

Canton Lake Master Plan

North Canadian Basin

Blaine and Dewey Counties, Oklahoma

December 2025

DRAFT REPORT



**US Army Corps
of Engineers®**
Tulsa District

*The Canton Lake Master Plan was produced
by the U.S. Army Corps of Engineers
Southwestern Division Regional Planning and
Environmental Center (RPEC) for the Tulsa
District (SWT).*



EXECUTIVE SUMMARY

 Canton Lake Master Plan
 U.S. Army Corps of Engineers
 Prepared by the Southwestern Division
 Regional Planning and Environmental Center (RPEC)
 October 2025

ES.1 PURPOSE

The Canton Lake Master Plan (hereafter Plan or Master Plan) is a complete revision of the 1975 *Canton Lake Master Plan* and its supplements. The revision is a framework built collaboratively to guide appropriate stewardship of U.S. Army Corps of Engineers (USACE) administered resources at Canton Lake over the next 25 years. The 1975 Master Plan has served well past its intended 25-year planning horizon and does not reflect the growing population around the lake, current regulations, and regional recreation needs.

Canton Lake was originally authorized in 1938 and is now operated as a multipurpose project with authorized purposes for flood control, water supply, recreation, fish and wildlife, and irrigation. The Flood Control Acts of 1946 and 1948 authorized irrigation and municipal water supply storage for the city of Enid, Oklahoma. Section 102 of the Water Resources Development Act of 1990 (P.L. 101-640) reassigned the previously designated municipal water supply storage for Enid, Oklahoma and the irrigation storage to the City of Oklahoma City, Oklahoma. Canton Lake is located at River Mile 394.3 on the North Canadian River. (see general location map in Figure ES.1). It is an integral component of the larger Arkansas River flood control system. In addition to the above-referenced authorized purposes, the USACE has an inherent mission for environmental stewardship of project lands as reflected in ER 1130-2-540, while working closely with stakeholders and partners to provide regionally important outdoor recreation opportunities.

The Master Plan and supporting documentation provide an inventory and analysis, goals, objectives, and recommendations for USACE lands and waters at Canton Lake, Oklahoma, with input from the public, stakeholders, and subject matter experts. The Master Plan is primarily a land use and outdoor recreation strategic plan that does not address the specific authorized purposes of flood risk management or water supply. Although the 2016 USACE Water Control Manual for Canton Lake addresses the specifics of water management, the Master Plan acknowledges that fluctuating water level for flood risk management and water supply can have a dramatic effect on outdoor recreation, especially at boat ramps, and swim beaches.

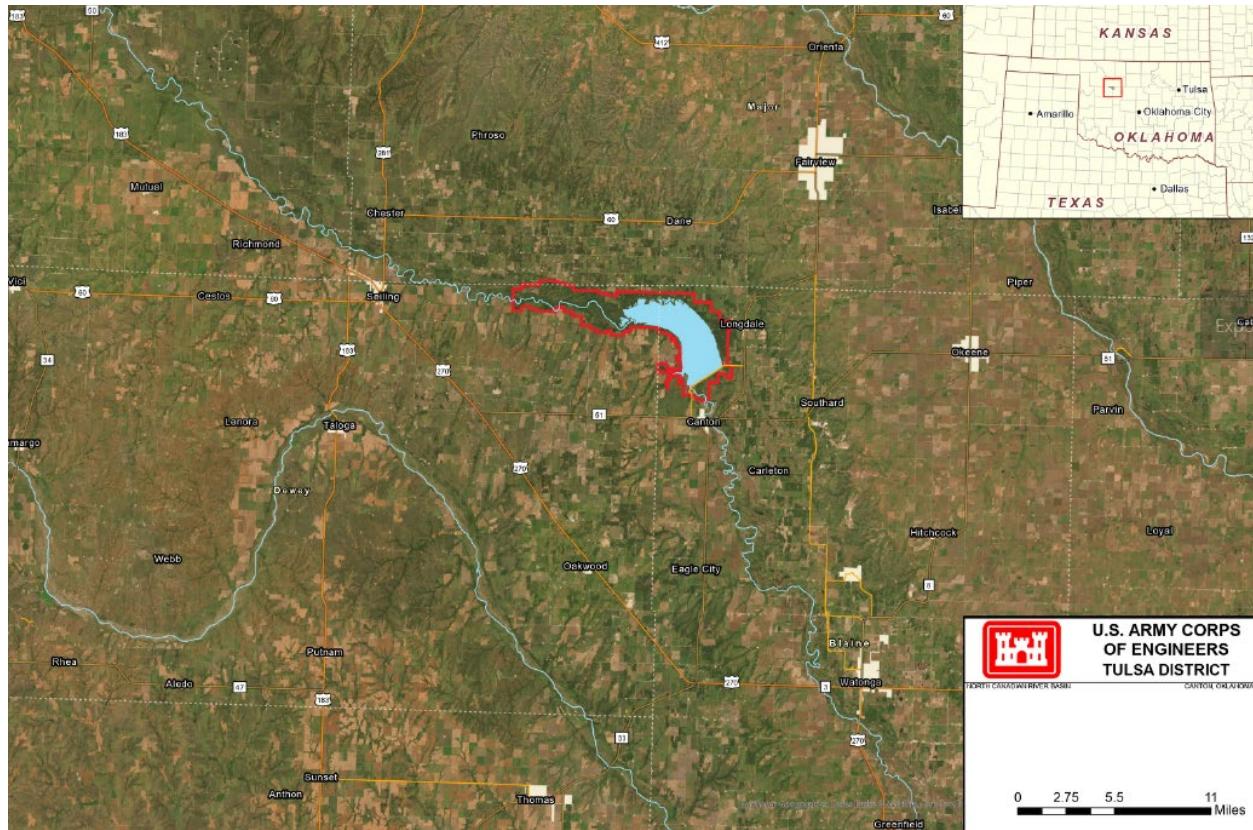


Figure ES.1 Vicinity Map of Canton Lake

The mapping used for this Master Plan revision uses modern satellite imagery and Geographic Information System (GIS) mapping, resulting in different acreage calculations than that of the 1975 Master Plan. Using 2025 GIS measurements, Canton Lake has a water surface of 7,610 acres at conservation pool of 1615.4 feet NGVD29 and approximately 12,851 acres of federal land lie above the conservation pool with a shoreline of approximately 55 miles at the top of the conservation pool.

ES.2 PUBLIC INPUT

To ensure a balance between operational, environmental, and recreational outcomes, USACE obtained both public and agency input toward the Master Plan. An Environmental Assessment (EA) was completed in conjunction with the Master Plan to evaluate the impacts of alternatives and can be found in Appendix B.

On 23 July 2024 a public information workshop was held at Canton Elementary School to inform the public of the intent to revise the master plan. The public input period remained open for 38 days from 23 July 2024 to 26 August 2024. At the public information workshop, a presentation was given that included the following topics:

- What is a Master Plan?
- What a Master Plan is Not
- Why Revise a Master Plan?
- Overview of the National Environmental Policy Act (NEPA) process
- Master Planning Process
- Instructions for submitting comments

During the Canton Lake Master Plan comment period, USACE received one (1) comment.

ES.3 RECOMMENDATIONS

The following land and water classification revisions (detailed in Chapter 8) were a result of the inventory, analysis, synthesis of data, documents, and public and agency input. In general, all USACE land at Canton Lake was reclassified either by a change in nomenclature required by regulation or changes needed to identify actual and projected use. Table ES.1 illustrates the prior and current land and water classifications, which includes an increase in Project Operations, High Density Recreation and Wildlife Management, new lands classified under the Environmentally Sensitive Area classification for environmental, cultural, and/or aesthetic preservation, and improvements to the maps including removal of the Cheyenne Arapaho Area lands which are not USACE fee lands, and inclusion of lands purchased after 1975.

Table ES.1 Change from 1975 Land and Water Surface Classifications to 2025 Land and Water Surface Classification

Prior Land Classifications (1975)	Acres	Proposed Land Classifications (2025)	Acres
Project Management Area	71	Project Operations (PO)	523
		Environmentally Sensitive Areas (ESA)	543
Public Use Areas	564	High Density Recreation (HDR)	635
State Wildlife Management	10,910	Multiple Resource Management – Wildlife Management (WM)	11,150
Not Classified	413		
Cheyenne-Arapaho Areas	530		
TOTAL LAND ACRES	12,488	TOTAL LAND ACRES	12,851
Prior Water Surface Classifications (1975)	Acres	Proposed Water Surface Classifications (2025)	Acres
Open Recreation	8,484	Open Recreation	7,557
		Designated No-Wake	13
		Restricted	40
TOTAL WATER SURFACE ACRES	8,484	TOTAL WATER SURFACE ACRES	7,610
TOTAL FEE	20,972	TOTAL FEE	20,461

Total Acreage differences from the 1975 total to the 2025 totals are due to improvements in measurement technology, deposition/siltation, and erosion. Totals also differ due to rounding while adding parcels.

The acreages of the conservation pool and USACE land lying above the conservation pool were measured using satellite imagery and Geographical Information System (GIS) technology. The GIS software allows for more finely tuned measurements and, thus, stated acres may vary from official land acquisition records and acreage figures published in the 1975 Public Use Plan. Some changes in acreage may also be due to erosion and siltation. A more detailed summary of changes and rationale can be found in Chapter 8.

ES.4 PLAN ORGANIZATION

Chapter 1 of the Master Plan presents an overall introduction to Canton Lake. Chapter 2 consists of an inventory and analysis of Canton Lake and associated land resources. Chapters 3 and 4 lay out management goals, resource objectives, and land classifications descriptions. Chapter 5 is the resource management plan that identifies how project lands will be managed for each land use classification. This includes current and projected overall park facility needs, an analysis of existing and anticipated resource use, and anticipated influences on overall project operation and management. Chapter 6 details special topics that are unique to Canton Lake. Chapter 7 identifies the public involvement efforts and stakeholder input gathered for the development of the Master Plan, and Chapter 8 gives a summary of the proposed changes in land and water classification from the previous master plan to the present one. Finally, the appendices include information and supporting documents for this Master Plan revision, including Land Classification and Park Plate Maps (Appendix A).

An Environmental Assessment was developed in conjunction with the Master Plan, which analyzed alternative management scenarios for Canton Lake, in accordance with federal regulations including the National Environmental Policy Act of 1969, as amended (NEPA); guidance from the Council on Environmental Quality; and USACE regulations, including 33 CFR Part 230: Procedures for Implementing NEPA. The EA is a separate document that informs this Master Plan and can be found in its entirety in Appendix B.

The EA evaluated two alternatives as follows: 1) No Action Alternative, which would continue the use of the 1975 Master Plan, and 2) Proposed Action. The EA analyzed the potential impact these alternatives would have on the natural, cultural, and human environments. The Master Plan is conceptual and broad in nature, and any action proposed in the Plan that would result in significant disturbance to natural resources or result in significant public interest would require additional NEPA documentation prior to the time of the proposed action.

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CHAPTER 1 – INTRODUCTION

1.1 GENERAL OVERVIEW

Canton Lake is located at river mile (RM) 394.3 on the North Canadian River, within the Arkansas River Basin. The damsite is in Blaine County, 2 miles north of Canton and 75 miles west of Oklahoma City, Oklahoma (Figure 1.1). Approximately 12,605 acres of fee simple land were purchased for the project. The construction of Canton Lake began in 1940, but World War II temporarily halted construction. After the war, construction resumed, and the project was completed in late 1948 and formally dedicated in May 1949.

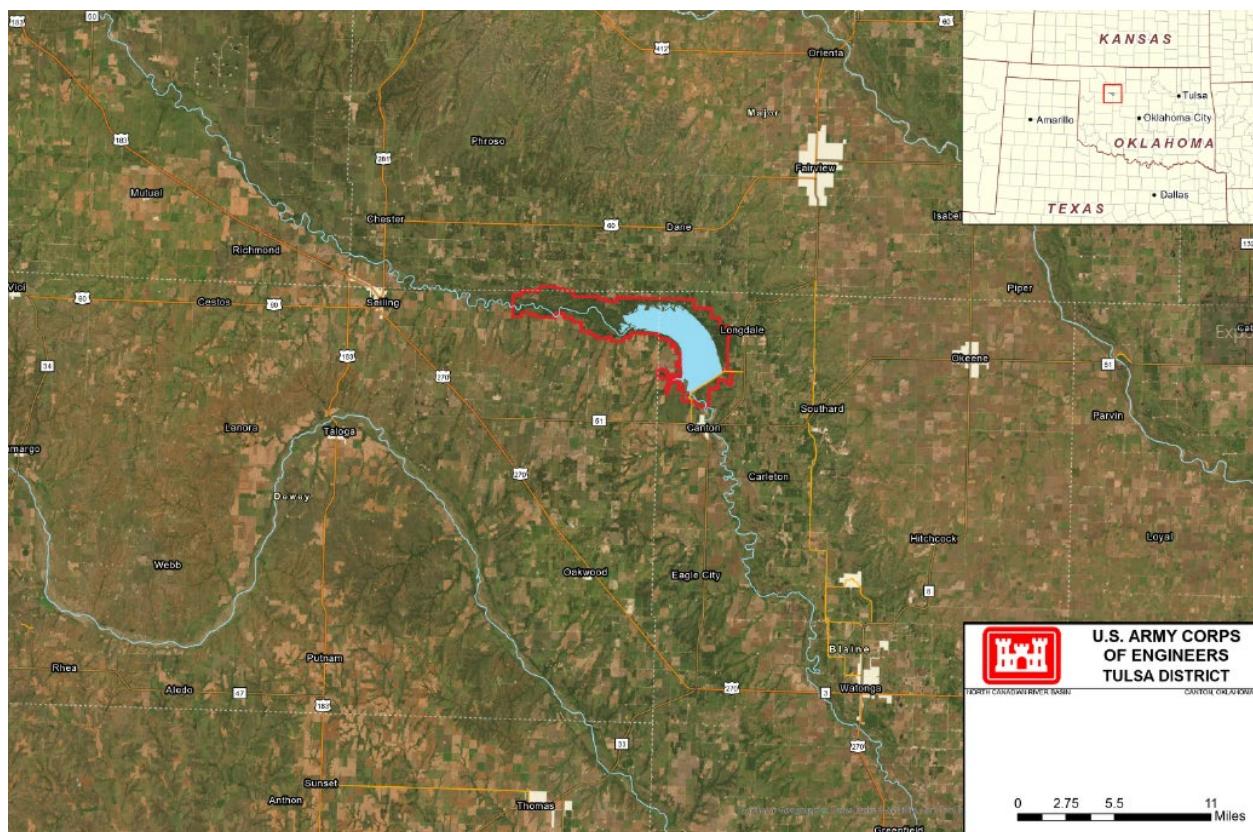


Figure 1.1 Vicinity Map of Canton Lake

Canton Lake is an integral part of the North Canadian River basin flood control plan that also includes the Optima and Fort Supply Reservoirs as well as the Oklahoma City Floodway. The total river basin is 47,700 square miles, while the drainage area upstream of Canton Lake is 12,695 square miles, of which 7,497 square miles are noncontributing. The USACE operates and maintains the dam and associated facilities and administers the Federal lands and flowage easements comprising the project through a combination of direct management and through consultation with local Tribal Nations.

