Great Plains State Park
Resource Management Plan
Kiowa County, Oklahoma

Lowell Caneday, Ph.D.
Hung Ling (Stella) Liu, Ph.D.
I-Chun (Nicky) Wu, Ph.D.
Tyler Tapps, Ph.D.

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Figure 0.1 – Granite Hills trail and Great Plains area
Acknowledgements

The authors acknowledge the assistance of numerous individuals in the preparation of this Resource Management Plan. On behalf of the Oklahoma Tourism and Recreation Department’s Division of State Parks, staff members were extremely helpful in providing access to information and in sharing of their time. The essential staff providing assistance for the development of the RMP included Jennifer Meeks, manager of Great Plains State Park; Virgil Walker, manager of Fort Cobb State Park, but former manager of Great Plains State Park and a long-time resident of the area; and Bruce Divis, Regional Manager of the Western Region, with assistance from other members of the staff at Great Plains State Park. Assistance was also provided by Deby Snodgrass, Kris Marek, and Doug Hawthorne – all from the Oklahoma City office of the Oklahoma Tourism and Recreation Department.

Trent Parish and Precious Braggs from the Bureau of Reclamation also attended meetings during the preparation of the RMP. Their insight related to Reclamation and its policies was of great value.

It is the purpose of the Resource Management Plan to be a living document to assist with decisions related to the resources within the park and the management of those resources. The authors’ desire is to assist decision-makers in providing high quality outdoor recreation experiences and resources for current visitors, while protecting the experiences and the resources for future generations.

Lowell Caneday, Ph.D., Regents Professor
Leisure Studies
Oklahoma State University
Stillwater, OK 74078
Abbreviations and Acronyms

ADAAG .................................................. Americans with Disabilities Act Accessibility Guidelines
BA ................................................................................. biological assessment
BIA ............................................................................. Bureau of Indian Affairs
BO ........................................................................................ biological opinion
CCC ........................................................................... Civilian Conservation Corps
CDC ........................................................................... Centers for Disease Control
CFR ............................................................................ Code of Federal Regulations
CLEET ........................................................ Council on Law Enforcement Education and Training
CPSC ........................................................................... Consumer Product Safety Commission
DOI ............................................................................. Department of Interior
EA ................................................................................ environmental assessment
EIS ................................................................................ environmental impact statement
EPA ................................................................................ Environmental Protection Agency
ESA ................................................................................ Endangered Species Act
FACA .......................................................... Federal Advisory Committee Act, Public Law 92-463
FLPMA ............................................................ Federal Land Policy and Management Act of 1976
GIS ............................................................................ geographic information systems
GPS ................................................................................ global positioning system
mcf ................................................................................ million cubic feet
MCL ................................................................................ Maximum Contaminate Level
NAAQS .......................................................... National Ambient Air Quality Standards
NAWQA .......................................................... National Water Quality Assessment Program
NEPA ................................................................................ National Environmental Policy Act
NHPA ................................................................................ National Historic Preservation Act
NPRM ............................................................... Notice of Proposed Rule Making
OSU ............................................................................ Oklahoma State University – Stillwater
OTRD .............................................................. Oklahoma Tourism and Recreation Department
OWRB .............................................................. Oklahoma Water Resources Board
PBCR ................................................................................ Primary body contact recreation
pH ................................................................................ potential for hydrogen ions
ppm ......................................................................................................................... parts per million
R ........................................................................................................................................ Range
Reclamation ........................................................................................................ Bureau of Reclamation
RMP ...................................................................................................... Resource Management Plan
ROS .................................................................................................. Recreation Opportunity Spectrum
SCORP ............................................................................. Statewide Comprehensive Outdoor Recreation Plan
SHPO ............................................................ State Historic Preservation Officer
T ........................................................................................................ Township
USACE .............................................................................. United States Army Corps of Engineers
USFWS .............................................................................. United States Fish and Wildlife Service
USGS ............................................................................................ United States Geological Survey
WBDO .............................................................................................. Waterborne Disease Outbreak
WROS ..................................................................................... Water Recreation Opportunity Spectrum
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Mission Statement of the Oklahoma Tourism and Recreation Department

The mission of the Oklahoma Tourism and Recreation Department is to advance Oklahoma’s exceptional quality of life by preserving, managing, and promoting our natural assets and cultural amenities.

Vision Statement

The vision of the Oklahoma Tourism and Recreation Department is to promote and enhance tourism throughout the state; protect and preserve the environment and natural resources; educate the public about Oklahoma’s people and places; provide exceptional customer service to all citizens and visitors; create a team environment in which all employees are successful, productive, and valued; embrace and seek diversity in our workforce and those we serve.

OTRD Values

- Responsibility and leadership
- Respect
- Quality
- Exemplary customer service
- Balance and self-fulfillment
- Teamwork and communication
- Flexibility
- Creativity and innovation
- Coordination
- Commitment
- Integrity
Chapter 1 – Introduction

Resource Management Plan: Purpose and Process

The Resource Management Plan (RMP) program and policy is to document management responsibilities to balance the use of water and land resources as they relate to recreation; in this instance, Great Plains State Park. As a guiding plan, the RMP seeks to propose long-term policies that limit adverse impacts to critical resources while providing protection and management of fish, wildlife, and other natural and cultural resources. In addition, the RMP will provide guidelines for public health and safety, public access, and a wide variety of outdoor recreational opportunities.

Within the Oklahoma Tourism and Recreation Department, the purpose and scope of the RMP is to provide background information, identify the policies and goals governing the management of Great Plains State Park and its incorporated resources, summarize the plan’s components, and provide descriptive and historical information related to the project. Since Great Plains State Park is on property leased from the Bureau of Reclamation (Reclamation), it is appropriate to cite Reclamation’s purpose for an RMP. For Reclamation, an RMP is intended to chart the desired future condition for the area related to biological, physical, and social conditions.

The ultimate purpose of the RMP is to establish a management framework for the conservation, protection, enhancement, development, and use of the physical and biological resources at Great Plains State Park. With regard to Great Plains State Park, the RMP is to:

- Provide managers and decision-makers with long-term direction and guidance for the successful management of the resources at Great Plains State Park;
- Ensure that management of the resources is compatible with authorized purposes;
- Ensure that recreation experiences and facilities are compatible with other environmental resources;
- Ensure that planned developments are based on public need and the ability of the environmental resources to accommodate such facilities and use; and
- Resolve issues and concerns related to management of the environmental resources.

Planning Process

The planning process for preparation of this Resource Management Plan included discussion between research staff at Oklahoma State University (OSU) and management personnel from Oklahoma State Parks. In addition, the process incorporated (1) the acquisition of archival information from libraries, state parks, books, research reports, and other sources; (2) interviews of state park personnel; (3) records provided by state park management; (4) input from members of the public through surveys, comments cards, and focus groups; and (5) searches of the Internet for information that expanded on other archives.

The purposes of public involvement are to inform the public and solicit public response regarding their needs, values, and evaluations of proposed solutions. Public involvement programs are designed not only to meet state and federal regulations, but also to include
interested individuals, organizations, agencies, and governmental entities in the decision-making process. Techniques used for public involvement include interviews, workshops, advisory committees, informational brochures, surveys, and public hearings. The process of public involvement is important to help strengthen the relationship between public and government agencies involved in the proposed plan. The relative success of public involvement techniques and the participation of supporting government agencies regarding the program as a whole is indicated by how well informed the public is and by how much the public has contributed to making environmentally sound, feasible decisions that are supported by a significant segment of the public. The public involvement process for the Great Plains State Park RMP is incorporated into the text of this document.

The original concept in preparation of an RMP is a federal action that requires compliance with the National Environmental Policy Act (NEPA); therefore, the public involvement process must fulfill the RMP and NEPA requirements as well as those of other entities. Oklahoma State Parks has committed the agency to follow a similar model at the state level for all state parks.

Using several public involvement methods to gain insight into the concerns of the public and governmental agencies potentially affected by provisions of the Great Plains State Park RMP, representatives from OSU compiled and analyzed the data. The public involvement process offered citizens and various interest groups information about the project and its potential impacts. This course of action was used to gather information, ideas, and concerns regarding the different issues to be compiled and addressed to determine issues of public concern. The issues were then evaluated resulting in alternative solutions and recommendations for the park.

Finally, the RMP process included integration of global positional system (GPS) technology into geographic information system (GIS) software to document features and attributes within the park. This component of the process permits an on-going record of facilities with their respective attributes, locations, and conditions. As a result, the GPS and GIS components of the RMP process are integral to on-going implementation and application of the planning effort.

**Authorization and Agencies Involved**

In 2006, Oklahoma State Parks, through the Oklahoma Tourism and Recreation Department (OTRD), contracted with Oklahoma State University to prepare Resource Management Plans for each park. This agreement has been renewed annually since 2006. The current agreement specified Great Plains State Park during 2013 – 2014, and the intent of the agreement is to continue the RMP process across all state parks in Oklahoma.

The RMP agreement became effective July 1, 2013 between Oklahoma Tourism and Recreation Department and Oklahoma State University. Following a meeting between OTRD and OSU staff, information, reports, and comment cards were provided to OSU for review. In accordance with the RMP contract, OSU performed research services and delivered reports to OTRD concluding with a written plan for Great Plains State Park in June 2014.

The authority for the agreement between OTRD and OSU is based upon Title 74 § 2213 as authorized by Engrossed Senate Bill 823 of the 2005 session: “The Commission may contract for the study, analysis, and planning as reasonably necessary to aid in determining the feasibility of leasing, selling or privately managing or developing the property or facilities under the control of the Commission. The Commission shall be exempt from the competitive bidding requirements of
the Competitive Bidding Act for the purpose of soliciting, negotiating, and effectuating such a contract or contracts.”

Further, this authority is specified in Title 74 § 2215 which states: the Division of State Parks, subject to the policies and rules of the Commission shall formulate, establish, maintain, and periodically review, with public participation, a resource management plan for each state park. The resource management plan, upon approval by the Commission, shall be considered a guide for the development, utilization, protection, and management of the state park and its natural, cultural, historic, and recreational resources.

At the federal level, the authority granted to Reclamation to participate in RMPs is vested in several broad legislative actions, including: the Reclamation Act of 1902 (Chapter 1093, 32 Stat.388); the Reclamation Project Act of 1939 (Chapter 418, 53 Stat. 1187); the Federal Water Project Recreation Act (P.L. 89-72, 79 Stat. 213); and the Reclamation Recreation Management Act of 1992 (P.L. 102-575, Title 28 [2805(c)(1)(A) (Reclamation, 2003).

Figure 1.1 – Entry sign for Great Plains State Park west of railroad tracks
Figure 1.2 – Reclamation project office located below Mountain Park dam
Chapter 2 – Project Description

About Great Plains State Park

The Division of State Parks, a part of the Oklahoma Tourism and Recreation Department, is governed by the laws of the state of Oklahoma. These laws define the authority for the Division and the context in which individual state parks are managed. Title 74 § 2214 of the Oklahoma Statutes states that the Division of State Parks shall, subject to the policies and rules of the Commission:

1. Conserve, preserve, plan, supervise, construct, enlarge, reduce, improve, maintain, equip and operate parkland, public recreation facilities, lodges, cabins, camping sites, scenic trails, picnic sites, golf courses, boating, and swimming facilities, and other similar facilities in state parks reasonably necessary and useful in promoting the public use of state parks under the jurisdiction and control of the Commission;

2. Supervise the management and use of state properties and facilities under the jurisdiction of the Commission. The Commission may adopt rules to lease concessions in any state-owned facility if the Commission deems it feasible;

3. Authorize those employees in the Park Manager job family classification series, as established by the Oklahoma Office of Personnel Management, to maintain administrative control over all facilities, programs, operations, services, and employees in the park to which they are assigned; and

4. Enforce the rules and policies governing the use of and conduct of patrons in all recreational facilities and properties of the Commission.

Purpose and Significance of Great Plains State Park

An initial requirement of the RMP process is the development of a purpose statement for the property under consideration. The process selected for the development of resource management plans for state parks requires purpose statements and statements of significance for each park. These statements drive the decisions as to planning for the respective parks, since individual parks in the state park system do not have identical purposes or intents.

At the initiation of this project, a purpose statement for Great Plains State Park did not exist. As a result, it was necessary that one be developed. Research staff from OSU worked with OTRD staff, representing Great Plains State Park and the broader agency, to develop a draft purpose statement. During that process staff created the following statement.

Great Plains State Park conserves the natural, cultural, historic, scenic, and environmentally-based recreational resources within the park, and makes them forever available for the education and enjoyment of all people. Oklahoma State Parks will protect, manage, restore and conserve these resources and associated values of Great Plains State Park and provide appropriate programs, facilities, and
opportunities for public use consistent with the conservation of these resources and values.

Similarly, in response to requests from the research staff, OTRD personnel, in cooperation with the research staff, developed a statement of significance for Great Plains State Park. That statement follows:

Great Plains State Park is significant because it offers public access to Tom Steed Reservoir, to natural and recreational resources adjacent to a wildlife management area while protecting the natural environment and providing education and recreation appropriate to that environment.

![Figure 2.1 – Utilization of purpose and significance statements](image.png)

Source: National Park Service

Figure 2.1 demonstrates the inter-relationship of purpose and significance statements with the mission of the management agency in decisions related to a given park or property. This model has been developed by the National Park Service to assure consistency between the mission of the National Park Service and the operation of their respective properties. In a similar manner, park purpose statements and park significance must be consistent with the mission of the Oklahoma Tourism and Recreation Department.

**Geographic Location of Great Plains State Park**

Great Plains State Park is located in southwestern Oklahoma in Kiowa County. In this location, Great Plains State Park is the state park at the most extreme southwestern location among the properties in the state park system. The park is located in the southern portion of Kiowa County, between the Wichita Mountains and the Quartz Mountains. The base map shown in Figure 2.2 on the following page shows the original boundaries for the park, while the inset provides the current boundaries for Great Plains State Park.
Great Plains State Park is located west of federal highway 183, approximately 20 miles south of Hobart, Oklahoma, and seven miles north of Snyder, Oklahoma. A map with various insets (Figure 2.2) of Great Plains State Park shows its location in the rural environment of Kiowa County along the shores of Tom Steed Lake.

Hobart is the county seat of Kiowa County, with a population of 3,997. There are numerous other small communities distributed throughout Kiowa County. The largest population base in the region is in Lawton, approximately 35 miles east of Great Plains State Park, and in Altus, approximately 25 miles southwest of Great Plains State Park.

Travel to and from Great Plains State Park requires access along federal Highway 183 extending north and south across the county. Highway 183 connects to federal Highway 62 in Snyder allowing for good highway access from Lawton and Altus. To the north of Great Plains State Park, Highway 183 links with state highway 9 near Hobart and continues to Interstate Highway 40 in Clinton, well north of Great Plains State Park.

**Community and Regional Context**

**Brief History of Kiowa County**

The following history of Kiowa County was written by Burna Cole for the Oklahoma Historical Society and retrieved from the website for the Oklahoma Historical Society ([http://digital.library.okstate.edu/encyclopedia/entries/K/KI019.html](http://digital.library.okstate.edu/encyclopedia/entries/K/KI019.html)).
“Kiowa County lies in the southwestern portion of Oklahoma, surrounded by Washita County to the north, Caddo and Comanche counties to the east, Greer and Jackson counties to the west, and Tillman County to the south. The western and southern boundary, the North Fork of the Red River, separates Kiowa from Jackson, Greer, and Tillman. Among fifty-eight archaeological sites reflecting the presence of prehistoric Native peoples in the county, one, the Cooperton Mammoth Site, indicates Paleo-Indian presence. Archaic peoples are reflected in eighteen sites and Woodland occupation in one. Thirty-eight Plains Village sites have been examined. In the modern period Spain and France claimed ownership of the region. The area became part of the United States with the Louisiana Purchase in 1803. The Doak’s Stand Treaty of 1820 gave all of southern Oklahoma to the Choctaw.

The area’s history is rich in cultural encounters. In 1833 the Osage attacked a Kiowa camp near present Cooperton. The Osage decapitated the victims and left their heads in copper cooking pots for the returning Kiowa warriors to find. The Kiowa have since referred to the area as Cutthroat Gap. This incident, coupled with Choctaw complaints against the hostile Plains Indians, factored in the formation of a dragoon unit under the command of Gen. Henry Leavenworth and Col. Henry Dodge. The 1834 Dodge-Leavenworth Expedition met the Kiowa and Comanche at a Wichita village in Devil’s Canyon on the North Fork of the Red River. A peace treaty ensued. Located on Otter Creek near Mountain Park in 1858-59, Camp Radziminski operated as the northern extension of a line of forts across Texas to control and subdue the Plains Indians. By the end of the Red River War in 1875 the Kiowa, Comanche, and Plains Apache had been confined to a reservation that encompassed present Kiowa County. As promised in the Medicine Lodge Treaty of 1867, the government opened a boarding school six miles south of Gotebo at Rainy Mountain. The Rainy Mountain Boarding School existed from 1893 until 1920.

The cattle industry of surrounding regions affected the area from the 1850s. From 1855 until the reservation era the southwestern portion of the Choctaws’ domain, including Kiowa County, became the Leased District, a place where cattlemen grazed large herds. From 1876 until 1888 the Western Trail crossed western Kiowa County. Approximately 300,000 head of cattle were moved up the trail yearly from Texas to Kansas.

In 1892 the Jerome Commission began enrolling the Kiowa, Comanche, and Apache in preparation for opening their reservation to white settlement. After several Oklahoma Territory land runs, Dennis Flynn, the Republican territorial representative in Congress, proposed a lottery as a more orderly and less dangerous way to open the reservation. Individuals registered for the lottery at either Lawton or El Reno. One hundred sixty-five thousand individuals registered for thirteen thousand available claims, each comprising 160 acres. The drawing began on August 6, 1901. Each townsite consisted of 320 acres. Lots were auctioned to raise funds for county government. Hobart, named for Vice President Garrett A. Hobart, was designated as the seat of Kiowa County.

Transportation developments ended the cattle drives and brought rail access to the future Kiowa County area. In 1900 the Chicago, Rock Island and Pacific Railway built west from Anadarko across the northern part of the county, linking Hobart with Chickasha and Mangum. In 1902 the Blackwell, Enid and Southwestern Railroad (later part of the St. Louis and San Francisco system), completed its north-south line connecting Kansas to the Red River, passing through Hobart. Finally, in 1908 the Kansas City, Mexico and Orient Railway (later the Atchison, Topeka and Santa Fe system) completed its Kansas-Texas line from Clinton through Lone Wolf. These linked the county’s economy with outside agricultural markets.
Following 1907 statehood, residents in southern Kiowa County won the support of Gov. Charles N. Haskell, who in 1910 proclaimed Hunter Township, Mountain Park, and Snyder, all in Kiowa County, and portions of western Comanche County, to be “Swanson County.” Trouble erupted immediately when Snyder disputed Mountain Park’s designation as county seat. Following a homicide, a kidnapping, and charges of election fraud, Comanche County filed suit to dissolve its new neighbor. Swanson County ceased to exist in June 1911 when the Oklahoma Supreme Court upheld a lower court decision. Citizens of Hunter Township, which included the communities of Siboney and Manitou, voted to join Tillman County after the dissolution of Swanson.

Although bounded on the south by the Wichita Mountains, Kiowa County is largely flatland. Principal crops are wheat, cotton, and other grains. Cattle, hogs, and sheep dominate the livestock arena. Vineyards were added to the agricultural base in the late twentieth century. Major water sources include the Washita River, Elk Creek, and Otter Creek. Lakes Altus-Lugert on the North Fork of the Red River and Tom Steed on Otter Creek provide both commercial water and recreational areas. The Burlington Northern Santa Fe Railway and Farmrail furnish transportation of agricultural goods. Hobart Municipal Airport provides access by air. Major thoroughfares include State Highway 9 and U.S. Highway 183.

By the year 2000 Kiowa County was home to several industries, such as Chicago Rawhide in Hobart, a manufacturer of rubber seals; the Dolese quarry near Roosevelt; Highland Supply in Hobart, manufacturer of Easter grass; and the Parsons Monument Company in Mountain Park. Education is offered from kindergarten through twelfth grade at Hobart, Lone Wolf, Mountain View-Gotebo, and Snyder public schools. The county enjoyed a steady population growth from 22,247 at statehood in 1907 to 29,630 in 1930. That number subsequently declined from 22,817 in 1940 to 12,532 in 1970. Census records for 2000 showed a population of 10,227. Incorporated towns included Cooperton, Gotebo, Hobart, Lone Wolf, Mountain Park, Mountain View, Roosevelt, and Snyder.

Kiowa County was the birthplace of several well-known Oklahomans. Col. Jack Treadwell of Snyder, who served in the 180th Infantry, Forty-fifth Infantry Division, during World War II, received the Congressional Medal of Honor. Gen. Lavern Weber and Dale Meinert, an All-Pro linebacker for the St. Louis Cardinals, were born at Lone Wolf. Novelist N. Scott Momaday (1934-), 1969 Pulitzer Prize winner for House Made of Dawn, is from Mountain View.

National Register of Historic Places listings for Kiowa County include the county courthouse (NR 84003094), the downtown Hobart Historic District (NR 05000130), and other buildings in the county seat. Also listed is Camp Radziminski (NR 72001067), in the Mountain Park vicinity.”

**Demographic and Socioeconomic Conditions and Impact**

The U.S. Bureau of Census provides summary data related to the demographic profile of the residents of Kiowa County. The 2010 Census provided the statistical basis for the detail related to the population of Kiowa County in 2013.

The following tables provide this summary based upon data retrieved during July 2013 from [http://factfinder2.census.gov](http://factfinder2.census.gov).
Table 2.1 – Population of Kiowa County

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kiowa County</td>
<td>10,227</td>
<td>9,446</td>
</tr>
</tbody>
</table>

Table 2.2 – Demographic Characteristics of the Population

<table>
<thead>
<tr>
<th>Factor</th>
<th>Detail on factor</th>
<th>Kiowa County Number (Percent)</th>
<th>Oklahoma Number (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex and Age</td>
<td>Male</td>
<td>4,680 (49.5%)</td>
<td>1,816,749 (49.4%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>4,766 (50.5%)</td>
<td>1,858,590 (50.6%)</td>
</tr>
<tr>
<td></td>
<td>Median age (years)</td>
<td>43.0</td>
<td>36.3</td>
</tr>
<tr>
<td>Under 18 years of age</td>
<td></td>
<td>2,207 (23.4%)</td>
<td>911,484 (24.8%)</td>
</tr>
<tr>
<td>18 years of age and over</td>
<td></td>
<td>7,239 (76.6%)</td>
<td>2,762,318 (75.2%)</td>
</tr>
<tr>
<td>65 years of age and over</td>
<td></td>
<td>1,734 (18.4%)</td>
<td>491,422 (13.5%)</td>
</tr>
<tr>
<td>Race</td>
<td>White</td>
<td>9,026 (80.2%)</td>
<td>2,720,135 (72.2%)</td>
</tr>
<tr>
<td></td>
<td>Black or African American</td>
<td>401 (4.2%)</td>
<td>267,179 (7.4%)</td>
</tr>
<tr>
<td></td>
<td>American Indian/Alaskan Native</td>
<td>622 (6.6%)</td>
<td>259,809 (8.6%)</td>
</tr>
<tr>
<td></td>
<td>Asian</td>
<td>30 (0.3%)</td>
<td>61,581 (1.7%)</td>
</tr>
<tr>
<td></td>
<td>Native Hawaiian/Pacific Islander</td>
<td>3 (0.0%)</td>
<td>3,967 (0.1%)</td>
</tr>
<tr>
<td></td>
<td>Two or more races</td>
<td>420 (4.4%)</td>
<td>263,896 (7.2%)</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>Of any race</td>
<td>832 (8.8%)</td>
<td>302,167 (8.2%)</td>
</tr>
</tbody>
</table>

The population of Kiowa County has decreased at a rate of 11.6% over the past ten years. This pattern of decreasing population is opposite that for the population of Oklahoma which has increased during that same period. However, it is similar to the decrease of population in several western Oklahoma counties.

Interestingly, Kiowa County reports a population in which the median age of male residents is three years lower than the median age for resident females. In addition, Kiowa County shows a population with less diversity than that present within the population for the state of Oklahoma. Kiowa County reports a population in which 4.4% of the residents represent two or more races. This composition of the population represents part of the history of the county in that 2% of the
population reported their race to be “White & American Indian.” In addition, Kiowa County presents a population with a larger percentage of Hispanic residents than is true across Oklahoma.

Table 2.3 provides detail on the household characteristics of the population of Kiowa County. Of particular note is the much higher percentage of households in Kiowa County with one or more members over the age of 65 than is true in the state of Oklahoma. On most measures related to household characteristics, Kiowa County is similar to the household characteristics represented across Oklahoma. However, the percentage of occupied housing units in Kiowa County is well below that for the state of Oklahoma, and similarly, there is a higher percentage of vacant housing units in the county.

Table 2.3 – Household Characteristics in Kiowa County

<table>
<thead>
<tr>
<th>Household Related Factor</th>
<th>Kiowa County Number (Percent)</th>
<th>Oklahoma Number (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of households</td>
<td>3,978</td>
<td>1,421,705</td>
</tr>
<tr>
<td>Population in households</td>
<td>9,275 (98.2%)</td>
<td>3,563,497 (96.9%)</td>
</tr>
<tr>
<td>Households with a child or children under 18</td>
<td>1,179 (29.6%)</td>
<td>425,149 (29.9%)</td>
</tr>
<tr>
<td>Households with person 65 years and over</td>
<td>1,267 (31.9%)</td>
<td>140,851 (9.9%)</td>
</tr>
<tr>
<td>Occupied housing units</td>
<td>3,978 (76.3%)</td>
<td>1,421,705 (86.5%)</td>
</tr>
<tr>
<td>Vacant housing units</td>
<td>1,238 (23.7%)</td>
<td>222,523 (13.5%)</td>
</tr>
<tr>
<td>Owner occupied housing units</td>
<td>2,852 (71.7%)</td>
<td>969,959 (68.2%)</td>
</tr>
<tr>
<td>Renter occupied housing units</td>
<td>1,126 (28.3%)</td>
<td>451,746 (31.8%)</td>
</tr>
</tbody>
</table>

One characteristic on which the population of Kiowa County differs from that across Oklahoma is household income. The median household income in Kiowa County is $9,000 below the statewide average. Median household income as reported by the U.S. Bureau of Census may be somewhat misleading: by definition 50% of the population in the county is above the median income level and 50% is below that number. In Kiowa County, the mean household income is $47,922 indicating that a small number of residents are in the upper levels of income while a larger number are in the lower income categories.

