a wholly municipally owned entity) contracted with a concessionaire to build and operate a lakeside restaurant and entertainment venue with live bands and private party rental space available. The venture has been highly successful and has added an amenity to the lake that can be enjoyed year round.

Visitors can pay entrance fees and camping fees at the manned gatehouse or the actual lakeside restaurant itself if the gatehouse is closed. The park is gated and closes from dusk to 6 AM daily; overnight guests receive a gate code upon check-in so they may leave and re-enter after dusk if needed.

In addition to camping and boating, the park has over 20 miles of mountain biking trails that were made possible by a partnership with the Brazos Valley Mountain Bike Association, whose members build and maintain them. The group is a 501 (c)4 non-profit organization and its members spend many hours maintaining trails, hosting race events, and educating other riders about the trail rules and etiquette expected. The group is very protective of their investment in the Lake Bryan Park property and help to self-police the mountain biking community that visits the park.

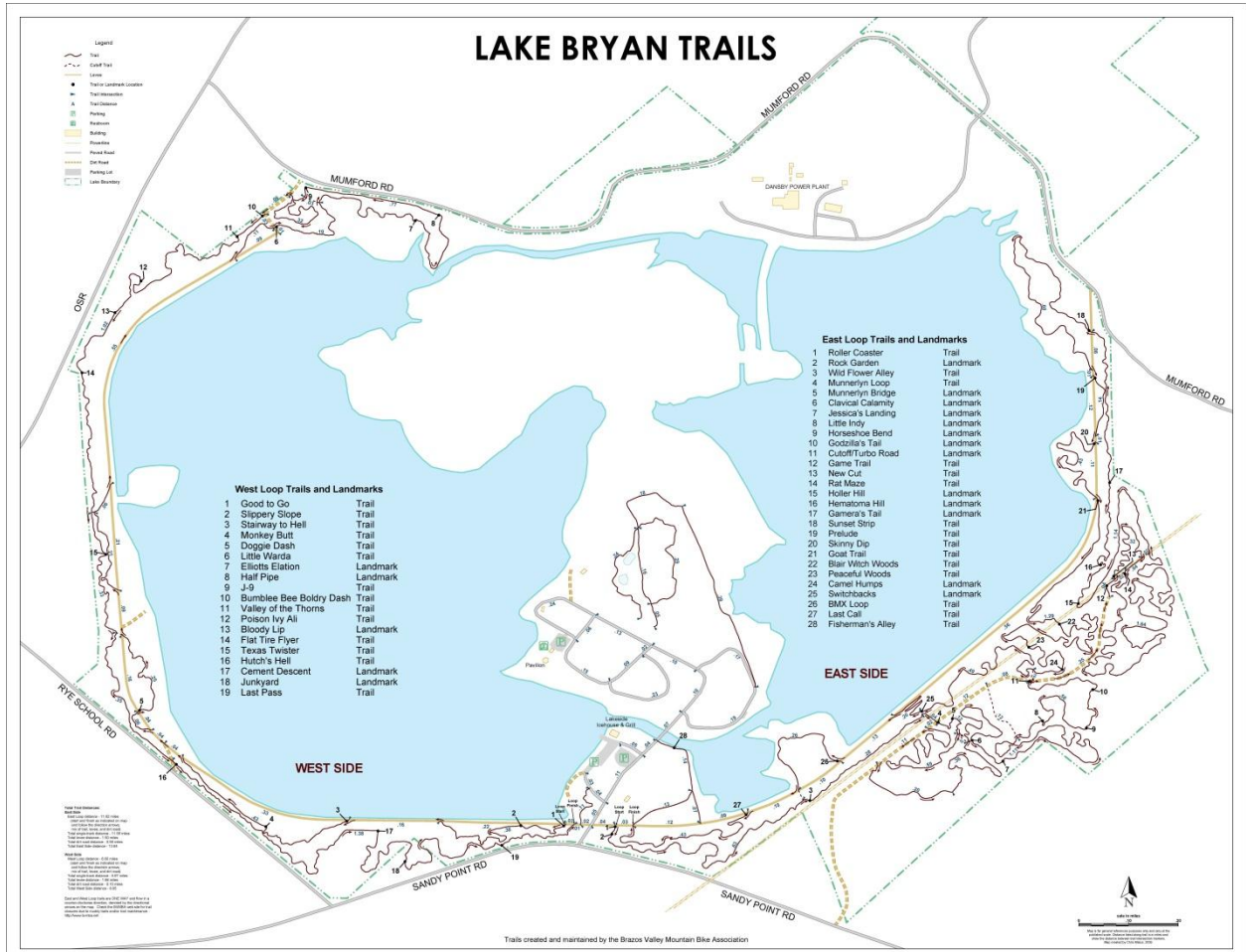


Special Events

A main event that has been going on for over 20 years is the “Power Pedal” event which includes 5K and 10K running races and mountain bike races of varying distances. The event is put on by Bryan Texas Utilities (the property owner) and all proceeds benefit a local community non-profit or charity.

In addition to recreational races, the park hosts large special events such as music festivals. Ziegefest, sponsored by ZiegenBock Beer, is an all-day music festival that has been held at Lake Bryan for the last ten years. The festival has brought thousands of visitors to the park over the years and has brought much needed revenue to the park.

The special events held at Lake Bryan and the partnerships with both a private concessionaire and a non-profit organization help to make this park a successful model for park management best practices. While lake levels are low at Twin Buttes Reservoir and likely will continue to be if drought trends continue – a lakeside restaurant is not the type of concessionaire partnership the city should pursue – but a similar partnership could be developed with an outdoors-based business such as hunting guide operators or ATV retailers.



PUBLIC PARTICIPATION

Public participation is an important part of any planning process, and especially in this case of Twin Buttes Reservoir Recreation Area, where there are many dedicated stakeholder groups who are passionate about the park property. There was one (1) general public meeting held and the meeting was advertised on the city's website and other social media and email invitations were sent out to specific contacts from stakeholder groups. Additionally, there were articles about the entire park planning process (City of San Angelo Parks, Recreation, & Open Space Master Plan was concurrently developed) in the Standard Times newspaper that alerted residents to future public meetings for both planning projects.

An online survey was also developed as part of the San Angelo Parks, Recreation, & Open Space Master Plan process, and there were several questions on that survey that were relevant to the Twin Buttes Recreation Use Plan which are discussed further in this section.

GENERAL PUBLIC MEETING

A general public meeting was held on December 1, 2011 at the McNease Convention Center in San Angelo. Thirty four (34) citizens signed the Sign-In Sheet, and there were a handful of city staff present as well as City Council Member Paul Alexander and Mayor Alvin New. There were several themes that can be derived from the public comments and they are detailed below.

Reinvestment of Fees

Many citizens felt strongly that whatever fees were collected from accessing Twin Buttes Recreation Area or from activities at the park, should be reinvested back into the property's infrastructure, programs, or operations. There was also quite a bit of discussion on keeping revenues from Twin Buttes separate from those collected at Lake Nasworthy, since a combined annual pass had been previously proposed by city officials. The citizens who spoke felt that the Nasworthy lake parks and Twin Buttes Recreation Area were two separate kinds of parks with different activities taking place in them and the needs of the recreationists were different, therefore the money should be separate. Since Lake Nasworthy parks are more developed and the Twin Buttes area is more primitive, the differentiation is similar to the state park model where there is a differentiation between a state park and a state natural area (discussed previously in the Park Models section.)

Enforcement

Whether it is actual law enforcement patrolling the area more to suppress illegal activity, or whether it is just general enforcement of simple park ethics and ordinances by a volunteer or park ranger staff member, a major theme of the public meeting was to enforce rules in the park. Citizens felt there was little need to create more rules or ordinances because there already are ordinances, state laws and federal regulations from the Bureau of Reclamation in place – they just need better enforcement.

Along with the enforcement sentiment, there were several citizens who spoke against the duplication of rules given the city had previously proposed some ordinances that were in conflict with and/or where duplications of state law. One example given was the proposed city ordinance stating that hunters could not shoot a firearm within 300 yards of a fence line, yet state law already prohibits shooting a firearm across a property line but allows you to essentially be "on the fence line" as long as you are shooting "into" your property (or public hunting property.) Many of the hunters in the public meeting felt this was an unnecessary duplication of rules.

Management of Visitor Registration

There were many comments throughout the course of the meeting in support for management of the Twin Buttes Recreation Area to eliminate the irresponsible users that were ruining the recreation experience for the rest of the responsible users. Several citizens mentioned some sort of visitor registration – whether it is purchasing an annual pass, paying entrance fees at a manned gate, or registering for access to special gate keys or gate codes – as a need to create the best environment for responsible recreation.

A discussion did take place about the existence of a manned entrance station that used to be in operation up until 1996. It was suggested that due to city budget constraints the entrance station was closed. Several citizens commented that things seemed to be “better” when this manned entrance station was in operation, and suggested that it should be re-instituted.

Maintain Recreational Access

Essentially all groups who were represented at the public meeting – hunters, fishermen, ATV trail riders, kayakers, mountain bikers, and equestrian lovers – were in agreement that whatever happens in future plans for Twin Buttes Recreation Area – that maintaining access for the recreational groups was a priority.

This is particularly important when related to the receding water levels of the lake and maintaining access to the water for fishermen, kayakers, windsurfers, and primitive campers. Several citizens expressed that they understand the reasoning for the pipe rail vehicle barriers in some places, but that as the water level recedes there should be temporary bollards and cable put in place down towards the water to give a certain amount of access.

Whatever managed access system is put in place – whether it be gate keys or a manned entrance – citizens felt it was important that there be a way for out of town visitors to access the area instantly versus having to buy a pass ahead of their arrival. The citizens were insinuating if there was a manned entrance and it was closed, there should be a process for those out-of-town visitors to enter and pay at a self-pay station or get passes somewhere nearby like at local retailers. The citizens felt it would be a detriment to tourism if visitors traveled here to camp or ride the trails and were faced with a locked gate with no recourse to gain entry immediately and would have to return home.

Economic Impact of Recreation

Another common theme of the public meeting was that of the economic impact associated with recreational activities at Twin Buttes Recreation Area. Several citizens talked about the numbers of people they were aware of who travel to San Angelo to ride the ATV trails from as far away as Midland/Odessa and Abilene; and who spend their money in local gas stations, restaurants, and hotels.

Engage Responsible User Groups

Overwhelmingly, the citizens who turned out to the public meeting felt that there is just a small group of “bad apples” who are participating in the illegal activities and damaging the resource by littering and dumping. The main stakeholder groups that were represented at the meeting (hunting, fishing, and ATV trail riding) were pretty much in agreement that they get along fairly well with other user groups and want to eliminate only the bad behavior of the few. They want to be engaged by city staff and want to help manage the park by self-policing user groups and hosting volunteer clean-ups of the area, etc.

In addition, the concept of a citizen board to advise city staff on management direction and engage the public in interpretive and recreational activities was supported by several citizens.

STAKEHOLDER VISIONING WORKSHOP

The Stakeholder Visioning Workshop was held on February 16, 2012 at the McNease Convention Center and lasted a little over 2 hours. There were approximately 36 citizens invited to participate in the workshop representing each stakeholder group. A stakeholder is defined as a recreationist who has an interest in the future of the Twin Buttes area. The groups represented were OHV (off-highway vehicle) Riding, Disc Golf, Fishing, Hunting, Biking, Running, and Windsurfing. There were 25 stakeholders in attendance and 4 law enforcement officers and park management representatives there to observe and field questions if necessary (SAPD, TPWD Game Warden, and San Angelo State Park Superintendent.)

The workshop was facilitated utilizing a modified Nominal Group Technique (NGT) process, whereby individuals share individual ideas that are then combined with group ideas through a process of discussion, consolidation, and voting of ideas. A decision is made by taking into account every one's ideas instead of a simple majority rules voting process. Facilitation of the process allows for more discussion among participants' ideas, identifying common ground and a plurality of ideas and approaches.

Participants were broken up into four groups of 5-8 people at round tables in the workshop room, with each table having one representative from each stakeholder group. One table also had a representative from the Geocaching community. Examples of other successful park models and maps were on display in the room for participants to view and get ideas of how the future of Twin Buttes Recreation Area could be.

The consultant began the workshop with an introduction to why the visioning workshop was needed and how the process would work. Each participant was given a stack of notecards to write down their ideas or solutions to the questions offered up by the consultant on a flipchart at the front of the room. The questions were:

What should the City of San Angelo (in partnership with Bureau of Reclamation) do to provide the best environment for recreational activity, public safety, and resource protection?

- *To enhance a family environment for recreation?*
- *To separate users to minimize conflict between user groups and ensure groups' safety?*
- *To maximize resource protection while minimizing resource destruction?*

No discussion was allowed at this point, the individuals were only to write their individual ideas down. Next, each individual at the table was to read their ideas out loud to the other participants at their table, going around the table until all had read their ideas out loud. No debating was allowed at this level of the process, participants were merely sharing their ideas to their small group. After all of the ideas had been heard by those at the table, then the group could discuss the ideas and deliberate. The group was tasked with consolidating any ideas that were duplicate or similar ideas, so as to minimize the total number of ideas at the table.

The next step required the consultant to go around the room and ask each table to read their consolidated ideas to the larger group in the room, while Carl White, Parks and Recreation Director, wrote the ideas down on the flip chart. The ideas were written down as spoken at this point, and no deliberation was allowed. After all of the ideas had been written on the flip chart, all of the pages were taped across the wall and the consultant proceeded to

identify similar or duplicate ideas for consolidation, with the participants' approval. The consultant continued to ask the participants which ideas could be grouped into themes or combined ideas, and the list became a manageable number of approximately 25-30 ideas.

At this point, each participant was given 8 green dot stickers each, to use in the voting process. The consultant explained that each participant could use their stickers to vote on the ideas that they felt were the most important for the future of Twin Buttes Recreation Area. Participants could place as many dot stickers next to an idea as they chose, but they would only have a total of 8 stickers or 8 "votes." The items with the most dot stickers in the end would be the items that were the most important to the group overall and would be considered priority items.

The top three ranked items were:

- *Trash management/cleanliness*
- *Add restrooms (flushing, vault, composting - depending on area)*
- *Maintain access to the water for all user groups*

This shows a commonality among all participants that trash management is a major issue to be addressed, adding restrooms is a major need, and maintaining access to the water (as it recedes in drought) is a priority for all user groups. These three items should be at the forefront as all of the other ideas are also addressed and incorporated into any future plans or developments.

Other highly-ranked items included:

- *Maintain areas for multi-use/instill multi-user trail ethic*
- *Increase signage/access to information/website for information*
- *Add a disc golf course*

The first two items in this group demonstrate a desire from the stakeholders for an increased "multi-user trail ethic" among visitors to the area and a management approach to provide signage to direct appropriate behavior to appropriate places and to provide more information in general via a website for information or park information boards on site. The plan will explore these ideas further in the planning guidelines section. Adding a disc golf course was the 6th highest ranked idea, and it appears that there is support in the stakeholder groups to add more amenities to the property in addition to the course (as shown in lower-ranked ideas.)

Next in ranking were the following ideas:

- *Keep hunting areas as they are currently*
- *Limit additions of new regulations (state law already applies)*
- *More police/law enforcement presence*
- *Designated areas for access/gate permits/fees*
- *Close north road from Marina Road east to Middle Concho Park*

This group of ideas demonstrates the stakeholders' frustration with any addition of new regulations that are duplicates of what already exists in state law, and that the current laws need to be enforced with increased law enforcement presence. Additionally, by creating designated areas for access to the recreation area and installing a gate permit or fee, the controlled access should make existing laws easier to enforce and be a deterrent for illegal activities. The various stakeholder groups showed strong support in the workshop for controlling access to eliminate some of the irresponsible users that are ruining the recreation experience for the majority of the law-abiding citizens.

Closing the north road from Marina road east to Middle Concho Park had a fair amount of votes as well, and was suggested to allow that area to remain free of full-sized vehicles to protect the users of the OHV trails, the bike trails, and the running trails, and to eliminate illegal dumping that occurs in that area via full sized vehicles.

The next highest ranked items were:

- *Any access fees reinvested into Twin Buttes Recreation Area*
- *Close Hunting Area #7*
- *Resource/cultural protection & install interp./nature trails and education*
- *Add established campgrounds, RV hook-ups, cabins, facilities, playscapes*
- *Adjoining private property access*

There was strong support in the workshop for any access fees that are collected at Twin Buttes Recreation Area should be reinvested back into the area. Several participants felt that the entrance fees and annual entrance pass should be sold separately from Lake Nasworthy fees and annual entrance passes, and that those revenues should remain separate. The concept is explored further in the planning guidelines section.