The Master Plan is intended to serve as a comprehensive land and recreation management guide with an effective life of approximately 25 years. The focus of the Plan is to guide the stewardship of natural and cultural resources and make provision for outdoor recreation facilities and opportunities on federal land associated with Canton Lake as reflected in ER 1130-2-540. The Master Plan identifies conceptual types and levels of activities, but does not include designs, project sites, or estimated costs. All actions carried out by the USACE, other agencies, and individuals granted leases to USACE lands must be consistent with the Master Plan. The Plan does not address the flood risk management or water supply purposes of Canton Lake. The 1975 Canton Lake Master Plan was written as Design Memorandum No. 1C and last supplemented in 1992, serving well past the intended planning horizon of 25 years. In 1999, USACE discontinued use of the Design Memorandum system as a means of organizing the many phases of civil works projects, therefore, the term "Design Memorandum" is not used in the title of this Master Plan revision.

National USACE missions associated with water resource development projects may include flood risk management, water supply, water quality, navigation, recreation, environmental stewardship and hydroelectric power generation. Most of these missions serve to protect the built environment and natural resources of a region from the climate extremes of drought and floods. This helps to create a more resilient and sustainable region for the health, welfare, and energy security of its citizens. Mitigation, while not a formal mission at USACE lakes, may be implemented to achieve the stewardship and recreation missions. Maintaining a healthy vegetative cover and including a native prairie or tree cover where ecologically appropriate on Federal lands within the constraints imposed by primary project purposes helps reduce stormwater runoff and soil erosion, mitigates air pollution, and moderate temperatures. To this end, the USACE has developed the following statements.

The USACE Sustainability Policy and Strategic Plan states:

The U.S. Army Corps of Engineers strives to protect, sustain, and improve the natural and man-made environment of our Nation, and is committed to compliance with applicable environmental and energy statutes, regulations, and Executive Orders. Sustainability is not only a natural part of the Corps' decision processes; it is part of the culture.

Sustainability is an umbrella concept that encompasses energy, climate change and the environment to ensure today's actions do not negatively impact tomorrow. The Corps of Engineers is a steward for some of the Nation's most valuable natural resources and must ensure customers receive products and services that provide sustainable solutions that address short and long-term environmental, social, and economic considerations.

1.2 PROJECT AUTHORIZATION

Canton Lake was authorized for construction by the Flood Control Act of 1938 and approved 28 June 1938 (Public Law 75-761, 75th Congress, 3rd session H.D. 569). A provision for 69,000 acre-feet of irrigation storage was authorized by the Flood Control Act of 24 July 1946. Utilization of 38,000 acre-feet of storage for municipal water supply for Enid, Oklahoma was authorized by Flood Control Act of 30 June 1948. Section 102 of the Water Resources Development Act of 1990 (P.L. 101-640) reassigned the previously designated municipal water supply storage for Enid, Oklahoma and the irrigation storage to the City of Oklahoma City, Oklahoma.

1.3 PROJECT PURPOSE

Canton Lake is a multipurpose water resource project constructed and operated by the USACE. The project was designed to provide flood protection on the North Canadian River when operated in conjunction with the larger North Canadian River System. Canton Lake has the following primary authorized purposes:

- Flood Control
- Water Supply
- Recreation
- Fish and Wildlife
- Irrigation

Canton Lake is an integral component of the larger Arkansas Basin. In addition to these primary missions, the USACE has an inherent mission for environmental stewardship of project lands while working closely with stakeholders and partners to provide regionally important outdoor recreation opportunities. Other laws, including but not limited to Public Law 91-190, National Environmental Policy Act of 1969 (NEPA) and Public Law 86-717, Forest Cover Act, place emphasis on the environmental stewardship of Federal lands and USACE-administered Federal lands, respectively.

1.4 MASTER PLAN PURPOSE AND SCOPE

In accordance with Engineering Regulation (ER) 1130-2-550 and Engineering Pamphlet (EP) 1130-2-550, master plans are required for most USACE water resources development projects having a federally owned land base. The master plan works in tandem with the Operational Management Plan (OMP), which is the task-oriented implementation tool for the resource objectives and development needs identified in the master plan. This revision of the Master Plan is intended to bring the master plan up to date to reflect current ecological, socio-demographic, and outdoor recreation trends that are impacting the lake, as well as those anticipated to occur within the next 25 years.

The *Canton Lake Master Plan* (hereafter Plan or Master Plan) is the strategic land use management document that guides the efficient, cost-effective, comprehensive management, development, and use of recreation, natural resources, and cultural resources throughout the life of the Canton Lake project. It is a vital tool for responsible stewardship and sustainability of the project's natural and cultural resources for the

benefit of present and future generations. The Plan guides and articulates USACE responsibilities pursuant to federal laws to preserve, conserve, restore, maintain, manage, and develop the land, water, and associated resources. It is a dynamic and flexible tool designed to address changing conditions. The Plan focuses on carefully crafted resource-specific goals and objectives. It ensures that equal attention is given to the economy, quality, and needs in the management of Canton Lake resources and facilities, and that goals and objectives are accomplished at an appropriate scale.

The master planning process encompasses a series of interrelated and overlapping tasks involving the examination and analysis of past, present, and future environmental, recreational and socioeconomic conditions and trends. With a generalized conceptual framework, the process focuses on the following four primary components:

- Regional and ecosystem needs
- Project resource capabilities and suitability
- Expressed public interests that are compatible with Canton Lake's authorized purposes
- Environmental sustainability elements

It is important to note what the Master Plan does not address. Details of design, management and administration, and implementation are not addressed here but are covered in the Canton Lake OMP. In addition, the Master Plan does not address the specifics of regional water quality, shoreline management (a term used to describe primarily vegetation modification or permits by neighboring landowners), or water level management, nor does it address the operation and maintenance of prime project operations facilities such as the dam embankment, gate control outlet, and spillway. Additionally, the Plan does not address the flood risk management, water supply, or fish and wildlife purposes of Canton Lake with respect to management of the water level in the lake.

The previous Plan was sufficient for prior land use planning and management, but changes in outdoor recreation trends, regional land use, population, current legislative requirements, and USACE management policy have occurred over the past decades. Additionally, increasing fragmentation of wildlife habitat, national policies related to land management, climate change, and growing demand for recreational access and protection of natural and cultural resources are all factors affecting Canton Lake and the region in general. In response to these escalating pressures and trends, a full revision of the 1975 Master Plan is required as set forth in this Master Plan. The Master Plan revision updates land classifications and includes new resource management goals and objectives.

1.5 BRIEF WATERSHED AND PROJECT DESCRIPTION

Canton Lake is located on the North Canadian River in the Arkansas River Basin. The North Canadian River rises in the high plateau region of northeastern New Mexico near Des Moines. From its source, the stream flows eastward for about 65 miles in New

Mexico and about 241 miles across the Oklahoma and Texas Panhandles. From there, it flows in a southeasterly direction for about 537 miles in Oklahoma to its confluence with the Canadian (South Canadian) River, east of Eufaula, Oklahoma. The total length of the stream is approximately 843 miles. The North Canadian River watershed upstream of Canton Lake comprises an area of approximately 12,696 square miles, of which 7,497 square miles are noncontributing. Between Seiling and Oklahoma City, Oklahoma, the watershed is very narrow with an average width of about 10 miles. Between Oklahoma City and the mouth of the stream, the watershed widens to include the basins of Wewoka Creek and Deep Fork River.

Canton Dam consists of a rolled earth-filled structure approximately 15,140 feet long (including the service spillway) with a designed crest elevation of 1,648.0 feet, NGVD29 (see section 1.10 for further information). The spillway is a 640 foot gated concrete, gravity chute located in the right abutment. Spillway discharges are controlled by sixteen tainter gates, 40 feet wide and 25 feet tall. The outlet works consists of two sluice gates, 7 feet wide and 12 feet tall that pass through the spillway. The outlets for low-flow discharges through the dam consist of two circular, 24 inch diameter valved concrete conduits. The Canton Lake auxiliary spillway includes nine concrete fusegates, with the first wall to tip over being the center section of the spillway at pool elevation EL 1640.5 NAVD88-ft (25-feet above normal pool elevation). As the pool elevations continue to increase, gates on either side of the new opening will continue to tip downstream until the entire auxiliary structure is flowing at EL 1642.12 NAVD88-ft.

Canton Lake is a component of the multiple-purpose North Canadian River system as part of a multi-objective plan for flood control, hydropower generation, navigation, and water use and development on the Arkansas River and its tributaries in Kansas, Arkansas, and Oklahoma.

1.6 DESCRIPTION OF RESERVOIR

Based on the Pertinent Data table maintained by the Tulsa District (see Section 1.10), Canton Lake covers approximately 7,709 surface acres of water when at the top of conservation pool (1615.4 NGVD29). The deepest part of the lake is located directly upstream of the dam and is approximately 35 feet deep, while depths gradually decrease further north of the dam. The top of the flood control pool is elevation 1638.0 feet NGVD29. At the conservation pool, the lake was designed to accommodate 108,580 acre-feet.

1.7 PROJECT ACCESS

Canton Lake is easily accessed by several primary, secondary, and tertiary roads. Oklahoma (OK)-51 runs east and west along the southern edge of the lake. OK-51 splits off with OK-58 which then runs north and south to the east of the dam.

1.8 PRIOR DESIGN MEMORANDA AND PLANNING REPORTS

Design Memoranda (DM) and planning reports approve and set forth design and development plans for all aspects of the project including the prime flood risk management facilities, real estate acquisition, road and utility relocations, reservoir clearing, and the master plan for recreation development and land management prior to 1999, when the use of DMs was terminated. The *Master Plan, Canton Lake, North Canadian River, Oklahoma*, dated September 1975, presents a program for development and management of the Canton Lake area for recreation and other land and water uses. The following are DMs for Canton Lake:

- Design Memorandum No. 1C, Revised Master Plan, dated July 1975.
- Design Memorandum No. 1C, Supps and Appx, dated July 1975
- Design Memorandum No. 2, Repair of Embankment Protection Stone, dated March 1961.
- Design Memorandum No. 5, Revised Master Plan Supplements and Appendixes, dated March 1992.

1.9 PUBLIC LAWS

The following Public Laws (PL) are applicable to Canton Lake. Additional information on Federal Statutes applicable to Canton can be found in the Environmental Assessment for the Canton Lake Master Plan revision in Appendix B of this Plan.

- Flood Control Act of 1944, Section 4 PL 78-534 of this act as last amended in 1962 by Section 207 of Public Law 87-874 authorizes the USACE to construct, maintain, and operate public parks and recreational facilities in reservoir areas and to grant leases and licenses for lands, including facilities, preferably to federal, state or local governmental agencies. This law also authorized the creation of the Southwestern Power Administration (SWPA), then within the Dept. of the Interior and now within the Dept. of Energy, as the agency responsible for marketing and delivering the power generated at federal reservoir projects.
- River and Harbor Act of 1946, PL 79-525. This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.
- Flood Control Act of 1946, PL 79-526. This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes including construction of Canton Lake. This law amends PL 78-534 to include authority to grant leases to non-profit organizations at recreational facilities in reservoir areas at reduced or nominal fees.
- Flood Control Act of 1954, PL 83-780. This act authorizes the construction, maintenance, and operation of public park and recreational

facilities in reservoir areas under the control of the Department of the Army and authorizes the Secretary of the Army to grant leases of lands in reservoir areas deemed to be in the public interest.

- Fish and Wildlife Coordination Act 1958, PL 85-624. This act as amended in 1965 sets down the general policy that fish and wildlife conservation shall receive equal consideration with other project purposes and be coordinated with other features of water resource development programs. Opportunities for improving fish and wildlife resources and adverse effects on these resources shall be examined along with other purposes which might be served by water resources development.
- Rivers and Harbors Act of 1962, PL 87-874. This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.
- Historic Preservation Act of 1966, PL 89-665. This act provides for: (1) an expanded National Register of significant sites and objects; (2) matching grants to states undertaking historic and archeological resource inventories; and (3) a program of grants-in aid to the National Trust for Historic Preservation; and (4) the establishment of an Advisory Council on Historic Preservation. Section 106 requires that the President's Advisory Council on Historic Preservation have an opportunity to comment on any undertaking which adversely affects properties listed, nominated, or considered important enough to be included on the National Register of Historic Places.
- River and Harbor and Flood Control Act of 1968, PL 90-483. Mitigation of Shore Damages. Section 210 restricted collection of entrance fee at USACE lakes and reservoirs to users of highly developed facilities requiring continuous presence of personnel.
- National Environmental Policy Act of 1969 (NEPA), PL 91-190. NEPA declared it a national policy to encourage productive and enjoyable harmony between man and his environment, and for other purposes. Specifically, it declared a "continuing policy of the Federal Government.... to use all practicable means and measures...to foster and promote the general welfare, to create conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans." Section 102 authorized and directed that, to the fullest extent possible, the policies, regulations, and public law of the United States shall be interpreted and administered in accordance with the policies of the Act.
- River and Harbor and Flood Control Act of 1970, PL 91-611. Section 234 provides that persons designated by the Chief of Engineers shall have authority to issue a citation for violations of regulations and rules of the Secretary of the Army, published in the Code of Federal Regulations.

- The Water Resources Development Act (WRDA) 1986, PL 99-662. This act provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure and establishes new requirements for cost sharing.
- WRDA 1996, PL 104-303. Authorizes recreation and fish and wildlife mitigation as purposes of a project, to the extent that the additional purposes do not adversely affect flood control, power generation, or other authorized purposes of a project.

1.10 PERTINENT PROJECT INFORMATION

Table 1.1 provides pertinent information regarding key reservoir elevations and storage capacity at Canton Lake.

Table 1.1 Canton Lake Pertinent Data

Feature	Elevation (NGVD29 feet)	Area (acres)	Capacity (acre-feet)	Equivalent Runoff ⁽¹⁾ (inches)
Top of Dam	1648.0	19,996	546,166	1.97
Maximum Pool	1642.68	17,487	455,494.80	1061
Surcharge	1640.0	16,332	400,036	1.44
Top of Flood Control Pool	1638.0	15,564	370,107	1.34
Flood Control Storage	1615.4-1638.0	-	261,527	0.94
Conservation Pool	1615.4	7,709	108,580	0.39
Conservation Storage ⁽²⁾	1596.5-1615.4	-	92,519	0.33
Spillway Crest	1613.0	6,675	92,464	0.33

⁽¹⁾ Based on a contributing drainage area of 5,198 square miles.

⁽²⁾ By contract (DACP56-92-C-0001), Oklahoma City is allocated 100% of the conservation pool, with an estimated 7.1.0-mgd yield (based on 75,000 acre-feet of storage after sedimentation). The Water Resources Development Act of 1990 reassigned all municipal and industrial storage as well as all irrigation storage to the city of Oklahoma City.

CHAPTER 2 – PROJECT SETTING AND FACTORS INFLUENCING MANAGEMENT AND DEVELOPMENT PHYSIOGRAPHIC SETTING

2.1 ECOREGION OVERVIEW

Ecoregions denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources. The Environmental Protection Agency (EPA) has developed a series of maps that categorizes these regions across the United States. Levels I and II divide the North American continent into 15 and 52 regions, respectively, while Level III ecoregions represent a subdivision of those into 104 unique regions and Level IV a finer sub-classification of those. Canton Lake and its watershed are located in the Level III Central Great Plains ecoregions as illustrated in Figure 2.1 (EPA 2021).