It is equally important to recognize that 17% of the population of Kiowa County is identified as being below federal poverty guidelines. The percentage of households below poverty levels and the percentage of individuals in those households are above the comparable statistics for the state of Oklahoma. It can be concluded that the residents of Kiowa County are financially limited as compared to the general population of Oklahoma.
Residents of Kiowa County also present education characteristics that are associated with the financial status of the county. In Kiowa County, the greatest variation from the statewide educational pattern is in the percentage of individuals with high school diplomas or equivalent educational achievement, but Kiowa County lags behind state statistics for education beyond the high school diploma. County residents have achieved a higher percentage at this level. Education levels have been shown to be highly correlated with other economic measures.

**Table 2.5 – Education Characteristics in Kiowa County**

<table>
<thead>
<tr>
<th>Educational Attainment</th>
<th>Kiowa County Number (Percent)</th>
<th>Oklahoma Number (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 9th grade</td>
<td>328 (5.1%)</td>
<td>115,248 (4.8%)</td>
</tr>
<tr>
<td>9th to 12th grade, no diploma</td>
<td>656 (10.1%)</td>
<td>232,987 (9.8%)</td>
</tr>
<tr>
<td>High school diploma or equivalency</td>
<td>2,515 (38.8%)</td>
<td>775,478 (32.6%)</td>
</tr>
<tr>
<td>Some college, no degree</td>
<td>1,469 (22.7%)</td>
<td>559,367 (23.5%)</td>
</tr>
<tr>
<td>Associate’s degree</td>
<td>353 (5.5%)</td>
<td>159,557 (6.7%)</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>791 (12.2%)</td>
<td>362,043 (15.2%)</td>
</tr>
<tr>
<td>Graduate or professional degree</td>
<td>364 (5.6%)</td>
<td>176,139 (7.4%)</td>
</tr>
</tbody>
</table>

Another demographic factor that is highly correlated with financial characteristics and educational characteristics is employment. The employment figures for Kiowa County are reported in Table 2.6. As of 2010, Kiowa County reported unemployment to be approximately 3.9% as compared with a statewide 7.7%. Both of these numbers place Oklahoma and Kiowa County in better employment condition than was true of the United States at this same time.
### Table 2.6 – Employment Characteristics in Kiowa County

<table>
<thead>
<tr>
<th>Characteristic or Factor</th>
<th>Kiowa County Number (Percent)</th>
<th>Oklahoma Number (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population in the labor force (16 years and over)</td>
<td>4,250 (45.0%)</td>
<td>1,806,858 (63.0%)</td>
</tr>
<tr>
<td>Employed</td>
<td>4,084 (96.1%)</td>
<td>1,674,765 (92.3%)</td>
</tr>
<tr>
<td>Private wage and salary workers</td>
<td>2,563 (62.8%)</td>
<td>1,260,965 (75.3%)</td>
</tr>
<tr>
<td>Government workers</td>
<td>860 (21.1%)</td>
<td>285,562 (17.1%)</td>
</tr>
<tr>
<td>Self-employed (non-incorporated business)</td>
<td>629 (15.4%)</td>
<td>124,013 (7.4%)</td>
</tr>
<tr>
<td>Unpaid family workers</td>
<td>32 (0.8%)</td>
<td>4,225 (0.3%)</td>
</tr>
</tbody>
</table>

In summary, Kiowa County comprises a rural area with approximately 9.16 persons per square mile as compared to an average of 50.3 for Oklahoma. Almost 45% of the population of Kiowa County resides in Hobart, the county seat. The county population shows an average household income below the statewide average; additionally, a higher percentage of Kiowa County residents are below the poverty level than is true statewide. A higher percentage of residents of the county have achieved their high school diplomas, but the county is below statewide educational statistics at higher levels of education.

### Competing and Complementary Recreational Opportunities

Western Oklahoma is dominated by a prairie ecosystem of grasslands interspersed with hardwood forests along creeks and rivers. These grasslands are situated on rolling hills with numerous canyons formed by the creeks and rivers. In addition, the Wichita Mountain uplift and the Quartz Mountains provide topographical relief for this portion of southwestern Oklahoma. Great Plains State Park lies between the Wichita Mountains and the Quartz Mountains permitting views on the horizon to the east and west.

The Bureau of Reclamation has four major projects in southwestern Oklahoma: (1) Foss Reservoir and the associated Foss State Park, (2) Tom Steed Lake and the associated Great Plains State Park, (3) Fort Cobb Lake and the associated Fort Cobb State Park, and (4) Lake Altus-Lugert and the associated Quartz Mountain Nature Park and Conference Center. Each of these properties provides water-based recreation opportunities, camping, hiking, and other outdoor features. These reservoirs vary in water depth with climatic conditions and water depth affects the recreational experiences.

While it is possible that each of these properties competes for similar visitors, visitors tend to have their preferred lakes. Each of these locations offers distinctive recreation opportunities. Fort Cobb State Park and Quartz Mountain Nature Park and Conference Center are more developed than Foss State Park or Great Plains State Park. Fort Cobb State Park and Quartz Mountain include golf courses and cabins, while Quartz Mountain also offers group camp facilities and a guest lodge. Foss State Park and Great Plains State Park are quiet, less developed parks.
Other regional recreational opportunities are provided at the Wichita Mountains Wildlife Refuge, managed by the U.S. Fish and Wildlife Service. The Refuge does not offer a lake environment and would attract a different use group from that at Great Plains State Park.

Similarly, Black Kettle National Grassland, managed by the U.S. Forest Service in the Department of Agriculture, offers hiking, hunting, and limited camping facilities. The Refuge and the Grasslands are complementary rather than competing resources for Great Plains State Park.

Lake Lawtonka and Lake Ellsworth, near the city of Lawton offer some of the same features and recreation experiences available at Great Plains State Park. However, these two city lakes attract primarily local Lawton residents whereas Great Plains State Park serves a regional population.

A complementary resource benefiting Great Plains State Park is the Great Plains Trail of Oklahoma, a cooperative venture of several organizations including Oklahoma Wildlife and Prairie Heritage Alliance, Oklahoma Department of Wildlife Conservation, Oklahoma Tourism and Recreation Department, Playa Lakes Joint Venture, Oklahoma Economic Development Authority, High Plains RC&D, and Great Plains RC&D. Great Plains State Park is an identified stop on the Quartz Mountain Loop of the Great Plains Trail, highlighted for its fishing and boating opportunities. Emphasis is placed on the nature trails within Great Plains State Park including the Granite Trail System and the Camp Radziminski Nature Trail.

The Great Plains Trail is marked along Oklahoma highways with signs as shown in Figure 2.3. In addition, visitors traveling the trail benefit from printed materials, web-based materials, and additional support information to enrich the travel experience along the route.

Figure 2.3 – Great Plains Trail sign
Regional and Park History

The history of Great Plains State Park is directly associated with the history of the Mountain Park Project under the Bureau of Reclamation, U.S. Department of the Interior. The Mountain Park Project was authorized by Public Law 90-503, September 21, 1968 (82 Stat. 853). This authorization included aqueducts to serve the cities of Altus and Snyder, Oklahoma. The authorization was amended to include an aqueduct to the city of Frederick, Oklahoma, by Public Law 93-493 (88 Stat. 1492), dated October 27, 1974. Public Law 103-434 dated October 31, 1994 added environmental quality as an authorized purpose to the project (Reclamation, 2013).

Mountain Park Dam was constructed slightly upstream from an earlier WPA impoundment that formed Snyder Lake (Figure 2.4). Snyder Lake is now limited for most recreational activities because of high levels of siltation. However, WPA construction present at this site includes historic and aesthetic values for park visitors.

Mountain Park Dam, the associated aqueducts, and canals are the principal components of the Mountain Park Project. Figure 2.5 on the following page provides detail related to the Mountain Park Project as presented in 1983 by the Bureau of Reclamation. Mountain Park Dam was constructed on Otter Creek near the community of Mountain Park, Oklahoma. Natural flows of West Otter Creek and diverted flows from Elk Creek are regulated through Mountain Park Dam.

Distribution of irrigation water was limited to a 10-year period from the commencement of delivery of municipal water. As stated by Reclamation (2013), “repayment negotiations for irrigation development downstream of Fort Cobb and Foss Reservoirs were not successful; therefore, no irrigation facilities were constructed.” Similarly, irrigation development from Tom Steed Reservoir has not been installed. However, municipal and industrial water supply for the cities of Altus, Snyder, Frederick, and others are supplemented by water from Tom Steed Reservoir as is Hackberry Flat Wildlife Management Area, south of Frederick.

Mountain Park Dam was constructed between 1971 and 1975. The original lease agreement for Great Plains State Park was authorized in 1974. As a result, the association between Oklahoma State Parks and the Bureau of Reclamation for this property originates with the impoundment of Tom Steed Reservoir.
Figure 2.5 – Mountain Park Project
Oklahoma State Parks, through the Oklahoma Tourism and Recreation Department, operates Great Plains State Park on the eastern side of Tom Steed Reservoir. The upper reaches of Tom Steed Reservoir are managed by the Oklahoma Department of Wildlife Conservation as the Mountain Park Wildlife Management Area (WMA). The Mountain Park WMA includes approximately 2,000 acres in an agriculture lease program and 320 acres in a wetland unit.

Game species of interest at the WMA include quail, deer, rabbit, various furbearers (coyote, bobcat, and raccoons), dove, waterfowl, and turkey. Nongame species of interest include bald eagles and migrating shorebirds.

While the history of Great Plains State Park is associated with the history of Tom Steed Reservoir, the regional history predates the park and the lake. The town of Cold Springs was established in the Otter Creek valley in 1901. Originally North Cold Springs and South Cold Springs, located about a mile apart, the town was consolidated when the depot in North Cold Springs was moved to South Cold Springs.

Cold Springs gained recognition as a recreation and health area. With the construction of a large hotel, people came by the hundreds in special trains from Hobart to visit the “Living Springs, Nature’s Health and Pleasure Resort.” Quarries were also developed to mine the blue and black granite of the area (Morris). By 1915, Cold Springs had a hotel, a lumberyard, a dry-goods store, a meat market, a blacksmith shop, and a gas station, four general stores, a cotton gin, a granite company, and a telephone exchange. A creamery and cheese factory were also located in Cold Springs. All structures of the former town of Cold Springs have been cleared away and no visible signs of the city remain.
Another town in the area was “Wildman.” Famous for saloons and gambling houses, Wildman was a tough mining town with a population of miners, gamblers, and bandits. Associated with the town and its history, the Gold Belle Mine is the last remaining structure of this ghost town. The site consists of an abandoned mine site with concrete platforms and a silo-circular tank. What remains of the Gold Belle Mine is within Great Plains State Park and is presented later.

The history of Oklahoma includes the following commentary on Camp Radziminski (May, J.D., 2007). “In September 1858 Bvt. Maj. Earl Van Dorn led soldiers of the Second U.S. Cavalry and First Infantry from Fort Belknap, Texas, in pursuit of Kiowa and Comanche raiders. Reaching the vicinity of present Tipton, in Tillman County, Oklahoma, Van Dorn ordered the construction of a camp on the left bank of Otter Creek. Named in honor of First Lt. Charles Radziminski of the U.S. Army Second Cavalry, the post contained no permanent structures. Also known as Camp Otter Creek and Otter Creek Station, it was moved in November 1858 to obtain better forage a few miles upstream. In March 1859 the camp was relocated a final time to a more sheltered site on the right bank of Otter Creek, four miles northwest of present Mountain Park in Kiowa County.

From his base of operations at Camp Radziminski, Van Dorn led his troops against the Comanche at the Battle of the Wichita Village near present Rush Springs, Oklahoma, in October 1858, and at Crooked Creek in southwestern Kansas in May 1859. Abandoned after the completion of Fort Cobb in December 1859, Camp Radziminski was briefly used by the Texas Rangers in their warfare against the Comanche. The site of Camp Radziminski near Mountain Park was listed in the National Register of Historic Places in 1972 (NR 72001067).”

The site of the former Camp Radziminski is within Great Plains State Park and is presented in later discussion.

**Natural Resources in the Park**

**Climate and Air Quality**

Kiowa County is part of the Osage Plains region of Oklahoma, in a humid subtropical climate. Average annual precipitation is 29.87 inches, although the wettest year occurred in 1908 with 46.16 inches of precipitation and the driest year occurred in 1910 with less than 13 inches. May and October are the wettest months on average, but much of the spring through fall receives sufficient rainfall for successful vegetative growth. Average snowfall is about five inches annually, providing snow cover on the ground for about three days each year.

Temperatures average near 61°F, with a slight increase from north to south. Temperatures range from an extreme daytime high of 117°F recorded in Hobart (July 19, 1936) to a low of -12°F at the Altus Dam (January 4, 1947). The county’s average growing season is 211 days, and plants that can withstand short periods of colder temperatures may have an additional two to five weeks.

Winds from the south to southwest are quite dominant, averaging 12 miles-per-hour. This wind resource has provided the basis for several “wind farms” located to the north and east of Kiowa County. Relative humidity, on average, is 65% during the day. During the year, humidity is highest in May and June and lowest in August. Winter months tend to be cloudier than summer months. The percentage of possible sunshine ranges from an average of about 60% in winter to nearly 80% in summer.
Thunderstorms occur on about 45 days each year, predominantly in the spring and summer. During the period 1950 – 2003, Kiowa County recorded 45 tornadoes. The most recent significant tornado (F2 intensity or greater) occurred on October 9, 2001 passing near the towns of Gotebo and Cowden. This F3 tornado had a 13 mile long path and affected parts of Kiowa and Washita Counties. There was only one injury. Kiowa County’s most deadly tornado occurred on May 10, 1905. An F5 tornado moved through Kiowa, Tillman, and Jackson County claiming the lives of 97 and injuring 150. Kiowa County typically has about seven events each year of hail exceeding one inch in diameter. As information collection has improved, both the number of reported tornadoes and the number of severe hail events have increased (OK Climatological Survey).

At the time of planning for the Mountain Park Project, the Bureau of Reclamation filed a Final Environmental Statement (1972). That report summarized the regional climate as “Southwest Oklahoma is characterized by long, hot summers and moderate winters, interspersed by occasional northers of short duration. The climate is classified as dry subhumid. Annual precipitation varies from 10 to 50 inches and averages 26.5 inches. Seasonal distribution of rainfall is highly erratic with the heaviest rainfall during the late spring and early summer months. A large portion of the annual rainfall often occurs during a few torrential storms. Zero precipitation has been recorded at stations every month of the year during the period of record. Recorded temperatures range from 120 to minus 11 degrees. The frost-free growing season averages about 225 days.”

The Pollution Information Site (Scorecard) reports that 88% of all days in Kiowa County show good air quality, with the primary pollutants being particulate matter (PM-2.5 and PM-10). Having said that, according to the Clean Air Task Force website, Kiowa County is among the lower 30% of the “dirtiest counties in the United States” (Clean Air Task Force).

**Archeology of Great Plains State Park**

While archaeological history was reported in the earlier presentation of Kiowa County, an archeological survey of Great Plains State Park has not been completed. The Cooperton Site is one example of the potentially rich archeological history in Kiowa County. This site yielded the remnants of a young male Columbian mammoth in situ with evidence of human activity.

Eighteen Archaic sites (8,000 – 2000 BP), one Woodland sites (2000 – 1000 BP), and 38 Plains Village sites (100 – 500 BP) have been identified in Kiowa County (Oklahoma Archeological Survey).

Other archeological value may be associated with the former Camp Radziminski site. This area has been scoured by persons with metal detectors.

At the time of planning for the Mountain Park Project, the Bureau of Reclamation completed a Final Environmental Statement (1972) with a thorough review of historical and archaeological sites in the project area. This report stated,

“Known areas of historical significance in the project vicinity is [sic] limited to the second site of Camp Radziminski, established in 1858 at the canyon mouth below Mountain Park Dam. This camp, abandoned in late 1859, figured prominently in the campaign of 1859 against hostile Comanche Indians. None of the camp’s structures remain. The only visible evidence of its existence is an
indentation where the well is believed to have been and a group of stones which appear to have been shaped into dimension stone. The Oklahoma Historical Society is seeking National Register status for the campsite. The site, however, is not located on project lands.

Recent information from the National Park Service indicates that a preliminary archeological reconnaissance was made in 1961, which determined that archeological values do exist in the Mountain Park project area. The NPS states that the 1961 survey was not adequate according to current standards. This survey covered only the lower parts of the Mountain Park Reservoir area and did not include the upper part of the reservoir, Bretch diversion dam and canal, or the aqueduct system. The 1961 survey identified at least four archeological sites consisting of Indian campgrounds and village sites.

There are no National Park Service areas or national register sites of present record which would be affected by the project.”

As an update to the 1972 environmental statement, Camp Radziminski (NR 72001067) is now on the National Register of Historic Places.

At the time of planning for the Mountain Park Project, Ray (1961) identified four sites of significance within the area to be inundated. In later archeological surveys, Steinacher and Brooks (1985) identified eight sites of significance within Great Plains State Park including the Camp Radziminski site which extends across the project boundaries. During preparation for re-routing of Highway 183, Ricker (2000) conducted an archeological survey and identified site 34-Ki-154 as a prehistoric site in the northeastern portion of Great Plains State Park. Numerous other archeological surveys have been completed for site specific development (Blasing, 2002; Blasing, 2007; Blasing, 2009). In each case within the developed portions of Great Plains State Park the findings have been consistent: “no resources of significance within the area of impact.”

**Topography**

Great Plains State Park and all of Kiowa County are situated in the Interior Plains division using the Fenneman Physiography Classification (National Geographic Society). This area is further defined as a central lowland province and a section of the Osage Plains.

As an ecoregion, Kiowa County is classified as dry, tropical/subtropical steppe. All of Kiowa County is in the Great Plains Steppe and Shrub province, specifically classified as “redbed plains.”

The Final Environmental Statement (Reclamation, 1972) stated, “Throughout the entire length of Elk Creek and in the upper portion of Otter Creek, erosion has produced rolling to rough topography of generally low relief, and the streams occupy wide sandy beds that meander through relatively shallow valleys. However, near the Mountain Park damsite Otter Creek flows through protrusions of granite and Precambrian formations which rise several hundred feet above the plains to form the Wichita Mountains. A short distance downstream from the damsite Otter Creek again flows through a relatively shallow valley bounded by rolling plains.”
Geology

Kiowa County and Great Plains State Park are situated in the Wichita Uplift south of the Anadarko Basin. The Wichita Uplift is one of three such mountain belts in Oklahoma where a series of folding, faulting, and uplifting occurred during the Pennsylvanian Period. The mountain belts exposed geologic structures and brought igneous rocks to the surface. Whereas the Anadarko Basin is primarily redbed plains, the Wichita Uplift includes granite and basalt. In this area, peaks of Cambrian granite and related igneous rocks rise 400 to 1,100 feet above the surrounding redbed plains.

Soil

The Natural Resources Conservation Service (NRCS) gathers data and prepares custom soil resource reports for specific areas. In each report they define various terms related to soils and the related capacities. Soils that have profiles that are almost alike make up a soil series. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into soil phases. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or

Figure 2.7 – Geological regions in Oklahoma
Source: Charpentier (2010)
management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series. Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An undifferentiated group is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, are an example.

Some surveys include miscellaneous areas. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example of a miscellaneous area (NRCS, 2010).

Material about soils in the study area provides background information about suitability for recreational development. The Natural Resource Conservation Service (NRCS) provides information related to soils. The detail of the soil report for Great Plains State Park is provided in Figure 2.8 on the following page.

Almost 45% of Great Plains State Park is classified as Rock Outcrop-Brico complex (coded RoF in Figure 2.8) with 8 to 50% slopes. The next most common soil groupings within Great Plains State Park are Holister silty clay loam (HoA) and Indiahoma silty clay loam (InB). Holister silty clay loam is primarily located on the eastern side of Tom Steed Reservoir, as is Indiahoma silty clay loam. The developed portions of Great Plains State Park are either Rock Outcrop-Brico complex or Lawton Loam (LaC) with three to five percent slopes.

**Soil Suitability for Recreational Development**

Various soils have characteristics that may limit development for recreational purposes without additional investment for remediation or engineering. This is true within Great Plains State Park. For development of campgrounds, areas with Miller clay (Mr) and Port silty clay loam (Po) are very limited due to flooding and slow water movement. These soils are situated at the extreme northern reaches of the leased property near Gold Bell mine. Similarly, Hollister silty clay loam (HoA), Indiahoma silty clay loam (InB), Tillman clay loam (TeB), and Tillman-Hinkle complex (TdB) are somewhat limited for campground development. This limitation is also due to slow water movement through the soils. These soils are situated from the dam extending north along the lake shore and at the extreme western reaches of the leased property. Neither area has been developed by Oklahoma State Parks.
Figure 2.8 – Soil map of Great Plains State Park
Source: Natural Resource Conservation Service
The only portion of Great Plains State Park that is somewhat limited for trails and paths is that area with Miller clay (Mr) in the creek bed north of Gold Bell mine. These clay soils and the Tillman clay loam (TcB), Tillman-Hinkle complex (TdB), Hollister silty clay loam (HoA), and Indiahoma silty clay loam (InB) are also somewhat limited for development of picnic areas. In both cases, the limiting factors are associated with slow water movement and potential for flooding.

Limitations for playground development are shown in these same areas, with the additional limitations of areas with Lawton-Brico Rock outcrop (LbE) and Lawton loam (LaC and LaD). This includes portions of Mountain Shade campground near the south end of the dam.

The entire property is very limited for septic tank absorption fields, whereas the only soils not limited for lagoons are along the eastern portion of Great Plains State Park.
Hydrology

Kiowa County straddles portions of five watersheds, one of which crosses the state border between Oklahoma and Texas. These watersheds are:

- Middle North Fork Red (OK and TX) – 11120302
- Lower North Fork Red (OK) – 11120303
- Cache (OK) – 11130202
- West Cache (OK) – 11130203
- Upper Washita (OK) – 11130302

The watershed that includes Tom Steed Reservoir and Great Plains State Park is the Lower North Fork Red (11120303). Waters in this watershed flow southward into the Red River. Waters in this watershed are impaired for enterococcus bacteria, turbidity, chloride, and total dissolved solids, among other possible causes of impairments.

The maps and figures on the following pages provide detail related to Tom Steed Reservoir. This detail is provided by the Oklahoma Water Resources Board. As indicated, the normal elevation for Tom Steed Lake is 1,411 feet above sea level. However, water levels have been considerably lower than normal elevation from 2011 through 2014.

Bureau of Reclamation records show that Mountain Park Dam is a thin double-curvature concrete arch flanked by concrete thrust blocks. Mountain Park Dam is 133 feet high and 535 feet long (Reclamation, 1983). The outlet works for Mountain Park Dam are on the left thrust block, including three outlet pipes, trash racks, fish screens, emergency and operating slide gates, and motor-operated gate hoists.

In addition to the dam, Tom Steed Lake is retained by two rolled earth dikes. The east dike is 13,235 feet long and is visible from much of the park. The west dike is 10,311 feet long.

Water quality in Tom Steed Lake is rated as “eutrophic.” Despite this quality rating, the waters in Tom Steed Lake are rated as supporting full body contact recreation, fish and wildlife propagation, aesthetics, and agriculture.
Figure 2.11 – Tom Steed Lake
Source: Oklahoma Water Resources Board
Figure 2.12 – BUMP report for Tom Steed Lake
Source: Oklahoma Water Resources Board
Vegetative Cover

Great Plains State Park is in the Bluestem-Grama Prairie using the Kuchler Vegetation Classification. The area is in the Subtropical Steppe division and the Great Plains Steppe and Shrub province.

The Lenihan Vegetation Classification identifies these areas with slightly different descriptors. All of Kiowa County is in the South Mixed Grass Prairie. The vegetation associated with this area is identified as sandsage grassland and mixed grass eroded plains. There are patches of mesquite grassland distributed throughout the southern portion of Kiowa County, as well as patches of post oak-blackjack oak forest. This vegetation provides habitat for a variety of wildlife, with the addition of the forest associated with the park property. Eastern Red Cedar is invasive in this environment.

The summary of vegetation in the Final Environmental Statement (Reclamation, 1972) states:

“Vegetation in the plains area is that of agricultural crops and native shortgrass pasture; the latter are often intermingled with scattered growths of mesquite trees. A decided contrast in vegetation exists between the plains area, the granite outcrops of the Wichita Mountains, and the bottomlands along the water courses. Vegetation on the boulder slopes flanking the reservoir includes juniper, mesquite, scrub hackberry, plum, various shrubs, perennials, flowering plants, and cactus. Bottomland trees include cottonwood, American elm, walnut, ash, and pecan.

Within the 6,000-acre reservoir area, about 80 percent is in croplands, 10 percent in open pasture, and 10 percent in wooded pasture. Principal crops are cotton, wheat, and alfalfa.

There are no known rare or endangered species of plants in the reservoir area.”
Wildlife

As is true with all Oklahoma state parks, Great Plains State Park is a wildlife sanctuary. Due to its substantial size and location, Great Plains State Park serves a variety of roles for many forms of wildlife. For some, Great Plains State Park and Tom Steed Reservoir are a temporary or seasonal habitat as part of the migratory movement of birds and animals through the area. For others, Great Plains State Park and Tom Steed Reservoir may be the permanent habitat, providing an appropriate setting for the entire lifecycle.