Closing Hunting Area #7 was suggested because it overlaps the same area where there are currently OHV trails, mountain biking trails, and running trails. This overlap of activities creates a potential for conflict among hunters and other recreationists. Hunters need quiet and undisturbed areas for the best possible experience and chances of finding game. OHV riders, mountain bikers, and trail runners create a lot of noise and activity that contradicts the hunting experience. On top of this basic incongruity is the fact that some people try and drive their full-sized vehicles on existing trails meant for OHV's, bikes, or runners to "get back to a hunting spot." The presence of full-sized vehicles in these areas could potentially be fatal for other recreationists, not to mention the presence of guns and the possibility of firing upon someone else in this actively used area. There are many other hunting areas in the recreation area that do not have the nucleus of trails that this area does, and thus allowing hunting in this area is not the best management choice. This idea is explored further in the planning guidelines section.

Resource and cultural protection, as well as developing interpretive and nature trails and providing educational opportunities was the next highest ranked item. The stakeholders felt the addition of interpretive exhibits about cultural sites or nature trails would enhance the area and provide another type of recreational experience, and providing educational opportunities – whether guided nature walks – or educational exhibits about flora and fauna or even a multi-use trail ethic or conservation ethic would be beneficial.

Adding established campgrounds, RV hook-ups, cabins, facilities, and playscapes was the next highest ranked idea. While there were a few vocal stakeholders who felt that the area should remain as it is with no improvements or changes, the majority agreed that some development and/or changes were needed. There were suggestions for an established campground area versus the current "camp anywhere" situation, and some even suggested RV hook-ups due to a lot of OHV trail riders wanting to bring their RV's out for the weekend. A few stakeholders mentioned cabins would be nice, as well as playscapes in the more popular day-use areas or future campground areas, while the majority of stakeholders agreed some type of facilities needed to be added to the area.

The concept of adjoining private property access was also mentioned by a few stakeholders and was ranked in this process. One particular participant felt strongly about maintaining his access to the recreation area via his private gate on his adjoining private property. There were several stakeholders who disagreed that adjacent private property owners should have unfettered access to the public lands, and some even mentioned a "creeping" of private property owners onto public lands. The Bureau of Reclamation's stance is that there are two authorized forms of access to Reclamation lands from private property. The first authorized access would be in the form of a

walk-through gate. Foot access from private property is allowable. However, walk-through gates would need to be approved and permitted by Reclamation. The second authorized access from private property is for livestock watering lanes. At the time of project construction, a few of the adjacent land owners retained the right for a livestock watering lane to the reservoir. These access lanes are for livestock only, and no vehicular access is allowed. No vehicular access of any kind is allowable under the two current authorized forms of access from private property. This access issue needs to be addressed further by the City of San Angelo, the Bureau of Reclamation, and law enforcement.

Lower in rankings were the following ideas:

- *Separation of user groups/activities/keep primitive area*
- *No rules against alcohol consumption (except hunting and driving)*
- *Increase wildlife management/resource management/water quality*

The next idea on the ranking list was that of separation of user groups/activities/keep primitive area. The concept is that some uses need to be separate (not all), but that allowing each stakeholder group to have their “own” area would eliminate any instances of conflict amongst user groups, eliminate unwanted behavior in delineated areas, and allow the stakeholder group to “adopt” the area for maintenance and litter management. While the participants agreed that some areas and uses needed to be separated, they wanted to also make sure that some primitive areas were maintained at Twin Buttes. Several said the primitive experience was what they enjoyed at Twin Buttes, thus they did not want this to be eliminated once other facilities or rules were added.

Some stakeholders felt that there shouldn’t be any additional rules against alcohol consumption in the recreation area, except what already applies by state law such as no drinking and driving and no drinking and hunting. This idea followed along the same theme as the previous idea that no additional regulations needed to be added by the City which would duplicate existing state laws.

The next highest ranked item was to increase wildlife management, resource management, and water quality. The workshop participants showed support for protecting the natural resources at Twin Buttes. They understand that an unhealthy landscape and unhealthy reservoir will diminish the recreation experience, thus the need to monitor and manage the resources. Ideas were discussed for the City’s Parks & Recreation Department to work with agencies such as the Upper Colorado River Authority, Texas Parks & Wildlife Department, and the City’s Water Utilities Department to continue brush control, continue water quality testing, stock fish species in the reservoir, and improve game management on the property.

The lowest ranked items in the voting process were the following:

- *Manning of gates (accessible to all - at all hours of intended use)*
- *Budget sufficient funds to maintain areas and apply for grants for funding*
- *Citizen group to promote recreation use of TBR including information, education, marketing, improvements, etc.*
- *Area(s) for full-sized vehicles (off-road)*

While these were the lowest ranked items in the voting process, it is important to point out that there were other ideas that didn’t receive any votes. Thus, these items, while low on the list, still have value given that they were offered up by stakeholders, made it to the final round of discussion, and did receive some stakeholder votes.

The issue of manning any future gates was brought up because of some of the participants’ concerns with gaining access after traditional operating hours of parks. Several stakeholders expressed their current usage at the reservoir involved fishing at night, and/or arriving at the area to camp after getting off of a late shift at work. They were concerned that if access hours were restricted to 8:00 am to 5:00 pm, like some parks with manned gates, then their recreation experiences would be limited. This is an important issue to consider when evaluating access options and weighing local users’ needs versus out of town visitors’ needs.

Budgeting sufficient funds to maintain areas and applying for grants to fund projects was the next highest ranked item. The stakeholders at the workshop showed support for the city investing funds to maintain the area, especially any revenues that are collected from entrance fees (a separate idea ranked much higher.) Additionally, stakeholders agreed that the city should apply for grants to fund projects such as development of facilities, development of trails, or implementation of outdoor recreation programs.

Another idea to come out of the workshop was the need for a citizen group to promote recreation use of Twin Buttes Recreation Area, including information, education, marketing, improvements, etc. Historically, there was an existing Lake Parks Advisory Board that oversaw both Lake Nasworthy and Twin Buttes Reservoir issues and developments. That board disbanded and hasn’t been in operation for years, yet it appears that the same kind of concept is popular with current stakeholders. The advisory board could be made up of representatives from each of the stakeholder groups present at the visioning workshop: OHV riding, fishing, hunting, mountain biking, trail running, windsurfing, and geocaching and would be akin to current “Friends Groups” at other state and national parks. These groups fundraise, market, provide volunteer service, and act as general ambassadors to the public for the recreation area. More information on this idea is explored in the planning guidelines section.

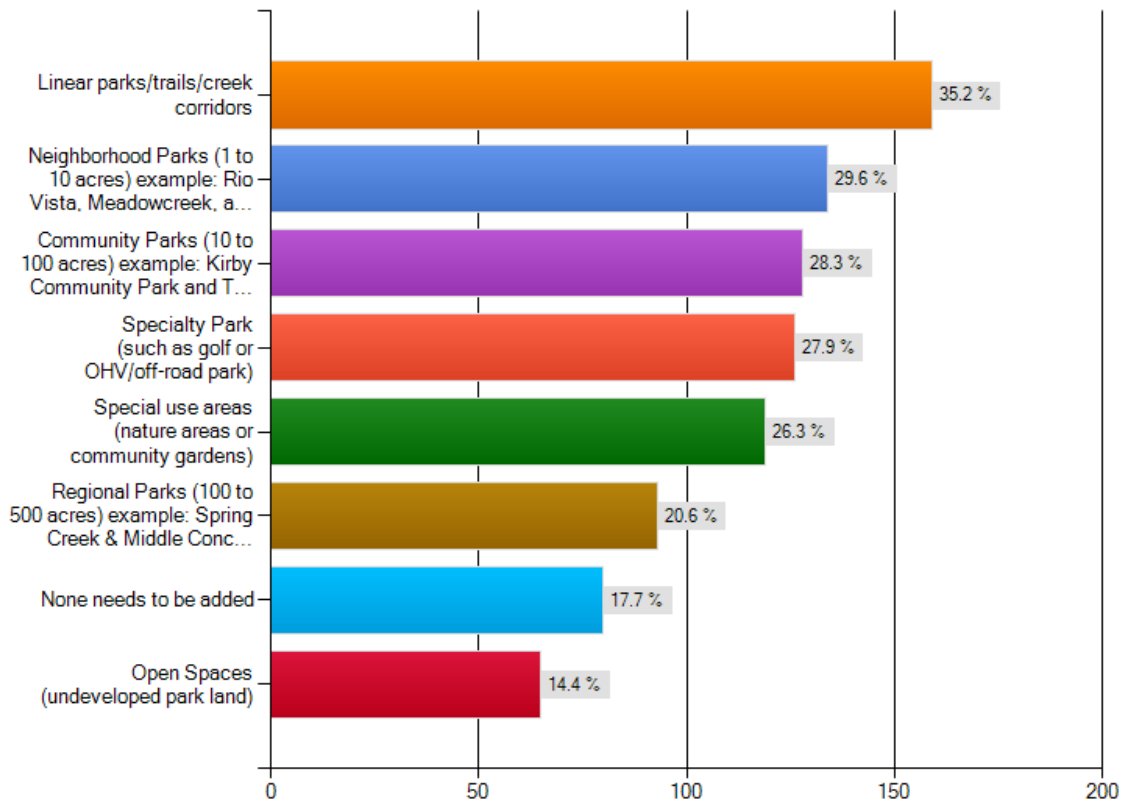
Common Idea or Theme	Number of Votes
Trash management/cleanliness	15
Add restrooms (flushing, vault, compost – depending on area)	14
Maintain access to the water for all user groups	14
Maintain areas for multi-use/instill multi-user trail ethic	12
Increase signage/access to information/website for information	10
Add a disc golf course	10
Keep hunting areas as they are currently	8
Limit additions of new regulations (state law already applies)	8
More police/law enforcement presence	7
Designated areas for access/gate permits/fees	7
Close north road from Marina Road east to Middle Concho Park	7
Any access fees reinvested in Twin Buttes Recreation Area	6
Close Hunting Area #7	6
Resource/cultural protection & install interp./nature trails and education	5
Add established campgrounds, RV hookups, cabins, facilities, playscapes	5
Adjoining private property access	5
Separation of user groups/activities/keep primitive area	4
No rules against alcohol consumption (except hunting & driving)	4
Increase wildlife management/resource management/water quality	3
Manning of gates (accessible to all) at all hours of intended use	2
Budget sufficient funds to maintain areas & apply for grants for funding	2
Citizen group to promote recreation use of TBR incl. information, education, marketing, improvements, etc.	1
Area(s) for full-size vehicles (off-road)	1

PUBLIC SURVEY

The public survey was part of the overall planning process for the San Angelo Parks, Recreation, & Open Space Master Plan, but several questions were relevant to the Twin Buttes Reservoir Recreation Area and those results are discussed here. The survey was developed using an online tool called Survey Monkey, with 39 questions covering topics such as: Parks, Trails, & Open Space; Recreation Facilities; and Fees & Reservations; and was available for the public to respond to for a total of 5 weeks. There were over 500 responses received, but not all of the surveys were 100% complete. Response levels for each individual question are noted in most of the illustrations or the narrative that corresponds with each question's analysis.

Question 6

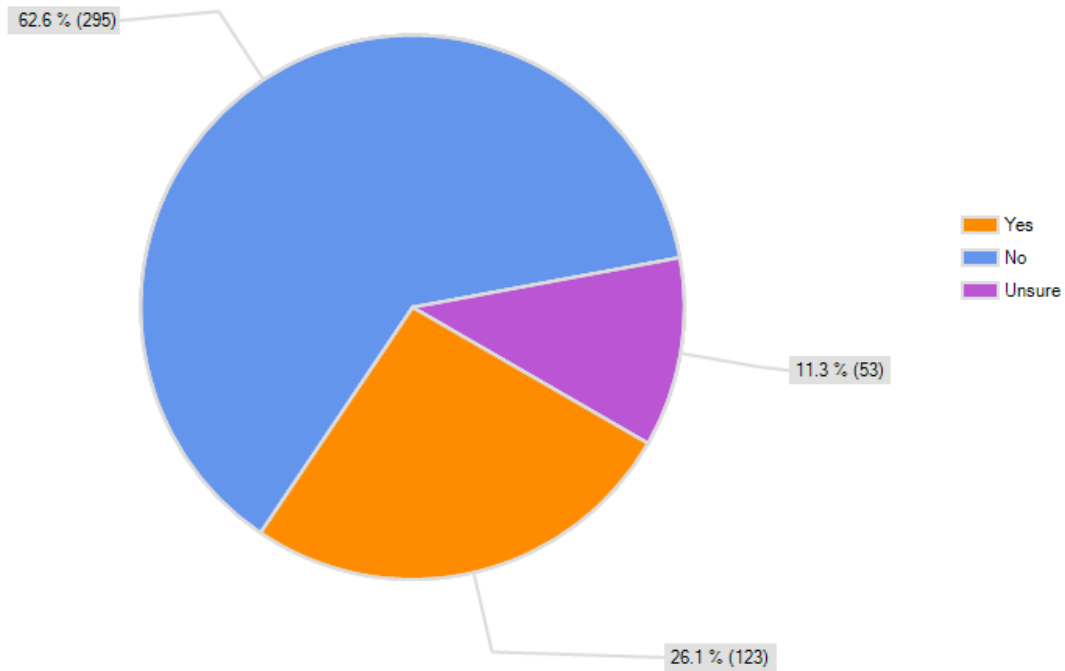
What type of park land, if any, needs to be added in San Angelo? (check all that apply)



This question asks citizens to specify what types of park land they would like to see added to San Angelo's offerings. A large percentage (35.2%) of the 452 respondents chose "linear parks/trails/creek corridors" as the most-needed type of park land. These numbers clearly support other trail projects on-going in the San Angelo area such as the downtown Concho River trails, but also supports the addition of trails anywhere, including at Twin Buttes Reservoir. Specialty parks such as OHV areas or golf courses at 27.9% of responses, support the theme from the public meetings that more non-traditional recreational activities need to be supported in San Angelo and that an "off-road" trail area at Twin Buttes is important.

Question 7

Do you feel there are enough multi-use trails (hike, bike, equestrian, etc.) in the City of San Angelo?

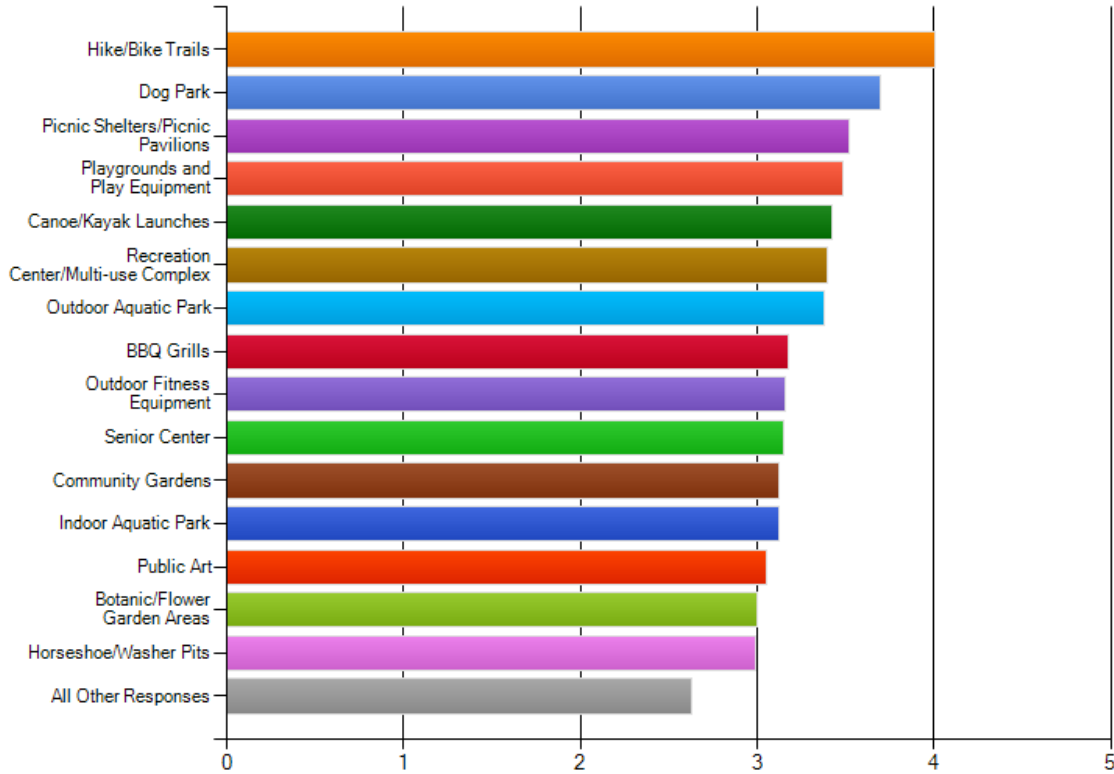


Question 7 asks citizens if they feel there are enough multi-use trails in San Angelo. Multi-use trails are designed with proper widths and materials for multiple user groups to utilize at the same time – whether they are motorized or non-motorized uses. Motorized multi-use trails would be designed for single-rider all-terrain vehicles (ATVs), multiple-rider utility-terrain vehicles (UTVs), and motorcycles. Non-motorized multi-use trails would be designed for hiking, biking, and equestrian users.