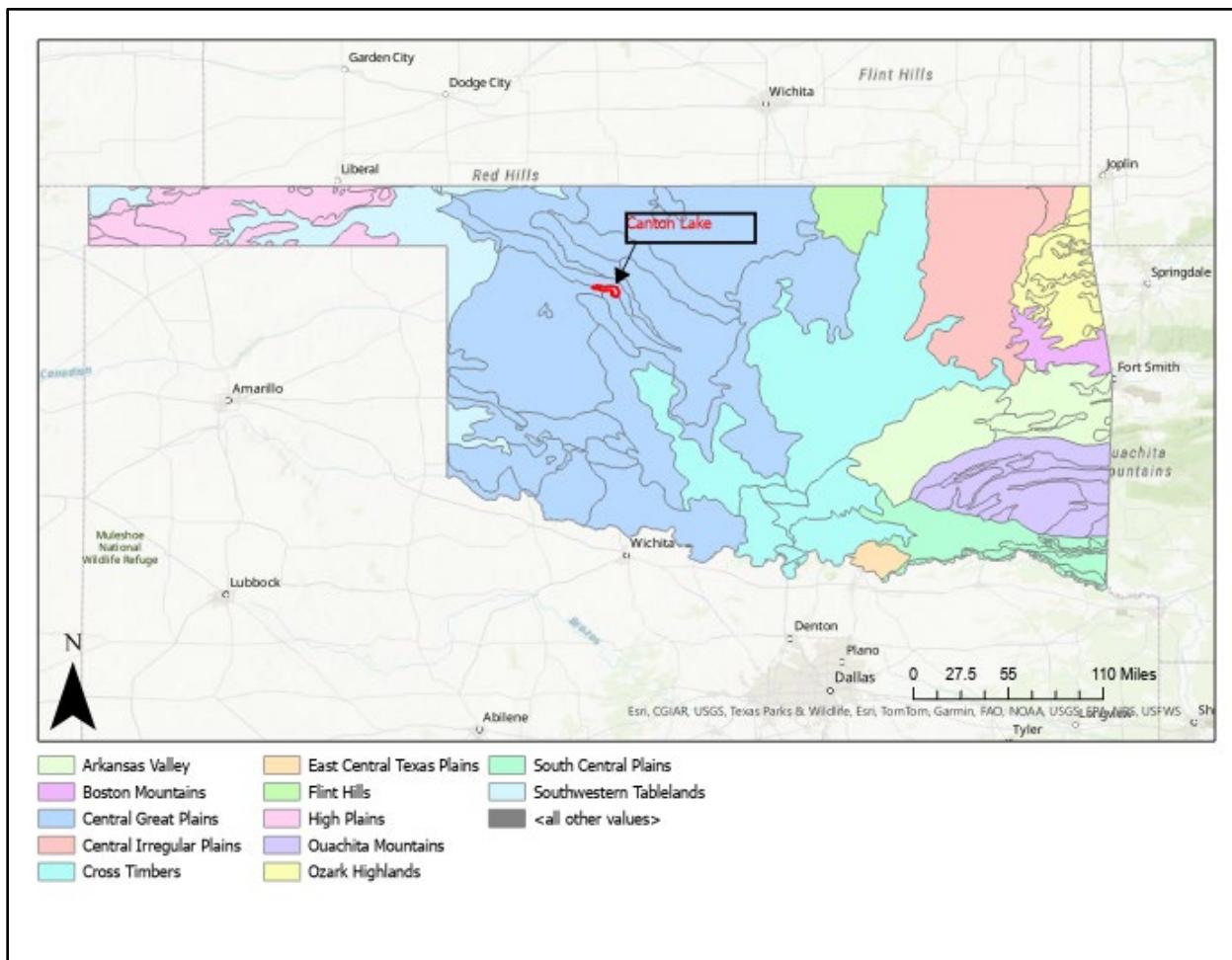


Figure 2.1 Canton Lake within Oklahoma Ecoregions

Source: EPA (2021)

The Great Plains ecoregion was once a transitional, mostly mixed-grass prairie, with some scattered low trees and shrubs in the south, much of this ecological region is

now cropland. Little bluestem, big bluestem, sideoats grama, blue grama, Indiangrass, Sand bluestem, sand dropseed was typical. What prairies exist are typically confined to managed lands like parks and wildlife management areas, as areas outside of those units had typically evolved into cropland.

2.2 CLIMATE

Colt Lake lies in the northwest part of the state of Oklahoma. The region is characterized by moderate winters and long, humid summers with high temperatures. Rainfall usually occurs as high intensity, local thunderstorms occurring primarily in the late spring and early fall months. These storms are frequently accompanied by high winds, hail, and occasional tornadoes. The mean annual temperature in nearby Woodward, Oklahoma (the nearest NOAA weather station) is about 59.9 degrees Fahrenheit (°F) (NOAA, 2021A). January, the coldest month, has an average temperature of 33.5°F and average minimum daily temperature of about 22°F. July has the highest average daily temperature of 81.5°F, and July has the highest average maximum daily temperature of 94°F (NOAA, 2020). The average length of the growing season is 194 days (Oklahoma Climatological Survey, 2025). Colt Lake lies within the USDA Plant Hardiness Zone 7A, which is determined by the winter extreme low temperatures, with 7b having normal winter lows between 5°F and 10°F (USDA, 2021).

The normal annual precipitation is approximately 32 inches with greater precipitation during spring and less precipitation during winter (Oklahoma Climatological Survey, 2025). The highest annual precipitation recorded was in 2007 at 59.23 inches, whereas the lowest annual precipitation recorded in the area was in 1956, at 11.81 inches (Oklahoma Climatological Survey, 2025). The average monthly climate data is presented in Figure 2.2, which includes the average precipitation each month and the average minimum, maximum, and daily average for each month. Watonga, Oklahoma's monthly climate normal was used to show average minimum, maximum, and daily average for each month. Watonga, Oklahoma is south from Colt Lake about 30 miles.

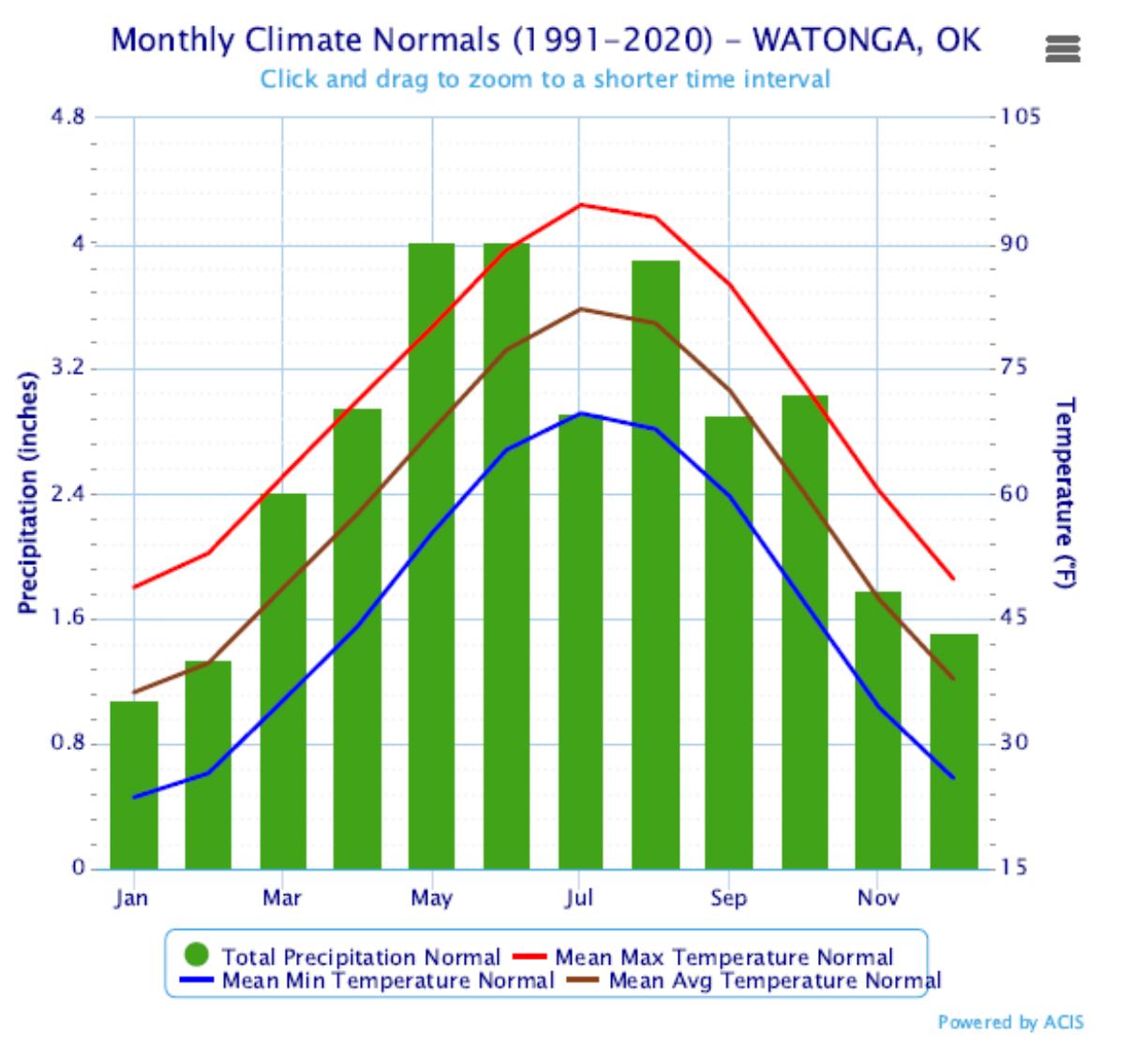


Figure 2.2 Average Monthly Climate Watonga, Oklahoma, 1991 – 2020
 Source: NOAA, 2023B.

2.3 AIR QUALITY

The U.S. Environmental Protection Agency (EPA) established nationwide air quality standards to protect public health and welfare in 1971. The Air Quality Division of the Oklahoma Department of Environmental Quality (DEQ) has adopted the National Ambient Air Quality Standards (NAAQS) as the state's air quality criteria. NAAQS standards specify maximum permissible short- and long-term concentrations of various air contaminants including primary and secondary standards for six criteria pollutants: Ozone (O_3), Carbon Monoxide (CO), Sulfur Dioxide (SO_2), Nitrogen Oxides (NO_x), particulate matter (PM10 and PM2.5), and Lead (Pb). If the concentrations of one or more criteria pollutants in a geographic area is found to exceed the regulated "threshold" level for one or more of the NAAQS, the area may be classified as a non-

attainment area. Areas with concentrations that are below the established NAAQS levels are considered either attainment or unclassifiable area. There are currently no non-attainment areas for any monitored pollutants in the State of Oklahoma including the counties around Canton Lake (DEQ, 2021).

2.4 GEOLOGY, TOPOGRAPHY AND SOILS

2.4.1 Geology

The Canton Lake region of northwest Oklahoma is located on the north flank of the Anadarko Basin, a major depositional and structural basin. Rocks that are exposed in the shallow subsurface in the region are sedimentary in type and Permian in age. Consisting of several thousand feet of red-brown shales and sandstones with thin but conspicuous layers of resistant gypsum and dolomite (Canton Dam and Lake North Canadian River WCM, 2016).

Permian bedrock formations present at the dam site are (in ascending order) the Blaine Formation, Dog Creek Shale, and Marlow Formation. During original dam construction, about 60-90 feet of basal Marlow and upper Dog Creek strata were excavated to establish the foundation for the spillway. In general, the Blaine Formation is deep below the land surface, and the Marlow Formation has been eroded or excavated from the spillway itself. These bedrock formations locally are overlain by Quaternary alluvium and terrace deposits.

The North Canadian River flows through the reservoir area in a broad, shallow, sandy valley in the Dog Creek formation. The floodplain is about 2 miles wide; the river channel being situated along its southwestern edge. The overburden in the floodplain is sand and alluvium averaging about 30 feet in thickness. The left abutment slopes gradually upward from the floodplain and is covered with sand dunes so that no distinct line of demarcation exists between it and the floodplain. The Red Beds outcrop along the right abutment which rises at a fairly gentle slope to a height of about 150 feet above the stream. Tributaries entering from this abutment have cut number of steep-sided gulches, some of which extend back into the upland surface southwest of the valley as much as a half a mile (Canton Dam and Lake North Canadian River WCM, 2016).

2.4.2 Topography

The topography of the North Canadian River basin varies from rolling plateaus and prairies in New Mexico to gently sloping plains in the Texas and Oklahoma Panhandles to wooded hills in eastern Oklahoma. The lower portion of the watershed is well timbered, but there are few trees west of Oklahoma City. The elevation of the headwater region is about 6,800 feet, NGVD 29, and begins in the foothills of Sierra Grande Volcano near Des Moines, New Mexico, while the elevation of the river mouth is about 500 feet, NGVD 29. Slopes of the North Canadian River vary from about 18 feet per mile in the headwater region to about 4 feet per mile in the reach from Woodward, Oklahoma, to Canton Lake. (Canton Dam and Lake North Canadian River WCM, 2016).

2.4.3 Soils

The Natural Resources Conservation Service NRCS Web Soil Survey (NRCS 2022) reports 59 soil types occurring within Canton Lake project lands. Table 2.1 lists the acreage and farmland status associated with each soil and surface type in the detention area while Figure 2.3 shows the location of the soils.

The main soil series within Canton Lake Project Lands is the Gracemont silty clay loam, saline, 0 to 1 percent slopes, occasionally flooded. Of the 59 soil types at Canton Lake, this soil association makes up 12.10 percent of soils found and is not a prime farmland soil. The Gracemont series consists of very deep, somewhat poorly drained, moderately or moderately rapidly permeable soils formed in calcareous sandy and loamy alluvium of Recent age (soilseries, 2002).

Table 2.1 Acres of Surface Soil Types within Canton Lake Project Lands

Soil Type	Number of Acres	Percent Total	Farmland Status
Gracemont silty clay loam, saline, 0 to 1 percent slopes, occasionally flooded	2,443.10	12.10%	Not prime farmland
Lincoln loamy fine sand, 0 to 1 percent slopes, occasionally flooded	320.1	1.60%	Not prime farmland
Cyril fine sandy loam, 0 to 1 percent slopes, occasionally flooded	398.5	2.00%	All areas are prime farmland
Canadian loam, 0 to 1 percent slopes, rarely flooded	53.8	0.30%	All areas are prime farmland
Canadian fine sandy loam, 0 to 1 percent slopes, rarely flooded	8.8	0.00%	All areas are prime farmland
Carey silt loam, 1 to 3 percent slopes	20.5	0.10%	All areas are prime farmland
Carwile-Eda complex, 0 to 5 percent slopes	16.6	0.10%	Not prime farmland
Carwile-Lovedale complex, 0 to 1 percent slopes	90.3	0.40%	Not prime farmland
Large dam	128.7	0.60%	Not prime farmland
Dill fine sandy loam, 0 to 1 percent slopes	138.7	0.70%	All areas are prime farmland
Dill fine sandy loam, 1 to 5 percent slopes	117.9	0.60%	All areas are prime farmland
Dill fine sandy loam, 5 to 8 percent slopes	33.8	0.20%	All areas are prime farmland
Daycreek loamy fine sand, 0 to 1 percent slopes	26.2	0.10%	Not prime farmland
Hardeman fine sandy loam, 1 to 3 percent slopes, cool	53.8	0.30%	All areas are prime farmland
Hardeman fine sandy loam, 3 to 5 percent slopes, cool	13.4	0.10%	All areas are prime farmland
Hardeman fine sandy loam, 5 to 8 percent slopes, cool	20.9	0.10%	All areas are prime farmland