The mixture of grasslands, agricultural fields, scrub mesquite, and open water provide an attractive habitat for a wide variety of wildlife. Being adjacent to Mountain Park WMA enhances the variety and quantity of wildlife present within Great Plains State Park. Quail, deer, rabbits, coyotes, raccoons, possible bobcats, doves, a wide variety of waterfowl and shorebirds, turkeys, and raptors may be observed within Great Plains State Park or in the immediate area. Great Plains State Park is within the identified range for western diamondback and massasauga rattlesnakes, although other venomous species may also be present including the copperhead.

The Final Environmental Statement (Reclamation, 1972) summarized fish and wildlife in the region as:

“Otter and Elk Creeks are slow moving streams containing numerous holes separated by shallow riffles. The bottoms are composed of sand and clay and are subject to shifting during flood periods. Waters are muddy except during periods of low flow. The banks are well covered with trees and are fairly stable. High water occurs mostly in the spring and fall, which is typical of southwestern Oklahoma streams. Fish migrate upstream during these periods and produce reasonably good fishing during the rise and for a short time thereafter. During the remainder of the year only a few holes retain water, and the streams supply very little fishing. Even the deeper holes go dry during periods of extended drought. Fish species in the streams include channel catfish, flathead catfish, carp, buffalofish, bullhead, and several of the sunfishes.

Snyder Lake contains the same kinds of fishes as the streams and, in addition, a few largemouth bass and white crappie. Although annual fluctuations are slight, the water is usually turbid and the fishing is generally considered poor. Despite the relatively poor fishing in Elk and Otter Creeks and Snyder Lake, people in the area fish them extensively. Pressure on the lake can be attributed to interest in fishing rather than volume of the catch.

Game resources of the project area include white-tailed deer, bobwhite, fox squirrels, cottontail rabbits, raccoons, and mourning doves. In addition, scaled quail have extended their range into this area. Deer have been seen in the area, but they are of little significance from a hunter’s standpoint. Bobwhite, fox squirrels, cottontail rabbits, and raccoons occur in moderate numbers along the creeks and are fairly abundant around the upper portion of Snyder Lake. The lake also furnishes some habitat for waterfowl. A growth of pondweed and smartweed in the upper portion makes an attractive area for ducks, principally blue- and green-winged teals, mallards, and pintails. Heavy use of the lake is made by local sportsmen. Fur animals such as mink and beaver occur to some extent in the project area, but no significant amount of trapping is done.
There are no known rare or endangered species of wildlife in the project area.”

The following information provides updated documentation related to threatened and endangered species in Kiowa County.

**Nuisance Species**

Feral hogs are present in Kiowa County and have been observed within Great Plains State Park. The estimated feral hog density for Kiowa County was moderate at 13 to 58 hogs per square mile. However, higher densities were reported for that portion of Kiowa County adjoining the Comanche County in the Wichita Mountains (Stevens, 2007).

**Endangered or Threatened Species**

At present there are no state-listed threatened or endangered species listed for Kiowa County. However, federally listed endangered and threatened species that may be present in Kiowa County include: Whooping Crane (*Grus americana*), Interior Least Tern (*Sterna antillarum*), Black-capped Vireo (*Vireo atricapillus*), and Piping Plover (*Charadrius melodus*). The Whooping Crane, Interior Least Tern, and Black-capped Vireo are listed as endangered, whereas the Piping Plover is listed as threatened. All of these birds are migratory and would be present in Kiowa County on a seasonal basis.

The Whooping Crane is migratory, moving annually from Canada to the Gulf of Mexico each fall and spring. Whooping Cranes may utilize Tom Steed Reservoir as a stopping point along their semi-annual migration routes.

As is true across much of Oklahoma, the Interior Least Tern (Figure 2.15) is also a migratory bird that nests along isolated areas of several rivers. As a result, the Interior Least Tern is possible to be close to the waters of the upper reaches of Tom Steed Reservoir. The Interior Least Tern is migratory and may be present during spring and summer.

The Piping Plover is also a shorebird, commonly associated with mud flats, sandy beaches, and shallow wetlands. Normally the Piping Plover is a migrant through Oklahoma in the spring and fall, although there are records of nesting areas in Oklahoma. Recent records include sightings of the Piping Plover in Kiowa County.
The Black-capped vireo is one of two vireos identified as possibly living in Kiowa County, and as a result, may be present within Great Plains State Park. The red-eyed vireo is more common and is not identified as either threatened or endangered. However, the Black-capped vireo has declined in numbers and range in Oklahoma. Only two populations remain: one in the Wichita Mountains of northern Comanche County and the other in northern Blaine County near Roman Nose State Park. This small songbird is migratory and may occur in Great Plains State Park during spring and summer.

Fishery

ODWC prepared a 5-year lake management plan (Cofer, et. al, 2012) for Tom Steed Reservoir. The average water exchange rate for Tom Steed is 0.08, a very long water storage period and low average outflow. A significant amount of water storage is lost annually through summer evaporation. As a result, frequent water level changes are among the greatest challenges to the fishery at Tom Steed Reservoir. A second factor that limits recreational value for the fishery is turbidity. As a result, the major threats to the fishery are turbidity, water level reductions, and excessive nutrient inputs.

As reported by Cofer (2012), “Fish stockings by the ODWC began in May, 1975 with largemouth bass, followed by sunfish and silversides that summer. Channel catfish fingerlings were stocked in 1977 and walleye fry were stocked in 1977 through 1988. Northern largemouth bass were also stocked in 1977-1979 and 1987, and Florida-strain bass were stocked in 1981, 1982, 1985 and 1986. Hybrid striped bass fry were initially stocked in 1979. Flathead catfish were stocked in 1982, 1985, 1988, and 1989. Blue catfish fingerlings were introduced in 1988 and 1989.” Jug-lining was prohibited between 1990 and 1993 due to reported excessive harvesting of walleye.

A 2013 project used 300 cedar trees to augment existing brush piles to enhance the fishery. Recreational anglers are keys to slowing the spread of aquatic nuisance species by checking, draining and drying their boats, trailers, livewells, and fishing equipment when moving between lakes.

The lake management included a recommendation for a 300-foot floating wave attenuator to be installed near the boat ramp at Rocky Shores. The cost estimate as reported is $210,000 with a 25% local match and ODWC investing 75% through its Sport Fish Restoration Boating Access program.

A second recommendation related to development within Great Plains State Park is the construction of a new, 500-foot jetty from the Otter Creek campground beyond the existing warning pole. This jetty should be lighted to improve safety for boaters and fishing access. Grooves should also be cut into a resurfacing of the main boat ramp.

Accessibility

The Oklahoma State Parks Division strives for accessibility for those with disabilities in all its park locations and facilities and has an access plan for the Division. Many parks and facilities
were designed and constructed before the passage of the 1990 Americans with Disabilities Act (ADA), and well before the Americans with Disabilities Act Accessibility Guidelines (ADAAG) were developed. Further, by its very nature, the natural environment may not lend itself to easy access for those with mobility impairments.

The technical provisions of the ADA permit deviation from the stated guidelines. These provisions allow deviation from full compliance if accessibility cannot be provided because (1) compliance would cause substantial harm to cultural, historic, religious or significant natural features or characteristics; (2) substantially alter the nature of the setting or purpose of the facility; (3) require construction methods or materials that are prohibited by federal, state or local regulations or statutes; or (4) would not be feasible due to terrain or the prevailing construction practices.

In 2007, the United States Access Board issued a Notice of Proposed Rule Making (NPRM) for outdoor developed areas. These rules and their associated interpretations have direct bearing on the consideration of access in Great Plains State Park. The minimum requirements found in the NPRM for outdoor developed areas are based on several principles developed through the regulatory negotiating process. They include (U.S. Access Board, 2009):

1. Protect the resource and environment
2. Preserve the experience
3. Provide for equality of opportunity
4. Maximize accessibility
5. Be reasonable
6. Address safety
7. Be clear, simple, and understandable
8. Provide guidance
9. Be enforceable and measurable
10. Be consistent with Americans with Disabilities Act Accessibility Guidelines (as much as possible)
11. Be based on independent use by persons with disabilities

Most of the trails within Great Plains are natural surfaces, although hard surface sidewalks have been installed in the developed areas. Any one designated trail may make use of all or several surface types. If major trail redesign or construction were to occur, it would be important to ensure compliance with the ADA standards where appropriate. The NPRM addresses ten provisions that must be considered related to trail accessibility. These provisions are:

1. Surface – must be firm and stable
2. Clear tread width – minimum of 36 inches
3. Openings in surface – may not permit passage of sphere one-half inch in diameter
4. Protruding object – minimum of 80” of clear headroom above the trail
5. Tread obstacles – cannot exceed a maximum of two inches
6. Passing space – minimum of 60” by 60” at intervals of 1000’ or less
7. Slope – addresses cross slope and running slope
8. Resting intervals – at least 60” in width
9. Edge protection – not necessarily required, but may be provided
10. Signage – information on distance and departure from technical provisions
An example of possible signage for trails as suggested by the National Center on Accessibility is shown in Figure 2.18. As of 2010, no specific signs have been designated for universal communication related to accessible trails. However, these signs communicate the concept of accessibility in outdoor developed recreation spaces that include trails.

Other considerations related to access for persons with disabilities include “Braille trail” concepts that allow persons with visual limitations to enjoy the features of a trail. This is particularly true if the trail is interpretive in nature, with signs communicating information related to natural, cultural, historic, or other significant topics related to the park environment.

In an effort to fully disclose the extent of accessibility within state parks, the Oklahoma State Park Division developed terms to describe two levels of access; these terms are used in State Parks publications: accessible and usable.

Accessible indicates that the park “substantially complies with the Americans with Disabilities Act Accessibility Guidelines (ADAAG). The facility is connected with a barrier-free-route-of-travel from an accessible parking area.”

Usable indicates that the “facility allows significant access. Some individuals with disabilities may have difficulty and need assistance. Due to topography and the primitive nature of some sites, parking and connecting routes may not be accessible to all with disabilities” (OTRD, 2007).

OTRD began development of the properties at Great Plains State Park before the passage of the ADA; thus, many of the established structures do not meet the explicit requirements of the law. In several locations, OTRD has added accessible restrooms, developed hard surface campsites, installed walkways, and made other efforts to improve accessibility. However, the number of designated accessible campsites and parking spaces in several locations are inadequate. In other settings, the restrooms are not accessible. The playgroups within Great Plains State Park tend to be of earlier installation dates and are not presently in compliance with accessibility standards or Consumer Product Safety Commission guidelines. The existing trails in these properties are not currently accessible trails, and such modification may not be desirable. The natural terrain varies considerably and is quite rocky; in addition, the environment includes vulnerable species. Thus, ADAAG-defined accessibility to every area of the park is not practical, nor necessarily desirable.

Throughout Great Plains State Park, it will be necessary to complete a thorough review of accessibility. In addition and in light of continuous updating, new rule-making, and interpretation of rules on-going vigilance related to accessibility is required.
An example of this rule-making and interpretation took effect March 15, 2011 under the Department of Justice ruling that specified “other power-driven mobility devices” (OPDMD) that could be used on trails by individuals with mobility limitations. At present, the expectation is that the operating entity (OTRD) shall “make reasonable modifications in policies, practices, or procedures to permit the use of other power-driven mobility devices by individuals with mobility disabilities, unless the public entity can demonstrate that the class of OPDMD cannot be operated in accordance with legitimate safety requirements that the public entity has adopted based on actual risks” (American Trails, 2011).
Chapter 3 – Current Status of the Resource

Recreational Development

As one of three Oklahoma State Parks in the southwestern quadrant of the state associated with a Bureau of Reclamation lake, Great Plains State Park is a historic, cultural, economic, natural, and recreational resource. The physical development of Great Plains State Park began in the late 1960s with discussion and legislation related to construction of the Mountain Park Project. Then in the early 1970s with the actual development of the Mountain Park Project and the resulting Tom Steed Lake, Great Plains was formalized as a lease of Reclamation properties by the State of Oklahoma for use as a state park.

The map on the following page, Figure 3.2, provides an overview of the features of Great Plains State Park. The park boundaries include 487 acres of land leased from the Bureau of Reclamation, although the lease also includes a significant portion of the lake. The property is adjacent to Tom Steed reservoir, a body of water that varies considerably in surface area. Great Plains State Park encompasses campgrounds, day use areas, lake access areas, trails, and other facilities. These facilities are detailed in the following discussion. For ease of presentation, the discussion and presentation begins at the eastern or main entrance to the property comprising Great Plains State Park and proceeds west and south along the main road through the property.

For all visitors entering Great Plains State Park by automobile, the only highway access route is along U.S. Highway 183 between Hobart and Mountain Park. Two county roads extend west from Highway 183 to provide access to the eastern entrance to Great Plains State Park or to the southern entrance to the property.

Figure 3.1 shows the boundaries of Great Plains State Park overlaid on aerial photography from Google Earth. This figure shows the irregular outline of the leased property, owned by the Bureau of Reclamation and leased by Oklahoma State Parks.

By contrast Figure 3.2 on the following page shows the developed portions of this property. Much of the lease is subject to flooding or is too rocky to develop. However, the contiguous lease permits state park management of the property under a consistent set of policies and implementation.
Figure 3.2 – Map of Great Plains State Park

KEY TO SYMBOLS

- PARK OFFICE
- RV CAMPING
- GROCERIES, BAIT, ETC.
- RV DUMP STATION
- PAY PHONE
- SWIM BEACH
- PICNIC SHELTER
- PLAYGROUND
- COMFORT STATION
- NATURE TRAIL
- BOAT RAMP
- HIKING TRAIL
- DAM
- MOUNTAIN TRAIL
- TENT CAMPING
- TRAIL HEAD

GREAT PLAINS STATE PARK
**Entry Drive and Environs**

The entry drive into Great Plains State Park from Highway 183 to the main body of the park is approximately one-half mile distance. This entry drive (E1570 road) passes through an agricultural area common to this portion of Kiowa County.

In this area, the terrain is quite flat although a rocky outcrop is visible to the west of Highway 183. This outcrop is shown in Figure 3.3 along the east entrance to Great Plains State Park. The county road crosses a railroad track. Just beyond the railroad, the park road turns to the north while the county road extends briefly to the west to private property.

The railroad crossing on E1570 Road is marked, but it is an uncontrolled crossing. There are no gates or warning lights at this location.

The Wichita Mountains form the eastern horizon and the rocky outcrops within Great Plains State Park form the western horizon. As a result the terrain somewhat belies the name of the park since there are distinct topographical changes for visitors entering Great Plains State Park.

**Granite Hills Trailhead**

E1570 turns northward as N2250 to enter Great Plains State Park. Upon entry into Great Plains State Park, the first park feature is along the west side of N2250. The Granite Hills Trail winds throughout the rocky outcrop, with a trailhead at this location near the main park entry.

The Granite Hills Trail is presented in greater detail later in this RMP. However, the trailhead at this location includes parking for half a dozen vehicles, a kiosk with a map of the trail system, and several interpretive panels (Figure 3.4). The Granite Hills Trail is open to mountain bikers and hikers. There are numerous connections to the trail system from within the park, but this is the most clearly identified trailhead and the first encountered by most visitors.
Park Office and Maintenance Area

Approximately one-quarter mile north of the Granite Hills Trailhead, the entry road turns slightly to the west. For a visitor entering Great Plains State Park, the most prominent feature in sight is the impounding dike extending north and south along the eastern edge of Tom Steed Reservoir. The park office and maintenance area for Great Plains State Park is located at the southern end of this dike.

The park office is on the north side of the entry drive and includes a parking lot with a capacity of about ten vehicles. To the rear of the park office (Figure 3.5), fences define the maintenance yard. Mowers, vehicles, and other essential equipment are stored in shelters or in the open area within the yard. In addition, fuel tanks are situated along the fence line.

The park office is not designed for public use due to limited capacity and the location. However, the office functions as the official park headquarters.

Two additional features are apparent in the general area. First, a water tower is located east of the maintenance yard and is shown in Figure 3.5. Secondly, on the east side of the dike shown in this figure.

Figure 3.5 – Park office and maintenance area
Top: view of dike from within Great Plains State Park
Middle: park office
Lower left: water tower
Lower right: maintenance yard
photograph there is a double lagoon for waste treatment of liquid waste from within Great Plains State Park. The lagoon area is fenced and may not be apparent to visitors unfamiliar with the park or waste management systems.

In this location, the park office and maintenance area are easily accessible near the main entrance. They are also located close to the park residence.

**Park Residence**

The park residence is directly west of the park office across N2250 Road. A short driveway forms a four-way intersection with N2250 road extending southeast to northwest into Great Plains State Park. The driveway to the park residence extends slightly southwest, while an entry drive into a parking area extends to the northeast.

The park residence (Figure 3.6) is slightly elevated above the surrounding terrain and is nestled into the trees and rocky terrain behind the residence. A pond separates the residence from adjoining areas in Mountain Shade Campground further west.

![Figure 3.6 – Park residence](image)

**East Dike Day-Use Area**

Directly across N2250 Road from the park residence is an unnamed area. This area is situated at the south end of the east dike on Tom Steed Lake. The park office and maintenance area are directly east of this location. However, the parking lot accessed from the four-way intersection provides a location for day-visitors and others to access a playgroup and a beach. During preparation of the RMP, the beach was little more than a wide sand bar with fairly heavy vegetation. Low water levels had reduced the usability of the area. Figure 3.7 portrays the playgroup located just west of the parking lot and south of the beach. This playgroup is of wood-

![Figure 3.7 – Playgroup near the beach](image)
frame construction with a separate swing apparatus. The older design of this playgroup does not comply with current CPSC safety guidelines or ADA requirements. However, the fall zone for the main playgroup is clearly identified, although it may not meet specifications related to absorption of impact.

**Mountain Shade Campground**

Mountain Shade Campground parallels N2250 Road on the north and south sides of the roadway for about a quarter mile. North of N2250, Mountain Shade Campground (Figure 3.8) is defined by a one-way road with back-in campsites along the entire route. This northern portion of the campground is identified as the “lower campground” in Mountain Shade. A spur at the eastern end adds three campsites and a spur at the western end adds five more campsites. The main route includes 24 campsites and a picnic pavilion with a capacity of 25.

The upper campground in Mountain Shade is along the southern edge of N2250 Road. This campground is also designed along a one-way loop with 14 modern campsites, of which 2 are accessible RV sites. Four additional sites offer electricity and water as semi-modern campsites.

The loop that forms the upper campground encircles a comfort station and a sanitary dump station (Figure 3.9 on the following page), both of which are directly accessible from N2250. The parking lot at the comfort station is designed to accommodate approximately a half dozen vehicles.

In addition to these features, there is a small pond impounded between Mountain Shade Campground and the park residence (Figure 3.9 on the following page). This pond retained water during the summer 2013 and provided aesthetic and recreational value for visitors. Youth were frequently observed fishing in the pond. The pond is slightly elevated above the terrain to the north and east. Foot trails lead around the pond, with additional trails linking to the Granite Hills Trail from within Mountain Shade Campground. At the north end of the campground, the paved Heritage Hills Trail terminates on the north side of N2250 across from the comfort station.
Table 3.1 – Campground Detail for Mountain Shade Campground

<table>
<thead>
<tr>
<th>Campground amenity</th>
<th>Mountain Shade Campground</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern campsite (Water, sewer, electricity)</td>
<td>14 sites in upper campground</td>
</tr>
<tr>
<td></td>
<td>2 accessible sites</td>
</tr>
<tr>
<td>Semi-modern campsite (Water, electricity)</td>
<td>4 sites in upper campground</td>
</tr>
<tr>
<td></td>
<td>30 sites in lower campground</td>
</tr>
<tr>
<td>Unimproved (no utilities)</td>
<td>6 sites</td>
</tr>
<tr>
<td>Pavilion (capacity of 25)</td>
<td>1, electricity, water and grill</td>
</tr>
<tr>
<td>Trail</td>
<td>Heritage Trail and trailheads for Granite Hills Trail</td>
</tr>
<tr>
<td>Boat Ramp</td>
<td>None</td>
</tr>
<tr>
<td>Sanitary dump station</td>
<td>1</td>
</tr>
<tr>
<td>Playgroup</td>
<td>1 (adjoining beach area)</td>
</tr>
<tr>
<td>Restrooms</td>
<td>1, including showers</td>
</tr>
</tbody>
</table>

Rocky Shores Area

The quarter mile west of Mountain Shade Campground is identified as Rocky Shores. This portion of Great Plains State Park includes a small campground, day-use area primarily for picnicking and walking, and the boat ramp area. As a result, Rocky Shores receives overnight and day use.

The north side of the roadway in Rocky Shores is linked to Mountain Shade by the Heritage Trail. The Heritage Trail (Figure 3.10 on the following page) is a paved, accessible trail that parallels the lakeshore through Rocky Shores. Picnic tables and interpretive panels enhance the trail and the walking experience. Several parking areas are adjacent allowing a visitor to access the trail at several locations. The interpretive panels provide historical background for the region, linking several Native American nations to the surrounding region. In addition, maps and additional panels provide historical background related to Great Plains State Park and the role of Senator Gilmer Capps in advocacy for the park.
Picnicking is encouraged in Rocky Shores with several tables and shelters distributed along the trail and the roadway. Parking lots for these picnic areas vary from those shown in Figure 3.11 as a mixture of gravel and vegetation to less vegetated areas or more paved areas. These parking areas are outlined by placement of boulders to limit vehicular access beyond a desired location.

The picnic sites on the lower side (north side) provide views of the lake at closer proximity than those on the upper (south side). The sites on the upper side border rocky outcrops as shown in Figure 3.11.

An interesting aspect of this area within Rocky Shores is the presence of an Evaporation-Transpiration (ET) pond. This feature (Figure 3.12 on the following page) is minimally apparent for most visitors. The ET system handles waste management for the comfort station at this location.
The entry drive in Great Plains State Park intersects with the continuing roadway toward the west and south. The intersection in Rocky Shores is controlled by a stop sign, allowing traffic to slow properly to continue westward or to cross into the boat ramp parking lot on the north side of the roadway.

The Rocky Shores boat ramp is the only lake access point within the main portion of Great Plains State Park. This ramp is two-lanes with 22 parking spots marked in the adjoining parking lot (Figure 3.13). The fishing pier had been disconnected due to low water conditions, although the ramp was usable throughout the summer 2013.

The dock separating the two lanes on the ramp aids in loading and unloading or in transferring passengers into watercraft. However, there is no true courtesy dock at this location. As a result, it is fairly common to see boats tied along the shoreline, especially for those needing to get back to the parking lot temporarily or to go to the bait shop.

Through 2015, the Tom Steed Bait Shop was located directly west of the intersection and south of the parking lot at the boat ramp (Figure 3.14 on the following page). The bait shop was a private concession operated under contract to Oklahoma State Parks. This facility was not compliant with ADA requirements for accessibility of commercial areas. The bait shop offered beverages, some food items, fishing supplies, ice, and some camper supplies. A private residence
(mobile home) was located immediately south of the bait shop as shown in Figure 3.14. Limited parking and a few picnic tables are located in front of the former bait shop. This parking and the picnic tables offer some amenity for guests. Slightly to the east, there is a restroom and a pay phone which may also serve guests (Figure 3.15). The comfort station serves the boat ramp area and Rocky Shores day use area. Cell phone service is limited dependent upon carrier making the pay phone of potential value. However, a dial tone was not consistent in service.

The water tower shown in Figure 3.15 was not in use during preparation of the RMP, although it remains on property. This tower was associated with the former water treatment plant housed in the adjacent comfort station building, accessed through the overhead door as shown.


**Otter Creek Campground**

Continuing to the west on the main park road, the next facility in Great Plains State Park is Otter Creek Campground. This campground is designed as a figure-8 with the campsites around the second circle. As shown in Figure 3.16, the campsites in Otter Creek include semi-modern sites with hard surfaces and unimproved tent sites.

![Figure 3.16 - Otter Creek campground](image)

One site shown in Figure 3.17 has been designed as an accessible site. This campsite is linked by hard surface to an accessible trail that extends from a parking area, past the accessible site, and toward the lake. This trail provides an accessible route of travel to a covered fishing pier, located just west of Otter Creek campground; however, that pier was limited for use during preparation of the RMP due to the low water levels.

![Figure 3.17 - Accessible site, trail, and fishing pier in Otter Creek](image)
There is a group pavilion located between the two circles of the figure-8 configuration of Otter Creek campground (Figure 3.18). This pavilion has shade panels to provide some climatic relief. In addition, the fireplace at the south end of the pavilion provides convenience for guests. The pavilion also includes water and electricity. Other guest amenities in this area include interpretive panels outside the pavilion. An older wooden swing without a proper fall zone is located in the area near the pavilion. Up the hill and adjacent to the roadway leading into Otter Creek there is a basic comfort station. Old horseshoe pits are evident on the east side of the campground, but are rarely used and poorly maintained.

Table 3.2 – Campground Detail for Otter Creek

<table>
<thead>
<tr>
<th>Campground amenity</th>
<th>Otter Creek campground</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern campsite (Water, sewer, electricity)</td>
<td>0 site</td>
</tr>
<tr>
<td>Semi-modern campsite (Water, electricity)</td>
<td>10 sites (1 accessible and 1 pull-thru)</td>
</tr>
<tr>
<td>Unimproved (no utilities)</td>
<td>8 sites</td>
</tr>
<tr>
<td>Pavilion (capacity of 50)</td>
<td>1, electricity, water and grill</td>
</tr>
<tr>
<td>Trail</td>
<td>Accessible trail to fishing pier</td>
</tr>
<tr>
<td>Fishing pier</td>
<td>1 (with adequate water level)</td>
</tr>
<tr>
<td>Playgroup</td>
<td>Swing</td>
</tr>
<tr>
<td>Restrooms</td>
<td>1</td>
</tr>
</tbody>
</table>
The main park road leading south from Otter Creek continues to the southern entrance into Great Plains State Park. At this location, the roadway enters the boulder field and rises slightly. The areas adjacent to the road offer limited opportunity for development due to the rocks and boulders (Figure 3.19). However, several “turn-outs” and small parking areas allow visitors to park and to gain access to various entry points to the Granite Hills Trail system. One such location is visible in Figure 3.19 with a footpath leading into the boulder field.