The overwhelming majority (62.6%) of respondents said there are not enough multi-use trails in San Angelo. These results support the existing multi-use trails already in the Twin Buttes Recreation Area but also could be a supporting factor in developing new trails in the park.

Question 8

Which of the following RECREATION FACILITIES need to be ADDED to existing parks or future parks in the City of San Angelo?

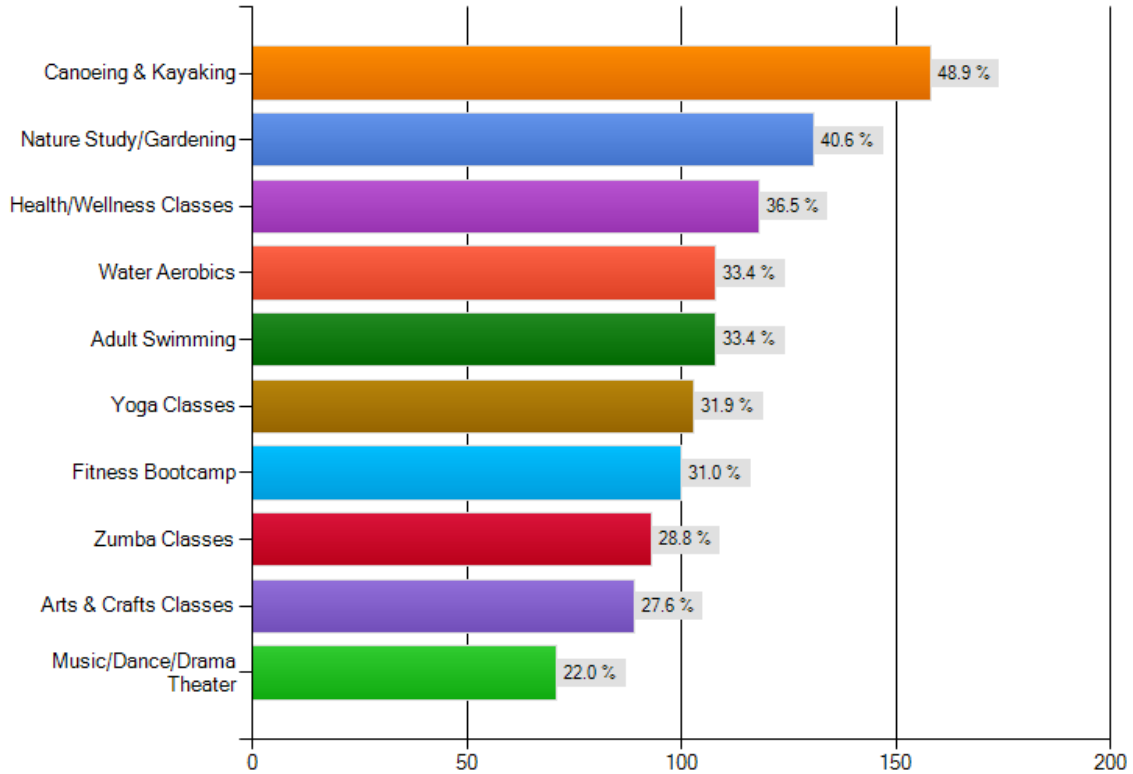


Question 8 asked citizens which recreation facilities need to be added to existing parks or future parks in the City of San Angelo with choices of “Definitely Needed,” “Needed,” “Neutral or No Opinion,” “Somewhat Needed,” and “Not Needed.” The graph above shows the aggregate of responses. Hike/Bike Trails were overwhelmingly the number-one choice of recreation facilities that need to be added, with 53.8% “Definitely Needed” responses and 22.5% “Needed” responses for a total of 76.3% out of 413 responses. This data supports the existing trails that are currently at Twin Buttes Reservoir Recreation Area, and supports future development of more trails.

The facility choices in this question were developed from initial discussions with city staff as well as feedback from initial meetings with the Recreation Advisory Board and stakeholder groups. For those types of facilities that were not listed as a choice in this question, there was an option for the public to write-in facilities that they felt were needed. Out of the 60 write-in responses there were 11 responses requesting additional off-road trail areas or maintaining the current one at Twin Buttes Reservoir.

Question 21

**What adult activities would you participate in if they were available from the Recreation Division?
(check all that apply)**

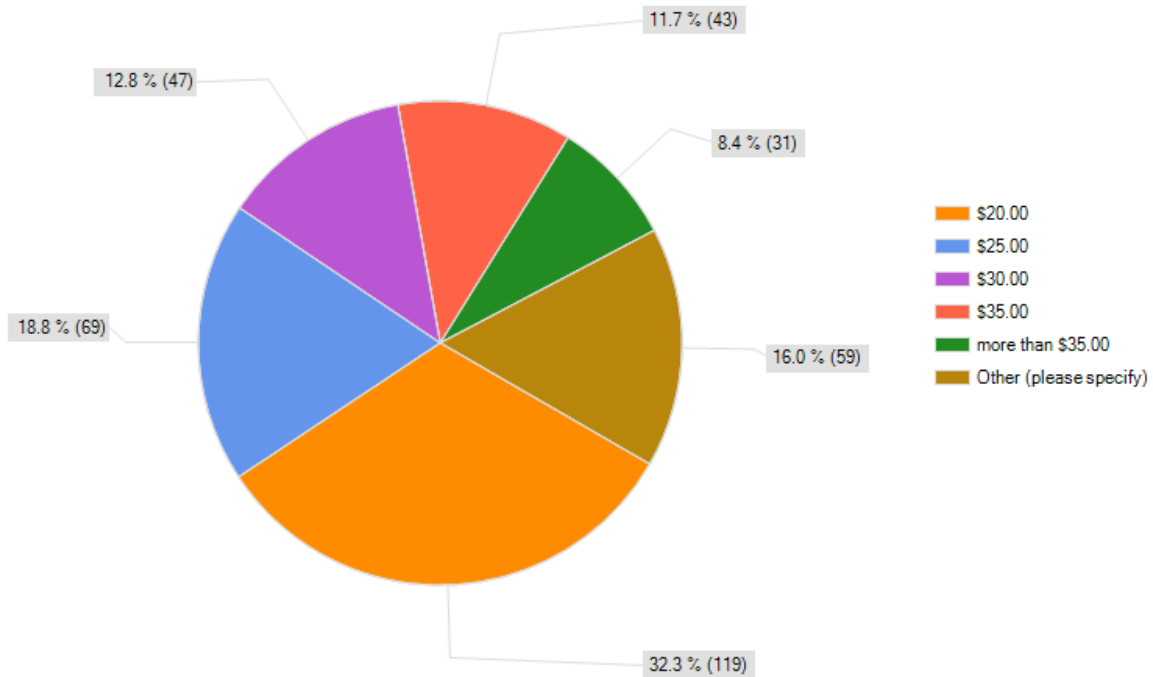


Question 21 asked citizens what types of recreation activities they would participate in if the Recreation Division offered them. There were 17 activities to choose from and an “Other” category to write in responses. Citizens could “check all that apply”, meaning they could have chosen multiple activities that they were interested in. The top 10 choices are shown in the chart.

The overwhelming activity of choice was “Canoeing & Kayaking” at 48.9% of responses. This is the kind of activity that would do well at Twin Buttes Reservoir given the more primitive nature of the park, and as water levels recede access for a kayak is easier to maintain versus motorized boats. The “Other Responses” category had 56 responses and there were 16 responses mentioning the types of activities that are currently available at Twin Buttes or activities that could occur in the future. Activities such as mountain biking, hiking, running, disc golf, triathlons, and motorcycle and ATV riding were all mentioned.

Question 34

What would you be willing to pay for an ANNUAL entrance pass to Lake Nasworthy & Twin Buttes Reservoir Parks?



Question 34 asked citizens what they would be willing to pay for an annual entrance pass to Lake Nasworthy and Twin Buttes Reservoir Parks. 32.3% of responders said they would pay \$20.00. Interestingly, over half of the pie – 51.7% of responders – said they would pay anywhere from \$25.00 to more than \$35.00.

There were 69 responses from the “Other” category and they were varied and diverse. Quite a few comments referenced that there shouldn’t be a fee to enter the parks because they feel their tax dollars have already paid for the park. Some comments referenced that entrance to Twin Buttes should still be free, or at least while there are no facilities there. Several responses indicated they would pay \$15.00 for an annual entrance pass. Several others indicated they would pay \$10.00 for an annual entrance pass. Additional comments indicated that the amount they were willing to pay for an annual entrance pass would be dependent upon the upgrades proposed for the parks. A few respondents commented that they would not go to the parks if there was a fee. A few respondents also commented that off-road access was important and if there were no area for that activity, then they would not visit the parks, and thus would not pay for the annual pass.

PLANNING GUIDELINES

The following items are planning guidelines that were developed after reviewing other successful park models and considering public input and survey results. The guidelines are a roadmap for the future development and management of Twin Buttes Reservoir Recreation Area with some immediate actions available within some guidelines and some more long-range goals to work towards within other guidelines. The City of San Angelo is responsible for the management of the Federal lands, but any development shall comply with existing Reclamation Directive and Standards. Many will require Reclamation approval or concurrence. In some cases documented compliance with the National Environmental Policy Act (NEPA) may be required.

Twin Buttes Reservoir has 199 documented archeological sites and one of Reclamations' paramount concerns is the protection of these cultural resources. A partial list of applicable Reclamation Directive and Standards are:

- LND 01-03 Recreation Program Management
- LND 02-04 Administration of the Archaeological Resources Protection Act on Bureau of Reclamation Land
- LND 04-02 Concession Management by Non-Federal Partners

RECREATION USE ZONES

The concept of recreation use zones refers to defining areas within Twin Buttes Recreation Area where certain activities can take place and separating those uses that are incompatible for a multi-use environment. For example separating passive recreational activities such as bird watching or kayaking - and active recreational activities such as ATV riding or jet-skiing are considered best management practices in the park management field.

In addition to separating passive and active recreation, day-use areas and overnight camping areas are commonly separated and along similar lines, managers of parks near major population centers have to consider local resident use versus tourist use when designing their park's use zones.

High-Impact Zones

High-impact zones are areas where visitor impact on the resource is the greatest and include entrance stations, visitor centers, parking areas, restroom facilities, campground loops, and other similar developed facilities. The high impact zones in the Twin Buttes Recreation Area are the main entrance to the North Pool side of the park from Twin Buttes Marina Road and the entrance to the South Pool side of the park from Ranch to Market Road 584. The entrance to the North Pool has the remainder of an old picnic/camping loop with some covered picnic tables still being used. The area around these picnic tables is heavily impacted by vehicle use since they are allowed to drive right up to and around all of the picnic sites.

The boat ramp areas that provide access to the reservoir would also be considered in the high-impact zone, so as the water level recedes, the high-impact zone boundary will progress within the area that is temporarily allowed for access to the reservoir. Vehicle traffic is allowed in high-impact zones as well as motorized recreation such as ATV riding and motorcycle riding.

Any additional development of campground loops, RV hook-ups, restroom facilities, playgrounds, etc. would be located in the high-impact zones which are detailed in the conceptual maps section.

Primitive Zones

Primitive zones are just the opposite of high-impact zones – they are the areas that are impacted the least by humans and generally only allow access on foot, by horseback, or by mountain bike. Primitive zones are often determined based on the sensitivity of the local environment – for instance - a pristine creek that is critical for aquatic and terrestrial species would normally be classified as a primitive area to reduce the amount of human impact versus a large open field that is part of a larger complex of grassland habitat that could be developed for park use and could stand up to more repeated use.



Specifically in Twin Buttes Recreation Area, the areas farthest from the park entrances and deeper into the interior of the property would be considered primitive zones – particularly along Spring Creek and the peninsula between Spring Creek and the Middle Concho River, and along the South Concho River. See the conceptual map section of this plan for more detail.

Hunting Zones

In the case of Twin Buttes Recreation Area, the current set-up allows hunting to take place everywhere on the property and city staff have only designated hunting “zones” on a map mainly for reference purposes. There is no signage nor really anyway to tell what hunting area you are in or if you cross into the area where hunting is not allowed unless you have a GPS unit with the boundaries programmed in it.

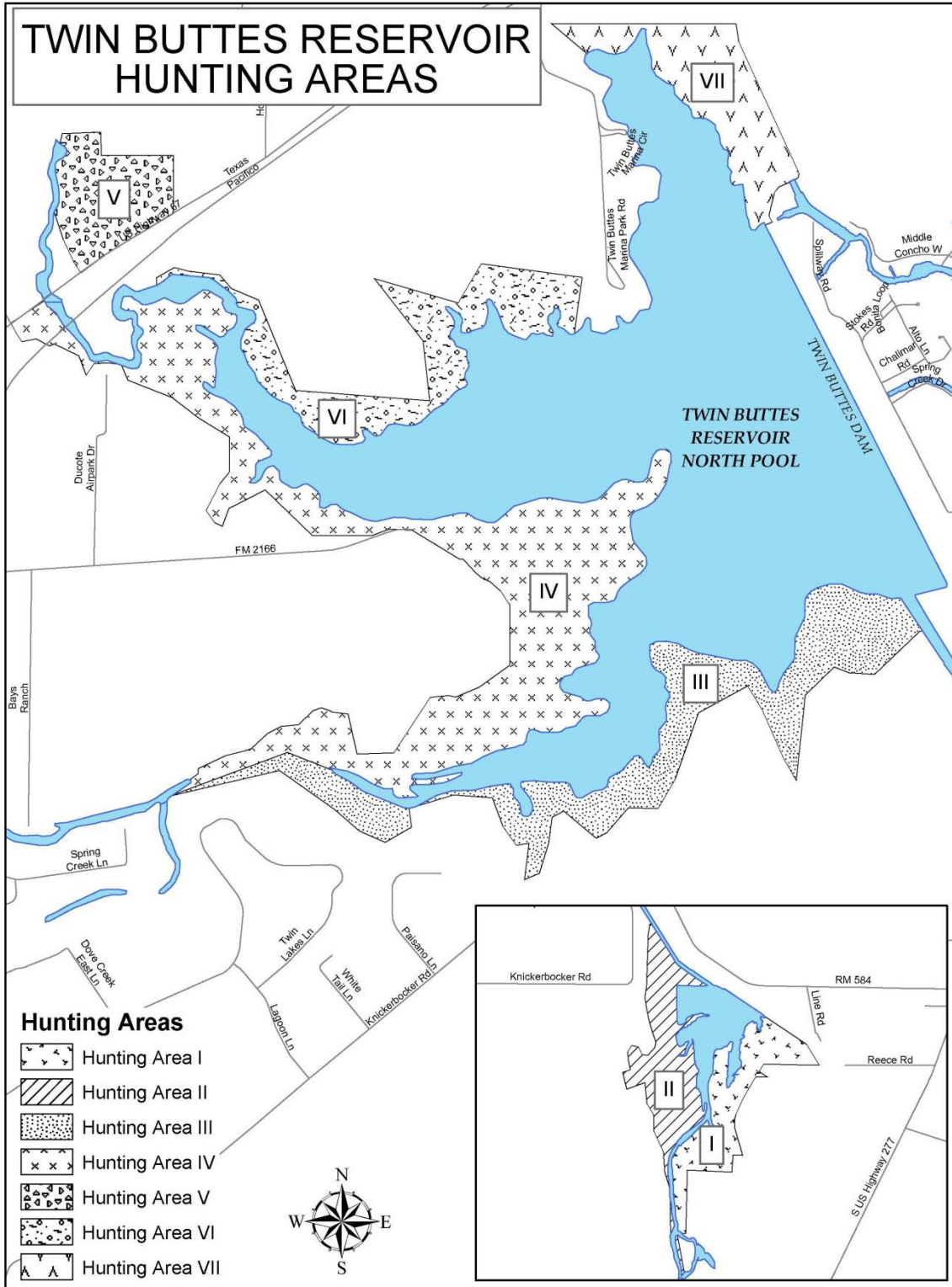
The fact that hunting can take place in an area with heavily-used ATV trails, running trails, and mountain biking trails is not the best management practice. The potential for conflict and for human fatality is too high. Thick brush characteristic of the property would inhibit hunters from knowing what is on the other side of the brush, and in reality there could be a trail with a mountain biker riding by that gets accidentally shot were the hunter to miss the animal, or worse yet, mistake a person for an animal.

Hunting Area VII (as seen on the map below) is the area where there are many heavily-used trails and where hunting should no longer be allowed. There have also been some suggestions from city staff to further categorize hunting zones by the type of hunting that is allowed. For example, designating Hunting Area VI as a waterfowl hunting area only would separate those hunters from deer hunters or turkey hunters. This type of separation has merit given the different environments desired for each different type of hunting. Plus, waterfowl hunters are concentrated near the water and will be shooting towards the water or the sky and not through the brush at the level of potential trail users, since there are proposed trails in Hunting Area VI. Hunting in the other zones should remain as is; however access restrictions should be enforced, as discussed in more detail in the next section.