Soil Type	Number of Acres	Percent Total	Farmland Status
Hardeman fine sandy loam, 8 to 15 percent slopes, cool	0.7	0.00%	Not prime farmland
Goodnight fine sand, 1 to 30 percent slopes	78	0.40%	Not prime farmland
Grant silt loam, 1 to 3 percent slopes	37.2	0.20%	All areas are prime farmland
Grant silt loam, 3 to 5 percent slopes	54.2	0.30%	All areas are prime farmland
Grant silt loam, 5 to 8 percent slopes	0.3	0.00%	Not prime farmland
Grant silt loam, 5 to 8 percent slopes, eroded	33.2	0.20%	Not prime farmland
Lela clay, 0 to 1 percent slopes, occasionally flooded	53.8	0.30%	All areas are prime farmland
Waldeck-Drummond complex, 0 to 1 percent slopes, occasionally flooded	35.1	0.20%	All areas are prime farmland
Gaddy loamy fine sand, 0 to 1 percent slopes, occasionally flooded	146.3	0.70%	Not prime farmland
Lincoln clay loam, 0 to 1 percent slopes, frequently flooded	644.6	3.20%	Not prime farmland
Grandfield fine sandy loam, 1 to 3 percent slopes	23.2	0.10%	All areas are prime farmland
Grandfield fine sandy loam, 1 to 3 percent slopes, moderately eroded	1.6	0.00%	Not prime farmland
Grandfield fine sandy loam, 3 to 5 percent slopes	0	0.00%	All areas are prime farmland
Grandfield fine sandy loam, 3 to 5 percent slopes, eroded	19.1	0.10%	Not prime farmland
Grandfield fine sandy loam, 5 to 8 percent slopes	4.7	0.00%	All areas are prime farmland
Grandfield fine sandy loam, 3 to 5 percent slopes	11.6	0.10%	All areas are prime farmland
Nobscot sand, 5 to 20 percent slopes	13.2	0.10%	Not prime farmland
Nobscot sand, 0 to 5 percent slopes	637.7	3.20%	Not prime farmland
Pits	5.5	0.00%	Not prime farmland
Eda sand, 0 to 3 percent slopes	29.9	0.10%	Not prime farmland
Eda sand, 3 to 8 percent slopes	165.6	0.80%	Not prime farmland
Eda sand, 0 to 3 percent slopes	559.3	2.80%	Not prime farmland
Eda sand, 3 to 8 percent slopes	330.7	1.60%	Not prime farmland
Devol fine sandy loam, 0 to 3 percent slopes	42.6	0.20%	All areas are prime farmland
Eda-Tivoli sands, 1 to 12 percent slopes	139.5	0.70%	Not prime farmland
Eda sand, 0 to 3 percent slopes	3.5	0.00%	Not prime farmland
Eda sand, 3 to 8 percent slopes	39.3	0.20%	Not prime farmland
Quinlan-Woodward complex, 3 to 5 percent slopes, eroded	4.8	0.00%	Not prime farmland
Quinlan-Woodward complex, 5 to 20 percent slopes	115	0.60%	Not prime farmland

Soil Type	Number of Acres	Percent Total	Farmland Status
Quinlan-Woodward complex, 5 to 20 percent slopes	211.6	1.10%	Not prime farmland
Renthin-Grainola complex, 3 to 5 percent slopes, eroded	0.9	0.00%	Not prime farmland
Lovedale fine sandy loam, 1 to 3 percent slopes	37.5	0.20%	All areas are prime farmland
Lovedale fine sandy loam, 3 to 5 percent slopes	10.5	0.10%	All areas are prime farmland
Lesho clay loam, 0 to 1 percent slopes, occasionally flooded	514.2	2.60%	All areas are prime farmland
St. Paul silt loam, 1 to 3 percent slopes	8.6	0.00%	All areas are prime farmland
Gracemore loam, 0 to 1 percent slopes, occasionally flooded	16.2	0.10%	Not prime farmland
Tivoli fine sand, 5 to 30 percent slopes	56	0.30%	Not prime farmland
Tivoli fine sand, 5 to 30 percent slopes	32.6	0.20%	Not prime farmland
Tivoli fine sand, 5 to 30 percent slopes	2,316.90	11.50%	Not prime farmland
Water	6,049.00	30.10%	Not prime farmland
Water	1,529.50	7.60%	Not prime farmland
Water	29.4	0.10%	Not prime farmland
Waldeck fine sandy loam, 0 to 1 percent slopes, occasionally flooded	506.2	2.50%	All areas are prime farmland
Pocasset loam, 0 to 1 percent slopes, occasionally flooded	689.4	3.40%	All areas are prime farmland
Woodward loam, 3 to 5 percent slopes	22	0.10%	All areas are prime farmland
Dill fine sandy loam, 0 to 3 percent slopes	63.9	0.30%	All areas are prime farmland
Gracemont and Gracemore soils, 0 to 1 percent slopes, frequently flooded	544.9	2.70%	Not prime farmland
Westola fine sandy loam, 0 to 1 percent slopes, rarely flooded	330.4	1.60%	All areas are prime farmland

Source: Soil Classes (NCRS, 2022)

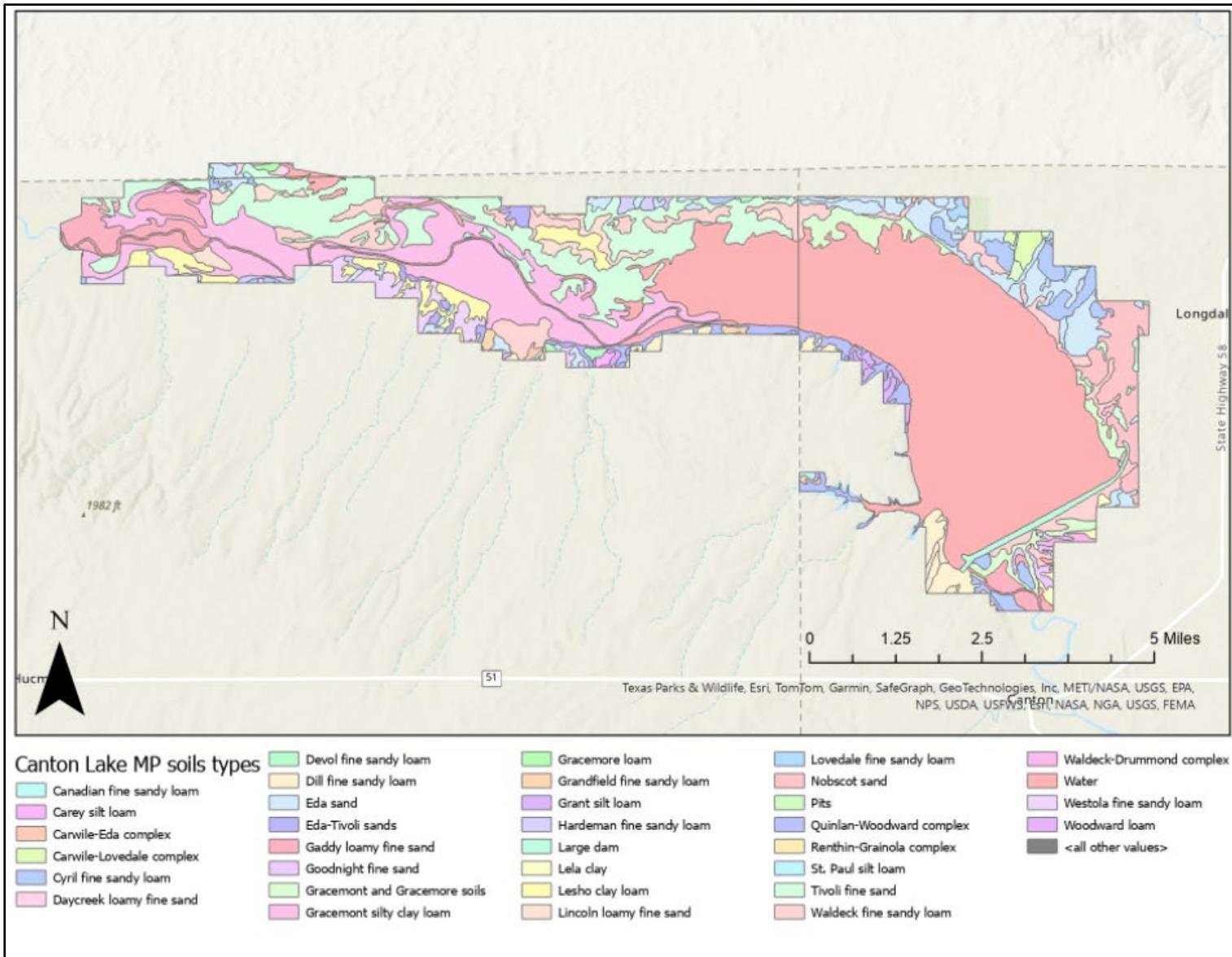


Figure 2.3 Canton Lake NRCS Soil Map

2.4.4 Prime Farmland

As required by Section 1541(b) of the Farmland Protection Policy Act (FPPA) of 1980 and 1995, 7 U.S.C. 4202(b), federal and state agencies, as well as projects funded with federal funds, are required to (a) use the criteria to identify and take into account the adverse effects of their programs on the preservation of farmland, (b) consider alternative actions, as appropriate, that could lessen adverse effects, and (c) ensure that their programs, to the extent practicable, are compatible with state and units of local government and private programs and policies to protect farmland.

There are several soil types in the study area that are considered prime farmland soils or soils associated with farmlands of state importance. There are agricultural leases on ODWC managed lands but not on any USACE managed fee lands at Canton Lake.

2.5 WATER RESOURCES

2.5.1 Surface Water

The North Canadian River rises in the high plateau region of northeastern New Mexico near Des Moines. From its source, the stream flows eastward for about 65 miles in New Mexico and about 241 miles across the Oklahoma and Texas Panhandles. From there, it flows in a southeasterly direction for about 537 miles in Oklahoma to its confluence with the Canadian (South Canadian) River, east of Eufaula, Oklahoma, at RM 38.5. Upstream from the mouth of Seneca Creek in New Mexico, the river is locally known as Corrumpa Creek. From the Seneca Creek confluence to the mouth of Wolf Creek in Oklahoma, it is also called Beaver River. The total length of the stream is approximately 843 miles. The North Canadian River watershed upstream of Canton Lake comprises an area of approximately 12,695 square miles, of which 7,497 square miles are noncontributing. The western portion of the basin above Seiling, Oklahoma, accounts for approximately two-thirds of the entire watershed. Between Seiling and Oklahoma City, Oklahoma, the watershed is very narrow with an average width of about 10 miles. Between Oklahoma City and the mouth of the stream, the watershed widens to include the basins of Wewoka Creek and Deep Fork River. Coldwater Creek, Palo Duro Creek, and Wolf Creek are the most important flood-producing tributaries in the upper basin.

2.5.2 Wetlands

Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, and under normal circumstances these wetlands do support this vegetation type. Defined within the Clean Water Act (CWA), wetlands are a subset of the Waters of the United States that may be subject to regulation under Section 404 of the CWA (40 CFR 230.3). Jurisdiction for these waters is addressed with the USACE and EPA.

The National Wetlands Inventory (NWI) established by US Fish and Wildlife Service (USFWS) is used to identify wetland types in a USACE water resource project area. The NWI was used to identify and calculate wetland acreage within the fee boundary of the project. Table 2.2 quantifies the number of acres per wetland type and Figure 2.4 displays the ecological habitat types at Canton Lake based on National Land Cover Data from USGS including wetland habitat types.

Table 2.2 Total Acres of Wetland and Open Water at Canton Lake

Wetland Types	Acres
Forested/Shrub Wetland	540.31
Herbaceous Riparian	5.10
*Open Water	7326.78
Freshwater Emergent Wetland	1199.04
Freshwater Forested/Shrub Wetland	1956.78
Freshwater Pond	115.13
Other	372.80
Total Acres of Wetlands	11,516.54

*These totals are based on USGS calculations and differ from the official or calculated acres reflected in other parts of this document.

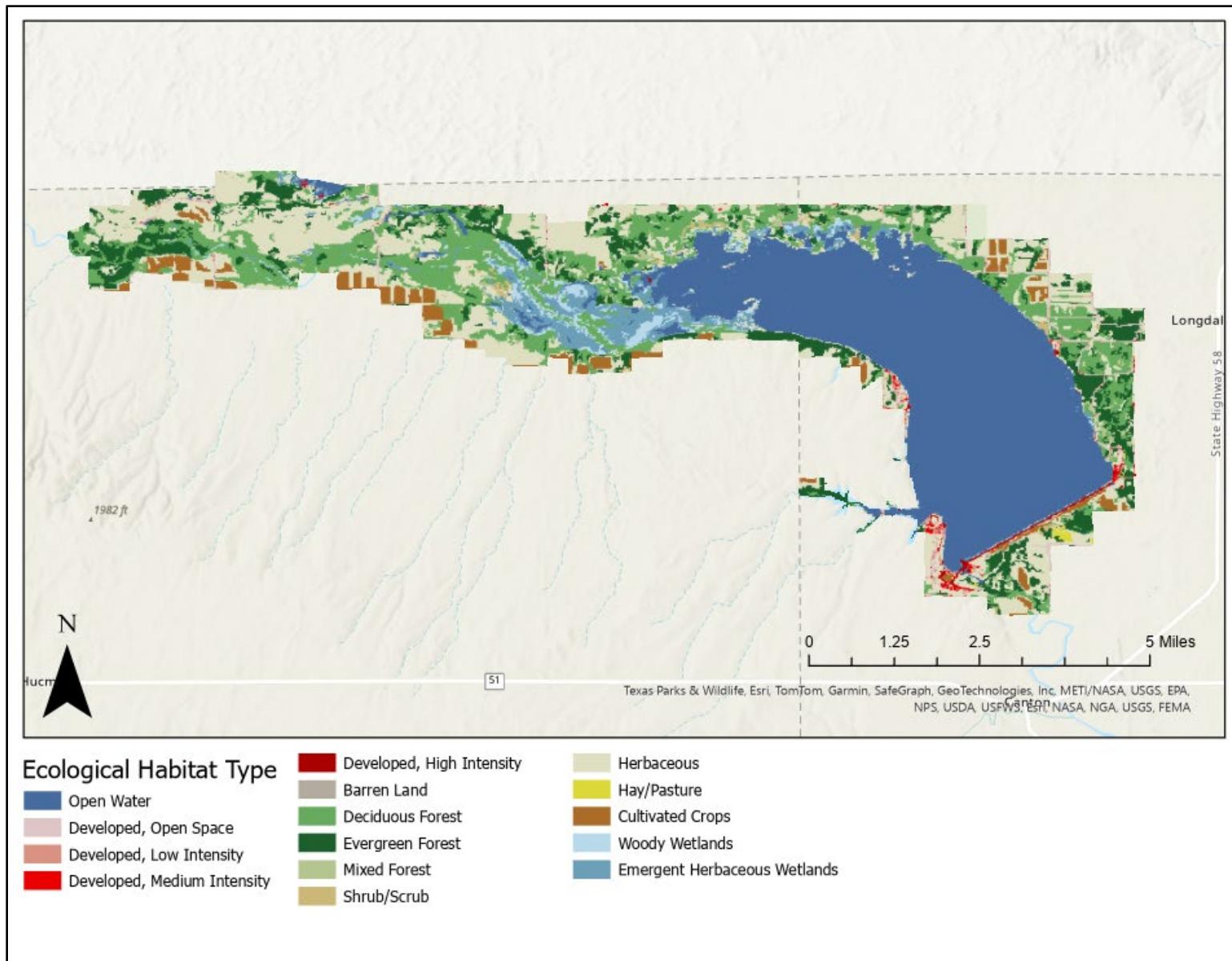


Figure 2.4 Ecological Habitat Types at Canton Lake

2.5.3 Groundwater

It is likely that a sizeable deposit or deposits of bedded rock salt (the Yelton Salt) originally existed in the lower part of the Dog Creek Shale beneath Canton Lake. The salt was dissolved by ground water in the distant geologic past, resulting in fracturing, subsidence, collapse, and flow of overlying materials into the underground cavities and voids. Eventually, the broken fragments of shale and interbedded (or overlying) siltstone, sandstone, dolomite, and gypsum were reconsolidated as brecciated rock. The clay, shale, and fine-grained sand making up the matrix around the clasts most likely were deposited by ground water that once flowed around the fragments and through voids during or shortly after brecciation. This is well demonstrated by sandstone matrix encountered in some of the borings; bedding and cross bedding in some of the sandstone matrix indicates that a water current was present at the time of deposition of matrix between the clasts of shale and other rock types.