**Bureau of Reclamation Area**

Otter Creek flowed through a narrow, rocky channel that is now impounded as the outlet for Tom Steed Reservoir. The Bureau of Reclamation constructed the dam as an arc across the narrow channel. The terrain and the dam have aesthetic and interpretive value as shown in Figure 3.20. However, Bureau of Reclamation policy limits visitor access to the dam. In addition, the roadway is gated at two locations and marked with signs indicating that stopping or standing along the roadway is prohibited. There are a couple of parking areas along the roadway leading to lack of clarity as to the right of visitors to park and walk in the area between the gates. There is limited interpretive information available on-site.
Snyder Lake (Reclamation Area)

What remains of Snyder Lake is immediately downstream from the Mountain Park dam (Figure 3.21). Snyder Lake is very shallow under normal water flow, but does have historical and interpretive value. The parking area at Mountain Park dam provides a view from the north end of Snyder Lake while other vantage points are limited for the public.

![Figure 3.21 – Snyder Lake](image)

Camp Radziminski (Reclamation Area)

The former Camp Radziminski was located just downstream from Snyder Lake. A trail leads from a parking area along the west side of the roadway back to Otter Creek. The camp location was along Otter Creek and has likely flooded several times since the camp was active. In addition, persons with metal detectors have scoured the area. Some artifacts have probably been removed and are now posted on websites.

A short nature trail is located along the west side of Otter Creek, but is poorly maintained and seldom used. At one time by special permit, groups were permitted to camp in this area. That practice was stopped following September 11, 2001.

![Figure 3.22 – Camp Radziminski area](image)
South Entrance

The south entrance to Great Plains State Park is via county road from Highway 183, then north into the park. This was the original main public entrance to the park. Since this entry is not marked on Highway 183, relatively few visitors would enter Great Plains State Park from this direction. The entry drive is marked (Figure 3.23) and the road corridor passes through the boulder field into the Otter Creek channel before entering the main body of Great Plains State Park.

Gold Bell Mine

An additional section of Great Plains State Park is located about four miles north of the main park entrance on Highway 183. County roads E1540 and N2250 lead to an area marked as Gold Bell Mine, also spelled as Gold Belle in some literature and on some signs. There is no signage on Highway 183 to identify this location, although signs on the county roads do indicate the presence of an Oklahoma State Park property (Figure 3.24). The roads in this area receive

Figure 3.23 – South entry to Great Plains State Park

Figure 3.24 – Entry to Gold Bell Mine area
Gold Bell mine and its history is apparently laced with mythology and legend. The story of Gold Bell mine is narrated on an interpretive panel at the site (Figure 3.25). However, little evidence of factual information is available beyond that material.

From a recreational perspective, the Gold Bell mine area has historic and cultural value for interpretation. Little additional development is possible in the immediate area.

The property that includes Gold Bell mine also includes a boat ramp providing access to the upper reaches of Tom Steed Reservoir when there is adequate water flow. During preparation of the RMP, this area was inaccessible by water and unusable for access to the lake (Figure 3.26). At one time a pier and walkway supplemented the ramp, but those amenities are now discarded as shown in the photograph.
**Hiking/Walking/Riding Trails**

There are two primary trails in Great Plains State Park: (1) the Heritage Trail, and (2) the Granite Hills Trail. Each of these trails offers a distinct experience for the visitor. The Camp Radziminski nature trail, outside park boundaries, is marked on several maps still available to the public. The Camp Radziminski nature trail is a moderate to easy walk of about one-third mile. This trail is located near the south entrance to Great Plains State Park along the lower portion of Otter Creek. The trail is poorly marked and minimally maintained, outside park boundaries.

Heritage Trail is an accessible, hard surfaced trail from Rocky Shores through Mountain Shade campground. Heritage Trail parallels the main park road and is adjacent to the lake shore. Several picnic sites are adjacent to Heritage Trail (Figure 3.10 on page 50) and interpretive panels provide additional attraction along the trail.

The Granite Hills Trail system (Figure 3.27) is a series of loops interlaced among the granite boulders in the center of Great Plains State Park. The Granite Hills Trail is intended for hiking and mountain biking. Trailheads are located near the main park entry, from Rocky Shores, from Otter Creek (Figure 3.27), and several locations along the main park road on the west side of Great Plains State Park.

The length of the Granite Hills Trail varies with the loops taken by hikers or bikers. As shown in Figure 3.28, the Yellow Trail is 3.9 miles, the White Trail is 4.1 miles, and the Blue Trail is 2.5 miles. There are two ponds along the eastern side of the Granite Hills Trail that enhance the experience for visitors. Wildlife is attracted to these locations, especially when the ponds have some water. Warning statements are provided on the signs at the entry to the trail regarding the presence of rattlesnakes and copperheads throughout the area.

![Figure 3.27 – Granite Hills Trail](image)
Public Access and Entry Aesthetics

Public access to Great Plains State Park was discussed earlier. All vehicular access is from federal Highway 183 on the eastern side of the park. Highway 183 is two-lane for most of the distance from Hobart on the north to Snyder south of the park. Highway 183 intersects with a number of east-west highways including Highway 62 to the south and I-40 in Clinton to the north.

The area near the entrance to Great Plains State Park is agricultural, fitting for the prairie environment. Open prairie, agricultural fields, and mixed hardwood stands border Highway 183 for most of the distance between Hobart and Snyder. Small communities such as Mountain Park and Roosevelt are closer to Great Plains State Park and offer basic commercial services.

To the east and west of Highway 183, the Wichita Mountains and the Quartz Mountains provide topographic relief that is unexpected by many first-time visitors. These mountains also raise questions as to the “Great Plains” designation for the park.

Signs for Great Plains State Park are in place along Highway 183. Most visitors to Great Plains State Park are likely to have some knowledge of the park’s location prior to a visit. Incidental visitation for travelers along Highway 183 is somewhat unlikely.

Park Visitation

Attendance records have been kept since the opening days of the park. It should be noted that counting park visitors is an inaccurate process. Technically, every person entering the park is a park visitor – but not all of those visitors are recreational visitors. At Great Plains State Park a certain percentage of the visitors recorded in the park would include park staff, vendors, and members of the general public entering the park to utilize the restroom or for other purposes. The physical location of Great Plains State Park along E1570 Road requires that persons driving on the roadway pass through the park. These motorists would be park visitors. In addition, persons entering the Gold Bell Mine area are also park visitors.

Other aspects of park visitation can be calculated more accurately. This would include those situations in which there is an exchange of a fee for a specific service. As a result, the following discussion reports total visitation to Great Plains State Park and specific usage of particular areas within the park.

For clarity in understanding of visitation patterns, total park visitation is presented in the following discussion. This would include campers and day visitors.

Recreational Use of Park Facilities

Visitation for Great Plains State Park has decreased during the past five years. The number includes day visitors and overnight visitors. The day visitors include pass-through sightseers, anglers, boaters, picnickers, trail hikers, and many other recreational visitors. Overnight visitors include campers who spend one or more nights within Great Plains State Park.

Determining the number of campsites rented is more accurate than is the calculation of total visitors to the park. Total visitors are calculated based on traffic counters and a proxy variable for number of occupants in vehicles passing entry points into the park. Total number of visitors should not be interpreted as “individuals” in that numerous individuals are repeat visitors to the
park on a daily, weekly, monthly, or annual basis. In addition, guests may enter the park, leave the park, and return to the park multiple times on a single visit. In such cases, traffic counters would record each entry. At Great Plains State Park, the number of day visitors has not been calculated using the traffic counter in recent years. As a result, the total visitation is an estimate.

**Table 3.3 – Camping and Total Visitation**

<table>
<thead>
<tr>
<th>Fiscal year</th>
<th>Day visitors</th>
<th>Campsites rented - improved</th>
<th>Campsites rented - unimproved</th>
<th>Total Visitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>Appr. 100,000</td>
<td>4,086</td>
<td>710</td>
<td>112,752</td>
</tr>
<tr>
<td>2010</td>
<td>Appr. 95,000</td>
<td>3,370</td>
<td>621</td>
<td>100,575</td>
</tr>
<tr>
<td>2011</td>
<td>Appr. 90,000</td>
<td>3,430</td>
<td>410</td>
<td>97,287</td>
</tr>
<tr>
<td>2012</td>
<td>Appr. 85,000</td>
<td>3,332</td>
<td>319</td>
<td>92,204</td>
</tr>
<tr>
<td>2013</td>
<td>Appr. 77,000</td>
<td>2,316</td>
<td>267</td>
<td>81,881</td>
</tr>
</tbody>
</table>

Based on the figures in Table 3.3, it is apparent that visitation during the recent five-year period peaked in 2009 for both day visitors and overnight guests. In all likelihood, the decline in visitation is a reflection of economic conditions during the past few years and the price of gasoline. Another factor that must be considered has been the drought and reduced lake levels between 2010 and 2014. Lower water levels have been associated with reduced park visitation at many sites. This pattern has also been seen in several other parks across Oklahoma.

It is difficult to identify exactly how many campers are individually associated with a registration. In the campgrounds, records are maintained of the number of campsites rented. As demonstrated in the photographs presented it is fairly common for one campsite rental to include a recreational vehicle and one or more tents. In addition, it is common for multiple motorized vehicles to be associated with a single campsite rental. Logically, group size associated with a single campsite rental can vary greatly.

Table 3.4 on the following page presents the campsite rentals for the past five years. These sites are defined as improved or unimproved, for which the category of improved sites includes modern and semi-modern site design. The number of campsites available varies slightly as new sites are developed, old sites are taken “off-line,” and new campground design changes the configuration of a campground. The number of campsites available is an estimate, calculated based on number of sites of a given category multiplied by 365 and reduced by 5% for days on which individual sites may have been unavailable due to maintenance or construction.
### Table 3.4 – Camping at Great Plains State Park

<table>
<thead>
<tr>
<th>Fiscal year</th>
<th>Type of campsite</th>
<th>Campsites rented</th>
<th>Campsites available*</th>
<th>Occupancy rate on campsites</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>Unimproved campsites</td>
<td>710</td>
<td>9,198</td>
<td>7.7%</td>
</tr>
<tr>
<td></td>
<td>Improved campsites</td>
<td>4,086</td>
<td>17,739</td>
<td>23.0%</td>
</tr>
<tr>
<td>2010</td>
<td>Unimproved campsites</td>
<td>621</td>
<td>9,198</td>
<td>6.8%</td>
</tr>
<tr>
<td></td>
<td>Improved campsites</td>
<td>3,370</td>
<td>17,739</td>
<td>19.0%</td>
</tr>
<tr>
<td>2011</td>
<td>Unimproved campsites</td>
<td>410</td>
<td>9,198</td>
<td>4.5%</td>
</tr>
<tr>
<td></td>
<td>Improved campsites</td>
<td>3,430</td>
<td>17,739</td>
<td>19.3%</td>
</tr>
<tr>
<td>2012</td>
<td>Unimproved campsites</td>
<td>319</td>
<td>9,198</td>
<td>3.5%</td>
</tr>
<tr>
<td></td>
<td>Improved campsites</td>
<td>3,332</td>
<td>17,739</td>
<td>18.8%</td>
</tr>
<tr>
<td>2013</td>
<td>Unimproved campsites</td>
<td>267</td>
<td>9,198</td>
<td>2.9%</td>
</tr>
<tr>
<td></td>
<td>Improved campsites</td>
<td>2,316</td>
<td>17,739</td>
<td>13.1%</td>
</tr>
</tbody>
</table>

*Based on number of total sites, either improved or unimproved, less 5% for maintenance

The occupancy rate on unimproved campsites is hindered by extremes of weather since these sites do not have electricity. The heat of the summers in 2011 and 2012 certainly had an adverse impact on occupancy in unimproved sites.

The occupancy rate for all campsites at Great Plains State Park has been trending downward over the past five years. There is a combination of factors that may explain this trend. Among those factors are: (1) reduction in public participation in camping; (2) economic conditions that limited outdoor experiences for potential guests; (3) climatic conditions that reduced the attractiveness for an experience at Great Plains State Park; (4) market preference for a level of service or quality of service that is not available at Great Plains State Park; or other factors.
Public Perception of Great Plains State Park

At the time of preparation of this resource management plan, the authors reviewed numerous websites and marketing sources related to Great Plains State Park, which were provided by private sources. Further, private citizens and visitors to Great Plains State Park maintain personal “blogs” and social networking sites that address their experiences and visits to the park. These blogs often were associated with activities such as hiking the various trails, camping, fishing, or boating, but addressed Great Plains State Park in some manner.

Several bloggers commented on the Camp Radziminski site and its history. In particular, a group of history buffs from Texas have explored that area, recovered some artifacts, and maintain an online communication regarding the site.

The following comments are examples of public perception of Great Plains State Park. These comments are taken directly from online sites and include verbatim comments which may also include errors.

• The park rangers were friendly and helpful. It is a beautiful park. We saw a couple of beavers. Very peaceful. Well kept.
• Fished there often as a kid, but my wife and I started going camping and boating again this year. Caught some fish (stepson caught a 3 pound walleye) and had a great time!!! Wife caught the biggest sandie and daughter-in-law caught the most. Me... I drove the boat.
• We were visiting in the area and looking for a place to spend the night. Wound up in a great Park and spending an extra day in the area.
• So far this is our 2nd time here and love it. It is very peaceful and not crowded.
• Great place, usually quiet and relaxing.
• The state of Oklahoma not very RV friendly. The rates are relatively high and rising, they have phased out discounts for longer stays and they do not take reservations so you have to call ahead if you want to be fairly sure to have a space. The main comfort station even charges for showers! Smaller free showers are available if you look. The park offers great hiking trails but rough for bikes. Biking on the roads is great though. The Wichita Mountains is a must if you are going to stay for a while. There is a nice winery open on Sat afternoon only near Roosevelt. Meers Store is fun but burgers are overrated. There’s a reason we stopped eating Longhorn beef. If you search flickr.com you can see photos of the park. Spots were close to level, easy to access, great views. No Wi-Fi at the sites but available at the HQ. Good cell phone. Seriously creepy bugs in some of the restrooms. We camped here in a Fifth Wheel.

User Evaluations of Great Plains State Park

The most formal and scientific evaluations for Great Plains State Park were generated during the 2003 park visitor survey (Caneday & Jordan, 2003). These evaluations were the result of on-site interviews with park visitors contacted at various locations throughout the park. The analysis of the data from these interviews was reported by category of type of visitor: day visitor or camper. Although dated, this visitor survey is the most recent thorough analysis of attitudes and opinions represented by visitors to Oklahoma state parks. Since contacts were made at public locations throughout the park, the determining factor for classification of the visitors was their respective place of lodging during the visit on which they were contacted.
Day visitors to Great Plains State Park were familiar with the park, averaging thirteen visits per year with a mode of five visits annually. Almost 90% of all day visitors interviewed were repeat visitors to the park. The most frequent recreational activities reported by these day visitors were picnicking, swimming in the lake, and relaxing. Day visitors tended to be satisfied with their experiences at the park, showing the least satisfaction with lack of shade in the park. The park was the primary destination for all of the day visitors, who were motivated to visit the park to be with friends or family and because Great Plains State Park was close to their respective homes.

Day visitors tended to be in groups, ranging up to six individuals, but the most common grouping of day visitors was three members. The day visitors contacted during the survey tended to be white or Native American, non-Hispanic with a high school education or above. They ranged in age from 18 to 78 years of age, with a median of 34 years of age; they included similar numbers of males and females. Since these individuals were day visitors, they had traveled a limited distance to get to Great Plains State Park, reporting a median of 17 miles in travel. It is likely that a substantial number of these day visitors were from the larger surrounding communities including Hobart and Snyder, since Lawton and Altus are more than that distance from the park.

Campers at Great Plains State Park were also quite familiar with the park in that they were repeat visitors. Approximately 70% of responding campers were repeat visitors; they had visited the park an average of fifteen times in a year, although that mean was skewed by several campers who stayed at the park more than 50 nights in the year. These campers participated in a wide range of recreation activities, but most frequently they walked or hiked, drove for pleasure (sightseeing), fished, boated for pleasure, or just relaxed in the park. Campers expressed great satisfaction with the facilities provided in the park.

Great Plains State Park was the primary destination for 93% of the campers contacted in the survey. They chose to visit the park to relax or rest and to be with friends or family, with the single highest factor in motivation being “rest and relaxation.” The vast majority of the campers were white and non-Hispanic. In addition, the campers were well educated in that they presented a high school education or above as the highest level achieved by 90% of campers.

Campers reported having traveled an average of 70 miles on their visit to Great Plains State Park. This would indicate that the majority of campers at the park were from southwestern Oklahoma or the bordering counties in Texas.

**Park Management**

Over the years of operation, the management structure for Great Plains State Park has changed at the direction of leadership within OTRD from Oklahoma City. However, Great Plains State Park has been quite stable in organization and operation throughout the years. During the preparation of the RMP, a new manager was appointed for Great Plains State Park. She participated fully in preparation of the RMP.

Great Plains State Park is included in the Western Region of Oklahoma State Parks. This intermediate management structure allows park management to work with regional oversight as an intermediary or in direct contact with the Oklahoma City office. As with all state parks in Oklahoma, personnel, purchasing, contracting, and all other aspects of operation are governed by Oklahoma state statutes, policies, and procedures.
Staffing

Staffing for Great Plains State Park has been stable over the past five years, with minor adjustments in the full-time-equivalent seasonal staff appointment during that time. The biggest change in staffing occurred with the appointment of a new park manager in late summer 2013. An anticipated change for fiscal 2014 is a reduction of permanent salaried staff to two persons. Table 3.5 documents the staffing pattern for Great Plains State Park in recent years.

Table 3.5 – Staffing at Great Plains State Park

<table>
<thead>
<tr>
<th>Fiscal year</th>
<th>Permanent salaried staff</th>
<th>Seasonal staff Park</th>
<th>Total park staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>3</td>
<td>.75</td>
<td>3.75</td>
</tr>
<tr>
<td>2010</td>
<td>3</td>
<td>.75</td>
<td>3.75</td>
</tr>
<tr>
<td>2011</td>
<td>3</td>
<td>.50</td>
<td>3.50</td>
</tr>
<tr>
<td>2012</td>
<td>3</td>
<td>.25</td>
<td>3.25</td>
</tr>
<tr>
<td>2013</td>
<td>3</td>
<td>.25</td>
<td>3.25</td>
</tr>
</tbody>
</table>

Most state parks in Oklahoma experienced similar staffing adjustments in response to budgetary appropriations. Great Plains State Park has sustained a dedicated, loyal staff over the years.

Revenue and Expenses

Data related to revenue and expense at Great Plains State Park was provided by local staff and augmented with material from the central OTRD office. Table 3.6 on the following page reports this revenue and expense data for the past four years.

The principal revenue sources for Great Plains State Park are campsite rentals and the concession lease. Most other services within the park are supported through state appropriations and allocation of state budgeted funds. As a result, the difference between revenue and expense for operation of Great Plains State Park has been in the range of $140,000 annually. Such expense is reflected in operation of the park, general maintenance and operations of buildings, mowing and other grounds maintenance, and related park operations.

There are various perspectives on revenue and expenses associated with state park operations. For Great Plains State Park, the annual investment of appropriated money ranged from $1.97 per visitor in 2013 to a low of $1.39 in 2011. Another possible perspective is to review the annual cost per acre in managing Great Plains State Park. This has been from a 2013 high of $331.96 per acre to a low of $279.00 per acre in 2011.

State park operations nationally have been discussing percent of self-sufficiency in operation. Personnel at Great Plains State Park provided these numbers showing a decline from 39% self-sufficiency in 2009 to 25% self-sufficiency in 2013.
<table>
<thead>
<tr>
<th>Fiscal year</th>
<th>Expense</th>
<th>Revenue</th>
<th>Difference Revenue - expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009 Total</td>
<td>Personnel Exp</td>
<td>$228,595</td>
<td>$88,153</td>
</tr>
<tr>
<td></td>
<td>Operating Exp</td>
<td>$153,490</td>
<td>($140,442)</td>
</tr>
<tr>
<td>2010 Total</td>
<td>Personnel Exp</td>
<td>$221,967</td>
<td>$75,402</td>
</tr>
<tr>
<td></td>
<td>Operating Exp</td>
<td>$148,145</td>
<td>($146,565)</td>
</tr>
<tr>
<td>2011 Total</td>
<td>Personnel Exp</td>
<td>$214,389</td>
<td>$78,468</td>
</tr>
<tr>
<td></td>
<td>Operating Exp</td>
<td>$151,185</td>
<td>($135,921)</td>
</tr>
<tr>
<td>2012 Total</td>
<td>Personnel Exp</td>
<td>$215,042</td>
<td>$74,711</td>
</tr>
<tr>
<td></td>
<td>Operating Exp</td>
<td>$148,287</td>
<td>($140,331)</td>
</tr>
<tr>
<td>2013 Total</td>
<td>Personnel Exp</td>
<td>$215,051</td>
<td>$53,386</td>
</tr>
<tr>
<td></td>
<td>Operating Exp</td>
<td>$148,290</td>
<td>($161,665)</td>
</tr>
</tbody>
</table>

**Hazards Analysis – Natural and Operational**

Any recreational activity includes the exposure to hazards, and the probability of specific risks may increase in many outdoor settings. In most current discussions related to hazard and risk, hazards are defined as conditions or events. Risk is the likelihood of injury resulting from a given hazard and is typically defined as a probability of adverse effects from those conditions or events. Everything people do exposes them to hazards. It is how people conduct themselves that determines the risk. An agency or site risk management plan addresses potential loss from anticipated hazards.

**Natural Hazards**

As with all natural areas, Great Plains State Park includes a number of hazards. Some of those hazards are natural and related to such things as topography, flora, and fauna. Some of the hazards are structural or related to design; other hazards are operational in nature.

Natural hazards in Great Plains State Park include the steep and rocky terrain, flora and fauna, as well as a number of other natural conditions or events. In addition, the development of facilities encourages visitors to interact with the natural environment, encouraging people to participate in recreation in an outdoor setting. For example, trails invite visitors to engage the varied terrain and, while signage exists, distressed and lost hikers are not uncommon. Quite commonly, the visitor is not informed of the various hazards and is not prepared for the risks involved in their interactions. Due to the topography of Great Plains State Park, it is possible for an individual to become “lost” on property, but that is an unlikely occurrence. Boating, swimming, and other aquatic activity present greater risks for most visitors.

Among the natural hazards present in the park are those associated with weather events. The National Climatic Data Center reports a variety of such hazards by county over several years.
These hazards include hail, floods, thunderstorms with accompanying wind and lightning, tornadoes, snow, ice, excessive heat, and drought. Staff members are prepared to notify park visitors in the event of severe weather, but appropriate shelter is limited. At the present time, neither signage nor printed visitor materials provide severe weather information to park visitors.

Other natural hazards are related to life forms in the natural environment. Any time people are hiking and recreating in an outdoor environment, a chance exists that they will inadvertently encounter such wildlife; this is the case in Great Plains State Park. The park environment encompasses habitat suitable for venomous snakes including the copperhead, rattlesnake, and water moccasin. Park staff reported sightings of venomous snakes, but there are no recent records of any adverse encounters between people and snakes within the park.

A number of mammals common to the park are subject to rabies. They include raccoons, opossums, skunks, badgers, and bats. Additional animals include armadillos and the possibility of bobcats, and mountain lions – although these are less likely.

The wooded and grassland environment in and around Great Plains State Park is home to mosquitoes, ticks, and spiders—all of which may be hazards or present hazards to recreational visitors. The Brown Recluse spider and the Black Widow are native to Kiowa County. Both spiders have produced adverse effects for humans in recreational settings (and other environments). Both types of spiders were observed within the park making it likely that these spiders may occur in structures throughout the park. In addition, ticks are known carriers of a number of serious diseases in humans.

The 2002 Statewide Comprehensive Outdoor Recreation Plan (Caneday, 2002) stated:

> An “environmental problem” of increasing occurrence in Oklahoma in recent years is related to ticks and tick-transmitted diseases. Although there are a number of tick-transmitted diseases, the most frequent occurrence is shown by Rocky Mountain spotted fever, Lyme disease, and Tularemia. A number of factors are related to this increased occurrence of disease including demographics, living preferences, and recreational behavior. Oklahoma has experienced significant increases in tick-transmitted diseases over the past decade. While most of these diseases can be treated, the diseases can also be life threatening. Participants in outdoor recreation are among those who encounter the ticks and who contract the tick-transmitted diseases. A concerted, unified effort is necessary to educate the recreational visitor regarding the results of recreational behaviors.

At the time of the writing of the 2002 SCORP, the author contacted the Centers for Disease Control (CDC) in Atlanta regarding rumors (at that time) of a mosquito borne virus – West Nile virus. The CDC assured Caneday that Oklahoma would not experience West Nile virus within the five-year period covered by the 2002 SCORP (2002-2007). However, by summer 2003, Oklahoma was experiencing cases of West Nile virus among horses and humans. Often these resulted from outdoor recreation activity, and that pattern is continuing.

Some plants are also hazardous to some individuals and the risk varies by degree of exposure and response to that exposure. Poison ivy is among those potentially hazardous plants at Great Plains State Park.

Another potential natural hazard in a recreation environment is waterborne disease. As stated in the 2002 Statewide Outdoor Recreation Plan (SCORP) for Oklahoma (Caneday, 2002):
Since 1971, Federal agencies (CDC and EPA) have maintained a collaborative surveillance system for collecting and reporting data related to occurrences and causes of waterborne-disease outbreaks (WBDOs). As an environmental hazard, waterborne diseases have always been present in the United States; however, outbreaks linked to drinking water have steadily declined since 1989. By contrast, the number of outbreaks linked to recreation activity has increased (Center for Disease Control). It is not clear whether this is due to increased outdoor recreation activity, larger numbers of people involved in outdoor recreation, or greater hazard present in the water environment. CDC reports for 1995 – 1996 have shown that the exposure to the disease occurred in lakes in 59% of waterborne-disease outbreaks of gastroenteritis associated with recreational water. Equal percentages (27%) of *Cryptosporidium parvum* and *Escherichia coli* as the etiologic agent were reported during that period.