Additionally, paint markers or flags should be installed on trees or other posts to notify hunters that they are at a boundary line of a hunting area. GPS coordinates of hunting area boundaries should also be available to hunters so that they can program coordinates into their GPS units if desired (and if technologically-savvy.) An example can be found at this link: <http://www.kdwpt.state.ks.us/news/KDWPT-Info/Locations/Hunting-Fishing-Maps-by-County/Fall-Hunting-Atlas/GPS-Information-Files>

TWIN BUTTES RESERVOIR HUNTING AREAS



Off Road Vehicle Use Zone

Reclamation Manual LND 01-03 – addresses ORV use on Reclamation lands and states that Reclamation lands will be closed to off-road vehicle (ORV) use unless, through an approved planning process, a Reclamation area is designated as limited or open to off-road vehicle (ORV) use and conditions of use are specifically described. The process of determining whether an area, road, or trail is designated as open to ORV use, open to limited use, closed to use, and the level of use allowed will include a combined public involvement process, a National Environmental Policy Act (NEPA) process, and the development of planning documents. For more information concerning the rules, regulations, and procedures for use of ORV's on Reclamation lands, see 43 CFR part 420; EO 11644, dated February 8, 1972; and EO 11989, dated May 24, 1977."

The City of San Angelo, in cooperation with the San Angelo Dirt Riders, should begin the process to legitimize the use of ORV's at Twin Buttes. The current trail map should be submitted for review by the Bureau of Reclamation and any adjustments to trail placements need to be made to avoid sensitive archeological sites. Preliminary reviews show some area of overlap between existing trails and archeological sites but many areas where they do not. Additionally, a portion of the existing trail network is actually on private land – a small linear parcel on the inside of Twin Buttes Marina Road. Given practicality issues, it is advised that the city lease this small parcel to be included as part of the park since it is widely believed by the public to be a part of the park and already includes a portion of the trail network. Effort should be made by city officials to be inclusive of the stakeholder groups who developed the trail systems and work within the existing framework wherever possible. This effort will likely translate into a designated ORV use area with a legitimate trail system approved by Reclamation and a healthy stakeholder group invested in the conservation of the park.

MANAGEMENT RECOMMENDATIONS

In addition to defining recreation use zones within the Twin Buttes property, there are several management recommendations that the consultant has identified for city staff to implement. Whether the city decides to fund and manage these programs themselves or contracts them out to a concessionaire, the following management tools should be implemented.

Friends Group

Many national, state, regional, and local level parks have a "Friends of X Park" group that is a vital part of the management, operation, and success of the park. Some Friends Groups are loosely organized groups of volunteers who occasionally participate in service projects throughout the park; and some are highly organized whose members spend thousands of hours volunteering in parks and fundraising for park projects and programs. Most of the highly organized groups maintain a 501(c)3 federal tax status which is critical for fundraising and applying for grants.

The Twin Buttes Recreation Area currently has several organized "Friends Groups – by Activity" which representatives could be solicited from to form one cohesive "Friends Group." The new group should have representatives from all of the following at a minimum: the San Angelo Dirt Riders (ATV and motorcycle riders); the San Angelo Road Lizards Running Club; the San Angelo Windsurfers Club; the San Angelo Bicycle Association; the San Angelo Ducks Unlimited chapter; and the Concho Bass Club. Additionally, city staff should seek out representation from the equestrian community, the hunting community, the kayaking community, and the geocaching community. City staff needs to foster the development of a Friends Group that combines all of these groups and encourage this new "Friends of Twin Buttes" group to obtain 501 (c)3 federal tax status.

In theory, the group will elect its own officers, develop its own by-laws, and operate on their own independently of the city, but work closely with the city or private management company (if city decides to go that route) to plan projects and programs for the recreation area. The benefit to this arrangement is that the Friends Group can apply for grant funding that can only be disseminated to 501 (c)3 organizations and leverage this funding with city funding or other grant funding.

In addition to the benefit of extra funding capabilities, having a dedicated Friends Group with passionate, engaged community members is invaluable to the operation and success of the park.

Park Host Program

A park host (also called campground host) is a volunteer (usually a retired couple), that provide volunteer labor to the park in exchange for a free campsite with RV hook-ups. Depending on the amenities of the park, some park hosts also receive free cable TV, laundry use, or wireless internet access. Typical park host duties include registering visitors and campers, collecting fees, cleaning restrooms, leading guided hikes, selling firewood, and educating visitors on park rules and regulations.

A park host is also a valuable asset to a park property if there is no on-site management such as a park superintendent living on the property because they can be the “eyes and the ears” on the property and report any illegal activities or issues of concern to the appropriate authorities. They can also act as the after-hours contact for any questions that people may have or if there are any emergency situations that happen overnight they can help direct people to the appropriate resource.

The establishment of a Park Host Program should be a priority for the city because this position is so critical for successful day to day operations and only costs the city a minimal amount in utility costs.

On-site Management

On-site management, where a park superintendent lives on the park property 24 hours a day, 7 days a week, is a best management practice found at the national, state, and regional park level across the field. It is a criterion in the Texas State Park Model (discussed earlier in this plan), and is suggested for Twin Buttes Recreation Area as well because of its large size (approx. 8,000 acres) and because of the primitive nature of the park.

Establishment & Enforcement of Rules

Hiring a park superintendent that lives on site combined with a Park Host Program and continued patrolling by the San Angelo Police Department and Texas Parks & Wildlife State Game Gardens will significantly make a positive impact in deterring unwanted and illegal activities and make enforcement of rules and regulations much easier. Besides park rules that are developed by the city in the form of city ordinances, there are also federal regulations that city staff must consider when implementing this recreation use plan.

Particularly in reference to the problem of visitors bringing in materials to build permanent blinds and leaving tree stands and other temporary blinds beyond a 24 hour period, and driving off road anywhere in the park, the existing federal regulation needs to be enforced:



43 CFR Part 420.11 Off-Road Vehicle Use: Requirements-vehicles

Each off-road vehicle that is operated on Reclamation lands shall meet the following requirements:

- a) It shall conform to applicable state laws and vehicle registration requirements.
- b) It shall be equipped with a proper muffler and spark arrestor in good working order and in constant operation. The spark arrestor must conform to Forest Service Spark Arrestor Standard 5100-1a, and there shall be no muffler cutout, bypass, or similar device.
- c) It shall have adequate brakes and, for operation from dusk to dawn, working headlights and taillights.

43 CFR Part 420.12 Off-Road Vehicle Use: Requirements-operators

- a) In addition to the regulation of Part 420, operators shall comply with any applicable State laws pertaining to off-road vehicles; if State laws are lacking or less stringent than the regulations established in this part, then the regulations in part 420 are minimum standards and are controlling.
- b) Each operator of an off-road vehicle operated on Reclamation lands shall possess a valid motor vehicle operator's permit or license; or, if no permit or license is held, he/she shall be accompanied by or under the immediate supervision of a person holding a valid permit or license.
- c) During the operation of snowmobiles, trail bikes, and any other off-road vehicle the operator shall wear safety equipment, generally accepted or prescribed by applicable State law or local ordinance use for use of the particular activity in which he/she is participating.
- d) No person shall operate an off-road vehicle:
 1. In a reckless, careless, or negligent manner;
 2. In excess of established speed limits;
 3. While under the influence of alcohol or drugs;
 4. In a manner likely to cause irreparable damage or disturbance of the land, wildlife, vegetative resources, or archeological and historic values of resources; or
 5. In a manner likely to become a nuisance to other users of Reclamation or adjacent lands.

43 CFR Part 423.23 Abandonment and impoundment of personal property

- (a) You must not abandon personal property of any kind in or on Reclamation facilities, lands, or waterbodies.
- (b) You must not store or leave unattended personal property of any kind.
 - (1) Unattended personal property is presumed to be abandoned:
 - (i) After a period of 24 hours;
 - (ii) At any time after a posted closure takes effect under Subpart B of this part 423; or
 - (iii) At any time for reasons of security, public safety, or resource protection.
 - (2) If personal property is presumed abandoned, an authorized official may impound it, store it, and assess a reasonable impoundment fee.
 - (3) The impoundment fee must be paid before the authorized official will return the impounded property to you.
- (c) An authorized official may impound or destroy unattended personal property at any time if it:
 - (1) Interferes with safety, operation, or management of Reclamation facilities, lands, or waterbodies; or
 - (2) Presents a threat to persons or Reclamation project resources.
- (d) An authorized official may dispose of abandoned personal property in accordance with the procedures contained in title 41 CFR and applicable Reclamation and Department of the Interior policy.

In reference to visitors using fireworks at Twin Buttes Recreation Area, the following federal regulation needs to be enforced:

43 CFR Part 423.30 Weapons, firearms, explosives, and fireworks

(c) You must not use or possess explosives, or fireworks or pyrotechnics of any type, except as allowed by a permit issued pursuant to Subpart D of this part 423, or in special use areas so designated by an authorized official under Subpart E of this part 423.

In reference to visitors who bring in trash, old furniture, building materials, and other refuse to dump in the interior areas of the park, the following federal regulation needs to be enforced:

43 CFR Part 423.34 Sanitation

- (a) You must not bring or improperly dispose of refuse on Reclamation facilities, lands, and waterbodies. Both the owner and the person bringing or disposing refuse may be issued a citation for violating this provision.
- (b) Campers, picnickers, and all other persons using Reclamation lands must keep their sites free of trash and litter during the period of occupancy and must remove all personal equipment and clean their sites before departure.

Entrance Fees

Charging an entrance fee for a park changes its perception in the minds of people, in that – if you have to pay to get in – the park is worth something. Versus the current psychological state of many people who know about Twin Buttes as a “dumping ground” or a place to go and cause destruction because it is free to get in and no one cares about it. Adding an entrance fee in combination with all of the other recommendations here will create a positive change for Twin Buttes and create a small stream of revenue to help make improvements to the park.

A modest entry fee per person is suggested in the \$2 - \$5 range depending on how many amenities are added to the park. At the present a \$2 per person fee would be appropriate and as amenities are added, it could be increased up to \$5 or more. The important thing to note about pricing is that visitors have to see some tangible result from the monies before they will be willing to pay more. The establishment of an annual pass is also suggested for the local residents who visit the park regularly.

Signage

The implementation of park entrance signage, regulatory signage, directional signage, and interpretive signage are all recommended for Twin Buttes Recreation Area. Currently, there is little to no signage in the park. Park entrance signage creates a psychological barrier for park visitors, that as they physically drive past the entrance sign, they understand they are entering a park area with its own set of rules and behavior ethics associated with parks. Park entrance signage can also be aesthetically pleasing and help foster a sense of pride about the park.

Regulatory signage should be present where necessary such as boating regulations at a boat ramp, or where problems have occurred in the past, such as at historical dumping areas. Directional signage is needed so that



visitors can find their way around the park with ease. Currently, there is no signage directing people to the boat ramps or to the ATV trail area, etc.

Informational signage should be installed at or near the entrances to the park with park rules and regulations posted, hunting seasons and regulations posted, as well as entrance fee information and instructions on where to pay fees and/or purchase hunting permits and annual park passes. It is recommended that one large message board be installed at each park entrance where different updated versions of rules and information can easily be replaced by installing new postings or signs on the larger board.



Interpretive signage should be implemented over time as city staff and the Friends Group develop more trails and programs that could interpret the natural resources or historical aspects of the property to the public. Both interpretive signage and park entrance signage construction could easily be community volunteer projects or local Eagle Scout projects.

Vehicular Management

One of the signature challenges besides receding water levels at Twin Buttes Recreation Area is the lack of vehicular management. A designated road system needs to be established and vehicular barriers put in place where they are needed. Currently, city staff has already installed a pipe rail barrier in some places where the need was greatest. The designated road system would need to be approved by Reclamation and be NEPA compliant.

Road infrastructure in the North Pool area would be based on the existing paved Twin Buttes Marina Road, and could be extended to the west along the Middle Concho River arm of the reservoir and end in a new parking area for hunters to access the interior regions of the park. A temporary dirt road would be established where it currently exists off of the main boat ramp at the end of Twin Buttes Marina Road, and would continue to the current shoreline to provide continued access to the water for fishermen, windsurfers, waterfowl hunters, and kayakers. The dirt road would be defined by a temporary cable and post system that would be removed or extended as water levels increase or decrease.



The improved caliche road that is accessible from Twin Buttes Marina Road on the north side and connects to Middle Concho Park on the east side should be closed to regular vehicle traffic. There are existing gates on either end, so there will be no problem in locking them and closing that road off. The road will still be available for emergency crews to utilize when needed, and will also be available for stakeholder group access for special events permitted by the city. Closing this road off will eliminate vehicular traffic into this area of the park which is dominated by trail systems and where vehicles have tried to access trails before, and where dumping has occurred.

Litter Management

Another challenge that needs to be addressed is litter management. There are several methods that could be used in combination to help combat the problem. Controlling vehicular management will automatically limit access to the deep interior reaches of the park so popular with those who illegally dump, thus making an immediate reduction in litter in the park. Second, installing dumpsters in key areas in the high-impact zones such as at boat ramps and camping loops will give responsible visitors a place to dispose of their trash. Dumpsters should only be installed however, after a gated or manned access has been instituted, otherwise they will fill up from people bringing in trash.

With the addition of on-site management, a Park Host Program, and increased patrolling by law enforcement it is expected that outright littering will also decrease with more authority figures present. Also, if a manned entrance station is implemented, each visitor to the park could be given a free trash bag to encourage personal responsibility of trash. The same program could occur if visitors had to check-in with a Park Host.

Managed Hunting Program

The hunting activity at Twin Buttes desperately needs to be managed. A permitting process needs to be established and a fee assessed to offset the cost of the program. Currently, Twin Buttes' status as a "no-man's land" allows for confusion as to what the regulations are and leads some to engage in irresponsible and illegal behavior. The pure lack of information provided by the city contributes to this atmosphere, and thus, regulations need to be set (using the management best practices in this plan) and available on the web and in hand-out form at local municipal offices and visitor centers.

It is recommended that all vehicle traffic into traditional hunting areas be restricted by allowing only permitted hunters access beyond locked gates by issuing the gate code for that hunting season only. No hunting will be permitted outside of Texas Parks & Wildlife Department-determined hunting seasons and no access (beyond foot or equestrian traffic) will be allowed into the designated Primitive Zones when hunting season is over. Permitted hunters who are allowed vehicle access beyond the locked gates will only be allowed to drive on the main designated road to an interior parking location where vehicles must remain parked in designated areas and hunters must proceed on foot from that point.

Fair Hill NRMA Managed Hunt Application

Name: _____

Address: _____
Street

_____ City _____ State _____ ZipCode

Telephone #: _____

Hunting License #: _____

Number the hunt date blocks, with #1 being your first choice:

	January 14, 2013		January 15, 2013
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Mail the completed application to:
Gwynnbrook WMA, 3740 Gwynnbrook Ave., Owings Mills, MD 21117
Deadline for applications is November 2, 2012.
The lottery drawing will be held on November 5, 2012 at 12:30pm.

The conceptual maps later in this plan outline potential main roads into the interior of the Primitive Zones based upon heavily-traveled existing dirt roads. City staff would have to do some work to block off other side roads by using either native brush piled up or temporary stake and flag type barriers to direct traffic. Signage would also need to be installed to remind visitors to keep vehicles on the designated main road. If violations occur then city staff and the San Angelo Police Department have the option to enforce the rule and ticket the violator and revoke his or her hunting permit. If violations continue then the city has the option to shut down the entire Primitive

Zone to hunting. The majority of hunters are law-abiding and would most likely report violators to authorities to protect their privilege of hunting in the area.

If city staff chooses not to engage in hunting management then efforts need to be made to join the Texas Parks & Wildlife Public Hunting Program. As part of the Public Hunting Program, the recreation area lands will be included in a state-wide map of available properties to hunt in, and will be included in the existing permitting process. Currently, those who choose to hunt on public lands (or leased private lands) must purchase an Annual Hunting Permit for \$48. The permit can be purchased at major sporting goods stores in the state and gives hunters' access to nearly a million acres of land all across the state. In the program, TPWD biologists will monitor and assess the wildlife populations at Twin Buttes Reservoir, in order to suggest bag limits, if they should need to be different than county-wide limits. Additionally, being in a TPWD sponsored program will make it easier for hunters to know and understand the regulations – as the same as what they are used to at other properties – and will ease some of the confusion as to what is and isn't legal at Twin Buttes Recreation Area.

CAPITAL IMPROVEMENTS

Investment in the capital infrastructure of the park is recommended. As the owner of the land, the Bureau of Reclamation may cost share up to 50% for recreation improvements depending on the availability of funds. Reclamation approval is also required for all construction and other improvements, and that new improvements must be compliant with the Americans with Disabilities Act (ADA) and the National Environmental Policy Act (NEPA.)

While there is not significant political will in the municipal arena for improvements, there is significant community support for at least basic capital improvements such as road infrastructure, restroom facilities, and continued enhancement of trail systems. Additionally, investment in entrance signage, entrance gates, and entrance stations that could be manned by volunteer park hosts should be considered given the value they will serve in controlling the unwanted behaviors by irresponsible users.