There is no evidence that Yelton Salt, or similar layers of rock salt, now exist in the subsurface beneath Canton Lake, or any location in the region. Obviously, the salt dissolution and brecciation occurred long ago, and the clasts and matrix in the Dog Creek Shale at Canton Lake have been completely re-cemented into a competent rock. Although dissolution of gypsum is also known to be responsible for caving of overlying beds and subsequent formation of breccias in some parts of northwest Oklahoma, the underlying Blaine gypsum beds here appear to be undisturbed, intact, and non-karstic. Therefore, dissolution of pre-existing Yelton Salt beds (not the Blaine gypsum beds) is regarded as the probable cause for brecciation in the Dog Creek.

2.5.4 Hydrology

Surface waters are categorized by hydrologic units. Hydrologic units are classified by the United States Geologic Survey (USGS) using a Hydrologic Units Code (HUC) system. The units are classified from largest HUC with a two-digit region (i.e., the Arkansas-White-Red Region), encompassing the largest area, to a twelve-digit sub-watershed HUC. Canton Lake is classified by sub-watersheds as follows:

- 11 (HUC 2: Region) – Arkansas-White-Red Region
- 1110 (HUC 4: Sub-region) – Red-Sulphur
- 111003 (HUC 6: Basin) – Lower North Canadian
- 11100301 (HUC 8: Sub Basin) – Middle North Canadian
- 1110030104 (HUC 10: Watershed) - Canton Lake – North Canadian River
- 1110030105 (HUC 10: Watershed)
- 111003010407 (HUC 12: Sub-watershed) – Upper Canton Lake – North Canadian River
- 111003010408 (HUC 12: Sub-watershed) – Lower Canton Lake – North Canadian River
- 111003010503 (HUC 12: Sub-watershed) – North Canadian River

Most major storms in the Canton Lake drainage basin have occurred in April through June or September through November. Three types of storms produce precipitation over the basin: (1) thunderstorms, (2) frontal storms, and (3) remnants of hurricanes. The largest storm of the 91 year period of record (1923 to 2014) occurred in August 1995 and produced approximately 9.74 inches of rain in the basin. Time of year and antecedent soil moisture conditions are also major factors that determine the amount of runoff from a given storm.

There is very little flood data available on the North Canadian River prior to 1914. General flooding results when storms occur over a large portion of the watershed; however, such storms are infrequent. Floods of considerable magnitude have occurred in the upper and central portions of the basin without causing flooding further downstream. Occasional intense storms have occurred over small tributary areas causing flooding on the main stem for a considerable distance downstream. Prior to the construction of Fort Supply Lake, Wolf Creek contributed heavily to flood flows in the lower reaches of the North Canadian River.

2.5.5 Water Quality

Designated beneficial uses of the impoundment created by Canton Lake include Public and Private Water Supply, Fish and Wildlife Propagation as a Warm Water Aquatic Community, Agriculture, Primary Body Contact Recreation, and Aesthetics (OAC 2020a). Based on the 2022 Integrated Water Quality Assessment prepared by the Oklahoma Department of Environmental Quality (ODEQ 2022), Canton Lake is listed as impaired by turbidity affecting Fish and Wildlife Propagation as a Warm Water Aquatic Community.

USACE conducted water quality sampling at Canton Lake, OK in 2021. All efforts indicated generally well-oxygenated conditions with weak summer month thermal stratification, and moderately reduced water clarity. An assessment of priority pollutant metals indicated the consistent presence of arsenic, probably from natural background sources, below concentrations of concern.

2.6 HAZARDOUS MATERIALS AND SOLID WASTE

There are no hazardous or solid waste advisories for Canton Lake.

2.7 HEALTH AND SAFETY

Canton Lake's authorized purposes include flood control, water supply, recreation, fish and wildlife, and irrigation. Compatible uses incorporated in project operation management plans include conservation and fish and wildlife habitat management components. The USACE, with some assistance from the Oklahoma Highway Patrol, Oklahoma Department of Wildlife Conservation (ODWC), and USFWS, has established public outreach programs to educate the public on water safety and conservation of natural resources. In addition to the water safety outreach programs, the project has established recreation management practices to protect the public.

These include safe boating and swimming regulations, and speed limit and pedestrian signs for park roads. Canton Lake also has solid waste management plans in place for camping and day use areas that are maintained by the USACE.

2.8 ECOREGION AND NATURAL RESOURCE ANALYSIS

2.8.1 Natural Resources

Canton Lake lies within the Central Great Plains – Pleistocene Sand Dunes and Central Great Plains – Rolling Red Hills ecoregion (Level III). The Central Great Plains – Prairie Tableland ecoregion extends from Nebraska to central Texas, passing through the western half of Oklahoma. Grasslands cover most of the ecoregion with woodland areas along the ravines and streams. The native grassland species in the Central Great Plains are little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), and several other short grass species (ODWC, 28-29).

Riparian/Bottomland Hardwood Forest – Riparian/Bottomland hardwoods are found along rivers and streams, mostly in broad floodplains. They are commonly found in areas where the rivers or streams are flooding beyond their channel confines. Common species found in riparian/bottomland hardwood forest can be made up of different Gum (*Nyssa* sp.), Oak (*Quercus* sp.), and Bald Cypress (*Taxodium distichum*). This habitat type acts as a natural buffer between uplands and adjacent water bodies, they act as natural filters of nonpoint source pollutants.

This region like so many other ecological regions in Oklahoma has undergone significant changes in the past 150 years. Although habitat for wildlife is present throughout the ecological regions as a whole, populations vary considerably within sub-regions. The diversity and configuration of the plant communities on the landscape influence wildlife populations. Other factors include fragmentation of once continuous habitat into smaller land holdings; competition for food and cover with livestock; conversion of woodland habitat to improved pastures, or urban and rural developments; and lack of proper wildlife and habitat management.

2.8.2 Vegetation Resources

The Texas Parks and Wildlife Division (TPWD) Wildlife Habitat Assessment Protocol (WHAP) was used to assist in the preparation of the Master Plan. The WHAP assessment was developed to allow a qualitative, holistic evaluation of wildlife habitat for particular tracts of land and measures key components that contribute to the ecological condition of the evaluated point and resulting overall suitability for wildlife.

The assessment was conducted June 15-18, 2024 at Canton Lake by an interdisciplinary USACE team consisting of USACE biologists and park rangers. Sixty-five WHAP survey point locations were selected and surveyed based on areas believed or known to have representative habitat types and features based on aerial imagery from existing GIS data as well as from local knowledge of the area. The purpose of the survey was to quickly assess wildlife habitat quality within the USACE Canton Lake fee-

owned property. The highest score a site can receive is 1.00 while the lowest is 0.03, while a score of 0 represents a site skipped and not incorporated into the report calculations. The scores are not species dependent but rather diversity dependent. The data gathered from this survey helped to quantifiably describe the general habitat characteristics and identify unique/high quality areas found within USACE Canton Lake Fee Boundary. This data helped with revising the land classification based on what areas needed the most protection. Three major habitat types were selected and assessed at Canton Lake and include riparian/bottomland hardwood forests (BHF), grasslands, and upland forests.

The two most abundant habitat types surveyed for the WHAP were upland forests and riparian/bottomland hardwood forest. To evaluate all habitat types on an even scoring basis, upland forest and grassland scores were normalized by dividing their original scores by the maximum possible score for their respective habitat types. These habitat types had the highest average scores, with average total scores within 1 point of each other. This reflects how normalizing efforts on the data has helped to evaluate sites on an even scoring basis. The WHAP assessment report can be found in Appendix C of this Plan.

2.8.3 Fisheries and Wildlife Resources

Canton Lake provides an improved fishery over the natural river, allowing some species of sport fish to flourish in contrast to previous natural river conditions. Major species that are present in the lake include: Walleye (*Sander vitreus*), Black Crappie (*Pomoxis nigromaculatus*), White Crappie (*Pomoxis annularis*), Channel Catfish (*Ictalurus punctatus*), Blue Catfish (*Ictalurus furcatus*), Flathead Catfish (*Pylodictis olivaris*), Largemouth Bass (*Micropterus salmoides*), White Bass (*Morone chrysops*), Striped Bass (*Morone saxatilis*), Bluegill (*Lepomis macrochirus*), Green Sunfish (*Lepomis cyanellus*), Common Carp (*Cyprinus carpio*), Buffalo (*Ictiobus cyprinellus*), and Freshwater Drum (*Aplodinotus grunniens*).

Common wildlife species includes: Whitetail Deer; Bobwhite Quail; Mourning Dove; Cottontail Rabbit; Wild Turkey; Migratory Waterfowl that includes Canada Geese; Snow Geese; White-fronted Geese and numerous species of ducks; Fox Squirrel; Feral Hogs and Coyote. Black-tailed Prairie Dog, Osprey, Bald Eagle, spotted skunks, western chicken turtle, five-lined skinks, scissor-tailed fly catchers, painted buntings.

Some wildlife habitat was inundated due to impoundment; however, wildlife management of lake perimeter lands strives to replace these losses. Hunting is allowed throughout most of the wildlife management areas. While there are no public parks available for hunting, all of the campgrounds except for Canadian campground are adjacent to hunting areas that are managed by the Oklahoma Department of Wildlife Conservation. There is also an 80 acre tract of land along the lake side of Thunder Road that is USACE managed land open to hunting of all species which may be legally taken during legal open seasons by shotgun, with pellets, or by archery only. Hunting at Canton Lake is for Whitetail Deer; Bobwhite Quail; Mourning Dove; Cottontail Rabbit;

Wild Turkey; Migratory Waterfowl that includes Canada Geese; Snow Geese; White-fronted Geese and numerous species of ducks; Fox Squirrel; Feral Hogs and Coyote.

2.8.4 Threatened and Endangered Species

The Endangered Species Act was enacted to provide a program for the preservation of endangered and threatened species and to provide protection for the ecosystems upon which these species depend for their survival. USFWS is the primary agency responsible for implementing the Endangered Species Act and is responsible for birds and other terrestrial and freshwater species. USFWS responsibilities under the Endangered Species Act include (1) the identification of threatened and endangered species; (2) the identification of critical habitats for listed species; (3) implementation of research and recovery efforts for these species; and (4) consultation with other Federal agencies concerning measures to avoid harm to listed species.

An endangered species is officially recognized by USFWS as being in danger of extinction throughout all or a significant portion of its range. A threatened species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Proposed species are any species of fish, wildlife, or plant that is proposed in the Federal Register to be listed under Section 4 of the Endangered Species Act. Species may be considered eligible for listing as endangered or threatened when any of the five following criteria occur: (1) current/imminent destruction, modification, or curtailment of their habitat or range; (2) overuse of the species for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; and (5) other natural or human-induced factors affecting their continued existence.

In addition, USFWS has identified species that are candidates for listing as a result of identified threats to their continued existence. The candidate designation includes those species for which USFWS has sufficient information to support proposals to list as endangered or threatened under the Endangered Species Act; however, proposed rules have not yet been issued because such actions are precluded at present by other listing activity. Although not afforded protection by the Endangered Species Act, candidate species may be protected under other federal or state laws.

By protecting a specific species, the USFWS and National Marine Fisheries Service (NMFS) may list them as endangered, threatened, listed, migratory, and or protected. A species can have more than one protection measure with the exclusion of endangered, threatened, and listed. A species cannot be both endangered and threatened; however, a species can be endangered, migratory and protected.

- Endangered is officially recognized by USFWS as being in danger of extinction throughout all or a significant portion of its range. Under this protection measure, a species cannot be taken, essential habitat altered and destroyed, nor transported without a permit. Take means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct” (USFWS, 2020B).

- Threatened means any species recognized by the USFWS as being likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Under this protection measure, a species cannot be taken, essential habitat altered and destroyed, nor transported without a permit.
- Candidate is a species for which the USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposal to list, but issuance of a proposed rule is currently precluded by higher priority listing actions.
- Protected means that there are other Federal laws and regulations protecting the species than the Endangered Species Act. Examples include Bald and Golden Eagle Protection Act, Lacey Act, and Migratory Bird Treaty Act. Just because a species is listed as migratory doesn't automatically qualify it as protected, it must be protected by more than one law.
- Migratory means it applies specifically to migratory birds. The law that governs these species is the Migratory Bird Treaty Act. The USFWS may list a species under "Similarity of Appearance (Threatened)" because of the species' similarity of appearance to another species that is currently listed as threatened. Under this classification these species will not have to go through Section 7 Consultation of the Endangered Species Act because they are not biologically endangered. However, under this listing category, the species may be protected by Section 9 of the Endangered Species Action, which primarily prohibits the "taking" of endangered species of fish and wildlife.

The USFWS's Information for Planning and Consultation (IPaC) database (USFWS, 2025) lists the threatened and endangered species, and trust resources that may occur within the Canton Lake Federal Fee Boundary (see USFWS Species List and the IPaC Report in Appendix C). Based on the IPaC report, there are 5 federally listed, proposed, or candidate species that could be found within Canton Lake (USFWS, 2022A). A list of these species is presented in Table 2.3. There is no Critical Habitat designated within or near Canton Lake.

Table 2.3 Federally Listed Threatened & Endangered Species with Potential to Occur at Canton Lake

Common Name	Scientific Name	Federal Status	State Status
Lesser Prairie-chicken	<i>Tympanuchus pallidicinctus</i>	Threatened	Not Listed
Monarch Butterfly	<i>Danaus plexippus</i>	Proposed Threatened	Not Listed
Piping Plover	<i>Charadrius melanotos</i>	Threatened	Not Listed
Rufa Red Knot	<i>Calidris canutus rufa</i>	Threatened	Not Listed
Whooping Crane	<i>Grus americana</i>	Endangered	Not Listed

The Lesser Prairie-chicken (*Tympanuchus pallidicinctus*) is listed as threatened in Northern Distinct Population Segments (DPS) and endangered in the Southern DPS (USFWS, 2022). It is a species of prairie grouse that is recognized for its feathered tarsi, stout build, ground-dwelling habit, and lek mating behavior. Characterized by its pattern of alternating brown and buff-colored barring, males have long tufts of feathers on the sides of their neck, termed pinnae, which are erected during courtship displays. Pinnae are smaller and less prominent in females. Males also display brilliant yellow supraorbital eyecombs and dull reddish esophageal air sacs during courtship displays (USFWS, 2022).

The Monarch butterfly (*Danaus plexippus*) is listed as a proposed threatened species wherever it is found (USFWS, 2022D). It is an orange butterfly with black stripes and white dots on its wings, whose span can be up to 10 cm (NatureServe, 2022A). Its breeding habitat consists primarily of milkweed species (*Asclepias* spp.), which larvae feed exclusively. When it is in North America and is migrating, the species can be found pretty much wherever blooming flowers are. Canton Lake and its federal fee boundary does contain an abundance of blooming flowers and milkweed; this along with numerous recent sightings confirms that this species is common within the area when the species is migrating and during breeding season.

The piping plover (*Charadrius melanotos*) is a shorebird listed as endangered in the watershed of the Great Lakes of North America and threatened in the remainder of its range, which includes the Northern Great Plains, the Atlantic Coast, the Gulf Coast, the Bahama Islands, and the West Indies (USFWS, 1996).