Great Plains State Park receives its potable water from approved public water supplies through Mountain Park. Warnings related to high levels of some contaminants in the water supply were posted throughout the summer 2013 and again in fall 2013. The presence of contaminants was attributed to possible problems with the on-site distribution of water. As with all water supplies, there is the potential to be a host for waterborne disease through the drinking water provided on-site. Such a risk is no greater for a park visitor than would be true in a private residence. By contrast, surface waters in Tom Steed Reservoir, in streams, and in ponds have a greater chance of being a source of a waterborne-disease. This is particularly true since cattle graze along the north shore of Tom Steed Reservoir and cattle are regularly seen wading into the lake.

**Operational Hazards**

Operational hazards include those vulnerabilities to park staff, the park system, or the state of Oklahoma that exist as a result of management or operation of the resource and application of policy. Management and operational decisions are made on a daily basis and are affected by budgets, prioritization within the state park system, staffing patterns, local and state politics, and other external influences.

At present, emergency fire service and other emergency services are provided by the Mountain Park Rural Fire and other local volunteer fire departments. Snyder and Roosevelt provide secondary support in a fire emergency. Emergency response time is estimated to be twenty minutes. Emergency medical service is available in Mountain Park including ambulance service.

As part of the data collection for the development of this RMP, the researchers conducted several on-site visits to Great Plains State Park. Common issues that could be dangerous for visitors include play structures which utilize a variety of surfacing materials. A thorough examination of the play structures and the applicable surface materials for compliance with Consumer Product Safety Commission guidelines for public playgrounds is warranted at this time.

Further, weather-related events (e.g., ice storms, strong winds) in Oklahoma often result in tree and limb damage throughout the park. The locations in which downed trees and limbs have immediate impact on visitors include the camping areas, trails, and day use areas. Currently, Great Plains State Park does not have a formal limb management or tree replacement program; this is common throughout the state park system. Park staff members attend to downed trees and limbs as they discover them and/or are notified of the hazard.
Law Enforcement

The CLEET certified rangers and reserve-CLEET certified rangers are responsible for primary activity related to law enforcement within the boundaries of the park. In 2014, at preparation of the RMP, under the staffing and management provided through Great Plains State Park, there was one CLEET certified ranger (the park manager) available for Great Plains State Park, although there have been no certified personnel since at least 2009 as shown in Table 3.7. It is common for law enforcement units to have mutual aid agreements with other law enforcement agencies. As a result, enforcement of applicable laws at Great Plains State Park relies on the support and cooperation of the Kiowa County sheriff in the appropriate jurisdiction. In addition, the Oklahoma Highway Patrol makes regular routes through the park.

<table>
<thead>
<tr>
<th>Fiscal year</th>
<th>CLEET Certified</th>
<th>Reserve CLEET</th>
<th>Total ranger staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2010</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2011</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2012</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>1 (manager)</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Citation records were available specifically for Great Plains State Park and are shown in Table 3.8. The incidents ranged from drug and alcohol related situations, to vehicular accidents and traffic incidents, to domestic difficulties, and conflict between park visitors. It can be assumed that patterns of behavior among visitors are similar to those in other parks. In spite of these experiences, Great Plains State Park is a safe, secure environment for the recreational visitor.

<table>
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<th>Calendar year</th>
<th>Incident Reports</th>
<th>Citations Issued</th>
<th>Arrests</th>
<th>Combined Total</th>
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</tr>
</tbody>
</table>
Policy-Related Exposures

Some aspects of management of hazard risk are incorporated into law enforcement. Park rangers are the law enforcement personnel for the Oklahoma Tourism and Recreation Department, although they frequently have cooperative (mutual aid) agreements with county sheriffs and the Oklahoma Highway Patrol. Law enforcement authority for Oklahoma State Park Rangers is authorized by state statute as follows (Title 74 § 2216, 2005):

Park rangers, when commissioned, shall have all the powers of peace officers except the serving or execution of civil process, and shall have in all parts of the state the same powers with respect to criminal matters and enforcement of the laws relating thereto as sheriffs, highway patrolmen [sic] and police officers in their respective jurisdictions and shall possess all immunities and matters of defense now available or hereafter made available to sheriffs, highway patrolmen, and police officers in any suit brought against them in consequence of acts done in the course of their employment, provided, however, they shall comply with the provisions of Section 3311 of Title 70 of the Oklahoma Statutes.

In parks with CLEET certified or reserve certified personnel, written logs are maintained by park staff to document incidents. In addition to the regular log, staff members complete incident reports when notified of property damage or personal injury to visitors or staff. While the incident reporting form requires information regarding personal injury or property damage, the process does not appear to require follow-up with the reporting party.

In terms of wildlife, while a formal management plan does not exist, staff operates under an agreed-upon plan approved by the Oklahoma Division of Wildlife Conservation (ODWC). As an important natural resource in the park, the vulnerable and endangered species in the area lack a management plan other than classification by ODWC.

Perhaps one of the most essential operational hazards related to the public is the concern that cell phones and radios have limited to sporadic service in rural areas, and possibly within the park. During the preparation of the RMP, research staff members were able to acquire and maintain cell phone signals throughout Great Plains State Park. Thus, in case of injury, illness, fire, or other emergency, park visitors with personal cell phones should be able to contact necessary emergency services. Those without personal cell phones or with inadequate signals must use a landline based telephone to call emergency personnel.

Waste Management

The relatively linear area of development at Great Plains State Park requires multiple programs in waste management. There are two primary concerns related to waste management within the park: solid waste and liquid waste.

Solid waste is transported off-site under a multi-year contract. Dumpsters have been located at strategic points within the park. Visitors are expected to dispose of waste properly in these dumpsters.

Liquid waste is managed on-site through a septic system, as well as a lagoon system for developed areas in Great Plains State Park. While the septic systems tend to be concentrated on a single structure, the lagoons serve multiple buildings and campgrounds. These lagoons require lift stations to transport liquid wastes to the respective lagoons.
Park management expressed some concerns with waste management through the evaporation-transpiration system located near the Rocky Shores intersection, shown in Figure 3.12. This aging system handles waste from a restroom and the bait shop. The system appears to have water infiltrating the system and reducing the efficiency of the waste handling processes. One consideration for improved efficiency was related to reducing grease and oils from the kitchen at the bait shop. However, that did not resolve the leakage or improve the efficiency of the system. As of 2015, the bait shop concession discontinued operation as the lease was not renewed.

As with any area that is utilized by the public, some trash and litter is present within the park. This solid waste presents a visual detraction, but presents limited problems other than clean-up of the area.

Figure 3.28 – Sewage lagoon in Great Plains State Park
Chapter 4 – Alternatives and Preferred Plans

Overview and Summary

In this Resource Management Plan, background is provided related to Great Plains State Park. This background information was gained through review of literature, interviews and meetings with park management personnel, input from the public, multiple on-site visits, and through other sources. When analyzed, this information raises several issues for consideration with alternatives for possible management action. These issues are presented in the following discussion with alternatives for management to consider. In each case, based on the available information a preferred alternative is identified.

Issues and Alternatives

Issue Statement 1: Qualification and branding as a state park

One of the central issues for consideration related to each of the properties being reviewed during the Resource Management Plan project is qualification and branding as a state park. That question is applicable for Great Plains State Park as for other properties.

What is a state park? Jordan and Caneday addressed this question in an earlier report for OTRD as a part of the state park visitor study in 2003 (Caneday and Jordan). As stated in that report –

The research team believes that the term “state park” should mean something specific. The term, “state park,” should identify a property distinctively through management practices, quality of experience and appearance to the public. The research team believes that visitors to Oklahoma “state parks” should know immediately that they are in a State Park because of the distinctive “branding” apparent to the visitor and deliberately intended by management. The research team believes that the Oklahoma Tourism and Recreation Department must jealously guard the use of the term “state park” in much the same manner as companies protect symbols of intellectual property.

An example of resource qualifications for specific classifications can best be demonstrated through the National Park Service. For a property to be classified as a National Park there must be (1) evidence of national significance for a natural, cultural, or recreational resource, (2) management of the property must be feasible, and (3) the property must be suitable within the mission, purpose, and system of the National Park Service.

By contrast, other classifications of National Park Service properties include National Monuments, National Recreation Areas, and National Preserves. National monuments must be significant natural, cultural, or recreational resources, but may be managed by entities other than the National Park Service. National preserves are limited to significant environmental resources and may vary in ownership and management of the resource. National recreation areas, including Chickasaw National Recreation Area in south-central Oklahoma, are managed for more intensive recreation in outdoor settings.
OTRD policy related to acquisition of property uses some of this language, thereby establishing a general pattern of resource qualification. These criteria include (1) state-wide significance for natural beauty, uniqueness, or other recreational and resource preservation purposes, and (2) sites which will improve the overall availability of public recreation facilities to the recreating public while possessing resource significance (Oklahoma Tourism and Recreation Commission, 1988).

In addition, branding and classification of properties within the Department has varied over the years. Minutes of the Oklahoma Planning and Resource Board (a precursor to the Oklahoma Tourism and Recreation Commission) from September 18, 1953 record the passing of a motion defining state parks, state recreation areas, state memorials, and state monuments. That variation in descriptive classification was changed by legislation during the 1980s.

Applying the national concepts to state parks in Oklahoma and utilizing the earlier definitions in Oklahoma, it could be concluded that a state park must (1) have a significant statewide natural, cultural, or recreation resource, (2) be feasible to manage by the agency, and (3) be suitable within the mission, purpose, and statewide system of state parks. If this set of qualifications is applied to Great Plains State Park, it could be concluded that:

1. Great Plains State Park offers historical, cultural, and environmental resources of statewide significance with the additional benefit of regionally important recreation significance. As indicated in the statement of significance of Great Plains State Park, this property is significant because it offers public access to the lake, to natural and recreational resources adjacent to a wildlife management area while protecting the natural environment and providing education and recreation appropriate to that environment.

2. Great Plains State Park is feasible to manage within the agency and fits within the mission of Oklahoma State Parks. Great Plains State Park is located in an under-served region of Oklahoma from the perspective of public recreation resources. It is a relatively small park offering a quiet recreation experience in an environment of sharp contrasts.

3. Great Plains State Park property fits within the mission of OTRD and the park’s stated purpose to conserve the natural, cultural, historic, scenic, and environmentally-based recreational resources within the park, and make them forever available for the education and enjoyment of all people. Oklahoma State Parks will protect, manage, restore and conserve these resources and associated values of Great Plains State Park and provide appropriate programs, facilities, and opportunities for public use consistent with the conservation of these resources and values.

As a result, the research team recognizes the value of Great Plains State Park as a state park.

Alternatives

A. Terminate the lease of the property at Great Plains State Park;
B. Seek to transfer Great Plains State Park to some other management agency;
C. No change – Retain Great Plains State Park as an integral property in the Oklahoma State Park system.

Preferred alternative:

Alternative C: No change – continue management as it is. Retain Great Plains State Park as an integral property in the Oklahoma State Park system.
Issue Statement 2: Name and identity of Great Plains State Park

The name “Great Plains State Park” is misleading and confusing for many potential visitors to Oklahoma State Parks and this property specifically. There is a general lack of public awareness of Great Plains State Park outside of the immediately surrounding region. Online searches for information regarding Great Plains State Park yield more information about Great Salt Plains State Park leading to confusion and probable misinformation for many visitors. During more than one visit to Great Plains State Park, park management received telephone calls seeking information on digging for crystals – clearly confusion with opportunities at Great Salt Plains State Park. In addition, the concept of “Great Plains” as a setting for a park will yield less than desirable images in the minds of most people.

The RMP research staff believes that the name for this park should reflect the lake, the park, the geography, and the features incorporated within the park. However, the adjoining lake is Tom Steed Reservoir, which is also a name without statewide advantage. The Bureau of Reclamation project is the Mountain Park Project which reflects the geological features. A more worthy name for this property, replacing the present Great Plains State Park, may be Mountain Park State Park.

While there is some awkwardness in the proposed Mountain Park State Park moniker, that name would better represent the surrounding topography and place the property into the context of the Bureau of Reclamation impoundment. Renaming the property would incur some expense for Oklahoma State Parks, but may also yield benefits with a stronger identity for this property.

Another alternative for naming the property may be to hold a statewide contest, encouraging Oklahomans to (1) visit the property and then (2) submit names for the property. It may be that the association of the property should be with that of historic resources such as Wildman, Cold Springs, or Gold Bell. Another worthy alternative would be to associate the property with the Wichita Mountains, possibly as Wichita Mountains Gateway State Park.

Alternatives

A. Consider renaming Great Plains State Park to more properly distinguish it from other state park properties and to give this property an identity;
B. No change – continue management as it is.

Preferred alternative:

Alternative A: Consider renaming Great Plains State Park to more properly distinguish it from other state park properties and to give this property an identity.

Issue Statement 3: Water levels and water quality

As with other lakes in southwest Oklahoma, the drought of recent years has served as a reminder of the critical importance of water to enhance the recreation experiences of visitors to Great Plains State Park. There is a direct correlation between water levels and attendance levels; adequate water in the lake attracts tourists, enhances the recreational visit, and encourages greater levels of visitation and recreational activity.

During preparation of the RMP, the boat ramp at Rocky Shores was usable, but water levels had reduced the utility of boat ramps on the north side of Tom Steed Reservoir and of the fishing pier.
in Otter Creek. It is likely that, even with increased water levels, the boat ramp in the Gold Bell Mine area will require dredging to make it usable. Siltation in the upper reaches of Tom Steed Reservoir complicated access to boat ramps in the wildlife management area and at Gold Bell Mine.

Water levels rely upon precipitation and in-stream flow. There is little that park management can do to affect water levels in Tom Steed Reservoir. As stated earlier, water quality in Tom Steed Lake is rated as “eutrophic.” The waters in Tom Steed Lake are rated as supporting fish and wildlife propagation, aesthetics, and agriculture. In addition, the waters in Tom Steed Lake are rated as supporting full body contact recreation.

Blue-green algae are present in the waters of Tom Steed Lake. Golden algae have been identified in Lake Altus-Lugert, which has lower salinity levels than in Tom Steed. However, the proximity of the two bodies of water would indicate that anglers and boaters may travel from one lake to another without adequately cleaning their equipment or boats.

Most of the issues associated with water quality are beyond the responsibility of Oklahoma State Parks. However, Oklahoma State Parks can be an advocate for best management practices upstream to encourage improvement of water quality. In addition, Oklahoma State Parks provides the primary recreational access to Tom Steed Lake for anglers and boaters. Appropriate educational information regarding invasive nuisance species, algae, and potentially dangerous boating conditions are the duty of park management.

Alternatives

A. Consider closing boat ramps that have become unusable and impossible to remedy;
B. Ignore the issues of water level and water quality as being outside the domain of state park operations;
C. No change – continue management as it is. Continue as an advocate for best management practices related to water conservation and water quality. Employ appropriate signage and management interventions as needed to permit safe access for boaters and anglers.

Preferred alternative:

Alternative C: No change – continue management as it is. Continue as an advocate for best management practices related to water conservation and water quality. Employ appropriate signage and management interventions as needed to permit safe access for boaters and anglers.

Issue Statement 4: Property concerns and lease management

While Great Plains State Park has been developed in a fairly concentrated portion of the larger lease from the Bureau of Reclamation, the actual borders of that larger lease are somewhat unclear. This is particularly true on the north side of the lease. During the 2014 preparation of the original Resource Management Plan, issues related to the property boundaries were discovered and clarified in the 2016 revision of the RMP.

The state park lease includes area north of the east dike, between the dike and Gold Bell Mine. During the preparation of the RMP, it was quite common to observe cattle grazing on that portion of the property and also in the water of Tom Steed Reservoir. These cattle were observed
on numerous occasions. Conversations with the park manager at that time indicated that cattle commonly entered the park property. Generally allowing cattle to have direct access to a lake or stream is undesirable as a practice when attempting to sustain water quality for other human uses. While these cattle were likely from adjoining private pastures, they had gained access to the property leased by Oklahoma State Parks for Great Plains State Park.

The access of cattle to the water should be reviewed in light of best management practices. Oklahoma State Parks should set an example of proper care of the environment, including the water environment adjacent to the state park.

Alternatives

A. Be cognizant of encroachment by cattle to the waters of Tom Steed Reservoir across portions of Great Plains State Park and work with adjacent property owners to assure adequacy of fencing;
B. No change – continue management as it is.

Preferred alternative:

Alternative A: Be cognizant of encroachment by cattle to the waters of Tom Steed Reservoir across portions of Great Plains State Park and work with adjacent property owners to assure adequacy of fencing.

**Issue Statement 5: Eliminate ORV and ATV activity**

During preparation of the RMP, research staff observed ORV and ATV activity in the northern extent of the Great Plains State Park property near Gold Bell Mine. In addition, there is evidence of this activity along roadways and across the terrain. ORV and ATV use is not permitted under state park policies and regulations except in specified areas. That is also true for ORV and ATV use on Bureau of Reclamation properties.

In general, ORV and ATV use presents safety problems and potentially adverse environmental impacts. As a result, ORV and ATV use must be eliminated from Great Plains State Park. This becomes a law enforcement issue and may be primarily a local behavioral pattern. Additional signage and increased vigilance for enforcement will be required.

Alternatives

A. Increase efforts to eliminate ORV and ATV activity from Great Plains State Park;
B. No change – continue management as it is.

Preferred alternative:

Alternative A: Increase efforts to eliminate ORV and ATV activity from Great Plains State Park.
Issue Statement 6: Interpretive Services at Great Plains State Park

Great Plains State Park has a story to tell in many locations. The story of Great Plains State Park would include the natural and geological history of the area, the history of the impoundment and operation of the Mountain Park Project, the history of Camp Radziminski, Wildman, Cold Springs, and Gold Bell. The interpretive message of Great Plains State Park should be told on property and off, to any interested audience, and to audiences yet uninformed.

Interpretive services are variously defined depending upon the source or the agency involved. The classic definition of interpretation was given by Freeman Tilden (1977) as “An educational activity that attempts to reveal meaning and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than to simply communicate factual information.”

William E. Brown (1971), in Islands of Hope, presented the role of parks in the interpretive process. His definition of interpretation encompassed technology as well as process, as he stated that interpretation is “That body of communications, devices and facilities that conveys environmental knowledge, stimulates discourse on environmental problems and results in environmental reform.” Brown also indicated that interpretation has a distinct purpose, especially in a sensitive natural environment. Brown argued that “Environmental interpretation not only informs, it motivates to action – sometimes it is action. Even at the informing level, it ceases to be innocent nature study or whitewashed history. It questions value systems, folk heroes, and conventional wisdom.”

The National Association for Interpretation (2008) has developed a professional, contemporary definition of interpretation that incorporates the theory from Tilden, the purpose from Brown, and the mission of the agency delivering the service. “Interpretation is a mission-based communication process that forges emotional and intellectual connections between the interests of the audience and the meanings inherent in the resource.”

Great Plains State Park offers multiple resources with inherent meaning and interest for the audience, allowing for forging of emotional and intellectual connections. The story includes the people, the place, the organizations, the events, the habitat, the wildlife, and much more.

Properly developed and delivered programming could be presented on a fee-for-service basis. These programs could and should be delivered on-site and off-site. These programs become the educational foundation and outreach for Great Plains State Park and the state park system more broadly. This would require staff at a time when finances are limited for employing personnel.

Great Plains State Park could host one or two collegiate interns continually to create and deliver interpretive messages. This would accomplish several goals for Great Plains State Park: (1) it would bring creative and energetic personnel into the park system; (2) it would achieve an educational goal for the park and the park system; (3) it would provide a link between the park system and the formal college and university education system; and (4) it would provide a message that Oklahoma’s state parks serve an educational role as well as a recreational role.

Alternatives

A. When finances permit, expand the interpretive programming within and beyond the park, especially if an interpretive heritage and nature center is possible;
   B. Encourage the development of internship agreements focused on interpretive services;
C. No change – continue management as it is.

Preferred alternatives:

Alternative A and B: When finances permit, expand the interpretive programming within and beyond the park, especially if an interpretive heritage and nature center is possible; encourage the development of internship agreements focused on interpretive services.

 Issue Statement 7: Green practices related to energy and conservation

Within the past few years Americans have begun to take conservation practices seriously. On behalf of citizens and as a representative of the park and recreation profession – a field with a strong connection to the environment – Oklahoma State Parks has initiated several practices that are intended to conserve energy and other resources. This has been initiated with energy efficient lighting in the lodge and office structures, and needs to be expanded to other management practices.

Among the many possible areas that would benefit from conservation practices are: (1) park policies related to mowing, maintenance, debris removal, and waste disposal; and (2) recycling opportunities for the entire operation and its guests.

At present, state laws do not encourage a state agency to recycle waste or trash products, especially when private citizens generate (and thereby ‘own’) those materials. Inventory management and accounting procedures prevent the sale of, or revenue production from, recycled materials. However, volunteer groups such as a possible “Friends of Great Plains State Park” are permitted to serve as an agent for the collection and sale of recyclable materials. Another challenge to the establishment of a recycling program is the difficulty in finding a consistent market for the various products that might easily be recycled: glass, aluminum, and paper. These challenges do not lessen the desirability of establishing a recycling program in the state park system.

Great Plains State Park can have a significant role in modeling and educating other managers and guests regarding best management practices. One state park in Oklahoma – Keystone State Park – has been eco-certified. Great Plains State Park should be a leader in this effort as well.

Alternatives

A. Seek to change state accounting regulations to permit operation of the recycling program by park staff;
B. Encourage the development of a “Friends of Great Plains State Park” to create, implement, and evaluate a comprehensive recycling program throughout the park;
C. No change – continue management as it is.

Preferred alternative:

Alternative B: Encourage the development of a “Friends of Great Plains State Park” to create, implement, and evaluate a comprehensive recycling program throughout the park.
Issue Statement 8: Pricing for instate and out-of-state guests

Presently OTRD operates under a policy of pricing a given good or service similarly for all guests. There is no distinction in pricing of goods and services between in-state residents who visit an Oklahoma State Park and out-of-state residents who visit and enjoy the same facilities and events. There is a distinction in that the in-state residents pay a significant tax burden which then subsidizes OTRD and the state parks. As a result, the in-state residents subsidize the recreation experience of out-of-state guests. It is readily acknowledged that the out-of-state guests benefit the local economy with their expenditures. However, if a guest at a local park resides outside the extent of the local economy, the dollars spent by a resident or an out-of-state guest have equal economic impact in direct measures, indirect measures, and induced measures.

Great Plains State Park enjoys visitation by a significant number of guests from Texas and other states, as well as those from within Oklahoma. This pattern of visitation is likely to occur at a number of other state parks near the interstate borders and for parks that offer attractions differing from what is available outside of the state of origin for the guests.

Many states have instituted a pricing differential to benefit in-state residents. For example, Texas requires vehicle permits for all vehicles entering its parks. Texas residents pay a lower price for the vehicle permits than do out-of-state residents – including Oklahomans who visit Texas.

Tourism is a business that includes intriguing interactions between the host community and its guests. OTRD must sustain a positive relationship between its parks, the staff in those parks, the surrounding community, in-state taxpayers, and guests – some of whom come from out of state. Pricing of goods and services is a sensitive variable in that relationship.

Alternatives

A. Review the pricing of lodging and camping provided by Oklahoma State Parks with consideration for state of residence as a factor in establishment of those prices;
B. Consider implementing entry fees at premium locations within Great Plains State Park for all guests utilizing those locations;
C. No change – continue management as it is.

Preferred alternatives:

Alternative A: Review the pricing of lodging and camping provided by Oklahoma State Parks with consideration for state of residence as a factor in establishment of those prices.

Recommendations beyond the Issues

Recommendation 1: Waste management

As indicated in the RMP, waste management from the various developed areas within Great Plains State Park is handled through septic systems and lagoons. However, the evaporation-transpiration system located near the Rocky Shores intersection was showing signs of leakage and inefficiency during 2013 – 2014. This system handles waste from a restroom and from the bait shop (removed in 2015). In discussion with park management, it was clear that pumping of effluent from the retaining tank resulted in leakage back into the system that exceeded normal operations.
Engineers have examined the system and recommended removing the evaporation-transpiration system and installing a lift station to pump waste to the park lagoon. In that event, the lagoon system would need to be expanded to handle the additional loading. However, with the discontinuance of the bait shop operation in 2015, the system will be monitored to see if it will sustain the comfort station.

**Recommendation 2: Playgroups and safety**

As mentioned throughout the RMP, the playgroups at all locations in Great Plains State Park are of the older wooden design typical of the 1980s. These playgroups do not comply with current safety and accessibility standards. All the playgroups throughout Great Plains State Park need to be reviewed for basic safety, particularly related to fall zones and surfaces. However, a review of these playgroups should also include examination of protrusions and potential for other injuries. A Certified Playground Safety Inspector (CPSI) could review the existing playgroups and make recommendations. However, a better alternative is to plan for replacement of these older playgroups and replace them with accessible, safe, and modern playgroups.

**Recommendation 3: Need for a courtesy dock**

As indicated in the RMP, the water levels at Tom Steed Lake were extremely low during throughout recent years. The Rocky Shores boat ramp remained in use, while the fishing pier was much less usable due to low water levels. For boaters on Tom Steed Lake who use the Rocky Shores boat ramp, there is no courtesy dock at present. Having a courtesy dock at this location would significantly enhance the boating experience. It may also benefit boaters who would like to utilize the concession (the Tom Steed Bait Shop).

A courtesy dock at the Rocky Shores boat ramp should be considered in the near future.

**Recommendation 4: Need for 50-amp electrical service**

As recreational vehicles and travel trailers become larger and include more amenities, 50-amp electrical service is commonly expected by park guests. At present, Great Plains State Park has a limited number of sites with 50-amp electrical service, making those sites of high demand. The climatic conditions in southwestern Oklahoma place high demand on electrical service throughout the “camping season.” Upper Mountain Shade campground would benefit greatly from addition of 50-amp electrical service to most of the sites at this location. With the addition of 50-amp service, upper Mountain Shade could be managed as a ‘reserveable’ campground with higher prices for rental of each site.