Additionally, investments need to be made in vehicle control where access is allowed to the receding shoreline. Since the shoreline is so far away from the current boat ramps on the North Pool, vehicles should be allowed to drive down the existing boat ramps along one main, designated road to an area of shoreline for fishing, windsurfing and kayak launching, and waterfowl hunting. It is recommended that removable posts and cables be installed along the main road and the defined shoreline areas in the immediate future to gain control of the vehicle traffic and allow past roads to be reclaimed by vegetation.



Small projects with the support and assistance of the current user groups should be encouraged and facilitated by city staff as much as possible. For example, local groups such as the San Angelo Ducks Unlimited Chapter have volunteered their time to assist in installing a floating dock on the South Pool to make it easier to launch small boats. This group like many other stakeholder groups at Twin Buttes may be able to get materials and equipment donated for use in park projects.

Additionally, the Concho Valley Disc Golf Association has interest in installing a disc golf course on the east side of

the park near the gate to Middle Concho Park. The group provides the volunteer labor to establish the course and maintain it, plus purchases all of the equipment needed for the course. This is a win-win for city officials which merely have to provide space and help monitor its use.

The San Angelo Dirt Riders have made significant improvements to the OHV trail system such as installing signage, mapping the area, and cleaning up the trails where people have dumped trash. The group supports more investment in the area such as trailhead informational signage, restroom facilities, and a camping loop for riders who want to stay overnight.

SPECIAL EVENTS

City staff should continue to support the local stakeholder groups already hosting special events in the park, and work to enhance those special events by providing Convention & Visitors Bureau marketing support among other organizational support.

Triathlons, mud runs, 5K and 10K races, and mountain bike races hosted by the San Angelo Road Lizards Running Club or the San Angelo Bicycling Association should continue to be supported at Twin Buttes Recreation Area. Additionally, any tournaments initiated by the Concho Valley Disc Golf Association at a future course within Twin Buttes Recreation Area should be supported by city staff. Not only do these kinds of events involve a lot of local residents, they also bring in a lot of visitors to the area, who have come solely to race or compete in a tournament. The economic impact associated with these events, should also garner Convention & Visitor Bureau marketing support for the associated non-profits hosting these events.

The idea of an off-road “Baja-style” race to be held at Twin Buttes Recreation Area was presented by the San Angelo Dirt Riders, the Lucas Oil Baja organization, and the San Angelo Chamber of Commerce during this master planning process. The proposed race course would mostly consist of existing dirt roads throughout the recreation area. The idea should be considered with the following precautions: the race course should not cross water bodies such as an arm of the lake or Spring Creek; the course should only be routed on existing dirt roads already established within the park – no new trails should be blazed.; the day of the event the park should be closed to other conflicting activities such as hunting or biking near the course; and the race course should avoid sensitive archaeological areas as defined by the Bureau of Reclamation.



FUNDING OPPORTUNITIES

In addition to traditional funding sources such as the City of San Angelo's General Fund, and any fees generated by park users, there are many other funding opportunities available for outdoor recreation facilities and programs. The following section highlights just some of the grants available; there are many more out there. Many of these funding opportunities require the recipient be a non-profit 501(c)3 organization, which is why it is important for city staff to engage with the local user groups who already have attained this status and/or help to foster a Twin Buttes Recreation Area Friends Group that will attain this status.

TPWD Trail Grants

The Texas Parks & Wildlife Department administers the National Recreational Trails Fund in Texas under the approval of the Federal Highway Administration. This program receives funding from a portion of federal gas taxes paid on fuel used in non-highway recreational vehicles. The grants can cover up to 80% of a project's cost up to \$200,000 for non-motorized trail grants. Currently there is no limit for motorized trail projects. Funds can be spent to build new recreational trails, to improve existing trails, to develop trailheads or trailside facilities (i.e. parking, restrooms, air stations), or to acquire trail corridors. The application deadline is Feb. 1 of each year. <http://tpwd.state.tx.us/business/grants/trpa/#trail>

Boating Access Grants

This grant program also administered by the Texas Parks & Wildlife Department provides up to a 75% match of project funds up to \$500,000. The applicant must provide: the land, the 25% match in funds or in-kind labor, and guarantee public access to the area and maintenance and operation responsibilities for a minimum of 25 years. These funds are allocated annually from the federal Sport Fish Restoration Act and can be used to construct boat ramps or boat lifts, breakwaters, loading docks, land acquisition, fish cleaning stations, restrooms, sewage treatment facilities, potable water, showers, security lights, parking areas associated with the access facilities, signage, navigational aids, retaining walls, engineering and dredging. The application deadline is Oct. 31 of each year. <http://tpwd.state.tx.us/business/grants/trpa/#boatramp>

Outdoor Recreation Grants

These grants administered by the Texas Parks & Wildlife Department provide up to a 50% match of project funds for outdoor recreation projects such as parkland acquisition, construction of playgrounds, sport courts, sport fields, swimming pools, splash pads, camping facilities, canoe launches, nature trails, etc. The maximum amount of the grant award is normally \$500,000; however recent budget cuts in the legislature have reduced the amount of funds available. Special calls for applications will be sent out when funds are available – the most recent deadline was August 1 of the year and there were matches available up to \$100,000. <http://tpwd.state.tx.us/business/grants/trpa/#outdoor>

Great American Trails

Administered by the National Recreation and Park Association, with funding provided by the Darden Foundation and Longhorn Steakhouse Restaurants, the Great American Trails program provides funding for refurbishing and improving trails across the country. In 2012, eight communities were awarded the grants including two communities in Texas. <http://www.nrpa.org/greatamericantrails/>

Tread Lightly! Stewardship Grants

These grants of up to \$1,000 are available to help with a volunteer-based trail clean-up, or trail maintenance projects. The grants are available to Tread Lightly organization members at the \$100 per year level and membership is open to anyone. Grants cover expenses such as tools necessary for projects, trash bags and/or dumpster rental, water or other non-alcoholic beverages for volunteers, fuel used at project location, signage materials, trail building and restoration materials, and facility rentals. The deadline to apply for each cycle is March 1, June 1, August 1, and December 31. <http://treadlightly.org/tread-lightly-stewardship-grant-program/>

Bell Built Grants

Sponsored by Bell and administered by the International Mountain Biking Association there are 3 grants available for \$100,000 to build one of each type of trail: Pump Track/Bike Park, Flow Trail, and a DH/Gravity Trail. Applications are accepted until Feb. 8 in 2013 and then finalists will be selected. The finalists will then be entered into a voting contest throughout the mountain biking community and the 3 projects with the most votes will be selected as winners. It is anticipated that this will be an annual granting opportunity.

<http://www.imba.com/resources/grants/bell-built>

IMBA/CLIF Bar Trail Preservation Grants

These grants of \$500 are administered by the International Mountain Biking Association and sponsored by CLIF Bar. The grants are available to IMBA affiliated clubs to support trail restoration and preservation projects. Applicants must have 501(c)3 status and fill out a short application. The deadline to apply is April 15 annually. CLIF Bar also supports volunteer trail events with donations of CLIF Bars and can be ordered on the IMBA website.

<http://www.imba.com/resources/grants/2011-imba-clif-bar-grants>

IMBA/HucknRoll Trail Improvement Grants

The International Mountain Biking Association administers these \$700 grants sponsored by HucknRoll. The grants are available to IMBA affiliated clubs and can be used to support projects that maintain and improve the sustainability of trails, preserve the environment, and enhance conservation in the mountain biking community. The deadline to apply is April 15 and application materials can be found on the IMBA website.

<http://www.imba.com/resources/grants/hucknroll-trail-improvement-grants>

IMBA/USAC Trail Tune-up Grants

USA Cycling funds these grants through member donations on license applications and renewal forms. Projects that create or improve trails used for mountain bike racing will be given the highest consideration but the \$2,000 grants can also be used to improve trails for race training and recreational riding. The grant also includes technical assistance from one of the Subaru/IMBA Trail Care Crews with an on-site visit. The application period for 2012 was May 15 – August 15. <http://www.imba.com/resources/grants/2010-imbausac-trail-tune-grants-available>

Bikes Belong Coalition Grants

The Bikes Belong Coalition provides grants to support projects such as bike paths, rail trails, mountain bike trails, bike parks, BMX facilities, and large-scale bicycle advocacy initiatives. Grants awarded at this time are called Community Partnership Grants and are awarded to a combined partnership of (1) non-profit 501(c)3 organization, (1) municipality, and (1) business. Grants are in the \$2,000 - \$10,000 range and a specific match is not required, however grants where more than 50% of project funds are requested from Bikes Belong will not be considered.

Special consideration is given to applications where funds are leveraged by partnerships or other funding sources. The application deadline for this year is May 24, 2013. <http://www.bikesbelong.org/grants/>

The NorthFace Explore Fund

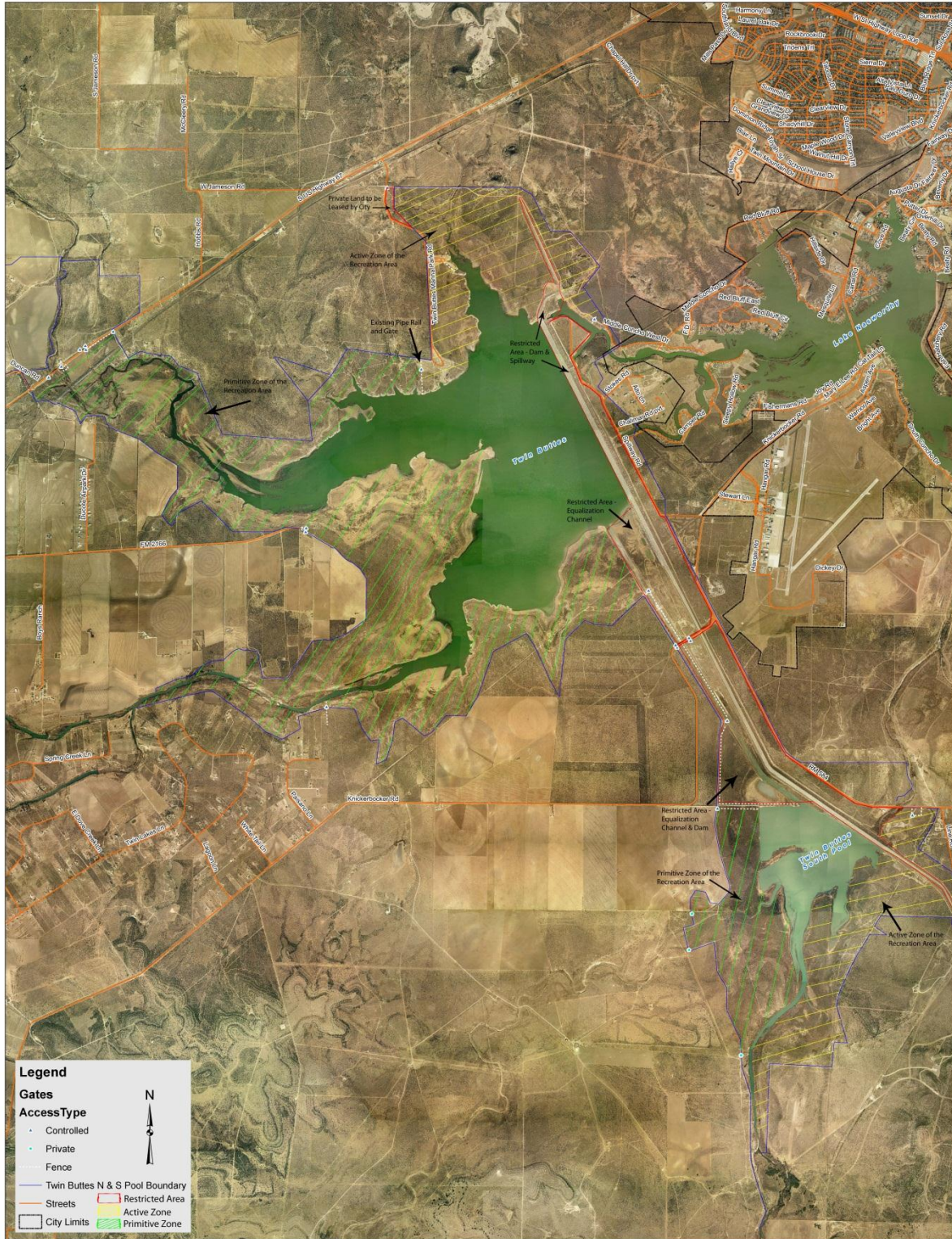
This grant program is sponsored by The NorthFace outdoor gear retailer and provides grants up to \$2,500 for non-profit groups to encourage youth outdoor participation, connect children to the outdoors, increase access to both frontcountry and backcountry recreation, and provide education for both personal and environmental health. Organizations must have 501(c)3 status and provide specific proposals with measurable outcomes. The 2013 application deadlines have not yet been announced. <http://www.explorefund.org/>

NEEF Every Day Capacity Building Grants

The National Environmental Education Foundation administers this grant program which is sponsored by Toyota. The program provides grants of up to \$5,000 to strengthen Friends Groups to unleash their potential to serve their public lands. These grants strengthen stewardship of public lands by strengthening Friends Groups through funding for organizational capacity building. Applications are accepted on a rolling basis and there are 2 deadlines: October 30 and April 30. http://www.neefusa.org/grants/every_day_grants.htm

CONCEPTUAL MAPS

Twin Buttes Recreation Area Overview (Detailed maps to follow)



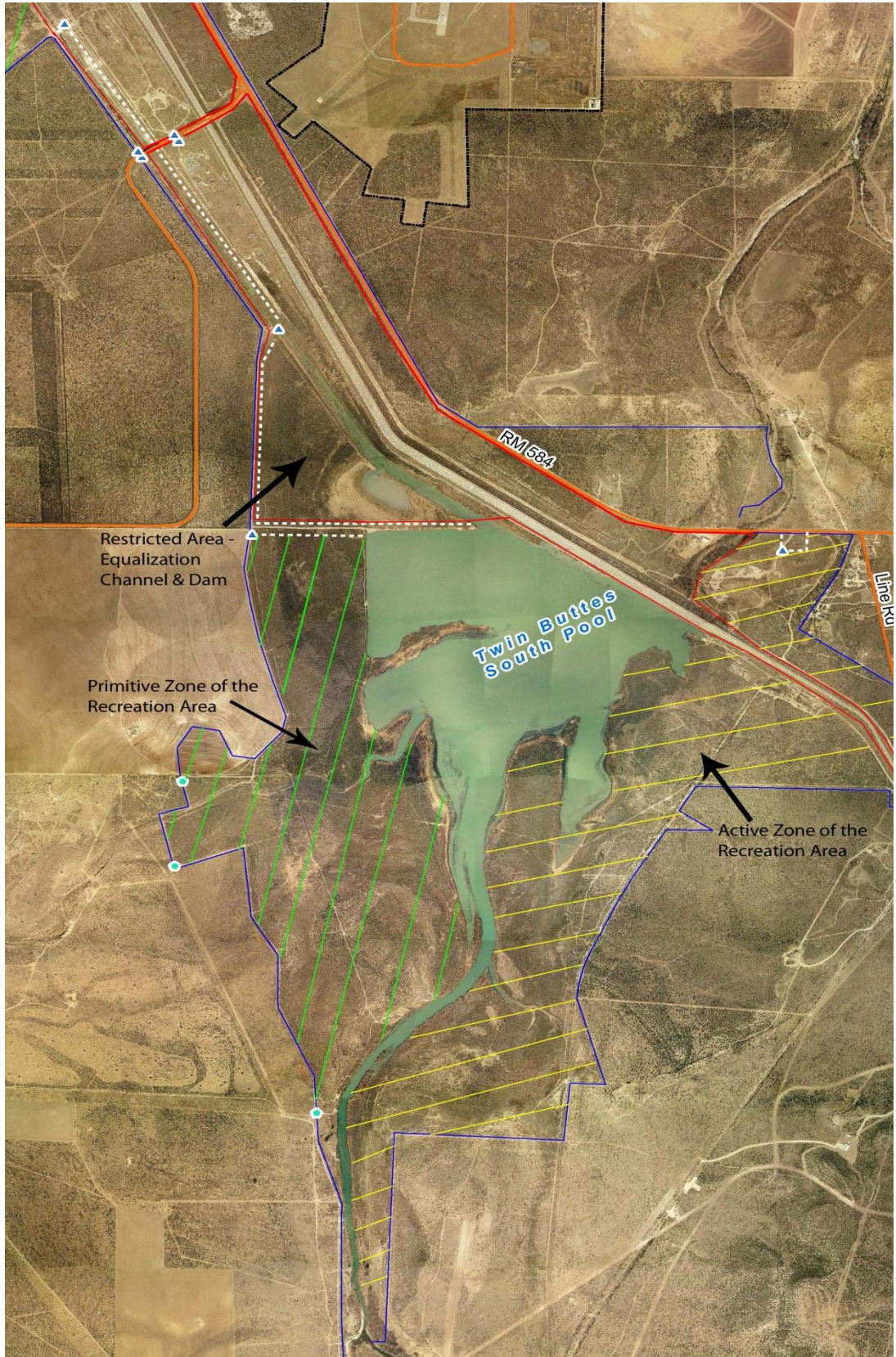
North Pool Recreation Use Zones – Middle Concho Arm