The Northern Great Plains population of piping plover spends up to 10 months a year on its wintering ground along the Gulf Coast and arrives on prairie breeding grounds in early May. During migration periods, they use large rivers, reservoir beaches, mudflats, and alkali flats (NatureServe, 2020D). They feed on a variety of aquatic and terrestrial invertebrates. The sandy beaches within the study area could provide suitable habitat during the plovers' spring and fall migrations. Despite the availability of habitat and the location of the lake within the species known migratory route the occurrence of the species within the project area is considered to be rare due to the lack of recent sightings.

The red knot (*Calidris canutus rufa*) is a migratory shorebird listed as threatened wherever found (USFWS, 2022I). Although sightings are rare, the project area is listed as a location where the red knot is “known or believed to occur” and is located within the probable migratory path, between breeding in the Arctic tundra and winter habitats in the southern U.S. and Central and South America. Red knots forage along sandy beaches and mud flats, and this species may use the study area for temporary stopover and foraging (NatureServe, 2022F). The bare sandy shoreline along Canton Lake could provide suitable habitat during the red knot’s spring and fall migrations. Although there is available habitat and the project area is within its known range, the species is considered rare at Canton Lake due to lack of recent sightings.

The Whooping crane (*Grus americana*) occurs only in North America and listed as endangered (USFWS, 2022L), within the Canton Lake fee boundary as a location where the species may occur. There are four geographically distinct populations of Whooping Crane that exist in the wild: Aransas Wood Buffalo Population (migrates between Aransas National Wildlife Refuge on the Texas Coast and Wood Buffalo National Park in Alberta, Canada), Central Florida, Eastern Migratory Population (migrates between Wisconsin and Florida), and White Lake, Louisiana. The natural population nests in Wood Buffalo National Park and adjacent areas in Canada and winters in coastal marshes in Texas at Aransas.

2.8.5 Oklahoma Natural Heritage Inventory

The Oklahoma Natural Heritage Inventory (ONHI), administered by the University of Oklahoma (OU) (2022), manages and disseminates occurrence of information on rare species, native plant communities, and animal aggregations in Oklahoma to help guide project planning efforts. An official request via email was made requesting this information for the Canton Lake project area. In the inventory given to USACE, ONHI indicates that there are no federally endangered, threatened, and protected species that are known to occur within the vicinity Canton Lake Federal Fee Boundary. (*Arkansas wheeleri*) (ONHI, 2022).

The species identified as Threatened, Endangered or Candidate Species by ODWC (2022D) that are not federally listed are included in Appendix C as well as a list of Species of Greatest Conservation Need (SGCN) for the Ouachita Mountains, Arkansas River Valley and West Gulf Coastal Plain Region (ODWC, 2016).

2.8.6 Invasive Species

An invasive species is defined as a plant or animal that is non-native (or native nuisance) to an ecosystem and whose introduction causes, or is likely to cause, economic and/or environmental harm, or harm to human health. Invasive species can thrive in areas beyond their normal range of dispersal. These species are characteristically adaptable, aggressive, and have high reproductive capacity. Their vigor, along with a lack of natural enemies or controls, often leads to outbreak populations with some level of negative effects on native plants, animals, and

ecosystem functions and are often associated with disturbed ecosystems and human activities.

Table 2.4 lists many of the invasive and noxious native species found at Canton Lake (USACE, 2016A). Other species are currently being researched for their invasive characteristics.

Table 2.4 Invasive and Noxious Native Species Found at Canton Lake

Common Name	Scientific Name	Native/Non-native
Birds		
Black Vulture	<i>Coragyps atratus</i>	Native
Cowbirds	<i>Molothrus ater</i>	Native
Mammals		
Wild Boar	<i>Sus scrofa</i>	Non-native
Insects		
Red Imported Fire Ant	<i>Solenopsis invicta</i>	Non-native
Plants		
Johnson Grass	<i>Sorghum halepense</i>	Non-native
Multiflora Rose	<i>Rosa multiflora</i>	Non-native
Musk Thistle	<i>Carduus nutans</i>	Non-native
Common Reed	<i>Phragmites australis</i>	Non-native
Amphibians		
None	None	None
Mollusks		
Zebra Mussel	<i>Dreissena polymorpha</i>	Non-native
Fish		
None	None	None

Because of the lake's relative isolation from metropolitan areas, it does not have as many invasive species compared to those within or directly adjacent to major metropolitan areas. The remoteness protects the lake from the inadvertent release and spread of common landscape plants that could become aggressive colonizers from nearby residential developments.

Emerald Ash Borers (*Agrilus planipennis*) are a growing threat across much of the United States. Emerald Ash Borers are not native to North America but to parts of eastern Asia. All native North American ash species are susceptible to Emerald Ash Borers, including Green Ash (*Fraxinus pennsylvanica*) which is fairly abundant around Canton Lake. While there have not been any Emerald Ash Borers identified at Canton Lake, they have been identified in northern Oklahoma as well as every neighboring

state except New Mexico. The Oklahoma Department of Agriculture, Food, and Forestry (ODAFF) stated that “[Emerald Ash Borers are] now considered the most destructive forest pest ever seen in North America.” (ODAFF, 2015). The USACE does have an active program in place that monitors and reports any possible signs of emerald ash borers.

Although native, cowbirds (*Molothrus ater*) have become problematic due to their expanding range associated with agriculture and human development and are considered a nuisance. They often outcompete many other native species while also acting as a brood parasite, introducing their own eggs into the nests of other birds, to the detriment of the other birds’ offspring.

2.9 AESTHETIC RESOURCES

Canton Lake includes many acres of scenic shorelines, lake views, and wildlife viewing areas providing high visual and scenic qualities. Some areas are admired for their scenic attractiveness (intrinsic scenic beauty that evokes a positive response), scenic integrity (wholeness of landscape character), and landscape visibility (how many people view the landscape and for what reasons and how long). Some areas have been designated as Wildlife Management or Environmentally Sensitive Areas to preserve specific animal, plant, or environmental features that also add to the scenic qualities at the lake. Nearby parks have been designed to access the lake, allow access to hiking trails, and take advantage of scenic qualities at the lake and surrounding areas.

Adjacent landowners are informed that removing trees from USACE property to obtain a view of the lake not only destroys wildlife habitat but also lowers the scenic quality of the shoreline when viewed by the general public from the water surface. Furthermore, unauthorized removal of trees and other vegetation from USACE property could result in fines. Additionally, reasonable measures must be taken to ensure that damage to the natural landscape from invasive species and catastrophic wildfire are minimized. Vegetative management, debris removal, and other shoreline issues are managed by the USACE Canton Lake Office.

2.10 CULTURAL RESOURCES

Cultural resources preservation and management is an equal and integral part of all resource management at USACE-administered operational projects. The term “cultural resources” is a broad term that includes but is not limited to historic and prehistoric archaeological sites, deposits, and features; burials and cemeteries; historic and prehistoric districts comprised of groups of structures or sites; cultural landscapes; built environment resources such as buildings, structures (such as bridges), and objects; Traditional Cultural Properties (TCP) and sacred sites. These property types may be listed on the National Register of Historic Places (NRHP) if they meet the criteria specified by 36 CFR 60.4 as authorized by the NHPA, reflecting significance in architecture, history, archaeology, engineering, and culture. Cultural resources that are identified as eligible for listing in the NRHP are referred to as “historic properties,” regardless of category. A TCP is a property that is eligible for inclusion in the NRHP

based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community. Ceremonies, hunting practices, plant-gathering, and social practices which are part of a culture's traditional lifeways, are also cultural resources.

Stewardship of cultural resources on USACE Civil Works water resources projects is an important part of the overall Federal responsibility. Numerous laws pertaining to identification, evaluation, and protection of cultural resources, Native American Indian rights, curation and collections management, and the protection of resources from looting and vandalism establish the importance of cultural resources to our Nation's heritage. With the passage of these laws, the historical intent of Congress has been to ensure that the Federal government protects cultural resources. Guidance is derived from several cultural resources laws and regulations, including but not limited to Sections 106 and 110 of the National Historic Preservation Act (NHPA) of 1966 (as amended); Archaeological Resources Protection Act (ARPA) of 1979; Native American Graves Protection and Repatriation Act (NAGPRA); and 36 CFR Part 79, Curation of Federally Owned and Administered Archeological Collections. Implementing regulations for Section 106 of the NHPA and NAGPRA are 36 CFR Part 800 and 43 CFR Part 10, respectively. All cultural resources laws and regulations should be addressed under the requirements of the National Environmental Policy Act (NEPA) of 1969 (as amended), as applicable. USACE summarizes the guidance provided in these laws in ER and EP 1130-2-540.

2.10.1 Cultural History Sequence

Six broad cultural divisions are applicable to a discussion of the culture history of the Canton Lake region: Paleoindian, Archaic, Woodland, Mississippian/Plains Village, Protohistoric, and Historic. These general adaptation types are adopted in this Master Plan to characterize prehistoric cultural traditions, within the following regional chronology:

Paleoindian: 30,000 to 7000 BC

Archaic: 7000 BC to 1 AD

Woodland: AD 1 to 1000

Mississippian/Plains Village: AD 1000 to 1500

Protohistoric (Contact Period): AD 1500 to 1830

Historic: AD 1830 to present

Paleoindian Period

While it is becoming increasingly evident that humans arrived in the Americas as early as 30,000 years ago, the Paleoindian Period is broadly accepted as spanning the end of the Pleistocene into the Early Holocene. The Clovis complex (9500–8900 BP) is the earliest well-substantiated archaeological period in the Central Plains. Paleoindian sites are usually identified by the presence of the remains of extinct Pleistocene megafauna and signature stone tools. The most visible tools are projectile points, which are used to reference different archaeological complexes. Point types include unnotched lanceolate projectile points, fluted (Clovis and Folsom), and unfluted (Allen-

Frederick, Agate Basin, Hell Gap, Meserve, Plainview, Cody, Dalton, Plano, and undesignated "Late Paleoindian"). Long characterized as specialized big-game hunters, it has now been demonstrated that the archaeological complexes of the Paleoindian Period represent diversified economies of small bands of hunters and gatherers. Some groups were more reliant on megafauna than others, and some hunted megafauna during specific seasons (Blackmar and Hofman 2006). The Dalton Complex is well represented in eastern Oklahoma, spanning the period from the end of the Paleoindian Period into the Early Archaic (Ballenger 2001; Blackmar and Hofman 2006; Meltzer 2009).

In Oklahoma, the earliest proven evidence of human occupation occurs at sites such as the Domebo site, a Clovis-era mammoth kill site in Caddo County, and Jakes Bluff, a bison kill site in Harper County (Gilbert 2000). Isolated Paleoindian points have typically been found on the surface, and these points are most often collected, resulting in the loss of archaeological context. For these reasons, a limited number of Paleoindian sites have been recorded in the project area, though sites with both Paleoindian and Archaic deposits are better represented. The small number of sites from this period is much more a product of archaeological visibility than an actual representation of prehistoric populations and patterns of land use (Blackmar and Hofman 2006). In eastern Oklahoma, sites such as the Packard site in Mayes County, the Quince Site in Atoka County, and the Billy Ross site in Haskell County include large quantities of local chert, which may indicate that later Paleoindian peoples were less nomadic than earlier Paleoindians (Brooks 2021; Hawkins 2011).

Archaic Period

During the Archaic Period, an increase in seasonal variability of resources and increasing populations resulted in changing settlement and subsistence patterns (Gilbert 2000). Repeated occupation of sites, often on a seasonal basis, and features such as rock-lined hearths, roasting pits, and grinding tools reflect intensive plant processing and the cyclical exploitation of resources (Brogan 1981; Sabo and Early 1990; Brooks 2021). Increasing diversity of stone tools through time reflects the increasing variability of faunal and floral resources and the diversity of activities taking place at habitation sites (Thies and Witty 1992). Projectile points from the Middle and Late Archaic are stylistically quite different (typically notched and stemmed) from those of the Paleoindian Period. Archaic assemblages include a variety of large dart points, knives, drills, axes, gouges, scrapers, and grinding implements (such as manos and metates). The Archaic Period is traditionally divided into Early, Middle, and Late Periods, the overall extent of which was approximately 7000 BC to 1 AD.

The Calf Creek Culture was prominent in Oklahoma during the Archaic Period between 7,000 and 4,000 years ago. This group adapted to a long drought period by living in highly mobile bands, hunting bison, and supplementing their diet with edible starchy plant seeds that were more readily available in the dry climate. Calf Creek is distinguished by finely made large spear points with deep notches on the base. Archaeologists believe there were four groups located in the east central, north central,

south central, and western areas of the state based on their reliance on local flint found in the four areas (Gilbert 2000).

Prominent Calf Creek sites in Oklahoma include Primrose and Stillman Pit sites in Murray County, the Kubik site in Kay County, the Arrowhead Ditch site in Muskogee County, and the Anthony site in Caddo County. The Anthony site is unique in that it exhibits artifacts from all four Calf Creek groups and was likely a gathering place for the people as a whole (Gilbert 2000). Other Archaic sites in Oklahoma include the Pumpkin Creek site in Love County, the Lawrence site in Nowata County, and the Gore Pit site in Comanche County. The Lawrence site is near the project area and known for its burned rock cooking pit concentrations (Hawkins 2011). Archaic sites further north along the Kiamichi River than the project area indicate people depended heavily on riverine resources, though sites closer to the Red River demonstrate less cultural diversity (Brooks 2021).

Woodland

The Woodland Period in Oklahoma can be defined as one of technological innovation, with ceramics, the bow and arrow, gradual intensification of horticulture, and concomitant social changes differentiating this time period from more residentially mobile hunting and gathering populations of earlier times. As people began domesticating plants during this period, populations became more sedentary in order to cultivate and harvest crops. In North America, sunflower, native squash, may grass, marsh elder, goosefoot, and pigweed were first domesticated, while South American crops such as corn, beans, squash, and chiles were imported through trade later. Bone tools from bison were commonly used in agricultural practices. People lived in small, seasonal villages with houses made of pole frameworks with grass thatch or cane matting to form walls and circular hearths (Gilbert 2000).

The appearance in the archaeological record of small corner-notched projectile points indicates that the bow and arrow was in use. The presence of ceramic sherds indicates that ceramic use in the form of pottery for storage and cooking had become widespread. Projectile points from this period include, in addition to the small corner-notched points, large contracting stem points and corner-notched projectile points in a variety of styles, indicating continued use of the atlatl and darts, as well as spears likely employed for symbolic political or religious effect (Logan 2006; Hawkins 2011; Gilbert 2000; Brooks 2021).

Woodland Period sites in Oklahoma continued to follow a north-south, east-west distinction. In eastern Oklahoma north of the Arkansas River, the Cooper Culture has been defined in Delaware and Mayes counties. These archaeological assemblages are similar to groups living near Kansas City, including spearpoints, ceramics, clay figurines, and the use of rock shelters as seasonal camps. South of the Arkansas River but north of the Ouachita Mountains, the Fourche Maline Culture is prominent and exhibited by the McCutchan-McLaughlin site in Latimer County. In western Oklahoma, people continued a nomadic bison-hunting lifestyle and were slow to adopt the bow and arrow. The Certain Bison Kill site in Beckham County represents this, though sites such as the

Swift Horse site in Roger Mills County demonstrate more adaptation of plant subsistence and bow and arrow use (Hawkins 2011; Brooks 2021).