**Recommendation 5: Social media presence for Great Plains State Park**

Great Plains State Park is one of the few Oklahoma State Parks without a presence on social media. The park would benefit greatly from having a presence on social media, particularly in expanding its market to the younger generation. Given the military personnel at Fort Sill and Altus, many of these individuals are not familiar with southwestern Oklahoma, but would have an interest in the activities and experiences available at Great Plains State Park. While it would take some time for an employee, there may be creative solutions to developing and maintaining that presence. For example, an intern could benefit the park manager in many aspects of operation and could take on the project of developing and sustaining a social media presence. If an intern cannot be arranged, it is possible that an Eagle Scout from the area may be interested.
References


Appendix A – Documents related to Property

1. Exhibit G, Final Environmental Statement, Department of the Interior
2. Lease agreement 5-07-05-x-183
3. Lease agreement 5-07-05-x0183 Amendment #1
EXHIBIT G

DEPARTMENT OF THE INTERIOR
(INT FES 72 - 6)

FINAL
ENVIRONMENTAL STATEMENT

MOUNTAIN PARK PROJECT, OKLAHOMA

Prepared by

Bureau of Reclamation
Department of the Interior

Commissioner Ellis L. Armstrong
May 27, 1972
SUMMARY

( ) Draft (X) Final Environmental Statement

Department of the Interior, Bureau of Reclamation, Region 5

1. Type of action: (X) Administrative ( ) Legislative

2. Brief description of action: This project involves constructing a thin-arch concrete dam on Otter Creek, diversion dam on Elk Creek, a 10.8-mile diversion canal to convey flows from Elk Creek into Otter Creek, pipelines to deliver municipal and industrial water to Altus and Snyder, and relocating short reaches of railroad and highway grades. Additional benefits include fish and wildlife, recreation, and flood control. Construction of Mountain Park Dam is scheduled to begin in March 1973 and continue for 2 years.

3. Summary of environmental impacts and adverse environmental effects:

   a. About 3 miles of stream will be inundated by the reservoir with the maximum pool covering 9,280 acres.

   b. The project will improve fish and wildlife habitat during the first 50 years of operation in the 27-mile reach of Otter Creek below the Snyder Dam.

   c. Snyder Lake will be restored and maintained as a 20-acre fishing and recreation pool.

   d. There will be a loss of fish and wildlife habitat in the 27-mile stretch of Otter Creek below the Snyder Dam after 50 years of project operation.

   e. The project will require the purchase of 35 homesteads, the relocation of 7.5 miles of railway and 5 miles of primary highway, and the relocation of 11 miles of transmission line.

4. Alternatives considered:

   a. Ground water underlying area.
   b. Ground water in western Tillman County.
   c. Importation of water from other areas.
   d. Other surface sources and reservoir sites.
   e. No project.
   f. Management of existing water supplies.
   g. The proposed plan of development.
5. Attached is a list of Government agencies as well as private groups and individuals receiving the draft statement and those from whom comments were received.

6. Date made available to CEQ and the public.

Draft statement: April 13, 1971

Final statement: MAR 27 1972
List of organizations receiving and commenting on environmental statement for Mountain Park project, Oklahoma.

* Bureau of Indian Affairs, Washington, D.C.
* Bureau of Sport Fisheries and Wildlife, Washington, D.C.
* Bureau of Land Management, Washington, D.C.
* Bureau of Mines, Washington, D.C.
* Bureau of Outdoor Recreation, Washington, D.C.
* National Park Service, Washington, D.C.
* Geological Survey, Washington, D.C.
  Associate Solicitor, Reclamation and Power
* Sierra Club, Tucson, Arizona
* State of Oklahoma, Clearinghouse

* Comments received from
A. **Description of the proposal**

The Mountain Park project, shown on Drawing 827-514-95, provides for the construction of (1) a dam on Otter Creek near the town of Mountain Park in Kiowa County, Oklahoma, (2) a diversion dam on Elk Creek to divert a portion of Elk Creek flows into Otter Creek, (3) a 10.8-mile canal for conveying diverted flows from Elk Creek to Otter Creek, thereby augmenting the reservoir water supplies, (4) a concrete pipeline system and appropriate pumping facilities to deliver 10.0 m.g.d. to Altus and 0.76 m.g.d. to Snyder, Oklahoma, with an additional 3.50 m.g.d. reserved for Frederick, Oklahoma, at Mountain Park Reservoir, and (5) specific fish and wildlife and recreation facilities. The project's primary purpose is to provide a dependable water supply for municipal and industrial use. Additional purposes include flood control, enhancement of fish and wildlife, and creation of opportunities for outdoor recreation. Public Law 90-503 dated September 21, 1968, authorized the Secretary of the Interior to construct, operate, and maintain the Mountain Park project. Construction activities are underway and a construction office was opened in April 1971. These activities are scheduled to continue through fiscal year 1975.

a. **Mountain Park Dam**

Mountain Park Dam will consist of a thin concrete arch structure 500 feet in length with a maximum height of 110 feet. Thickness at the base and crest will be 16.2 and 5.0 feet, respectively. Volume of concrete required will be 12,700 cubic yards. An overflow section in the dam will provide spillway capacity.

The damsite is located within existing Snyder Lake, an impoundment of 150 acres that was abandoned as a source of water supply by the city of Snyder in 1958 when it became inadequate to meet demands and the pipeline became badly deteriorated. The project plan proposes that Snyder Lake be breached and drained during construction of Mountain Park Dam. After completion of Mountain Park Dam, Snyder Dam will be restored and the remaining lake of about 20 surface acres will be used for recreational purposes and as a stilling basin.

b. **Mountain Park Reservoir**

Mountain Park Reservoir (legislation is pending to change the name to Tom Steed Reservoir) will have a capacity of 129,000 acre-feet including
99,000 acre-feet of conservation capacity (elevation 1411.0), 21,000 acre-feet of flood control (elevation 1413.9), and 9,000 acre-feet minimum pool (elevation 1386.3). These amounts are for initial conditions and will be gradually reduced over the next 100 years with the accumulation of 17,000 acre-feet of sediment deposition. In addition, 77,000 acre-feet of surcharge capacity (elevation 1423.0) is provided to accommodate the design flood. Municipal and industrial water supplies provided from the reservoir for Altus, Snyder, and Frederick, and the capacity of conveyance facilities to Altus and Snyder are sufficient to deliver the estimated demands for project water in the year 2025.

Mountain Park Reservoir is located in a dry subhumid region. As is typical of areas such as this, streamflow varies widely, not only daily and seasonally, but also annually. As such, a large portion of the water entering the reservoir is obtained in a relatively small portion of the time in each year. In addition, annual hold-over storage must be stored in the reservoir to provide for yields during years of very low flows. During the period of study (1949-69) the total flow entering the reservoir varied from less than 5,000 acre-feet to nearly 100,000 acre-feet annually. The reservoir operation study shows that the reservoir would have an average annual fluctuation of about 3 feet during the period from June 1 to October 1.

c. Bretch Diversion Dam and Canal

Bretch diversion dam will be located in the channel of Elk Creek about 12.5 miles above the confluence of Elk Creek with the North Fork of Red River. The dam will be rolled earthfill construction 190 feet long and 37.5 feet high. It will require about 40,000 cubic yards of earth fill and will have a spillway capacity of 36,000 c.f.s. The dam will include a gated spillway 64 feet long in the stream channel; a gated headworks in the left abutment; a compacted earth dike 400 feet in length on the right bank side of the gated spillway followed by a grass-covered overflow spillway with a concrete capped sheet piling control sill extending 4,800 feet across the flood plain.

The gated spillway is designed to provide a pool level at elevation 1465 (about 20 feet above streambed) for normal operation of the canal and to pass the spillway design flood with minimum increase in pool level. Releases would be controlled by two 27- by 16-foot and one 10- by 16-foot radial gates. The smaller gate would be used to flush accumulated sand from the headworks. With a 50-year frequency flood peak of 36,000 c.f.s., the water surface elevation would be 1474.5. During such a flood, part of the flow would pass through the gated spillway and part would pass over the grass-covered overflow spillway section. The headworks is designed to discharge 1,000 c.f.s. into Bretch diversion canal with pool surface at elevation 1465, and canal water surface at elevation 1464.4. Releases would be controlled by one 14- by 21-foot radial gate. Provision is also included to bypass 10 c.f.s. to meet downstream water rights.
The concrete lined Bretch diversion canal will have a capacity of 1,000 c.f.s. It will extend from the headworks in the left abutment of the diversion dam a distance of 10.8 miles to discharge into Otter Creek about 7 miles above Mountain Park Dam. The canal will require about 915,000 cubic yards of excavation and 33,000 cubic yards of concrete. The canal section will have a bottom width of 10.0 feet, 1 1/2:1 side slopes and a depth of 11.0 feet. Water will flow at a maximum depth of 9.64 feet. The excavated material will be shaped into spoil banks with 12-foot top width for operation and maintenance roads.

d. Municipal and Industrial Aqueduct

Municipal and industrial water supplies to Snyder and Altus will be delivered through a conveyance system consisting of some 30 miles of concrete pipe varying from 15 to 39 inches in diameter. Water will flow by gravity from the dam to Snyder while a part of the pipeline to Altus will be under pump pressure provided by four horizontal centrifugal pumps driven by electric motors. Basement rights for construction, operation, and maintenance of the conveyance system will be acquired in strips 60 feet in width extending the total length of the pipelines. Lands required for the pumping plant, totaling 15 acres, will be acquired in fee.

e. Initial Reservoir Operation

The conservation storage capacity of Mountain Park Reservoir will develop 14,200 m.g.d. during the first 50 years of project operation and will reduce only slightly during the second 50 years. This excludes an estimated 1,200 a.f./yr. seepage. Use of reservoir water by the three cities is expected to vary from 2,000 m.g.d. in the first year of operation to 14,200 m.g.d. in the 50th year and remain near that amount throughout the second 50 years. Thus, during the initial period of operation the reservoir will produce substantial quantities of water surplus to demands. Actually, water surplus to project needs would be even greater than indicated above since recorded flows of Elk and Otter Creeks were depleted about 16 and 3 percent, respectively, in project water supply studies. This was to allow for planned programs of the Soil Conservation Service to construct land treatment measures and flood water-retardation structures on Elk and Otter Creeks watersheds above the Mountain Park project.

Impoundment of Otter and Elk Creeks flows by Mountain Park Reservoir will make the quality of water more uniform, but reservoir evaporation will increase the concentration of dissolved solids. To minimize the period of time water in the conservation pool is retained and the consequent concentration of dissolved solids, the plan of operation
proposes that during the initial years water surplus to needs will be released to Otter Creek. Also, it is proposed that, at times when the quality of water in Elk Creek is better than the quality of water in the reservoir, divertible flows of Elk Creek will be diverted and the amount of any diversion not required to fill the conservation pool will be spilled from Mountain Park Reservoir. Under these proposals the quantity of Otter Creek flows below the reservoir will be augmented during the early life of the project over the "without project" condition, while flows of Elk Creek below the diversion dam will be depleted. It is anticipated, however, that with the flexibility of operation permitted by surplus water, and with data available from quantity and quality of water stations included as part of the plan, that minimum flows can be maintained in Elk Creek during early years.

As permitted by Oklahoma law, all unappropriated waters in Otter Creek above the Mountain Park Reservoir and all unappropriated waters in Elk Creek above the Bretch diversion dam have been withdrawn from further appropriation for use by the Mountain Park project. The date of withdrawal has been established as May 4, 1955. Throughout the initial period of project operation when releases of water temporarily surplus to needs are made to Otter Creek, State and project interests should take any actions that may be necessary to insure that rights to the water released remain with the project for its use when needed.

f. Ultimate Reservoir Operation

After the 50th year of project operation there will be no water surplus to municipal and industrial demands. Depletion of Otter Creek flows and diverted Elk Creek flows will amount to about 14,200 m.g.d. plus reservoir evaporation and an estimated 1,200 a.f./yr. seepage. Points of municipal and industrial use are outside the Otter and Elk Creeks Basins so that there will be no return flows to the source streams.

During the period of record, the minimum flow of Elk Creek near the diversion point has ranged from 0 to 0.1 c.f.s. about 10 percent of the time. Under the proposed plan of operation flows occurring from 10 to 1,000 c.f.s. will be diverted, thus reducing the flow below the diversion dam about 60 percent of the time. Provisions are included in the diversion dam to bypass 10 c.f.s. to meet downstream water rights. Operation studies indicate that about 62 percent of the depleted Elk Creek flow will be diverted to Mountain Park Reservoir. There will be no concentration of solids in the water due to the operation of the diversion dam, and the Elk Creek quality of water will not be affected by the diversion at any particular time. However, the higher flows are usually of better quality, and a portion of these will be diverted to Mountain Park Reservoir.
The drainage area above Bretch diversion dam is about 15 percent of the total drainage area of the North Fork Red River at its confluence with Elk Creek. The proposed plan of operation of Bretch diversion dam is to divert to Mountain Park Reservoir at times when the flow is in the medium and high range. It is intended to bypass the low flows. Thus, the effect of the project on the flows of the North Fork would be to reduce them slightly during periods of medium and high flows and have no effect upon the low critical flows.

The project will comply with water quality standards under provisions of the Federal Water Pollution Act, State of Oklahoma, and Executive Order 11507.

**g. Project Lands**

About 14,000 acres of private land is authorized for project purchase. This involves 12,500 acres necessary for Mountain Park Dam and Reservoir, 800 acres for the Bretch diversion dam and canal, 250 acres for the pipeline and pumping facilities, and 473 acres for recreational purposes. Fish and wildlife aspects of the project will jointly use project lands purchased for other purposes.

**h. Relocations**

Construction of the project will affect the location of about 5 miles of the St. Louis-San Francisco Railway. Length of the relocation will be about 7.5 miles. Approximately 3.2 miles of U. S. Highway 183 will be replaced by about 5.2 miles of new road. Electric facilities consisting of 3.8 miles of 69 kva transmission line will be modified and about 17 miles of REA lines will be removed and about 7 miles of new line constructed.

**i. Recreation Facilities**

Recreation facilities will be constructed at three sites around the reservoir in accordance with recommendations of the National Park Service. These include access roads, launching ramps, picnic areas, an overlook, shelters, parking areas, sanitation facilities, drinking water, planting and seeding, and information signs. The plan provides $472,500 for construction of recreation facilities, and $97,000 for the purchase of 473 acres of land for recreation purposes.

**j. Fish and Wildlife Facilities**

The plan proposes the provision and implementation of the following measures recommended by the Bureau of Sport Fisheries and Wildlife.
1. That approximately 700 acres of land in the reservoir in the locations depicted by the Bureau of Sport Fisheries and Wildlife be designated as seining areas and cleared of obstructions for the purpose of rough fish removal.

2. That access points with boat-launching ramps and adequate parking areas be provided at designated sites.

3. That project lands totaling 3,100 acres be provided for wildlife management purposes.

4. That Federal lands and project waters be opened to free public use for hunting and fishing except for sections reserved for safety, efficient operation, fish and wildlife operations, or protection of public property.

5. That consideration be given to the development of a reservoir zoning plan to insure that certain areas or periods will be available for fishing, hunting, and other wildlife purposes without conflicting use for general recreation. Also, that parties involved in developing the zoning plan include the agency expected to administer the reservoir and the Oklahoma Department of Wildlife Conservation.

B. Description of the environment
   a. Location

The project area lies in southwestern Oklahoma and includes portions of the drainages of Elk Creek, Otter Creek, and the North Fork of the Red River, of the Red River Basin. Otter Creek heads in the northwest corner of Comanche County and the eastern part of Kiowa County, Oklahoma, and flows in a southerly direction for about 43 miles to its confluence with the North Fork. The point of confluence is about 20 miles upstream from the junction of the North Fork with the Red River.

Elk Creek is also a tributary to the North Fork of the Red River and heads in the northeast corner of Beckham County, Oklahoma, and flows in a southerly direction for about 65 miles to its confluence with the North Fork some 35 miles upstream from the Otter Creek confluence.

The drainage areas of Otter Creek and Elk Creek are 278 and 587 square miles, respectively, of which 131 square miles are above the Mountain Park damsite and 541 square miles are above the diversion structure. The combined drainage areas cover an area roughly 64 miles long and 13 miles wide.
b. Climate

Southwest Oklahoma is characterized by long, hot summers and moderate winters, interspersed by occasional northerlies of short duration. The climate is classified as dry subhumid. Annual precipitation varies from 10 to 50 inches and averages 26.5 inches. Seasonal distribution of rainfall is highly erratic with the heaviest rainfall during the late spring and early summer months. A large portion of the annual rainfall often occurs during a few torrential storms. Zero precipitation has been recorded at stations every month of the year during the period of record. Recorded temperatures range from 120 to minus 11 degrees. The frost-free growing season averages about 225 days.

c. Topography

Throughout the entire length of Elk Creek and in the upper portion of Otter Creek erosion has produced rolling to rough topography of generally low relief, and the streams occupy wide sandy beds that meander through relatively shallow valleys. However, near the Mountain Park damsite Otter Creek flows through protrusions of granite and other Precambrian formations which rise several hundred feet above the plains to form the Wichita Mountains. A short distance downstream from the damsite Otter Creek again flows through a relatively shallow valley bounded by rolling plains.

d. Vegetation

Vegetation in the plains area is that of agricultural crops and native shortgrass pasture; the latter are often intermingled with scattered growths of mesquite trees. A decided contrast in vegetation exists between the plains area, the granite outcrops of the Wichita Mountains, and the bottomlands along the water courses. Vegetation on the boulder slopes flanking the reservoir includes juniper, mesquite, scrub hackberry, plum, various shrubs, perennials, flowering plants, and cactus. Bottomland trees include cottonwood, American elm, walnut, ash, and pecan.

Within the 6,000-acre reservoir area, about 80 percent is in croplands, 10 percent in open pasture, and 10 percent in wooded pasture. Principal crops are cotton, wheat, and alfalfa.

There are no known rare or endangered species of plants in the reservoir area.

e. Fish and Wildlife

Otter and Elk Creeks are slow moving streams containing numerous holes separated by shallow riffles. The bottoms are composed of sand and clay and are subject to shifting during flood periods. Waters are muddy except during periods of low flow. The banks are well covered with trees and are fairly stable. High water occurs mostly
in the spring and fall, which is typical of southwestern Oklahoma streams. Fish migrate upstream during these periods and produce reasonably good fishing during the rise and for a short time thereafter. During the remainder of the year only a few holes retain water, and the streams supply very little fishing. Even the deeper holes go dry during periods of extended drought. Fish species in the streams include channel catfish, flathead catfish, carp, buffalofish, bullhead, and several of the sunfishes.

Snyder Lake contains the same kinds of fishes as the streams and, in addition, a few largemouth bass and white crappie. Although annual fluctuations are slight, the water is usually turbid and the fishing is generally considered poor. Despite the relatively poor fishing in Elk and Otter Creeks and Snyder Lake, people in the area fish them extensively. Pressure on the lake can be attributed to interest in fishing rather than volume of the catch.

Game resources of the project area include white-tailed deer, bobwhite, fox squirrels, cottontail rabbits, raccoons, and mourning doves. In addition, scaled quail have extended their range into this area. Deer have been seen in the area, but they are of little significance from a hunter's standpoint. Bobwhite, fox squirrels, cottontail rabbits, and raccoons occur in moderate numbers along the creeks and are fairly abundant around the upper portion of Snyder Lake. The lake also furnishes some habitat for waterfowl. A growth of pondweed and smartweed in the upper portion makes an attractive area for ducks, principally blue- and green-winged teals, mallards, and pintails. Heavy use of the lake is made by local sportsmen. Fur animals such as mink and beaver occur to some extent in the project area, but no significant amount of trapping is done.

There are no known rare or endangered species of wildlife in the project area.

f. Recreation

In 1960 the population within 50 miles of the project site was approximately 183,000. Of especial importance are Altus and Lawton, Oklahoma, and the somewhat more distant Wichita Falls, Texas. The climate of southwestern Oklahoma favors a long summer recreation season, with swimming and various related activity much in demand. The climate does not favor winter sports.

Lake Altus with a surface area of 7,420 acres, Quartz Mountain State Park on the west, and the dozen or so named lakes of the Wichita Mountains Wildlife Refuge on the east are within 25 airline miles of the project area. Lake Lawtonka near Lawton, Oklahoma, and Fort Cobb Reservoir near Fort Cobb, Oklahoma, are within 50 miles and have surface areas of 1,870 and 5,590, respectively.
Within the project area, however, present recreation use is limited to fishing and hunting activities and to some picnicking along Otter Creek below Snyder Lake. The Bureau of Sport Fisheries and Wildlife, in its report of June 6, 1961, estimated that fishing on project area streams would average about 4,800 man-days annually. Without the project, Snyder Lake would accommodate an estimated 3,400 fisherman-days annually. Upland game hunting on project lands would be about 400 man-days annually while waterfowl hunting would amount to 180 man-days per year.

g. Historical and Archeological Sites

Known areas of historical significance in the project vicinity is limited to the second site of Camp Radziminski, established in 1858 at the canyon mouth below Mountain Park Dam. This camp, abandoned in late 1859, figured prominently in the campaign of 1859 against hostile Comanche Indians. None of the camp’s structures remain. The only visible evidence of its existence is an indentation where the well is believed to have been and a group of stones which appear to have been shaped into dimension stone. The Oklahoma Historical Society is seeking National Register status for the campsite. The site, however, is not located on project lands.

Recent information from the National Park Service indicates that a preliminary archeological reconnaissance was made in 1961, which determined that archeological values do exist in the Mountain Park project area. The NPS states that the 1961 survey was not adequate according to current standards. This survey covered only the lower parts of the Mountain Park Reservoir area and did not include the upper part of the reservoir, Bretch diversion dam and canal, or the aqueduct system. The 1961 survey identified at least four archeological sites consisting of Indian campgrounds and village sites.

There are no National Park Service areas or national register sites of present record which would be affected by the project.

h. Land Use Patterns and Economic Development

Kiowa and Jackson Counties are approximately 1,175,700 acres in area, of which about 1 million acres are farmland. About two-thirds of the farmland is classified as cropland and one-third as pasture, woodland, and other lands in miscellaneous agricultural uses. The principal crops are wheat and cotton; minor crops are sorghum grains, oats, alfalfa, and peanuts. Livestock numbers on the grazing lands have increased in recent years. The average farm size is over 300 acres.

The economy of the area is based on agriculture. Industrial development is relatively limited, consisting of such agribusinesses as cotton gins, cottonseed oil mills, cotton compresses, alfalfa dehydrators, potato processors, meat and meat byproducts plants, and seed and feed processors. Altus Air Force Base is an important economic contributor
in the area. Production of oil and gas from several small fields in Jackson County accounts for some industrial employment, but it is not significant in the overall economy. There is no oil or gas production in or adjacent to the Mountain Park Reservoir area.

Population trends in Jackson and Kiowa Counties during the last 40 years indicate a constant shifting from rural to urban dwelling. In 1930, about 83 percent of the 29,630 residents in Kiowa County and 71 percent of the 28,910 Jackson County residents were rural inhabitants. In 1960, the percentages rural were 65 percent in Kiowa County and 28 percent in Jackson County. Preliminary census data for 1970 indicate the trend is continuing with the 12,532 and 30,902 residents of Kiowa and Jackson Counties, respectively. The project area cities of Altus in Jackson County and Snyder in Kiowa County report 1970 populations of 22,865 and 1,791, respectively. The increases in urban dwelling emphasize the need for additional municipal water sources.

i. **Hydrology**

The flows of both Elk Creek at the Hobart gage and Otter Creek below Snyder Lake are quite erratic. Most of the time there is no flow below the Snyder Lake gage; and, in most years, the flow at the Hobart gage is zero for several days. Maximum recorded discharges have been 22,400 c.f.s. at the Hobart gage and 14,200 c.f.s. at the Snyder Lake gage. Over half of the annual runoff of both streams occurs during May and June.

Discharge records for the gage at Snyder Lake indicate no flow below the dam from March 1966 through March 1968.

j. **Sedimentation**

Studies were made for the feasibility report of the sediment load in Elk and Otter Creeks. These studies estimated the average annual sediment load of Elk Creek at the Bretch diversion site as just over 200 acre-feet per year and of Otter Creek at the damsite as just under 100 acre-feet per year. The estimated load diverted to Mountain Park Reservoir from Elk Creek was about 120 acre-feet per year. The total 100-year sediment accumulation in Mountain Park Reservoir was estimated to be about 17,000 acre-feet. Sediment samples show that about 70 percent of the sediments are in the clay-size particles.

k. **Water quality**

A quality-of-water study was made for the feasibility report. Using the quality-of-water data available and normal computational procedures, the volume weighted average concentration of Elk Creek was estimated
to be about 350 p.p.m. total dissolved solids, and that of Otter Creek about 300 p.p.m. Additional studies subsequent to the feasibility report studies indicate that the above values are somewhat low. The average quality of the streams is quite good, but the concentrating effect of evaporation of the reservoir results in an increase of total dissolved solids in the water which will be released from the reservoir.

C. The environmental impact of the proposed action

A portion of Otter Creek and its surrounding valley landscape will be changed to a manmade lake of 6,400 acres at conservation pool elevation and 9,280 acres at maximum water surface elevation. Development of the project would result in termination of present use and occupancy of about 14,000 acres that would be acquired for construction of project facilities. Land acquisition will involve relocation of homesites; railway; highway; and telephone, telegraph, and transmission lines. Relocation of these facilities will destroy some riparian vegetation and cover for wildlife habitat. Temporary construction scars will result in some erosion to lands until cover vegetation can be reestablished.