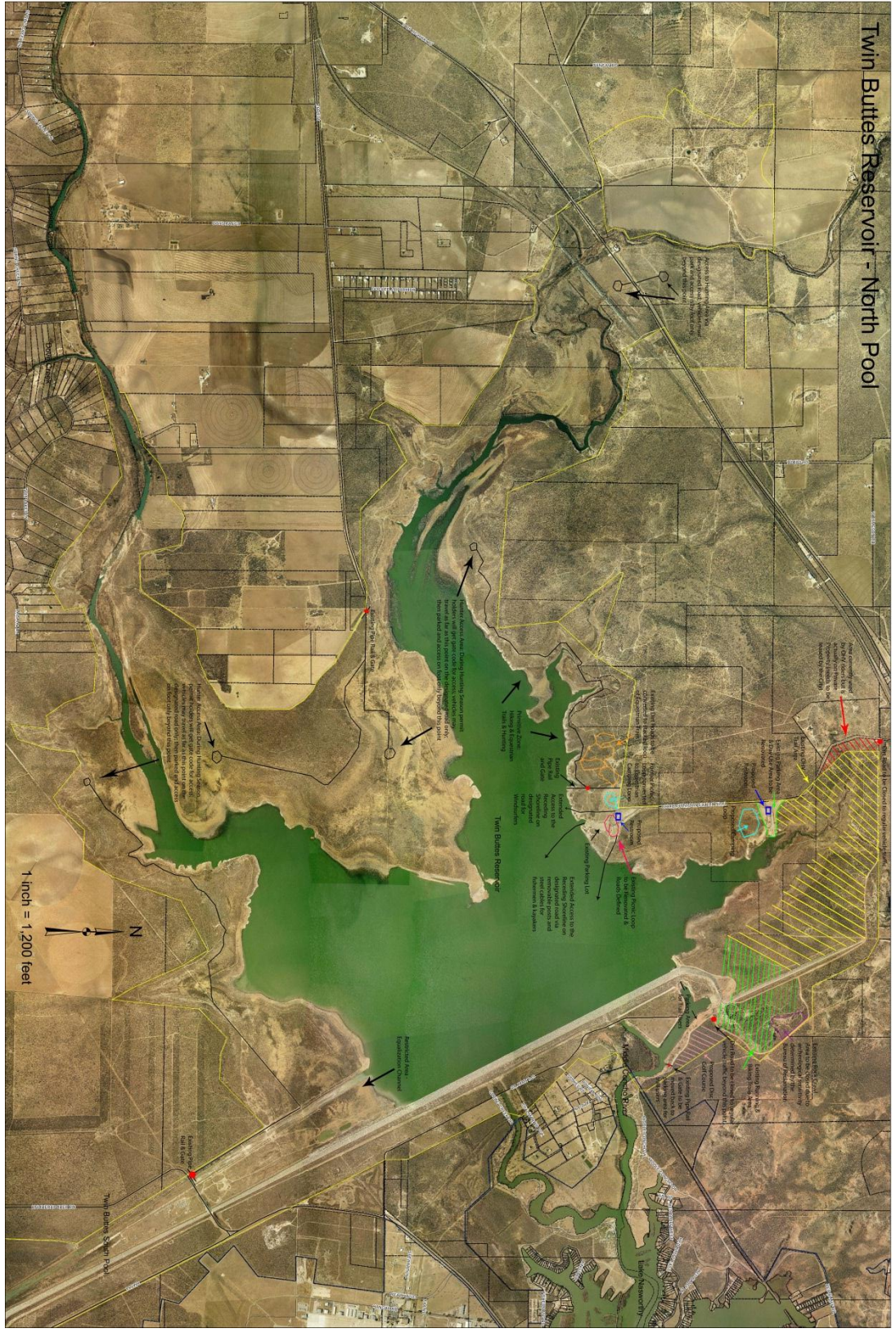
North Pool Recreation Use Zones – Spring Creek Arm



South Pool Recreation Use Zones



North Pool Overview



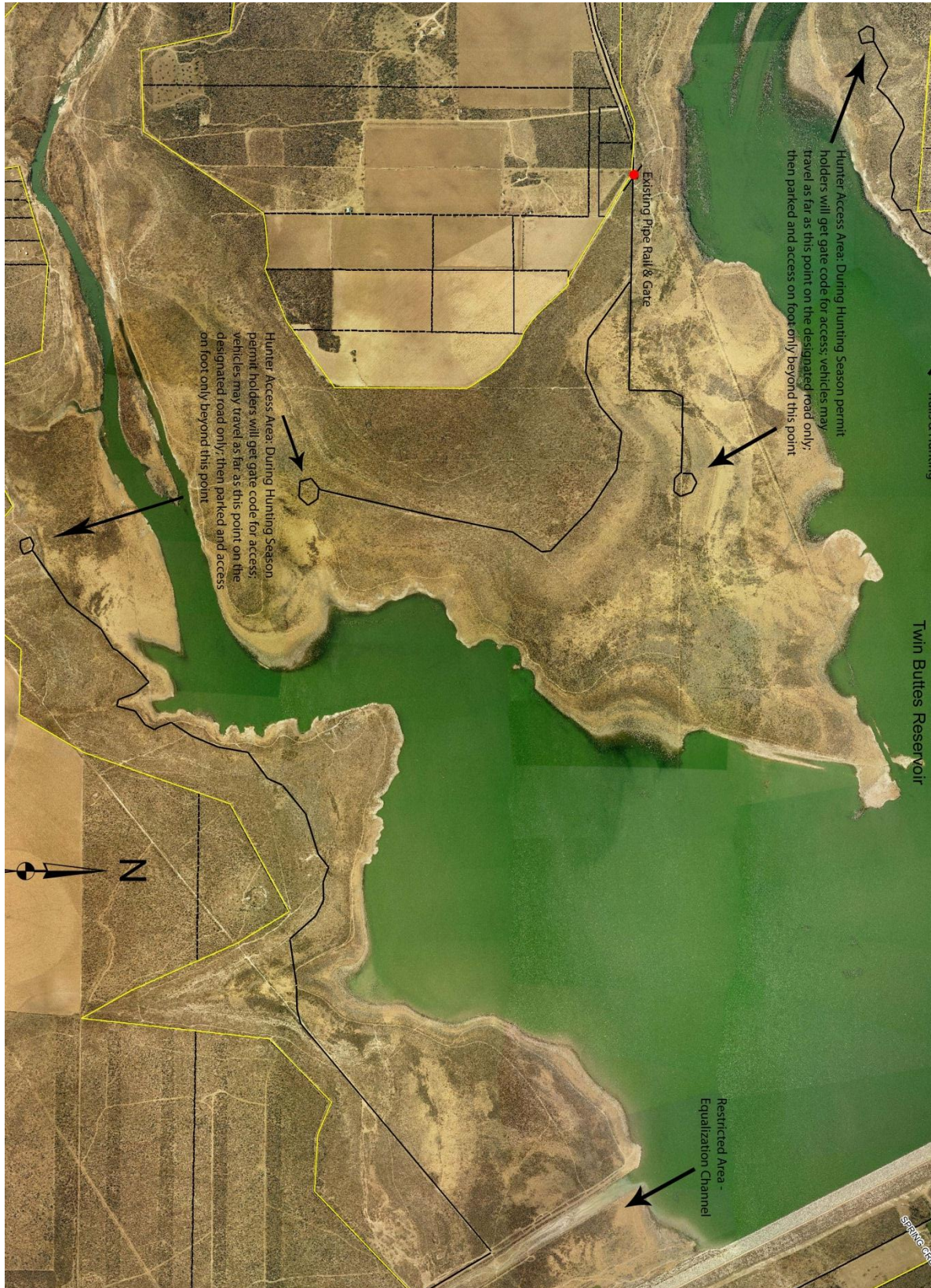
North Pool – Main Entrance



North Pool – Middle Concho River Arm



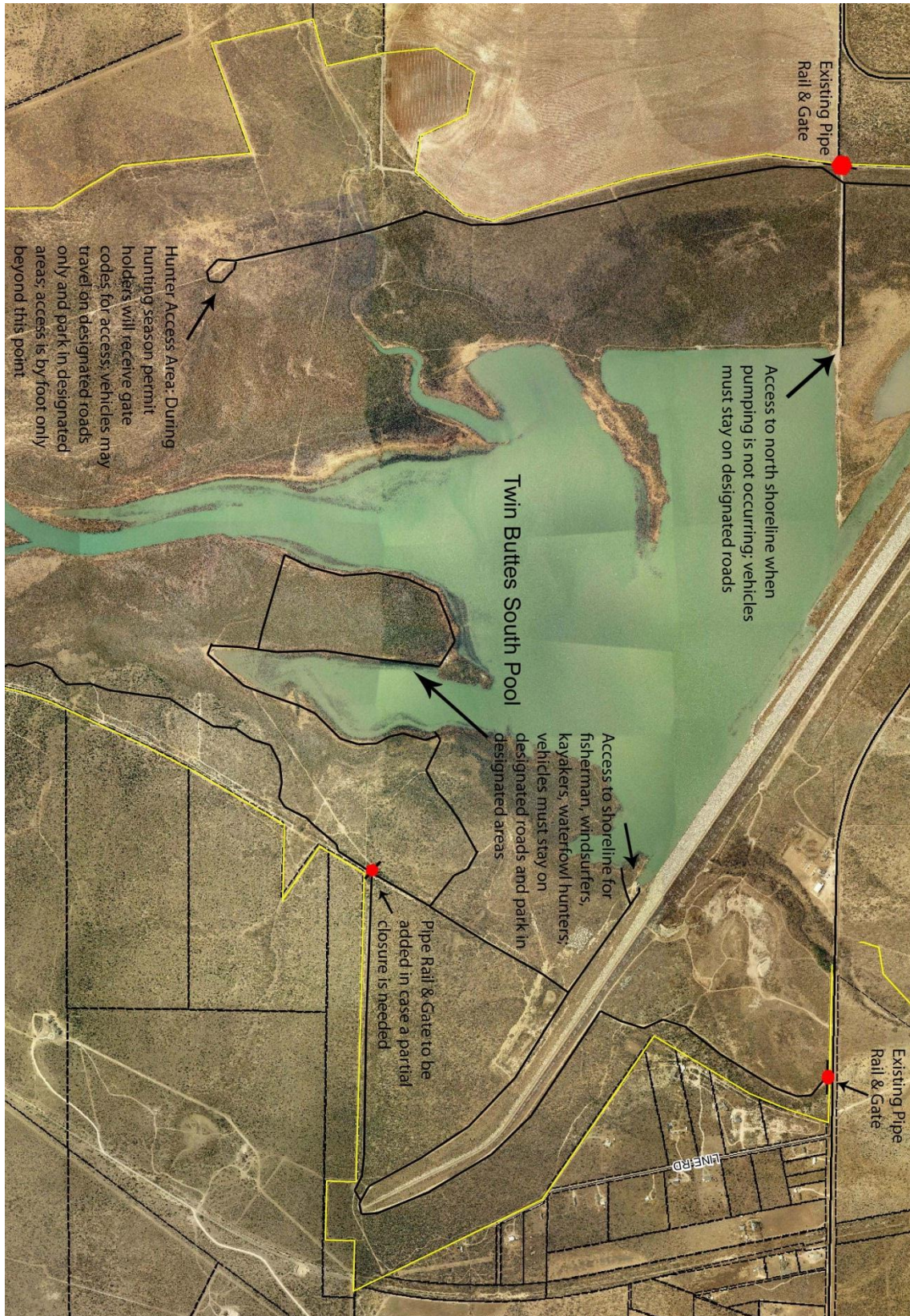
North Pool – Spring Creek Arm



South Pool Overview (detailed maps to follow)



South Pool - Main Entrance



South Pool – South Concho Arm



23



Find your way with easy to understand trail signs and maps

Trail Number & Direction

ATV Rating

Green = Beginner,
Blue = Intermediate,
Red = Advanced

4x4 / Jeep Rating

Green = Class 2, Blue = Class 3
Orange = Class 4, Red = Class 5



Primitive Campsites and Tent Decks Available



Permit Fees (Per Vehicle)

\$35 - Yearly Permit (One year from month of purchase)

Family Discount: \$5 off your second permit and \$15 off each additional (Yearly Permit only)

\$20 - 31-Day Permit

Lodging

Everts Tourism Commission, Everts
RV Sites, Camping, 1 Mile from Trailhead (877) 737-0778

Black Mountain Cabins, Everts
2 Miles from Trailhead (606) 837-9961

Harlan County Campground
Cabins & RV Park, Putney Trailhead (606) 573-9009

Little Inn of Harlan, Harlan
8 Miles from either Trailhead (606) 573-7011

Holiday Inn Express, Harlan
9 Miles from either Trailhead (800) 465-4329

Mount Aire Motel, Harlan
9 Miles from either Trailhead (800) 988-4660

America's Best Value Inn, Cumberland
12 Miles from Putney Trailhead (606) 589-4911

Benham School House Inn, Benham
15 Miles from Putney Trailhead (800) 231-0627

For more lodging information, visit
www.HarlanCountyTrails.com/lodging

Black Mountain Off-Road Adventure
Area Office & General Store
(606) 837-3205

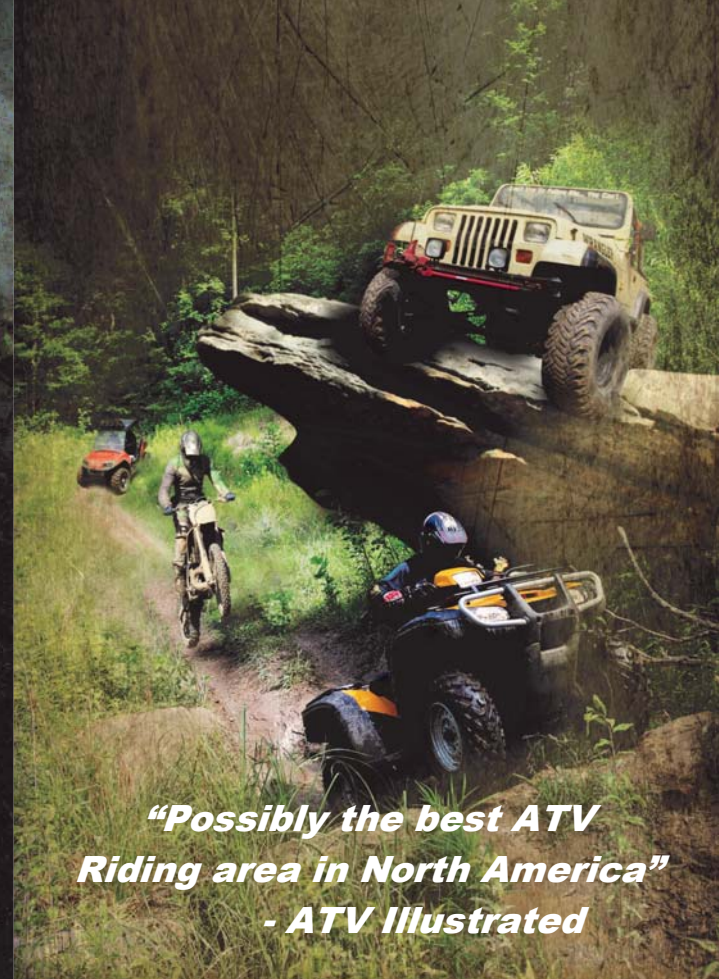
Office Hours:
8-430 Sunday thru Thursday
8-8 Friday and Saturday
Trails always open

Operated by the Harlan County
Outdoor Recreation Board Authority



www.HarlanCountyTrails.com

Come Ride The Best



*"Possibly the best ATV
Riding area in North America"
- ATV Illustrated*

Over 150 Miles of Trails...

Open 24 hours per day, 365 days per year



Come Join the Fun!!

Black Mountain Off-Road Adventure Area is fast-becoming the most popular ATV and 4x4 destination on the east coast. The reason is simple; Great trails, breathtaking views and old-fashioned Appalachian hospitality.

- Beginner, Intermediate and Extreme trails.
- Every trail is marked, rated and mapped.
- Open to ATVs, Trucks, Dirtbikes and more.
- Never closes, open all day, year-round.
- Two convenient trailheads.

Find out more online at
www.HarlanCountyTrails.com

Elevations up to 3,300 Feet

Breathtaking views from atop
the Appalachian Mountains

Class 4 & Class 5
4x4 Obstacles

Variety of trails rated for every skill level...
Beginner, Moderate or Advanced



Trails for everybody

It doesn't matter if you prefer sport quads, side-by-sides or rail buggies, Black Mountain offers an experience for families and hardcore off-roaders, all at rates lower than any other off-road trail system.