Mississippian/Plains Village

From 1000 to 1500 AD, two main cultures were present in Oklahoma: the Mississippian to the east and the Plains Village to the north and west. Although in other regions either the Mississippian or the Plains Village are considered unique cultures and time periods in prehistoric chronology, Oklahoma presents a crossroads where the cultures coexisted in the state around the same time. Both cultures became more reliant upon cultivating crops, and large villages soon became common. Both cultures also began creating more pottery forms and styles, including bowls, jars, plates, bottles, and effigies with a wide variety of surface treatments. Ornamentation made from copper, marine shell, animal bone, a variety of minerals, and textiles was widely used as well (Hawkins 2011; Brooks 2021).

The Mississippian culture in Oklahoma, also known as the Caddoan culture, is the western-most representation of a mound-building culture that dominated the southeast during this timeframe. Early Mississippians constructed houses and temples with square or rectangular floor plans featuring center posts supporting the roofs. Later structures had only two center posts, and some were circular. Large burial mounds surrounded by smaller mounds are defining features of Mississippian culture. Burials included grave goods that became more elaborate over time. The Harlan site in Cherokee County is the earliest known center of Mississippian culture in Oklahoma. Spiro Mounds in Le Flore County is the most famous Mississippian site in Oklahoma. Consisting of at least 12 mounds covering an area of 80 acres, the site contained many well-preserved and elaborate objects that yielded a great deal of information about the Mississippian people with evidence of a sophisticated society, extensive trade networks, a highly developed religious center, and a political system that controlled the region (Gilbert 2000).

Plains Village people grew crops and hunted and gathered wild resources. Artifact assemblages contain gardening tools along with triangular arrow points for hunting. Sites from this time are often identified in lowland terraces of waterways where gardening with bone tools was viable. These villages have been found along major rivers and their tributaries, including the Arkansas, Canadian, North Canadian, Washita, and Red Rivers (Gilbert 2000). Food was stored in underground cache pits that could be 3-5 feet deep and 3-5 feet wide. Ceramics were used for cooking directly over fire both inside and out and were usually smooth, though some were cord-marked. Clay figurines have been found at Plains Village sites as well and may have been used in fertility ceremonies related to agriculture. Plains Village people typically lived in villages of 75-150 people. Houses were square or rectangular and could be over 20 feet long. Rather than mounds, Plains Village people buried their dead in nearby cemeteries (Gilbert 2000). Examples of Plains Village sites in Oklahoma include the Roy Smith Site in Beaver County, the Heerwald site in Custer County, the Arthur site in Garvin County, and the McLemore site in Washita County.

The Protohistoric (Contact) Period

The period from A.D. 1500–1830 is referred to as the Protohistoric (or Contact) Period. During this time, non-native explorers, trappers, and traders visited the region, and land claims by first the Spanish and then the French brought significant changes (Everett 2021a). This was a time of reorganization and relocation by Native peoples in response to rapid cultural change as European contacts introduced new technologies, goods traded throughout the continent, diseases that spread ahead of them, the fur trade, and the horse. The pressures of these rapid changes led to increased inter-group conflict, including conflicts over access to and control of resources. People aggregated into large villages situated along major rivers, and in the later part of the period, many of these villages were fortified (Vehik 2006). The Tribes first encountered by Europeans in Oklahoma included the Caddo and Wichita in the southern and eastern parts of the state, and the Plains Apache, Osage, Pawnee, and other more nomadic groups in the northern and western parts of the state. The project area was primarily occupied by the Wichita and the Caddo, though the Osage were known to hunt and raid in the area (Everett 2021a).

The first Europeans documented in Oklahoma were part of a Spanish expedition led by Francisco Vazquez de Coronado in 1541. In search of gold they erroneously believed to be in the province of Quivira, the expedition began in New Mexico and ended at a Wichita village in southern Kansas, passing through the panhandles of Texas and Oklahoma (Everett 2021a). Additional Spanish explorations in search of gold were conducted in the region through the early 1600s. However, the most valuable findings of these expeditions were the descriptions of the land, animals, and peoples they encountered. Spain eventually lost interest in exploring the area northeast of New Mexico and viewed it as a buffer zone between its territory and the French.

In 1682, Robert Cavelier, Sieur de la Salle, claimed the territory drained by the Mississippi as part of the French Empire in North America. By 1700, French traders were established in the region and had developed trading relationships with Wichita groups in the Arkansas Valley of northern Oklahoma and with the Osage to the east. In 1718, Jean Baptiste Benard Sieur de La Harpe led a trading expedition with the eventual goal of establishing a trading post along the Red River in present-day Texas. The party traveled through eastern Oklahoma and stopped at a Wichita village in present Tulsa County at a site known as Lasley-Vore.

The Caddoan language-speaking Wichita and Affiliated Tribes were historically known as the Wichita Proper, Waco, Taovaya, Tawakoni, and Kichai. These Tribes can be traced back at least 800 years to the Washita River culture of central and western Oklahoma. The Washita River people resided in small villages of rectangular, mud-plastered houses with small gardens nearby. Between 1350 and 1450, some Washita River people began migrating north to the Great Bend of the Arkansas River in southern Kansas. Great Bend villagers lived in large, circular grass houses, grew crops, and hunted bison and small game. The archaeological record documents significant long-distance trade with the southwest, evidenced by items such as painted and glazed pottery, turquoise beads and pendants, and shell beads distinctive to Southwest Pueblo

cultures. The Wichita used horses from Spanish colonies to more effectively hunt buffalo and employed guns, metal hoes, and buckets obtained from the French in their daily lives and for trade with the Comanche. In the late 1700s, increased pressure from the Osage forced the Wichita to abandon their homes in northern Oklahoma. They moved south into southeastern Oklahoma and Texas outside the project area (Wichita and Affiliated Tribes 2021). The Wichita gradually relocated to what is now northern Texas until 1859, when their reservation was established in Indian Territory (Wichita and Affiliated Tribes 2021).

The Osage were one of five immigrant Tribes of Dhegiha Siouan speakers who originated in the Ohio River area. Over time the Dhegiha Sioux diffused into different Tribes as they migrated westward, and the Osage were one of the last to split and settle in the central and western portions of Missouri around 1300 (Hunter 2013). Osage villages were physically arranged to reflect the Osage cosmos with a central street running east-west representing the path of the sun. Dwellings were rectangular long houses with domed roofs constructed of poles and woven cattail mats, bark, hides, or some combination thereof. Osages planted crops near their permanent villages, though the entire village would move onto the plains during the summer and autumn buffalo hunts and return to the permanent village locations for the remainder of the year (Bailey and Swan 2004). As the French built trade alliances with the Osage in the late 1600s and early 1700s, the Osage benefited greatly from the influx of guns and other French trade goods, as well their villages' proximity to accessible river trade routes. The Osage became the dominant Tribe in the region and began forcing the Wichita and Caddo further south. Similarly, other eastern Tribes' forced removal to traditional Osage lands in Missouri put a strain on resources available to the Tribes. In the 1790s, French trader Rene Auguste Chouteau convinced roughly one third of the Tribe to relocate to the Three Forks region of Oklahoma where the Arkansas, Verdigris, and Grand Rivers converge near Chouteau's new trading posts. Known as the Arkansas Osage, the group mainly settled at Claremore with other villages nearby.

As eastern Tribes such as the Cherokee were forced to move into Osage territory in Arkansas by the United States in the early 1800s, increased conflict between the Osage and eastern Tribes became more commonplace as the groups competed for natural resources. In an effort to stop the violence the United States signed treaties in 1818 and 1825 with the Osage establishing their reservation in southern Kansas and forcing Osage removal. However, the last Arkansas Osage did not leave the region until 1839, when they became too overwhelmed by eastern Tribes forced into the area by the Indian Removal Act of 1830 (Bailey and Swan 2004). The first printing press in Oklahoma was established at the Union Mission in 1835, technically ending the Protohistoric era in the state (Everett 2021b).

2.10.2 Historical Period

What is now the state of Oklahoma was included in the Louisiana Purchase in 1803, becoming part of what was known as the Louisiana Territory. When Louisiana joined the Union as a state in 1812, Louisiana Territory was renamed the Missouri Territory by the U.S. Congress to avoid confusion with the new state. In the 1820s,

Oklahoma was designated Indian Territory and closed to white settlement. From that time until 1890, when the Organic Act created the Oklahoma Territory and incorporated it into the United States, more than three dozen Tribes had been forced to reside there (Bolton 2021). A portion of present-day McCurtain County was included in Miller County, Arkansas, as part of disputed territory between Mexico (present-day Texas) and the United States. The county was later abolished when Texas declared its independence from Mexico in 1836 (Rowe 2022).

The Choctaw have two creation myths that differ dramatically, but both are centered around Nanih Waiya mound located in modern-day Mississippi. When the Choctaw were first referenced in the written record in the late 1600s, they were a matrilineal community living in three geographical districts, with two social divisions and multiple clans within each division that determined social roles and hierarchy (Mould 2018). During the 1700s, their government consisted of local headmen presiding over groups of villages. It was not until the early 1800s that the Choctaw began to coalesce into one nation as a gradual response to pressure from the U.S. Government (Krauthamer 2013). The Choctaw were the first major Tribe in the southeast to be removed to modern-day Oklahoma. Removal for the Choctaw lasted over 70 years, with groups periodically being removed from their homeland until 1903. The largest group, approximately 12,000 people, made the journey first between 1830-1834 after the Treaty of Dancing Rabbit Creek was signed in 1830.

The Chickasaw homeland was located in portions of modern-day southwestern Kentucky, western Tennessee, northern Mississippi, and northwestern Alabama (Chickasaw Nation 2021). Descendants of mound-building societies, the Chickasaw were a matrilineal society that generally lived in towns containing around 200 households. Towns could move but kept the same names, spreading apart during peacetime but clustering during war. A typical town contained a log-palisaded fort, religious and council buildings, and grounds for councils, festivals, and sports. Individual households usually included a winter house that was circular, approximately twenty-five feet in diameter, and framed with pine logs and poles, with mud-plaster walls and a sunken earthen floor; one or two summer houses, which were rectangular and had two rooms, walls of loosely woven mats, and roofs of grass thatch and bark; and a storage house for crops (Newhall 2018). The Chickasaw were considered great warriors and were instrumental in fighting the French during the French and Indian War (Chickasaw Nation 2021). They were the last major Tribe in the southeast to be removed to modern-day Oklahoma and were able to negotiate favorable sales of their land in Mississippi. This allowed the Chickasaw to pay for their own removal and select favorable seasons to travel, which saved hundreds of lives.

In 1837, the Chickasaw, who had been traditional enemies of the Choctaw, signed a treaty with the Choctaw to create a Chickasaw district within the Choctaw Nation. The Chickasaw became a part of the Choctaw Nation, and the two groups negotiated with the United States together (Choctaw Nation, February 2021). At this time, Choctaw Nation was divided into three Choctaw districts to the east—Moshulatubbee, Apukshunnubbee, and Pushmataha—and the Chickasaw District to the west. Chickasaw and Choctaw families were free to live in any of the four districts

despite their Tribal affiliation, though the bulk of Chickasaw families lived in the Chickasaw district. In 1855, the Choctaw, Chickasaw, and United States entered into a treaty that split the Tribes into two nations once again and sold Choctaw land holdings west of the Chickasaw district to the United States, reducing the reservation from over 23.7 million acres to 6.688 million acres. During this time, the Choctaw prospered economically through small farms and large cotton plantations (Choctaw Nation March 2021 and April 2021).

Both the Chickasaw and Choctaw had participated in the southern market economy built around chattel slavery. By the time both Tribes were removed to Indian Territory, their slave-owning population reflected that of the rest of the Deep South. The upper-middle class owned anywhere from 1-15 slaves, a handful of extremely wealthy individuals owned hundreds of slaves, and the majority of Chickasaw and Choctaw citizens owned no slaves or rented enslaved labor instead (Krauthamer 2013). Their slaveholdings meant that the majority of Choctaws and Chickasaws sympathized with the South during the Civil War, and the Tribes allied with the Confederacy.

Oklahoma went through a period of instability during the Civil War. Its low population, proximity to Confederate (Texas and Arkansas) and Union (Kansas) neighbors, relatively minor tactical importance to the western campaign focused on the Mississippi River, and the Tribes' smaller militaries ensured the territory became used for troop movements to other locales and a hotspot for small raids and guerilla warfare for both sides. The Five Tribes (Cherokee, Choctaw, Chickasaw, Muscogee Creek, and Seminole) signed treaties with the Confederacy in 1861 as the Confederacy promised to respect Tribal lands and sovereignty and not abolish slavery. At this time, approximately 14 percent of Oklahoma's residents were enslaved people. The Tribes formed regiments that fought in engagements throughout the western theater, most notably at Pea Ridge, Arkansas, and Honey Springs, Oklahoma (Huston 2021). The culminating battle at Honey Springs in 1863 ensured the Union maintained control of the territory for the remainder of the war, though small Confederate raids continued. Due to constant marauding, retaliation, and split loyalties, refugee camps became common. Union loyalists were moved to Ft. Riley in Kansas and Ft. Smith in Arkansas, and Ft. Gibson was surrounded by as many as 7,000 refugees. Confederate camps along the Red River held close to 15,000 refugees (Huston 2021). After the Confederacy surrendered, the Five Tribes signed a peace treaty with the United States in 1866. The treaty gave the western half of the territory to other Tribes in Kansas, abolished slavery, granted freedmen citizenship and property rights, and opened the territory to railroads across Tribal lands (Huston 2021).

Fort Cantonment, later known as Canton, was established on March 6, 1879, as a response to violent raids led by Northern Cheyenne leaders Dull Knife and Wild Hog. These raids stemmed from the Cheyenne's dissatisfaction with poor conditions on the Cheyenne-Arapaho reservation, prompting their attempt to return to their homeland in Nebraska (Oklahoma Historical Society, 2007). The U.S. Army, under Colonel Richard I. Dodge, stationed six companies of the 23rd U.S. Infantry at Cantonment, strategically located along the North Canadian River between Fort Supply and Fort Reno. Initially a temporary post with modest facilities like tents and sod-infilled barracks, the site evolved

to include a hospital, commissary, and officers' quarters, though its abandonment in 1882 marked the end of its military use (May 1975).

The Cheyenne and Arapaho actively resisted U.S. government efforts to seize their lands, but policy changes, including reducing the number of signatures required for land-sale agreements, enabled the government to acquire most of the tribes' surplus lands. By 1869, Cheyenne and Arapaho families began settling along the North and South Canadian Rivers, with many adopting farming as a primary livelihood. However, the General Allotment Act of 1887 further disrupted their way of life by dividing collectively held tribal lands into individual 160-acre allotments, forcing the sale of surplus lands to non-Indigenous settlers. This policy not only led to widespread dispossession but also significantly reduced tribal landholdings (Kidwell 2021a).

Historical accounts, including oral histories, indicate that after the 1868 massacre of Black Kettle and his followers along the Washita River, surviving Cheyenne and Arapaho bands regrouped in what is now Blaine County, Oklahoma. Black Kettle's body is said to have been brought to the Canton area for burial along the floodplain of the North Canadian River (Moore 1987).

Following its military use, the site transitioned into a Mennonite mission, primarily serving the Arapaho community. In 1882, after a fire at the Darlington mission, Indian Agent John Miles transferred the former cantonment buildings to the Mennonites, making it the second Mennonite colony in Oklahoma (Kaufman 1962). The mission focused on industrial and spiritual training, establishing a school, hospital, and broom factory by 1883 (Morrison 1936; Kaufman 1962). The Mennonites also introduced ranching techniques to the Cheyenne and Arapaho, though conflicts arose with ranchers who leased land and began fencing areas within the reservation, leading to federal intervention and the expulsion of unauthorized ranchers (Morrison 1936:146; Dale 1942:365). Despite their efforts, the mission declined in importance after 1896 due to the construction of the Orient Railroad, which drew settlers toward the growing town of Canton, and a shift in government policy that prioritized public over private schools (Kaufman 1962).