Clearing in Mountain Park Reservoir would consist of removing fences and foundations, cleaning up homesites, and clearing brush and trees from about 1,000 acres. Most of the trees in the project are located on bottomlands along water courses. Only about 16 percent of the 6,400 acres below the top of the conservation pool will require clearing of brush and trees. Sparse stands of timber now on project lands above the conservation pool will not be cleared except where it may be required by the relocation of existing facilities or the construction of access roads and other facilities needed for recreational development. The project plan includes funds considered necessary by the National Park Service for tree planting and seeding.

The upper reaches of Mountain Park Reservoir may be susceptible to establishment of "water weeds" such as smartweeds and other species of plants. These should provide some habitat for waterfowl. It is anticipated that phreatophytes such as saltcedars will establish along the upper reaches of the reservoir.

As discussed in section A, flows in Otter Creek will be augmented during the early years of project operation due to reservoir releases of water surplus to project requirements. After the 50th year of operation, the entire yield of the reservoir will be required for the project; and, except for about 2 c.f.s. seepage, flows of Otter Creek below the dam will be cut off resulting in practically a total loss of the fishery and loss of upland game in the 27-mile reach of stream downstream from the dam except for Snyder Lake which will be enhanced as a fishery.
Throughout the entire 100-year economic life of the project the diversion of Elk Creek will reduce the high flows in the lower 12.5 miles of Elk Creek and thus curtail the migration of fishes that provide good fishing following high-flow periods. It is expected, however, that the flexibility of operation that will be possible with water surplus to project needs during the first 50 years will permit minimum flows in Elk Creek to be considerably greater than those during the second 50 years.

Otter and Elk Creeks will be changed from intermittent streams to impounded and regulated streams. This change would affect some of the flora and aquatic organisms adapted to the intermittent still pools of the natural streams.

Mountain Park Reservoir will add about 100 acre-feet per month of seepage flows downstream to Otter Creek, which has had periods of no flow for as long as 2 years at a time. Fringe biota adaptable to the high water table will develop around the reservoir impoundment. The project area is not unique since other stream systems in the vicinity have similar environmental settings.

About 200 acres of land will be required for construction of the 10.8-mile diversion canal. The canal and spoil banks will be designed and spoil banks seeded to blend into the natural surroundings. The canal will be operated intermittently; therefore, it should pose no problem for crossing by deer or small animals. Crossings will be provided as necessary for public crossing and for operation and maintenance of the canal.

The 30 miles of pipeline will require an easement 60 feet wide and would affect 15 acres of land.

Visible signs of ditching operations for the municipal and industrial water supply pipelines across pasture and cultivated lands will disappear in a short time after construction and will pose no problem to farm operations or wildlife.

The spoil banks along Bretch diversion canal and earthwork required for construction of Mountain Park Dam, Bretch diversion dam, and associated appurtenant structures will be shaped and protected by seeding and other means to blend into the natural surroundings. Construction contracts will include requirements for landscape preservation and other measures to eliminate most construction scars to make project works harmonious and esthetic additions to the environment.

Habitat for upland game will be lost in the Mountain Park Reservoir area below top of the conservation pool. However, the project plan provides for the development and management of about 3,100 acres of
project lands, including 2,000 acres of open water, as a game-management area on the western arm of the reservoir. This will mitigate losses to upland game and enhance waterfowl hunting.

Existing Snyder Lake provides some sport fishing and hunting to local sportsmen. These will be lost temporarily since construction of Mountain Park Reservoir will require breaching and draining Snyder Lake. However, Snyder Dam will be restored and a 20-acre permanent pool will be maintained for sport fishing and recreation. Mountain Park Reservoir and the game management area provided as part of the plan will provide additional sport fishing and hunting benefits.

Mountain Park Reservoir will control all floods of record at the damsite and to a lesser degree from the mouth of East Otter Creek to the backwater limits of North Fork of Red River. The flood plain of Otter Creek below the dam is used extensively for crops and for livestock production. About 80 percent of the area is in crops, 10 percent in open pasture, and 10 percent in wooded pasture. Flood losses prevented would approximate 69 percent of the average annual flood losses experienced on Otter Creek below the damsite. Construction of the dam and reservoir will result in an immediate increase in rural land values, a change in land use to the growing of more valuable crops, and the conversion of a portion of the wooded and pastureland to crop-land. Other tangible flood control benefits include a share of those on the North Fork of the Red River below the mouth of Otter Creek. Intangible benefits include prevention of motor traffic interruption, reduction to human suffering, and inconvenience and reduction in health hazards due to unsanitary conditions created by floods. About 67 percent of the flood damage is to crops.

The Mountain Park project will create a reservoir of about 6,400 acres, operated primarily for municipal and industrial water supply, but will also provide excellent recreation opportunities. Its shores will be relatively flat except for the south shoreline which will be composed of rough topography arising from a scenic granite outcrop of the Wichita Mountains.

Recreation sites can be developed at some grading expense. The reservoir will be adequate for most kinds of boating activity. There will be room for an extensive water skiing area without encroachment on all fishing waters. The open-water area, approximately 3 miles by 2 miles in extent, will still be about 2 miles by 1 1/2 miles at the lowest reservoir level. The operation study indicated that the lowest reservoir level was reached in only one of 33 recreation seasons. The National Park Service estimates that Mountain Park Reservoir will provide 160,000 recreation days of use annually. They also suggest that when this use is increased the number of facilities needed to serve this area will also increase. Because of the limits in the authorizing legislation, the full recreation potential of 175,000 recreation days of use annually cannot be developed. The
National Park Service recommends that at least minimum development be provided to insure public health and safety and to prevent destruction of the resource.

The Bureau of Mines indicates that there are no fuel or mineral resources of economic significance that will be affected by construction of the storage facilities, diversion dam and canal, pipelines, or pumping facilities.

A preliminary archeological reconnaissance of the area was made by the National Park Service in 1961, which determined that archeological values exist in the project area. They estimate that the archeological values in the project site could be salvaged for $7,500. These include Indian campsites and villages. The Bureau of Reclamation will contact the National Park Service to arrange for them to conduct the necessary salvage operations. Construction funds will be provided for the salvage operations.

In the interest of water quality in Mountain Park Reservoir, the period of retaining water in the conservation pool and the consequent concentration of total dissolved solids will be minimized by operating the reservoir under maximum firm yield. Also, it is planned that at times when the quality of water in Elk Creek is better than the quality of water in the reservoir, most of the divertible flows of Elk Creek will be diverted, and the amount of any diversion not required to fill the conservation pool will be spilled from Mountain Park Reservoir. Thus, the quantity of Otter Creek flows below the reservoir will be augmented during the early life of the project by project operation, although the quality will reflect mineral concentration due to evaporation from storage.

During the period of record, the minimum flow of Elk Creek near the diversion point has ranged from 0 to 0.1 c.f.s. about 10 percent of the time. Under the proposed plan of operation, flows occurring from 10 to 1,000 c.f.s. will be diverted, thus reducing the flow below the diversion dam about 60 percent of the time. Provisions are included in the diversion dam to bypass 10 c.f.s. to meet downstream water rights. Operation studies indicate that about 62 percent of the depleted Elk Creek flow will be diverted to Mountain Park Reservoir. The concentration of solids in Elk Creek will not be affected by the diversion at any particular time. However, the poorer quality flows will be passed on down the creek and, consequently, the quality of flows below the diversion will, on a volume weighted basis, be lower. No additional minerals will be added to the water. The operation of the project will conform to State and Federal water quality standards.

After 50 years, the depletion of Otter Creek flows and diverted Elk Creek flows will amount to 16,000 acre-feet of M&I use annually, plus reservoir evaporation. Points of M&I use are outside the Otter and Elk Creek basins so that there will be no return flows to the source streams.
The drainage area above Bretch diversion dam is about 15 percent of the total drainage area of the North Fork Red River at its confluence with Elk Creek. The proposed plan of operation of Bretch diversion dam is to divert to Mountain Park Reservoir at times when the flow is in the medium and high range. It is intended to bypass the low flows. Thus, the effect of the project on the flows of the North Fork would be to reduce them slightly during periods of medium and high flows and have no effect upon the low critical flows.

The Mountain Park project would cause no increase in the amount of pollution by herbicides or pesticides. However, reduced streamflow in Otter Creek could result in the concentration of pollutants. Temporary and unavoidable dust and noise pollution during construction of the dam, spillway, and associated nonproject works and relocation of highways, the railroad, utilities, and other improvements in the project area would likely occur. However, the greatest environmental impact of the project will result from municipal and industrial use of the water supply. The cities of Altus, Snyder, and Frederick will be furnished a full water supply for 50 years; and 92 percent of their requirements will be met after 100 years of project operation.

The people living in seven counties--Kiowa, Jackson, Tillman, Cotton, Comanche, Greer, and Washita--generally within 50 miles of Mountain Park are expected to provide the major portion of the resident visitation at the reservoir. The 1970 population of these counties totaled 185,822, which is expected to increase during the next 100 years. Therefore, the project is a desirable investment to satisfy the needs of future generations from both an economic and environmental viewpoint.

The project plan includes safeguards against pollution of the project's land and water areas. These are incorporated in the sanitation facilities provided as a part of the recommendation of the National Park Service and in proposals by the Oklahoma State Department of Health. Funds are provided for the State to furnish qualified sanitation personnel to plan and regulate the public health aspects of water supply, waste and sewage disposal, malaria control, and recreational activities.

D. Mitigating measures included in the proposed action

During construction the contractor(s) will be required to comply with applicable Federal and State laws, orders, and regulations concerning the control and abatement of water and air pollution. Specifications for construction of project works will include appropriate requirements for air and water pollution control, landscape preservation, and other measures to eliminate construction scars to make those works harmonious and aesthetic additions to the environment. Spoil banks and earthwork will be shaped and seeded to blend into the natural surroundings.
It will be necessary for local and State agencies, assisted as appropriate and necessary by related Federal agencies, to take necessary actions to protect the reservoir against pollution from sources upstream from or adjacent to the area to be acquired and to assure that use of the water supply provided by the reservoir and disposition of return flows from such use do not impair the environment. The project will be operated in compliance with water quality standards under provisions of the Federal Water Pollution Control Act, State of Oklahoma, and Executive Order 11507.

Only commercial aggregate operations that comply with State and Federal pollution regulations will be designated as approved sources for contractors supplying aggregate to the Mountain Park project construction activities.

Construction and permanent access road locations will be designated or approved by the Bureau of Reclamation contracting officer. Roads not required as part of the permanent road system will be obliterated to blend into the landscape.

Additional grading and seeding of exposed cut and fill slopes along access roads and on the spoil banks of the main canal will be necessary in order to stabilize the road and bank sections and restore a natural appearance insofar as practicable. The project plan includes funds considered necessary by the National Park Service for tree planting and seeding.

Reclamation reservoir clearing criteria require removal of all trees and larger brush below elevation 1411.0 feet m.s.l., top of conservation pool level. This requirement excludes those areas recommended by the Bureau of Sport Fisheries and Wildlife to be left uncleared for fish concentration areas and for protection to fishermen and hunters during windy weather.

Relocation of U.S. Highway 183 will require excavations in igneous rocks belonging to the Raggedy Mountain gabbro group. This group of rocks includes anorthosite, troctolite, and varieties of gabbro. Published information on isotopic age determinations indicate they are about 535 million years old. Anorthosite is a peculiar type of rock found in Oklahoma only in the Wichita Mountains. Astronauts have found anorthosite rock on the moon. Excavations for highway relocation will expose fresh rocks in cross sections of appreciable length and depth. These will have considerable educational and scientific significance because of the rather unusual nature of the rocks. They will afford opportunities for teaching and study and convenient places for collecting by petrologists as well as rock hounds. Measures for making slopes of excavations and waste rock dumps accessible to the public, as well as providing suitable informational signs at the sites are included in the plan.
L. Unavoidable adverse effects

The Mountain Park project will eliminate stream fishing in the 5 miles of Otter Creek inundated by the reservoir and result in practically a total loss of the fishery in the 27-mile reach of Otter Creek below the dam after 50 years of project operation. Diversion of Elk Creek will reduce the high flows in the lower 12.5 miles of Elk Creek, thus curtailing the migration of fishes that provide good fishing following high flow periods. This will result in annual losses of 4,125 man-days of stream fishery. Breaching Snyder Dam and draining Snyder Lake will result in a temporary loss of sport fishing and hunting to local sportsmen.

About 6,400 acres of land would be inundated with the reservoir water surface at the top of conservation capacity. An additional 2,880 acres would be intermittently flooded with the reservoir at the maximum water surface. Therefore, adverse effects would consist of termination of present landownerships; removal of wildlife habitat; removal of valuable agricultural production and income and other benefits now obtained therefrom; removal of persons now residing in the area; and inundation of highways, utilities, railroads, and other improvements.

With the project, the quantity of Otter Creek flows below Mountain Park Reservoir will be increased during the early years of project operation; but the quality of water will reflect mineral concentration due to evaporation from storage. Without the project, Elk Creek flow has ranged from 0 to 0.1 c.f.s. 10 percent of the time. With the project, reduced flow will occur below the diversion dam about 60 percent of the time.

There will be a short-term occurrence of noise, dust, and traffic interruptions incidental to construction of Mountain Park Dam; Betch diversion dam and canal; pipelines and pumping facilities; relocations; and recreation facilities.

F. Short- and long-term environmental uses

Both the beneficial and adverse environmental impacts of construction and operation of the Mountain Park project are related to long-term productivity rather than to short-term uses. The beneficial impact of the project will begin with storage of the project water supply. The beneficial impact of converting project lands from private to public ownership and use through general recreation, sport fishing, waterfowl hunting, and other wildlife-oriented visitation will begin with project completion.

The foreseeable 100-year economic life of the project to provide municipal and industrial water for the cities of Altus, Snyder, and Frederick would be long-term in relation to water resources planning; however, it would be short-term in relation to environmental changes. Recreation use in the project area will increase with time and will provide long-term benefits.
Elk and Otter Creeks flows are very erratic and will be changed from intermittent streams to a fluctuating reservoir. Downstream changes in ecological values, loss of prime agricultural land, and changed land use brought about by the project will be long-term effects. Future generations will be given the benefits and changes provided by the project and would be committed to the changed conditions in lieu of maintaining the land and streams in their present state of development.

Adverse effects of construction activities and use of manpower involved are such that activities would be short-term only.

The concentration of solids in Elk Creek will not be affected by the diversion at any particular time. However, the poorer quality flows will be passed on down the creek and, consequently, the quality of flows below the diversion dam will, on a volume weighted basis, be lower. The concentrating effect of evaporation of the reservoir will result in an increase of total dissolved solids in the water to be released from the reservoir into Otter Creek below Mountain Park Dam. The Otter and Elk Creeks flows entering the North Fork of Red River after project construction would have no environmental impact on the North Fork since the quality of North Fork flows is unsuitable for most beneficial uses at the present time.

**G. Irreversible and irretrievable commitments of resources**

Commitment for project purposes of 12.5 miles of Elk Creek, 32 miles of Otter Creek, and about 14,000 acres of land in the area to be acquired for the project constitutes in our opinion the highest use of these resources at this time. Construction of the project will commit the natural resources of these streams, and future generations will be limited in their scope to change these uses. However, the commitment of water and certain lands could be changed to a higher priority use should such develop in the future.

Mountain Park Reservoir will inundate the upper portion of Snyder Lake and about 5 miles of Otter Creek within the conservation pool. However, Snyder Lake will be restored and improved by providing a permanent 20-acre recreation pool. The Mountain Park Reservoir will cover about 6,400 acres of land at the top of the conservation pool. Loss of stream fishing, hunting, natural esthetics of the area, and changed land use in and adjacent to the reservoir could be irreversible and irretrievable with construction of the project.

**II. Alternatives to the proposed action**

Potentialities for developing municipal and industrial water supplies in the same geographical area as the selected project were studied. With the exception of "the proposed plan of development" the other possible alternatives considered would not be practical in that they would not provide realistic equivalent benefits.
a. **Ground water underlying area**

Permian strata underlying most of the area consist principally of sandstones and siltstones interbedded with shales. These strata have a gentle regional dip to the southwest. Ground water in the Permian formations is generally confined and is therefore artesian. No exhaustive inventory of wells tapping this source has been made. However, available information indicates that such wells generally yield small volumes of highly mineralized water, and that further development of the area cannot be based on water supplies obtained from the Permian strata.

Environmental impacts from this alternative would include foregoing flood protection, and the annual threat of flooding would continue. The flora and fauna associated with Otter and Elk Creeks would not be changed. The recreational opportunities and fish and wildlife benefits resulting from the proposed project would be foregone. However, there would be additional return flows to the North Fork of Red River. Energy would be expended for pumping, and a system of pumps and pipelines to collect and transport the ground water to project users would be required. No relocations would be required.

b. **Ground water in western Tillman County**

Terrace deposits in western Tillman County have long been recognized as a source of relatively large supplies of ground water. Wells in this area provide the water supplies for all rural domestic and farmstead uses; for municipal uses of Frederick, Tipton, and Manitou; and for irrigation development. In recent years competition for water has developed with agricultural interests. A restraining order issued by the District Court has prohibited the city of Frederick from constructing additional wells to meet increasing demands. Also, a damage suit has been successfully prosecuted against the city for damage to an adjoining property owner from operation of city-owned wells. Because of the legal difficulties involved in obtaining additional ground water, the city has urgently sought other new or supplemental supplies.

This alternative would have about the same environmental impacts as alternative 2. **Ground water underlying area.**

c. **Importation of water from other areas**

As an emergency measure the city of Altus, Oklahoma, acquired underground water rights in Wilbarger County, Texas, which are expected
to deliver some 2,400 acre-feet annually. This amount is only about 14 percent of estimated water requirements that would be met by the selected project. Whether additional water can be obtained from the Texas area has not been established. Use of the emergency facilities was delayed nearly 2 years pending the outcome of litigation wherein the city of Altus questioned the constitutionality of a Texas law prohibiting sale of ground water by a private citizen to an out-of-state customer. The U. S. Supreme Court held in favor of the city of Altus.

This alternative would have about the same environmental impacts as alternative a. Ground water underlying area.

d. Other surface sources and reservoir sites

Potentialities for further development of surface water resources for beneficial uses are extremely limited. The flows of the North Fork of Red River originating upstream of the existing Altus Reservoir are fully appropriated for existing uses. Elm Fork, the principal tributary entering the North Fork from the west below the Altus Reservoir, is contaminated by numerous salt springs to the extent that its flows are unsuitable for domestic, municipal, or irrigation uses. The Salt Fork of the Red River, whose basin is immediately south and west of the North Fork basin, contains water which is unsuitable for domestic and municipal uses, and which is suitable for irrigation use only when mixed with water of lesser dissolved mineral content. The flows of Otter and Elk Creeks, which enter the North Fork from the east downstream of the Altus Reservoir, are of satisfactory quality for most beneficial uses. Thus, they constitute the only surface water resources of significant volume in an extensive area that are considered suitable for development. However, the portion of the Otter Creek watershed tributary to the Mountain Park damsite amounts to only 131 square miles, and the runoff from that area would not justify full development of the site. Possible sites on Elk Creek, the larger of the two streams, are unfavorable for storage over long periods of time.

The environmental impacts of constructing a reservoir on another stream system would be similar to those for the proposed plan of development as other stream systems in the vicinity have similar environmental settings. Some differences would be unique to each site.

e. No project

The alternative of not developing the project would maintain stream fishery in its present condition in and below Mountain Park Reservoir and below the Butch diversion dam. It would also maintain the
quantity and quality of downstream flows, and present uses and occupancy of the area to be acquired for the project, but would forego environmental and economic effects of the project from use of the project water supply, prevention of flood damage, and creation of opportunities for water-based recreation and sport fishing.

f. Management of existing supplies

Consideration was given to recycling of existing supplies by means of more advance treatment of sewage effluents and to prolonging the life of existing supplies by restricting certain types of use such as washing cars, irrigating lawns, etc.

More advanced or tertiary waste treatment necessary to permit successful recycling has a marginal cost roughly equivalent to the cost of primary and secondary treatment together. Most tertiary treatment operations in the United States are being carried out on an experimental basis to try out new techniques. Use in the Mountain Park area would not provide equivalent economic, social, or environmental benefits at comparable costs. In addition, tertiary treatment to permit recycling will conserve water in some areas but is not necessarily an alternate. Most water supplies are presently partially made up of sewage effluent from upstream sources. Natural purification permits the reuse of the sewage effluent by the downstream user. There is considerable doubt that legally a complete recycling of treated wastes can be made by a city which has previously released treated water which was used by downstream users with a prior water right.

Restrictive practices would delay development of an increased water supply to the area and would amount to a decision to limit urban and industrial growth indefinitely to the level that can be supported by the water supply now available.

Environmental impacts from this alternative would be similar to those for alternative e. No project.

gh. The proposed plan of development

The project plan contemplates controlled diversion of Elk Creek flows into the potential Mountain Park Reservoir at a location where the tributary area in the Elk Creek watershed is 540 square miles, and thus provides sufficient inflow to assure full utilization of the storage capacity available at the Mountain Park damsite.

A reservoir at the Mountain Park damsite would provide a relatively large permanent pool which would serve the purposes of recreation
and fish and wildlife conservation, in addition to that of water supply for beneficial use. Such a reservoir would also provide sufficient capacity for effective control of floods originating in the Otter Creek watershed upstream of the site.

The environmental impact of the proposed plan of development is described in this statement.
STATE SENATE REPORT
By HERSCHAL CROW
State Senator from Jackson, Tillman, Harmon and Greer Counties.

Several Southwestern Oklahoma legislators met recently with officials of the Mt. Park Conservancy District for the purpose of initiating an effort to resolve problems concerning the use of the property around the new Tom Steed Reservoir.

The problem is a complex one and I may not fully understand all of its ramifications. However, on the surface, it appears that the several hundreds of acres of land which are now owned by the Bureau of Reclamation and the Conservancy District will need to take on a manager. Part of the purpose of this management will be development for recreation and wildlife control. It appears that the Bureau of Reclamation will, when the project is completed, turn the land and the reservoir to the Conservancy District, who, in turn, seeks to place that property in the hands of the State Parks Department for development purposes.

One note, that persons who live in the area should begin to be familiar with, is that it appears that new Federal law will require some of the construction cost to be repaid to the Federal Government through fees charged to users. In other words, it appears inevitable that persons who utilize fishing, boating and camping facilities within this new lake and park compound will be required to pay users fees. I would repeat at this point that this policy is one that was initiated a few years ago by the Federal Government and is something which is not subject to change by state or local authorities.

Another thing that local people should be interested in, is the fact that there will be a fence which surrounds the entire lake and park area. Access to the land and park will be rigidly controlled and the entrances and exits will be strategically placed. Those people who are selecting cabin sites are anticipating being able to walk to the lake should check very carefully before purchasing. At this point it appears there will be no access, on a walking basis, from any privately owned cottages.
In accordance with the requirements of Reclamation Instructions, Series 130, Part 133, the following data are submitted for the design specifications for the relocation of U. S. Highway No. 183.

13.1.33 - A General Map

A location map, Drawing 827-533-8, showing the U. S. Highway No. 183 relocation is included.

13.4.83 - A Topographic Map

Strip topography on a scale of 1 inch equals 200 feet is included for the entire length of the relocation. Structure topography on a scale of 1 inch equals 50 feet is also included for the Glen Creek Bridge site.

13.3.83 & 84 - Foundation and Construction Materials Data

**Foundation Data**

The area is underlain primarily by three geologic formations: Precambrian Granite, Clear Fork Shales of Early Permian Age, and Quaternary Terrace Deposits. The Middle Pennsylvanian was a period of upheaval, during which the Precambrian Granites were pushed up through the overlying Paleozoic sediments to form the Wichita Mountains. During the Permian period this area was covered by a series of shallow seas, which laid down alternating beds of clay shale, sandstone, mudstone, and gypsum. As a result of this deposition all that can be seen today of the Wichita Mountains are a few isolated peaks and masses of granite rising above the gently rolling sea of Permian "Red Beds."

**Foundation and Construction Materials Data**

**Earthwork**

**Highway Centerline**

Investigation of soil along the proposed relocation route on the highway was started in June 1971. Holes, four inches in diameter were augered approximately every 2,000 feet on or near the proposed centerline. The initial holes were augered with a hand auger and the remaining holes were drilled with a Giddings hydraulically operated drill mounted on a pickup truck. The holes were stopped at near 10 feet of depth due to the limits of the power auger and the difficulty of going deeper with a hand auger.
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

MOUNTAIN PARK PROJECT, OKLAHOMA

LEASE AND AGREEMENT AMONG THE UNITED STATES OF AMERICA,
THE STATE OF OKLAHOMA, AND THE MOUNTAIN PARK MASTER
CONSERVANCY DISTRICT FOR THE DEVELOPMENT AND
ADMINISTRATION OF RECREATIONAL FACILITIES OF THE
MOUNTAIN PARK RESERVOIR, OKLAHOMA

THIS CONTRACT, made and entered into this 19__ day of
June, 1902 (32 Stat. 388), and acts amendatory thereof and supple-
mentary thereto, particularly the Act of September 21, 1968 (82 Stat.
853), by and among THE UNITED STATES OF AMERICA, herein called "United
States," acting by and through the Bureau of Reclamation of the United
States Department of the Interior, herein called "Bureau"; the STATE
OF OKLAHOMA, acting by and through the OKLAHOMA TOURISM AND RECREATION
DEPARTMENT, herein called "Department"; and THE MOUNTAIN PARK MASTER
CONSERVANCY DISTRICT, herein called "District."

WITNESSETH THAT:

WHEREAS, the United States owns and/or is presently acquiring
lands and interests in lands for the Mountain Park Federal Reclamation
Project, herein referred to as the "Project," which includes certain lands,
water areas, and other improvements and facilities in and adjacent to
the Mountain Park Reservoir site located in Kiowa County, Oklahoma; and

WHEREAS, Title 74, Section 1802, Oklahoma Statutes 1971, provides
for acquisition of State park sites by the Department, and said Depart-
ment is otherwise authorized by Oklahoma law to administer and control
all State parks; and

WHEREAS, the District is obligated among other things to
reimburse the United States its costs incurred in constructing the
Mountain Park Project which are allocated to recreation, estimated
at $285,000 plus interest, as provided in Contract No. 14-06-500-1794
dated January 27, 1971, between the United States of America and the
Mountain Park Master Conservancy District, herein sometimes termed "the
repayment contract"; and
WHEREAS, the parties hereto have determined that it is in the public interest for the United States to lease to the Department a portion of the lands, water areas, units, improvements, and facilities in and adjacent to Mountain Park Reservoir, which lands and facilities are identified on Exhibit "A," attached hereto and by this reference made a part hereof, and are hereinafter called the "Leased Premises."