Events all-year round

Black Mountain is home to an array of events and competitions held by local and national clubs each year. Be sure to check out our events schedule online at www.HarlanCountyTrails.com



2012 Firearm Hunt Regulations

Laguna Atascosa National Wildlife Refuge

New Information:

- All hunt permits are now \$75 each.
- **Two-deer bag limit: one male (antlered or button buck) and one female or two females per hunt permit.**
- **Scouting periods are November 9-11 and 16-18, 2012.**

Refuge Firearm Hunts

Five 2-day hunts, 3 consecutive days each hunt, from noon the first day to noon the last day, 35 hunters per hunt, as follows:

Hunt #1: December 4-6

Hunt #2: December 8-10

Hunt #3: December 14-16

Hunt #4: December 21-23

Hunt #5: December 28-30

Firearm Permit Process & Fee

All firearm hunts are a random drawing. Applications are only accepted and have to be postmarked during August, 2012. Applicants only pay if they are selected. All hunts are now \$75 per hunt permit. Replacement permits will be issued for an additional \$5 fee. Applicants can mail, fax, or apply in person at the Refuge Office, Monday-Friday; 7:30 a.m. to 4:00 p.m. A maximum of three applicants may be listed on each application but an individual hunter may apply only once. Only successful applicants will be notified by mail in September, 2012. All hunt fees are non-refundable. All hunts may be cancelled without notice for public safety or resource protection reasons (e.g., high wildfire danger).

Firearm Hunt Units

Refuge Units 2, 3, 5, and 8 will be open for firearm scouting and hunting. Hunt Units or areas within a unit may not be reserved.

Closed Areas

The following areas are closed to hunting: Adolph Thomae, Jr. County Park in Unit 3, Units 1, 4, 6, and 7 and all areas posted "No Hunting Zone" or as indicated on the Firearm Hunt Map.

Hunting Access

Only permitted hunters will be allowed in the Hunt Units during the firearm hunts. On the first day of your scheduled hunt, you must report to the Refuge check station at 12 noon for a hunter orientation. For the remainder of the hunt, you may enter the Refuge one hour before legal shooting hours (i.e., 1½ hours before official sunrise). All harvested game is required to check out at the Refuge check station.

Parking and Vehicle Access

Vehicle parking is allowed at the Unit 1 parking area, along the roadsides of General Brant Road (FM 106), and County Road.

Motorized vehicle access is allowed on Refuge roads that are not closed by gates or signs. All other roads may only be accessed by foot or bicycle.

Mobility Impaired Hunters

Hunters with mobility impairments must contact the Assistant Refuge Manager by October 28, 2012 to obtain the new application forms for special access accommodations.

Scouting Access

Permitted hunters may scout during the following periods: November 2-4 and 16-18, 2012. Scouting access hours will be from official sunrise to official sunset. A permitted hunter, and a limit of two non-permitted individuals accompanying the hunter, may enter the Hunt Units during the scouting period. A Refuge-issued Vehicle Validation Tag & Scouting Permit must be conspicuously displayed on vehicle dashboard. Possession of firearms or archery equipment is not permitted during scouting.

Flagging & Markers

The use of flagging and markers to mark trails and stands is prohibited.

Hunting Stands & Blinds

We allow hunting from portable stands or by stalking and still hunting. There is a limit of one blind or stand per permitted hunter. You must attach hunter identification (name and phone number), to the blind or stand. We prohibit attaching blinds and stands to trees or making blinds and stands from natural Vegetation. You must remove all blinds and stands at the end of the permitted hunt season.

Other Uses

We prohibit use of or hunting from any type of watercraft or floating device. We prohibit the possession or use of dogs while scouting or hunting.

Legal Weapons

We only allow the use of shoulder-fired muzzleloaders, rifles and crossbows during the firearm hunt. Persons may only use (discharge) firearms in accordance with Refuge regulations. Muzzleloader firearms must be .40 caliber or larger, and modern rifles must be center fired and .22 caliber or larger. All firearms must be unloaded and cased while in a vehicle. Loaded is defined as having rounds in the chamber or a firing cap on a muzzle-loading firearm. We prohibit target practice or "sighting-in" on the refuge.

Bait

The possession and/or distribution of bait or hunting over bait is prohibited.

Legal Species and Bag Limit

Two-deer bag limit: one male (antlered or button buck) and one female per hunt permit. There is no bag limit on feral hogs and nilgai antelope. Hunting of javelina is prohibited. You may not kill or wound an animal covered in this section and intentionally or knowingly fail to make a reasonable effort to retrieve and include it in your bag limit.

Hunters 17 and Younger

Each youth hunter, ages 9 through 17, must be accompanied by, and remain within sight and normal voice contact of, an adult age 21 or older.

Hunter Orange

Hunters must visibly wear 400 square inches of hunter orange including 144 square inches visible on both the chest and back, and a hunter orange cap or hat visible on the head. Hunter orange *camouflage patterns* may be worn.

Field Dressing

Hunts are primitive; therefore, assistance from Refuge personnel will be very limited to none. Make harvest plans accordingly. Harvested game must be field dressed before removed from the Refuge. You may quarter your game. You may use a non-motorized cart/wagon to transport harvested game. A meat cooler is available at the Refuge check station for temporary storage of game.

Alcoholic Beverages and Drugs

The use or possession of alcoholic beverages and drugs on the Refuge is prohibited.

Camping

We allow camping *only* at Adolph Thomae Jr. County Park. Access to the Refuge is not permitted directly from the county park.

We reserve the right to revoke or deny any permit for up to five years due to unsafe conduct or violation of one or more refuge regulations.

For Additional Information Contact:

Laguna Atascosa National Wildlife Refuge
22817 Ocelot Road
Los Fresnos, Texas 78566
(956) 748-3607
(956) 748-3609 (Fax)
FW2_RW_Laguna@fws.gov (E-mail)

Download hunt applications at
www.friendsofsouthtexasrefuges.org



Hunting Information and Regulations



Welcome to Lake Meredith National Recreation Area. Game species found here include dove, turkey, quail, duck, goose, whitetail and mule deer. To help improve game harvest estimates, and management of big game species, hunters should notify a National Park Service Ranger or Texas Game Warden after taking a deer.

General Information

The National Park Service wants all hunters to have a safe hunt. All hunters are required to have a Texas State Hunting License with appropriate endorsements to match the game being hunted. A Federal Duck Stamp is also required for those hunting migratory waterfowl.

Two areas in the Lake Meredith National Recreation Area are open to off-road vehicles (ORV): Blue Creek and Rosita Flats. Vehicle use in the Blue Creek area is to be confined to the creek bed. Rosita begins at the Park Boundary and ends at Chicken Creek. No motorized vehicles of any kind are permitted past Chicken Creek.



Seasons, Bag Limits and Regulations

Hunting seasons and bag limits for Lake Meredith National Recreation Area are outlined in our annual hunting brochure, available at park headquarters, or from any NPS ranger.

It is the responsibility of the hunter to be aware of applicable federal regulations on federal lands.

Fall Turkey Season as outlined in the Texas Parks and Wildlife Outdoor Annual is not observed at Lake Meredith National Recreation Area.

As outlined in our annual hunting brochure, only Gobblers may be harvested on Lake Meredith National Recreation Area.

Spring Turkey Season is Shotgun and Archery—Gobblers Only.

Safety

HUNTER ORANGE: During General Deer Season and Youth Whitetail Seasons, all hunters are required to wear hunter orange clothing, consisting of 400 square inches of daylight florescent orange with 144 square inches appearing on both chest and back, and daylight florescent orange headwear must be worn. **NOTE:** Migratory bird hunters on the waters of Lake Meredith are exempt.

WEATHER: Sudden changes in weather are common. Hunters should be equipped for severe weather. Always check local forecasts prior to hunting. Boaters should avoid lake areas exposed to severe winds, and wait in a sheltered area for calmer, safer conditions.

FIRES: Fires are permitted in established camping areas unless a burn ban is in effect. Fires should not be left unattended; they must be extinguished completely with water before leaving camp. No fires are permitted in the backcountry.



The employees and volunteers at Lake Meredith NRA want you to have a SAFE and enjoyable hunting experience.

Prohibited Activities

The following are PROHIBITED:

1. Poaching of out-of-season game. These incidents should be reported to a Park Ranger or a Texas Game Warden immediately.
2. Hunting of non-game animals. Exemption: rabbits, coyotes and raccoons may be hunted during quail season.
3. Baiting animals.
4. Use of artificial lighting (i.e. spotlighting) for hunting.
5. Hunting or releasing feral livestock within the boundaries of the park.
6. Permanent stands or blinds. Temporary blinds must have the hunter's name and telephone number on the blind, and the blind must be removed within 24 hours of hunt.
7. Discharge of a weapon other than legal taking of game, including target shooting or weapon sighting. Exemption: Primitive weapons may be discharged prior to transportation.
8. Carrying a handgun while archery hunting.
9. Loaded weapons inside a vehicle, on an ORV, or on vessels, unless the vessel on the water is not being propelled and is being used as a shooting platform.
10. Hunting or shooting from or across a roadway.
11. Traveling off designated roadways.
12. Operating an ORV outside designated areas.
13. Camping for more than 14 days. However, between October 1 and December 31, camping for hunting activities for up to thirty calendar days will be allowed if the equipment is identified with the hunter's name and telephone number.
14. Leaving a camp unattended for more than 24 hours.
15. Digging or leveling the ground for a camp area.
16. Firewood, such as pallets with nails/hardware, unless the hazards are removed before burning.



For further information about Lake Meredith National Recreation Area facilities, services and programs, write or call:

Superintendent
Lake Meredith National Recreation Area
P.O. Box 1460
Fritch, TX 79036

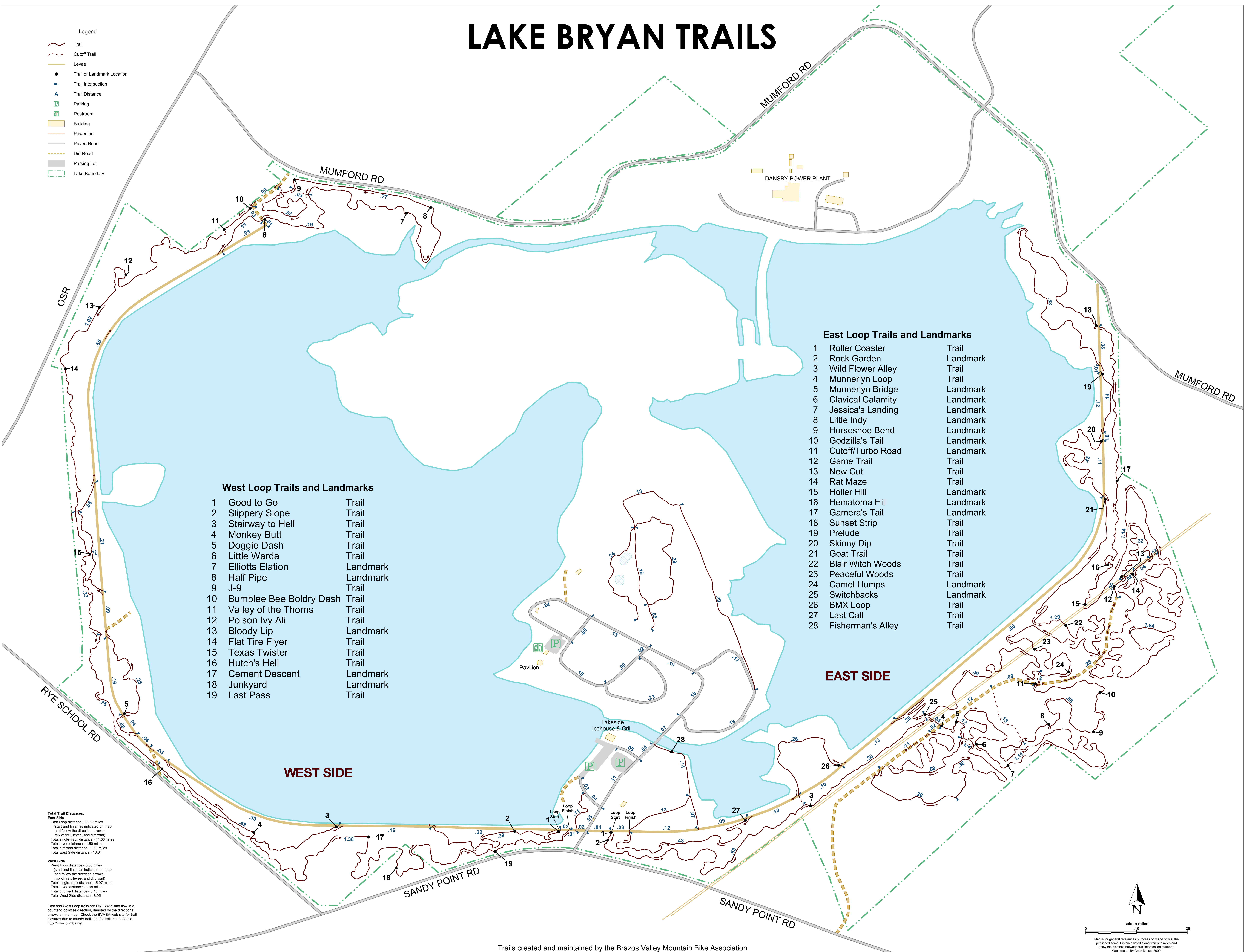
(806) 857-3151

www.nps.gov/lamr

In case of emergency, telephone 911.
For non-emergencies, telephone Borger
Dispatch at (806) 273-0930.

LAKE BRYAN TRAILS

- Legend**
- Trail
 - Cutoff Trail
 - Levee
 - Trail or Landmark Location
 - Trail Intersection
 - Trail Distance
 - Parking
 - Restroom
 - Building
 - Powerline
 - Paved Road
 - Dirt Road
 - Parking Lot
 - Lake Boundary

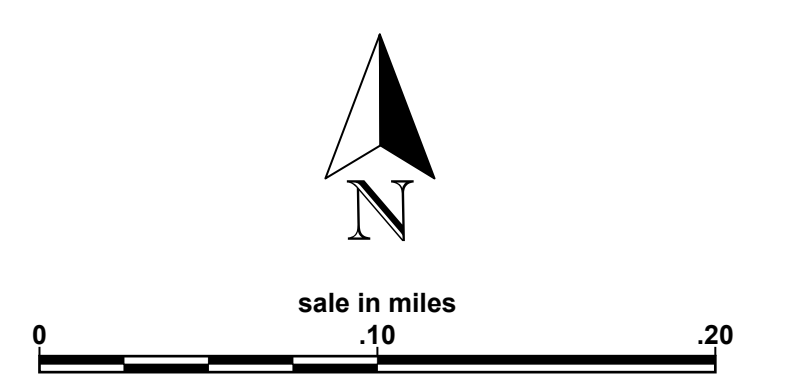


- West Loop Trails and Landmarks**
- | | | |
|----|------------------------|----------|
| 1 | Good to Go | Trail |
| 2 | Slippery Slope | Trail |
| 3 | Stairway to Hell | Trail |
| 4 | Monkey Butt | Trail |
| 5 | Doggie Dash | Trail |
| 6 | Little Warda | Trail |
| 7 | Elliotts Elation | Landmark |
| 8 | Half Pipe | Landmark |
| 9 | J-9 | Trail |
| 10 | Bumble Bee Boldry Dash | Trail |
| 11 | Valley of the Thorns | Trail |
| 12 | Poison Ivy Ali | Trail |
| 13 | Bloody Lip | Landmark |
| 14 | Flat Tire Flyer | Trail |
| 15 | Texas Twister | Trail |
| 16 | Hutch's Hell | Trail |
| 17 | Cement Descent | Landmark |
| 18 | Junkyard | Landmark |
| 19 | Last Pass | Trail |

- East Loop Trails and Landmarks**
- | | | |
|----|-------------------|----------|
| 1 | Roller Coaster | Trail |
| 2 | Rock Garden | Landmark |
| 3 | Wild Flower Alley | Trail |
| 4 | Munnerlyn Loop | Trail |
| 5 | Munnerlyn Bridge | Landmark |
| 6 | Clavical Calamity | Landmark |
| 7 | Jessica's Landing | Landmark |
| 8 | Little Indy | Landmark |
| 9 | Horseshoe Bend | Landmark |
| 10 | Godzilla's Tail | Landmark |
| 11 | Cutoff/Turbo Road | Landmark |
| 12 | Game Trail | Trail |
| 13 | New Cut | Trail |
| 14 | Rat Maze | Trail |
| 15 | Holler Hill | Landmark |
| 16 | Hematoma Hill | Landmark |
| 17 | Gamera's Tail | Landmark |
| 18 | Sunset Strip | Trail |
| 19 | Prelude | Trail |
| 20 | Skinny Dip | Trail |
| 21 | Goat Trail | Trail |
| 22 | Blair Witch Woods | Trail |
| 23 | Peaceful Woods | Trail |
| 24 | Camel Humps | Landmark |
| 25 | Switchbacks | Landmark |
| 26 | BMX Loop | Trail |
| 27 | Last Call | Trail |
| 28 | Fisherman's Alley | Trail |

Total Trail Distances:
East Side
 East Loop distance - 11.62 miles
 (start and finish as indicated on map and follow the direction arrows; mix of trail, levee, and dirt road)
 Total single-track distance - 11.56 miles
 Total levee distance - 1.50 miles
 Total dirt road distance - 0.56 miles
 Total East Side distance - 13.64 miles
West Side
 West Loop distance - 6.80 miles
 (start and finish as indicated on map and follow the direction arrows; mix of trail, levee, and dirt road)
 Total single-track distance - 5.97 miles
 Total levee distance - 1.58 miles
 Total dirt road distance - 0.10 miles
 Total West Side distance - 8.05 miles

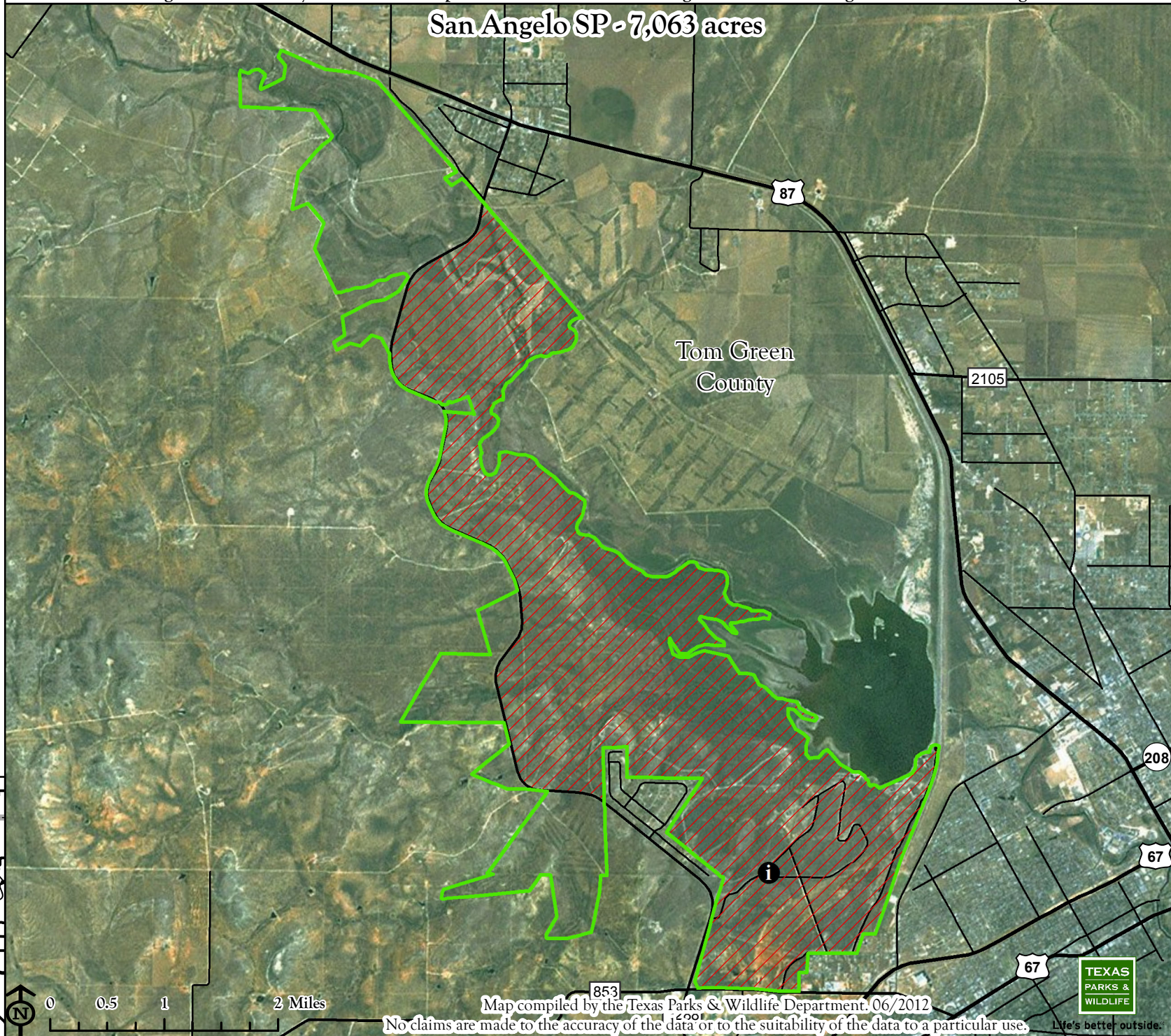
East and West Loop trails are ONE WAY and flow in a counter-clockwise direction, denoted by the directional arrows on the map. Check the BVMAA web site for trail closures due to muddy trails and/or trail maintenance.
<http://www.bvmba.net>



*** Annual Public Hunting Permit Required ***

Refer to Legal Gamebox in your "2012-13 Map Booklet for Public Hunting Lands" for hunting information and regulations.

San Angelo SP - 7,063 acres



- Headquarters
- Info/Registration Station
- Deer Check Station
- Designated Access Point
- Parking
- Camp Sites
- Boat Ramp
- Canoe/Small Craft Launch
- Equestrian Trailhead/Parking
- Viewing Blind
- Water Troughs
- Guzzlers
- Windmill
- Gate
- City
- Fence
- Canal
- Levee
- Pipeline
- Transmission Line
- Public Hunt Property
- No Hunt Zone
- Private In-holdings
- Archery Hunting Only
- Waterfowl Hunt Area
- Waterfowl Sanctuary
- Recommended Dove Area
- Special ATV/ORV Use Area
- Equestrian Area
- County



Map compiled by the Texas Parks & Wildlife Department. 06/2012

No claims are made to the accuracy of the data or to the suitability of the data to a particular use.



Life's better outside.

Spillway Hill Trails

The Spillway Hill trailhead is located just outside the back gate of Middle Concho Park in SW San Angelo. To get there, take Knickerbocker Blvd south from Loop 306 until you reach Red Bluff Road. There is a large Baptist on the left and Packsaddle BBQ on the right.

Turn right onto Red Bluff and follow it until it dead ends in the park (see image #1). When you enter Middle Concho Park, make an immediate right on the paved park road and follow it 1 mile to the back gate. The paved road will change to gravel after ½ mile.

Park near the back gate and bike, run, or walk out the back gate (if it's closed just go over or around it). There is an opening in the rock berm directly ahead at the base of the hill just a few yards outside the back gate. That opening leads you onto the Spillway Hill trails (see image #2).

Although most trails are not currently marked with signs, you can see the worn path used by cyclists, runners, and hikers (see image #3). There are numerous 4WD roads and trails on the hill, and additional trails and dirt roads to the west of Spillway Hill on the other side of the levee.

Image #1: Middle Concho Park location

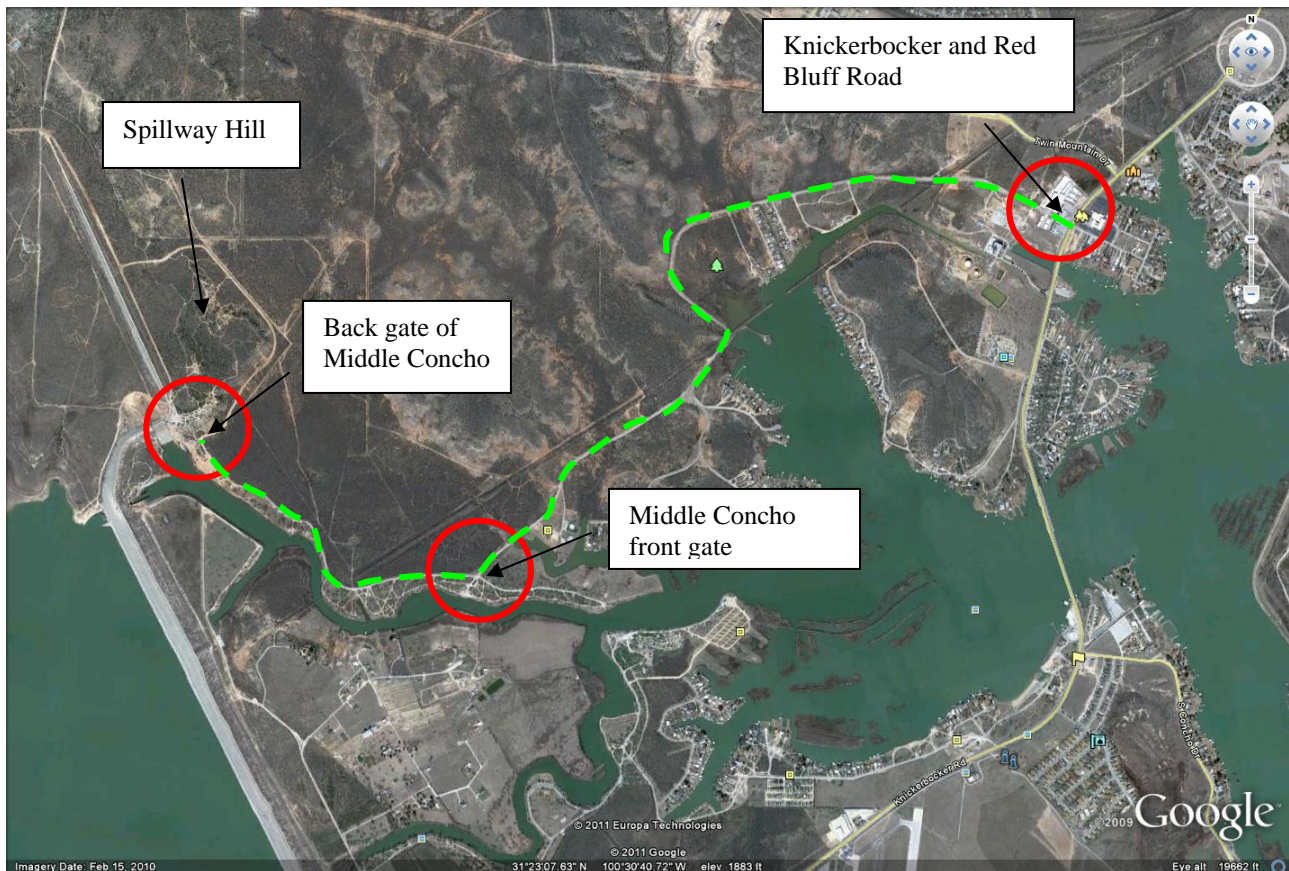


Image #2: Back gate and trail head



Image #3: Spillway trails

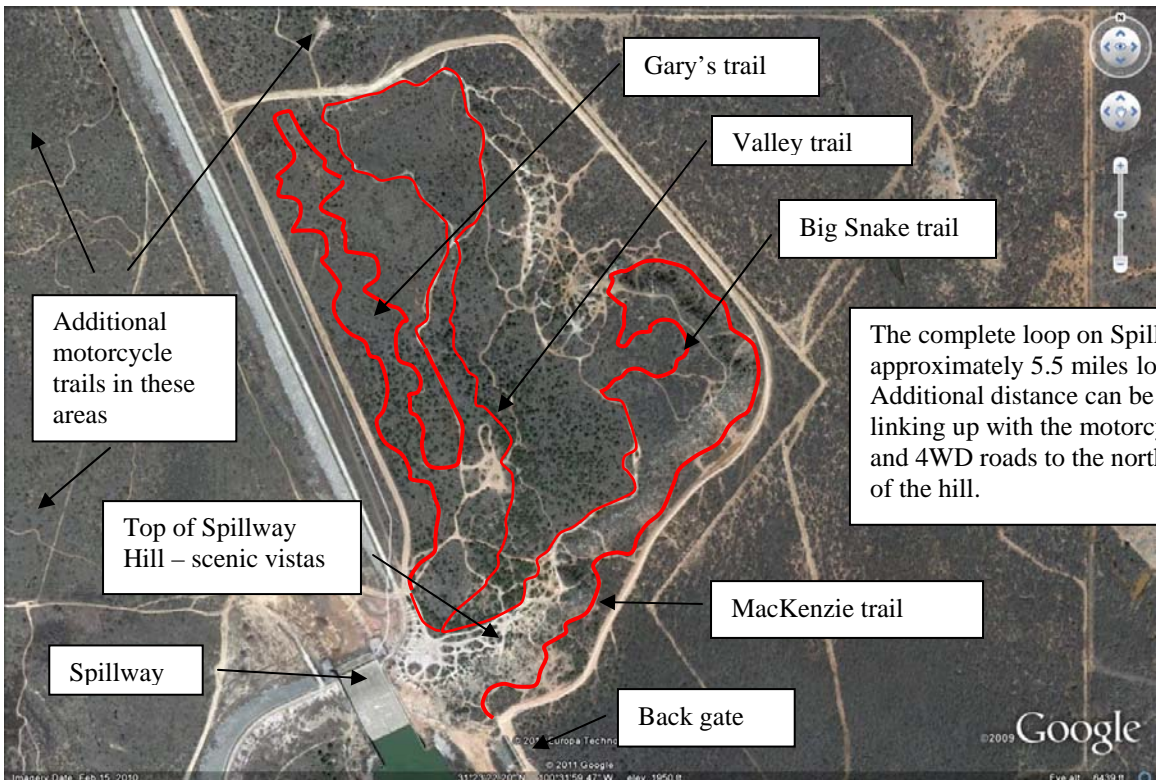
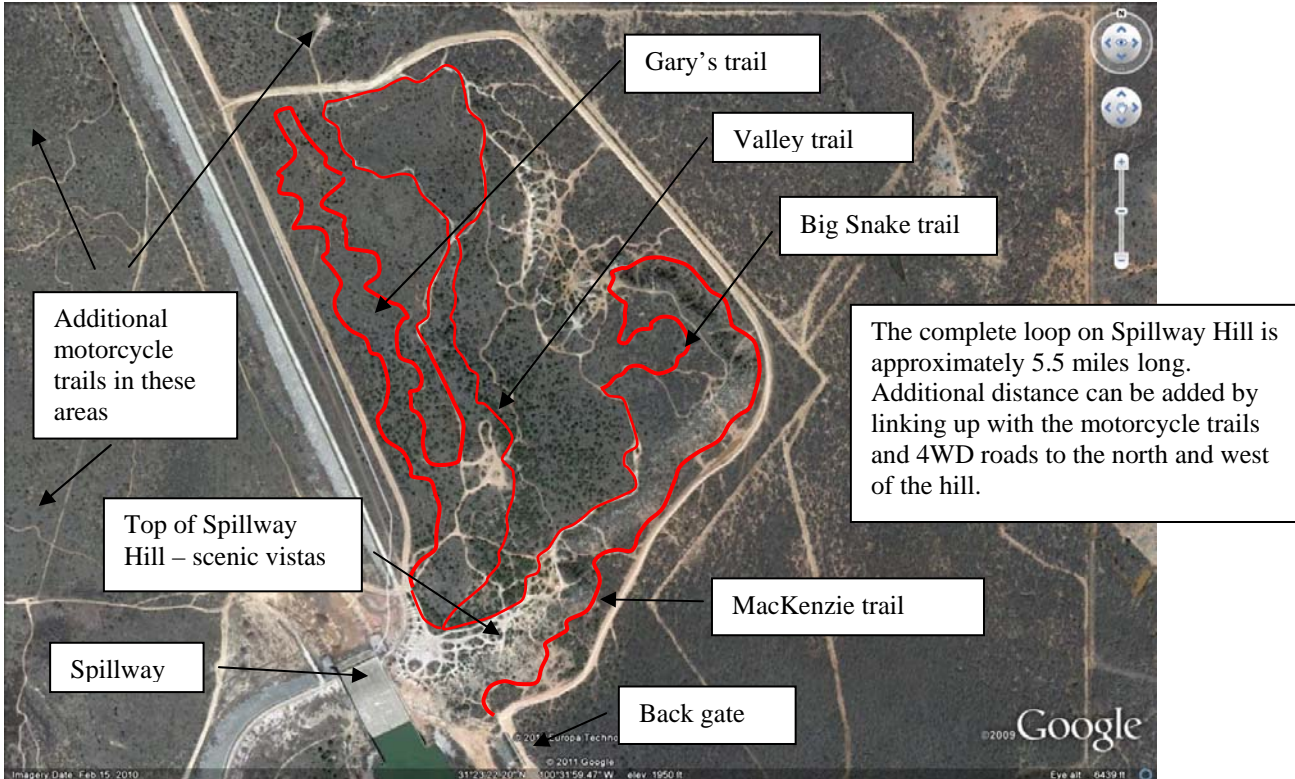


Image #3: Spillway trails



Gary's trail

Valley trail

Big Snake trail

Additional motorcycle trails in these areas

The complete loop on Spillway Hill is approximately 5.5 miles long. Additional distance can be added by linking up with the motorcycle trails and 4WD roads to the north and west of the hill.

Top of Spillway Hill – scenic vistas

MacKenzie trail

Spillway

Back gate

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