NOW, THEREFORE, the parties hereto agree as follows:

LEASE BY UNITED STATES

1. The United States, by virtue of the authority conferred under the Federal Act and in consideration of the observance and performance by the Department of its contractual obligations under this lease, hereby leases the Leased Premises to the Department for a term of 50 years from the date of execution of this contract.

DEPARTMENT WILL OPERATE LEASED PREMISES

2. The Department does hereby accept lease of the Leased Premises and will occupy, use, operate, maintain, develop, improve, manage, and supervise the Leased Premises in conformity with the terms and conditions of this lease: Provided, however, That the Department shall not be obligated to develop or improve the Leased Premises except to the extent that funds therefore are available to the Department for such purpose.

INTERFERENCE WITH PROJECT FACILITIES PROHIBITED

3. The Department will not interfere with or impede the Bureau's operation and maintenance of any Project facilities owned and operated by the United States.

ACCESS TO LEASED PREMISES

RETAINED IN THE UNITED STATES

4. a. The officers, employees, agents, contractors, and assigns of the United States will have the right of ingress, passage over, and egress from and into the Leased Premises for the purpose of operating and maintaining the Project, including the construction, operation, and maintenance of channels, drainage of ponded areas, clearing of phreatophytes,
and conducting soil and water conservation activities. Rights of the Department acquired hereunder are inferior and subordinate to the rights of the United States, its successors and assigns, to operate the Mountain Park Reservoir for Reclamation project purposes.

b. The construction of recreational facilities at or near Mountain Park Reservoir shall not provide a basis for the allocation of project water for recreational use or for the allocation of reservoir capacity for recreational use; and the priority for municipal and industrial use of water stored in Mountain Park Reservoir and the priority of use for municipal and industrial purposes of the capacity of such reservoir shall not be affected in any manner by the provision for recreational facilities as provided herein.

c. The Department's leasehold interest acquired hereunder is subject to the right and power of the United States, its agents, successors, assigns, lessees, licensees, and permittees to remove from the Leased Premises any materials necessary for the construction, operation, or maintenance of the Project and all features of the Project, provided it does not interfere with improvements previously completed by the Department, and to prospect for and develop and produce oil, gas, and other minerals in the Leased Premises. In its exercise of such rights and powers, the United States shall take or cause to be taken reasonable measures to avoid (1) impeding the occupancy, use, operation, maintenance, development, improvement, management, or supervision of the Leased Premises for public recreational purposes by the Department or any of its concessionaires, licensees, permittees, or lessees or (2) jeopardizing the security or the rights of the holders of any bonds.

d. In order to enable the Department to take appropriate protective measures with reference to the Leased Premises, the United States shall give or cause to be given to the Department reasonable advance notice of any projected exercise of reserved rights or powers which may adversely affect the Leased Premises, the interest of the Department therein, or the security or the rights of the holders of any bonds.

**TITLE TO LEASED PREMISES NOT WARRANTED**

5. The United States does not warrant title to the Leased Premises.
CONCESSION LEASES

6. The Department may negotiate, grant, execute, and administer agreements with third parties granting concessions, licenses, permits, and leases for the occupancy, use, operation, maintenance, development, and improvement of the Leased Premises for public recreational purposes; Provided, however, That the Department shall include in each such agreement granting any concession, license, permit, or lease appropriate provisions requiring that all provisions of this lease and the Federal Law be fully observed and complied with to the extent applicable. Concession agreements shall not be effective until approved by the Bureau. Any concession agreement shall be reviewed by the Bureau within 30 days of date of receipt by the Bureau. Failure to review or approve within 30 days shall constitute automatic approval.

RULES AND REGULATIONS - STATE

7. Use of the leased area at Mountain Park Reservoir for recreation shall be administered by the Department. The Department shall promulgate regulations, issue permits, provide area zoning, time schedules, etc., and police as necessary. No portion of the shorelines will be reserved for private use. The Department shall prepare and submit to the Bureau at the close of each calendar year, on a summary form provided by the Bureau, a report of recreational use and facilities provided the public.

RULES AND REGULATIONS FOR PROTECTION OF PROJECT - UNITED STATES

8. The Leased Premises shall be occupied, used, operated, maintained, developed, improved, managed, and supervised in conformity with such reasonable rules and regulations for protection of the Project as are issued or approved by the Bureau. By mutual agreement, the parties may adopt a management plan for all or any part of the area.

Upon request of either the United States or the Department, the Bureau, the Department, and the National Park Service of the United States Department of the Interior will meet to review administration of the Mountain Park Reservoir area.
IMPROVEMENT AND MAINTENANCE OF RECREATIONAL FACILITIES

9. The Department may (1) construct or cause to be constructed in and upon the Leased Premises buildings, improvements, lodges, cabins, other accommodations, fences, signs, walls, piers, and other structures of any and all types useful or convenient for recreational purposes; (2) provide or cause to be provided equipment, machinery, furnishings, and other facilities; and (3) perform or cause to be performed such landscaping, seeding, and planting work for and in connection with the Leased Premises as may be deemed desirable by the Department, provided that all major construction, facilities, and work shall be performed or furnished in accordance with plans and specifications approved in advance by the Bureau. Provided, however, that changes in any such plans or specifications so approved found necessary by the Department may be made without approval thereof by the Bureau to the extent that such changes are determined by the Department to be minor in nature and are consistent with this lease and the Federal Law, and the Bureau shall be promptly informed thereof.

BONDS AND OTHER OBLIGATIONS

10. The Department may issue revenue bonds or assume other obligations to pay the cost of buildings, improvements, and other structures and facilities necessary or desirable for the development, improvement, operation, and maintenance of the Leased Premises for public recreational purposes. The collection, administration, and expenditure of revenues and other moneys will be subject to requirements protecting the security of the bonds; and the Bureau, to the fullest extent feasible and consistent with Project administration, shall avoid any action with respect to the Leased Premises which would prejudice or impair the security of the bonds to the detriment of the holders thereof.

DEVELOPMENT OF LEASED PREMISES

11. The Department may proceed with the development and improvement of the Leased Premises for public recreational purposes and may prosecute to completion a program of improvement and development in general accordance with general plans prepared by the National Park Service including approved revisions thereto.
FEES - DEPARTMENT

12. a. The Department may fix, charge, and collect reasonable fees, charges, tolls, and rents for the use or occupancy of land and improvements or for any services rendered by or through the Leased Premises.

b. All revenues received by the Department from use of the Leased Premises, including rents and other income from concessions, licenses, permits, leases, and other contracts shall be accounted for through general accounting procedures. All revenues received by the Department shall be utilized by the Department for further development of the Mountain Park Reservoir recreation area or may be deposited in a reserve account for accomplishing future public recreational development and improvements within the area of Leased Premises: Provided, however, That any net income from State-financed improvements may be used by the Department for any purpose authorized by State law as designated by the Department.

c. Promptly after the close of each fiscal year, the Department will cause an audit to be made by qualified accountants of its books and accounts for the preceding fiscal year and shall submit to the Bureau a report of each such audit setting forth the accountants' findings respecting the revenues, income, and other receipts; the expenditures for operation and maintenance, the number of visitors to the Leased Premises, the details of all bonds and other obligations issued and outstanding; and other data and information respecting the use of the Leased Premises and all facilities in connection therewith. Revenues derived from licenses and permits required by State law such as fishing licenses, hunting licenses, boat operating permits, and State user fees shall not be included as revenue within the meaning of this subparagraph.

BOOKS, RECORDS, AND REPORTS

13. a. The Comptroller General of the United States, or any of his duly authorized representatives, and the Bureau, or any of its duly authorized representatives, shall have access to and the right to examine any directly pertinent books, documents, papers, and records of the State and the Department involving transactions related to this lease, which right shall continue until 3 years after termination of this lease or any extensions thereof. Pertinent books, documents, papers, and records shall be retained and recorded in accordance with the Oklahoma Public Records Act.
b. The Department shall include in all agreements of
the State granting any concession, license, permit, or leasehold or
pertaining to the operation, maintenance, development, or improvement
of the Leased Premises a provision permitting the Comptroller General
of the United States, or any of his duly authorized representatives,
and the Bureau, or any of its duly authorized representatives, until
the expiration of 3 years after termination of the respective agreement,
to have access to and the right to examine any directly pertinent books,
documents, papers, and records pertaining to such agreement and the
Leased Premises. These provisions shall not be applicable to (1) pur-
chase orders not exceeding $2,500 and (2) agreements or purchase orders
for public utility services at rates established for uniform applicability
to the general public.

STATE RULES AND REGULATIONS

14. The Department shall, within the limits of its authority,
make and enforce such rules and regulations for the occupancy, use,
operation, maintenance, development, and improvement of the Leased
Premises as are necessary and desirable for public recreational pur-
poses, securing any bonds that may be issued, protecting the health
and safety of persons using the Leased Premises and preserving law and
order: Provided, however, That such rules and regulations shall not
be in conflict with this lease.

MAINTENANCE OF LEASED PREMISES
UTILITIES, AND SERVICES

15. The Department shall, during the term of this lease and
to the extent of funds available therefor:

a. Maintain all trails, streets, and roads within the
Mountain Park Reservoir recreational areas, which are presently con-
structed or which may hereafter be constructed by the State, except the
road below and approaching Mountain Park Dam and in the main administra-
 tion area south of the dam, which is to be maintained by the District.

b. Maintain the grounds within the Leased Premises including
maintenance in "as is" condition of water, sewer, and outdoor electrical
systems, trash and garbage collection, and provide water and power for
such maintenance and for outdoor lighting.

c. Maintain all public-use facilities located within the
Leased Premises.
HOLD HARMLESS CLAUSE

16. The Department shall not do, or knowingly permit to be done by others, anything which may jeopardize the health or safety of any person on the Leased Premises or which may damage or destroy any property or improvements in or upon the Leased Premises. To the extent of its authority, the Department shall save the United States harmless from any claim on account of death, personal injury, or property damage by reason of anything done, or knowingly suffered or omitted to be done, by the Department in its exercise of the rights, powers, and privileges granted by this lease. Nothing in this lease shall be construed or interpreted as authorizing (1) the Department, its agents, or employees to act as the agent or representative of or on behalf of the United States or to incur any obligation of any kind on behalf of the United States or (2) the Bureau, its agents, or employees to act as the agent or representative of or on behalf of the State or to incur any obligation of any kind on behalf of the State.

INSURANCE - ELEVATION RESTRICTIONS

17. The Department shall provide in its agreements with concessionaires, permittees, licensees, and lessees for carrying such public liability, fire, theft, vandalism, and other insurance as is customary for similar operations under comparable circumstances, which insurance shall be subject to approval of the Department. In the event of major or total destruction of any improvement constructed with Federal funds, the Department shall determine whether the insurance shall be paid to the United States or used for restoration or construction of similar facilities to be mutually agreed upon. Notwithstanding any other provision in this lease to the contrary, no building shall be constructed in Mountain Park Reservoir below elevation 1423.0 USBR datum.

REPAYMENT OBLIGATION

18. The District, by its execution of this contract, approves the plan of development, operation, maintenance, and administration of the recreational features of the Mountain Park Project by the Department and agrees that such development, operation, maintenance, and administration by the Department does not relieve the District of its obligations under the Repayment Contract No. 14-06-500-1794. The Department, to the extent funds are available on an annual basis, will pay to the District an amount to cover the separable cost of the District's repayment obligation under Contract No. 14-06-500-1794.
UTILITIES AND SERVICES

19. The Department shall provide and deliver all necessary electrical power, sanitary services, and other utilities designated for areas covered by this lease.

TERMINATION

20. a. This lease shall be effective as of the date of this agreement and continue for 50 years: Provided, however, That, at the option of the United States, this lease agreement may be revoked and terminated in the event the Department violates or breaches any of its obligations or covenants assumed in this agreement and fails to correct, remedy, or eliminate such violation or breach to the satisfaction of the United States within a period of 180 days after notice in writing of the specific violation or breach is given to the Department by the Bureau. The Bureau shall send a copy of any notices issued under this article to the trustee under the trust indenture in the event bonds secured by such trust indenture are outstanding; however, failure to send such copy shall not affect the validity of the notice.

b. Prior to expiration of the initial term of this contract, the parties shall consider the desirability of an additional lease for the purpose of enabling the State to pay in full any bonds or other obligations, herein called the "bonds," which it may issue to pay the cost of any part of any development or improvement of the Leased Premises or any facilities for or in connection with the Leased Premises.

c. The Department, at its option, may terminate this lease by giving written notice to the Bureau, with or without assigning any cause or reason therefor: Provided, however, That any such termination shall become effective on January 1 next succeeding the expiration of a period of not less than 1 year from the date such written notice is given.

d. Upon termination of this lease, whether by expiration of the term, revocation, or otherwise, the Department shall promptly vacate the Leased Premises and return possession thereof to the United States; and, within a period 180 days from the date of such termination or such longer period as the Bureau may in writing allow, the Department may remove or cause to be removed from the Leased Premises all property and facilities, whether real or personal property, owned by the Department or any concessionaire, licensee, permittee, or lessee of the Department and shall restore the Leased Premises or cause to be restored to
a good and satisfactory condition without cost to the United States; and, if the State shall fail or neglect to remove such property and facilities within the time specified, then said property and facilities shall become property of the United States free of any obligation on the part of the United States to compensate anyone for or to pay damages in connection with such property or facilities so acquired by the United States.

ASSIGNMENT LIMITED - SUCCESSORS AND ASSIGNS OBLIGATED

21. The provisions of this contract shall apply to and bind the successors and assigns of the parties hereto, but no assignment or transfer of this contract or any part or interest therein shall be valid until approved by the Bureau.

COVENANT AGAINST CONTINGENT FEES

22. The Department warrants that it has not employed any person to solicit or secure this lease upon agreement for a commission, percentage, brokerage, or contingent fee. Any breach of this warranty shall give the United States the right to annul the lease or, in its discretion, to deduct from any amount payable under this lease by the United States to the State the amount of such commission, percentage, brokerage, or contingent fee.

EQUAL OPPORTUNITY

23. a. During the performance of this lease agreement, the Department agrees as follows:

(1) The Department will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Department will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including
apprenticeship. The Department agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Bureau setting forth the provisions of this Equal Opportunity clause.

(2) The Department will, in all solicitations or advertisements for employees placed by or on behalf of the Department, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(3) The Department will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided by the contracting officer, advising the labor union or workers' representative of the Department's commitments under this equal opportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Department will comply with all provisions of Executive Order No. 11246 dated September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The Department will furnish all information and reports required by said amended Executive Order, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting officer and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the Department's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Department may be declared ineligible for further Government contracts in accordance with procedures authorized in said amended Executive Order, and such other sanctions may be imposed and remedies invoked as provided in said Executive Order or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The Department will include the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor.
issued pursuant to section 204 of said amended Executive Order so that such provisions will be binding upon each subcontractor or vendor. The Department will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event the Department becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Department may request the United States to enter into such litigation to protect the interests of the United States.

b. Inclusion of the above nondiscrimination clause in subcontracts may be by reference to section 201 of Executive Order No. 11246 dated September 24, 1965, as amended. Subcontracts below the third tier, other than subcontracts calling for construction work at the site of construction, are exempt from the requirements of the clause.

c. (1) Definitions: (a) the term Department shall mean the employees, agents, lessees, sublessees, concessionaires, and contractors, and the successors in interest; (b) the term facility shall mean any and all services, facilities, privileges, accommodations, and activities available to the general public and permitted by this agreement.

(2) The Department shall not: (a) publicize any facility operated hereunder in any manner that would directly or inferentially reflect upon or question the acceptability of any person because of race, color, religion, sex, ancestry, or national origin; (b) discriminate by segregation or other means against any person because of race, color, religion, sex, ancestry, or national origin in furnishing or refusing to furnish such person the use of any such facility.

(3) The Department shall post the following notice in such a manner where any facility is available so as to ensure that its contents will be conspicuous to any person seeking employment or use of any facility. Such notice will be furnished the Department by the Secretary.

NOTICE

THIS IS A FACILITY OPERATED IN AN AREA UNDER THE JURISDICTION OF THE UNITED STATES DEPARTMENT OF THE INTERIOR.

NO DISCRIMINATION BY SEGREGATION OR OTHER MEANS IN THE FURNISHING OF ACCOMMODATIONS, FACILITIES, SERVICES, OR PRIVILEGES ON THE BASIS OF RACE, COLOR, RELIGION, SEX, ANCESTRY, OR NATIONAL ORIGIN
IS PERMITTED IN THE USE OF THIS FACILITY. VIOLATIONS OF THIS PROHIBITION ARE PUNISHABLE BY FINE, IMPRISONMENT, OR BOTH. COMPLAINTS OF VIOLATIONS OF THIS PROHIBITION SHOULD BE ADDRESSED TO THE UNITED STATES DEPARTMENT OF THE INTERIOR, WASHINGTON, D.C. 20240

(4) The Department shall require in all of its contracts or other forms of agreement for the operation of a facility pursuant to this agreement, inclusion and compliance with provisions identical with those stated in subsections (1), (2), (3), and (4), herein.

WATER AND POLLUTION CONTROL

24. The Department shall, within its legal authority, comply fully with all applicable Federal laws, orders, and regulations and the laws of the State of Oklahoma, all as administered by appropriate authorities concerning the pollution of streams, reservoirs, groundwater, or watercourses with respect to thermal pollution or the discharge of refuse, garbage, sewage effluent, industrial waste, oil, mine tailings, mineral salts, or other pollutants, and concerning the pollution of air with respect to radioactive materials or other pollutants.

NOTICES

25. Any notice, demand, or request authorized or required by this contract shall be deemed to have been given when mailed, postage prepaid, or delivered to the Regional Director, Southwest Region, Bureau of Reclamation, Amarillo, Texas, on behalf of the United States or the Bureau, and to the Director, Oklahoma Tourism and Recreation Department, Oklahoma City, Oklahoma, on behalf of the State or the Department. The designation of the addressee or the address may be changed by notice given in the same manner as provided in this article for other notices.

OFFICIALS NOT TO BENEFIT

26. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.
IN WITNESS WHEREOF, the United States of America and the State of Oklahoma hereto have executed this agreement as of the day and year first hereinafore written.

THE UNITED STATES OF AMERICA

By

ACTING Regional Director
Southwest Region
Bureau of Reclamation

THE STATE OF OKLAHOMA

OKLAHOMA TOURISM AND RECREATION DEPARTMENT

By

Director

MOUNTAIN PARK MASTER CONSERVANCY DISTRICT

By

Title

CONCUR:

NATIONAL PARK SERVICE

By

Title Acting Regional Director

LEGAL APPROVAL:

By

Title Field Solicitor
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

MOUNTAIN PARK PROJECT, OKLAHOMA

LEASE AND AGREEMENT AMONG THE UNITED STATES OF AMERICA,
THE STATE OF OKLAHOMA, AND THE MOUNTAIN PARK MASTER
CONSERVANCY DISTRICT FOR THE DEVELOPMENT AND
ADMINISTRATION OF RECREATIONAL FACILITIES OF THE
MOUNTAIN PARK RESERVOIR, OKLAHOMA

THIS CONTRACT, made and entered into this 19th day of July, 1974, in pursuance of the Act of Congress of June 17, 1902 (32 Stat. 388), and acts amendatory thereof and supplementary thereto, particularly the Act of September 21, 1968 (82 Stat. 853), by and among THE UNITED STATES OF AMERICA, herein called "United States," acting by and through the Bureau of Reclamation of the United States Department of the Interior, herein called "Bureau"; the STATE OF OKLAHOMA, acting by and through the OKLAHOMA TOURISM AND RECREATION DEPARTMENT, herein called "Department"; and THE MOUNTAIN PARK MASTER CONSERVANCY DISTRICT, herein called "District."

WITNESSETH THAT:

WHEREAS, the United States, the Department, and the District entered into an agreement dated November 13, 1974 (Contract No. 5-07-05-X0183), hereinafter termed the "Basic Contract," and

WHEREAS, the parties to said Basic Contract now desire to amend same by reducing the area of the Mountain Park Project to be administered by the Department for recreational and park purposes, thereby making a greater area available to the Oklahoma Department of Wildlife Conservation and the Mountain Park Master Conservancy District.

NOW, THEREFORE, the parties hereto agree as follows:

1. The Department hereby releases and conveys to the Bureau the interest acquired by it under the Basic Contract in the following described lands:

   All those portions of sec. 35, T. 4 N., R. 17 W.,
   lying east of the relocated St. Louis and
   San Francisco Railroad Right-of-Way.

   SSW1/4 of sec. 8, T. 3 N., R. 17 W.
All of NW¼ of sec. 17, T. 3 N., R. 17 W., lying north of the West Dike constructed by the Bureau as a facility of the Mountain Park Dam and Reservoir.

2. Exhibit "A," attached to and made a part of the Basic Contract, is hereby superseded and replaced by the attached Exhibit "A," Drawing No. 827-500-96, which drawing, with this Amendment No. 1, is hereby made a part of the Basic Contract.

3. Except as modified herein, the Basic Contract shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have executed this Amendatory Agreement as of the day and year first hereinabove written.

THE UNITED STATES OF AMERICA

CONCUR:

Robert H. Weinert
Regional Director, Southwest Region
Bureau of Reclamation

THE STATE OF OKLAHOMA

Title
Regional Director

OKLAHOMA TOURISM AND RECREATION DEPARTMENT

Director

Title

MOUNTAIN PARK MASTER CONSERVANCY DISTRICT

LEGAL APPROVAL:

By

Title

Acting

Amphirillo Field Solicitor
Appendix B – Great Plains State Park bird brochure
### Great Plains State Park Birding Guide

<table>
<thead>
<tr>
<th>Species</th>
<th>Most Likely Season(s) of Occurrence</th>
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<td></td>
<td>Spring</td>
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<td>Fox Sparrow</td>
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<td>Le Conte's Sparrow</td>
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<td>Chestnut-collared Longspur</td>
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<td>Lapland Longspur</td>
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<tr>
<td>Yellow-headed Blackbird</td>
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<td><strong>Crows</strong></td>
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<td>American Crow</td>
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<td><strong>Raptors</strong></td>
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<tr>
<td>Eastern Screech Owl</td>
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<td>Great Horned Owl</td>
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<td>Osprey</td>
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<td>Turkey Vulture</td>
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<td><strong>Upland Birds and Game Birds</strong></td>
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<tr>
<td>Mourning Dove</td>
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<td>Wild Turkey</td>
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<td>Bobwhite Quail</td>
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<td>Greater Roadrunner</td>
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<td><strong>Shorebirds</strong></td>
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<td>Killdeer</td>
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<td>Common Snipe</td>
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<td>Baird’s Sandpiper</td>
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<tr>
<td><strong>Wading Birds</strong></td>
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<td>Great Blue Heron</td>
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<td>American Wigeon</td>
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<td>Snow Goose</td>
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<td><strong>Gulls</strong></td>
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<td><strong>Shorebirds (cont.)</strong></td>
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<td>Long-billed Dowitcher</td>
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<td>Greater Yellowlegs</td>
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<td>Least Sandpiper</td>
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Welcome to Great Plains State Park

Great Plains State Park is a wonderful place to observe birds. Prairie grasses, shrubs and trees provide birds with food, shelter and places to raise their young. Tom Steed Reservoir attracts many kinds of waterfowl each winter and wading birds each summer.

This guide identifies bird species that are normally seen here. However, each year brings unexpected arrivals to Great Plains State Park. A good field guide will help you to identify common birds, as well as those that occasionally visit this park and lake.

Things That You Need For Birdwatching

1) A field guide to birds.
2) A pair of binoculars.
3) Patience. Stop, look and listen. Birds can be observed in picnic and campground areas, as well as on park trails. Scan the shoreline and lake for migrating birds that stop here to rest and feed.

Things Great Plains State Park Does Not Need

1) Litter. Please help to keep the park clean.
2) Unhappy wildlife. Please don’t chase, catch or harm wildlife. Keep pets on a leash. Don’t remove wildflowers and other plants; leave them for others to enjoy.

Additional Opportunities for Bird Watching

The Great Plains Trail Guide contains information about many other wildlife viewing areas that are located within fairly close proximity to Great Plains State Park.

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<thead>
<tr>
<th>Species</th>
<th>Most Likely Season(s) of Occurrence</th>
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<tbody>
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<td>Northern Mockingbird</td>
<td>Spring, Summer, Fall, Winter</td>
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<td>Carolina Chickadee</td>
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<td>Tufted Titmouse</td>
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<td>Blue Jay</td>
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<td>American Robin</td>
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<td>Bewick’s Wren</td>
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<td>Rock Wren</td>
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<td>Canyon Wren</td>
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<td>Carolina Wren</td>
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<td>White-breasted Nuthatch</td>
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<td>Eastern Meadowlark</td>
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<td>Belted Kingfisher</td>
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<td>Field Sparrow</td>
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</tr>
<tr>
<td>Vesper Sparrow</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>Savannah Sparrow</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>White-crowned Sparrow</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>Grasshopper Sparrow</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>Lark Sparrow</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>Song Sparrow</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>Chuck-will’s-widow</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>Common Nighthawk</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>Barn Swallow</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>Cliff Swallow</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>Ruby-throated Hummingbird</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>Dark-eyed Junco</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>American Goldfinch</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>Pinyon Jay</td>
<td>Spring, Summer, Winter</td>
</tr>
<tr>
<td>Mountain Bluebird</td>
<td>Spring, Summer, Winter</td>
</tr>
</tbody>
</table>