By 1897, the Department of the Interior repurposed the site as a federal Indian boarding school, part of a broader policy to assimilate Indigenous children into Euro-American culture. The Browning Boarding School opened in 1898, expanding over the next two decades to include dormitories, classrooms, and administrative buildings, with a capacity for 250 students (Thoburn 1925). The school's layout shifted north of the original military parade grounds, and the surviving military buildings were repurposed for new functions. However, attendance never reached full capacity, and the school ultimately closed in 1927. The remaining buildings saw sporadic use, with some families continuing to live on-site, while others were repurposed or demolished (Lintz 1975).

During the 1930s, the Civilian Conservation Corps (CCC) utilized the cantonment for agricultural development and erosion control projects. The CCC terraced fields, repurposed materials from the remaining buildings for conservation structures, and dismantled the stone hospital and bakery/commissary for construction materials (Lintz

1975). The officer's quarters remained intact due to its use as a storage facility for agency records. Following this period, in 1938, Congress authorized the construction of Cantonment Reservoir to provide irrigation and municipal water supply (Corps of Engineers 2025). Although dam construction was delayed by World War II, it was completed in 1948.

In recognition of its historical significance, the site was nominated for the National Register of Historic Places following the passage of the National Historic Preservation Act of 1966. However, only a five-acre portion surrounding the remaining officer's quarters was formally accepted in 1970, as the nomination process focused on the site's military history rather than its later religious and educational roles (Lintz 1975). Despite modifications, demolitions, and material reuse, the cantonment remains an important historical site reflecting military, missionary, and educational transformations over nearly a century.

During Reconstruction, Oklahoma struggled with lawlessness as much as, if not more than, during the Civil War. Tribal police and courts had no jurisdiction over non-Tribal citizens (Huston 2021). In the 1890s, The Dawes Commission began the process of allotment that would transition communally held Tribal lands into individually owned private property. This led to a large loss of Tribal lands, Tribal citizens who accepted allotments now becoming United State Citizens and allowed the area that had formerly been Indian Territory to become the territory of Oklahoma, which could then apply for statehood. Oklahoma achieved statehood in 1907 (Kidwell 2021).

Canton Lake occupies parts of Blaine and Dewey Counties. Blaine County was organized in 1890 as county "C" for the Land Run of 1892 with the town of Watonga as its seat. The county was named for Speaker of the U.S. House Representative James G. Blaine in 1892. Dewey County was originally designated as "County D" when created in 1891 during the formation of Oklahoma Territory. Non-Indian settlement in the area commenced on April 19, 1892, following the federal government's opening of these lands. The county's current name was chosen by voters in a general election held in 1898, honoring Admiral George Dewey, a prominent figure in the Spanish-American War (Gannett 1905). The lands that now constitute Dewey County were historically part of the territories assigned to the Choctaw and Seminole tribes. These assignments were altered after the Reconstruction Treaties of 1866, through which the Choctaw and Chickasaw Nations ceded their western lands, known as the Leased District, to the United States. Portions of this ceded land later became part of the Cheyenne and Arapaho Reservation (Kappler 1904).

In 1938 the Flood Control Act authorized initial construction of Canton Lake. Construction began in December 1940 and was completed in May 1948. Embankment closure began in July 1947 and was completed in January 1948. Impoundment of the conservation pool started in April 1948 and was completed in July 1948. Additional recreational facilities and the lake intake and filter plant were completed in 1972. In 2016, Tulsa District completed the auxiliary spillway at Canton Lake. The auxiliary spillway includes nine fusegates, each measuring 53 feet in length, 21 feet in width, and

32 feet in height, designed to enhance the dam's capacity to manage extreme flood events.

The Canton Reinterment Cemetery, established in 1947 during the construction of the Dam was created to respectfully relocate graves from 19 smaller cemeteries that were situated within the area designated for the lake's development. The original cemeteries varied in size, each containing between two to thirty graves. Out of the 19 cemeteries that were planned to be relocated, only 9 were selected for reinternment due to the reservoir capacity not impacting the other cemeteries. Individuals reinterred in the cemetery include several esteemed leaders of the Cheyenne and Arapaho Tribes. USACE is actively consulting and collaborating with the Cheyenne and Arapaho Tribes regarding the documentation and management of this cemetery due to its historical significance and enduring importance to the community and the descendants of those interred.

Historic site types and related resources expected in the project area include homesteads and ranches, farmsteads, trails, cemeteries, wells, cisterns, privies, rock walls, foundations or foundation piers, cellar depressions, oil and gas components, railroad lines, roads, schools, dumps, and water diversion features.

2.10.3 Cultural Resources at Canton Lake

There are approximately 12 known archaeological sites located wholly or in part on USACE fee lands associated with Canton Lake. These include 3 precontact sites, 7 historic sites, and 2 multicomponent sites with both historic and precontact components. Of these, 1 site has been determined eligible for the NRHP, 1 is ineligible, and 9 have not been assessed for the NRHP. One archaeological site is currently listed on the NRHP. The dam itself, completed in 1948, and has been recommended eligible for the NRHP in 2008.

Under the NHPA, properties of traditional religious and cultural importance to a living community may be determined to be eligible for inclusion on the NRHP. Commonly known as Traditional Cultural Properties (TCP), these properties are associated with cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community. Therefore, TCPs must be taken into account in order to comply with federal cultural resources regulations. Additionally, Executive Order 13007 states that each federal agency with responsibility for the management of Federal lands shall accommodate access to and ceremonial use of Native American sacred sites by religious practitioners and avoid adversely affecting the physical integrity of such sacred sites. There have been no TCPs or sacred sites identified at this time at Canton Lake. If TCPs or sacred sites are identified at Canton Lake in the future, they could be given additional protected status through ESA designation.

Multiple formal archaeological surveys have been completed at Canton Lake since the 1960s in response to ongoing activities such as lake constructions, inadvertent discoveries, and NHPA Section 106 compliance. This section includes an

overview of work conducted in the area. The first archaeological excavation known to take place within USACE fee lands of Canton Lake was conducted by Charles Smith and Mrs. James Watson in 1964 (Smith and Watson, 1964). Smith and Watson aimed to document archaeological sites before the planned inundation due to the completion of Canton Dam on the North Canadian River. The survey identified only contemporary non-white occupation and noted the historical significance of the Cantonment site, where two buildings still stood at the time. In 1975, Christopher R. Lintz led a cultural resource assessment in connection with the development of a recreational vehicle park. This survey recorded historic features such as officer quarters, a hospital, and other structures tied to the area's military history. Lintz recommended preservation measures for significant elements. Subsequent investigations in 1978 expanded the archaeological record by documenting both historic and prehistoric sites. These included remnants from the Cheyenne-Arapaho reservation era and sites connected to Mennonite mission activities. This survey revisited earlier historical narratives while identifying new cultural materials.

The 1990s saw a surge in archaeological activity with significant contributions from surveys led by Rain Vehik in 1991 and James Briscoe in 1992 and 1993. Vehik's work integrated archaeological site preservation into wildlife conservation projects, while Briscoe's surveys for various wildlife management efforts identified and recorded prehistoric lithic scatters and historical artifacts. These efforts resulted in the recommendation of site preservation and provided insights into land use patterns and cultural occupation. The late 1990s introduced a broader scope of inquiry with projects like Roger Burkhalter's excavation of the Canton Lake Mammoth Site. This effort focused exclusively on recovering significant paleontological materials, as no archaeological materials were present. The excavation underscored the site's importance in contributing to the understanding of the region's paleoenvironment and the extinct megafauna that once inhabited it (Burkhalter 1998). Concurrently, Christopher Cojeen's surveys for Marathon Oil's 3D seismic exploration recorded new archaeological sites and revisited previously identified ones, ensuring compliance with preservation standards while addressing the impacts of industrial activity (Cojeen 1998).

The early 2000s continued this trajectory with Briscoe's deep testing for the Canton Lake spillway expansion, which included subsurface testing and geomorphic assessments to evaluate site integrity (Briscoe 2004). Cojeen also conducted multiple studies during this period, notably a Class III gaming facility survey that documented both new and revisited sites, emphasizing the integration of archaeological research with development planning (Cojeen 2004). In 2006, Jim Ricker's wetland development survey documented the environmental and cultural interplay in the Canton area. The survey identified no new sites or previously recorded sites within the project area, though sites located outside the survey area were noted (Ricker 2006). The 2008 cultural resources inventory for the Canton Lake Spillway Improvement Project, conducted by Engineering-Environmental Management Inc, evaluated approximately 1,043 acres for potential cultural resources under Section 106 of the NHPA. The survey included pedestrian survey, judgmental shovel testing, ground-penetrating radar (GPR) for identifying unmarked graves near the Cheyenne and Arapaho cemetery, and geomorphic assessment via backhoe trenching in the North Canadian River valley. The

inventory recorded four isolated occurrences, two historic artifact scatters, and two historic standing structures. While the majority of identified features lacked significant integrity or research potential, the Overlook Building was recommended eligible for listing in the National Register of Historic Places (NRHP) under Criterion C for its architectural significance (Hokanson et al. 2008). The following 2008 Historic American Engineering Record (HAER) documentation of the Canton Dam Overlook Building, authored by Gray & Pape, focused on its historical and architectural significance. Constructed in 1947 as part of the Canton Lake project, the Overlook Building reflects mid-20th-century federal architectural design and engineering practices. The HAER documentation emphasizes the building's association with New Deal-era infrastructure and its significance as a public works project demonstrating advances in construction techniques and regional development during the mid-1900s (O'Bannon 2008).

The 2010s saw a continuation of this work with projects like Cojeen's 2019 survey for a gun range expansion and Deere's 2019 Phase I survey for a wildlife management equipment yard. Both studies combined pedestrian surveys and systematic testing to ensure that development activities would not disturb significant cultural resources. These surveys resulted in no new sites. Small surveys have been, and continue to be, conducted in and near Canton Lake for compliance with Section 106 of the NHPA.

2.10.4 Long-term Objectives for Cultural Resources

As funding allows, the Tulsa District will plan and budget for a Historic Preservation Management Plan (HPMP) that shall be developed and incorporated into the Operational Management Plan (OMP) in accordance with EP 1130-2-540. The purpose of the HPMP is to provide a comprehensive program to direct the historic preservation activities and objectives at Canton Lake and it will be accomplished if future funding is forthcoming. Completion of a full inventory of cultural resources at Canton Lake is a long-term objective that is needed for compliance with Section 110 of the National Historic Preservation Act (NHPA). All currently known sites with unknown eligibility and newly recorded sites must be evaluated to determine their eligibility for the NRHP. Identification and evaluation of sites is an ongoing process at Canton Lake. As more significant sites are identified, they could be protected through various land classifications in the future.

In accordance with Section 106 of the NHPA, any proposed activities or projects at Canton Lake will require review by District Archaeologists to assess their potential to impact historic properties. These activities may include those described in this master plan or those that may be proposed in the future by others for leases, licenses, right-of-way easements, recreational development, construction, wildlife management, or other activities that can be considered undertakings subject to Section 106 of the NHPA. The need for cultural resource surveys to locate and evaluate historic and prehistoric resources, consultation, or other compliance activities related to Section 106 of the NHPA shall be determined and coordinated by a qualified District Archaeologist. Resources determined eligible for the NRHP must be protected from proposed project impacts, or the impacts must be mitigated in consultation with appropriate parties.

The Archaeological Resources Protection Act (ARPA) secures the protection of archaeological resources and sites on lands owned and administered by the United States for the benefit of the American people. According to ARPA, it is illegal to excavate, remove, damage, or deface archaeological resources on public lands without a permit issued by the federal agency managing the land. It is also illegal to sell or transport archaeological resources removed from public lands. Tulsa District requires permits for archaeological investigations at Canton Lake in accordance with ARPA and is increasing surveillance and coordination with law enforcement agencies in the state to enforce ARPA civil and criminal penalties.

According to the Native American Graves Protection and Repatriation Act (NAGPRA), it is the responsibility of a federal agency to inventory human remains and associated funerary objects, as well as summarize any potential sacred objects, that existed within their archaeological collections prior to the passage of the law and, to the extent possible, identify their cultural affiliation in order to repatriate such objects to affiliated Tribes requesting their return. In addition, there are responsibilities related to the inadvertent discovery of human remains or funerary objects that occurred on federal land after the passage of the law that require a separate process of consultation, affiliation determinations, and notifications prior to repatriation. Although NAGPRA compliance has been an ongoing focus of the Tulsa District and many consultations and repatriations have occurred over the past 25-30 years, there is still more work to be done.

In recognition of the significance of the responsibility the Tulsa District has to ensure the proper and respectful treatment of the individuals who have been - or may inadvertently be - disinterred from Tulsa District land and acknowledging the fact that this work requires more than a part-time effort to be accomplished, a new full-time position has been established to focus on the proper execution of this responsibility. The intensive process to verify existing documentation and complete any missing part of the process for all collections of human remains, funerary objects, or sacred objects subject to NAGPRA in Tulsa District archaeological collections is in progress. As a necessity, this renewed effort is starting with research and reorganization of associated records and archaeological collections to ensure the proper identification and initial inventory of all NAGPRA materials that are under the control of Tulsa District. This effort will include NAGPRA collections that have been made – or may yet be discovered - at Canton Lake, therefore, compliance with NAGPRA is ongoing.

2.11 CURRENT SOCIAL AND ECONOMIC CONDITIONS

2.11.1 Zone of Interest

Canton Lake is in Blaine County, OK and is approximately two miles north of Canton, OK. The zone of interest (100-mile radius) for the socio-economic analysis covers portions of three states including Kansas, Oklahoma, and Texas. Table 2.5 contains a list of counties in the zone of interest.

Table 2.5 Zone of Interest Counties

Barber County, KS	Greer County, OK
Clark County, KS	Harper County, OK
Comanche County, KS	Jackson County, OK
Cowley County, KS	Kay County, OK
Harper County, KS	Kingfisher County, OK
Kingman County, KS	Kiowa County, OK
Kiowa County, KS	Lincoln County, OK
Meade County, KS	Logan County, OK
Pratt County, KS	McClain County, OK
Sumner County, KS	Major County, OK
Alfalfa County, OK	Noble County, OK
Beaver County, OK	Oklahoma County, OK
Beckham County, OK	Osage County, OK
Blaine County, OK	Pawnee County, OK
Caddo County, OK	Payne County, OK
Canadian County, OK	Pottawatomie County, OK
Cleveland County, OK	Roger Mills County, OK
Comanche County, OK	Washita County, OK
Custer County, OK	Woods County, OK
Dewey County, OK	Woodward County, OK
Ellis County, OK	Collingsworth County, TX
Garfield County, OK	Hemphill County, TX
Grady County, OK	Lipscomb County, TX
Grant County, OK	Wheeler County, TX

2.11.2 Population

The estimated population in the zone of interest in 2023 was 2,224,316 (Table 2.6). Approximately 36% of the zone of interest's population resides in Oklahoma County, OK, and 13% in Cleveland County, OK.

Table 2.6 2010, 2020, and 2023 Population Estimates and Projections

Geographical Area	2010	2020	2023 Population Estimate	2040 Population Projection Estimates
Kansas	2,853,118	2,937,880	2,937,569	3,280,420
Oklahoma	3,751,351	3,959,353	3,995,260	4,235,086
Texas	25,145,561	29,145,505	29,640,343	38,063,056
Barber County, KS	4,861	4,228	4,153	4,130
Clark County, KS	2,215	1,991	1,987	927
Comanche County, KS	1,891	1,689	1,685	2,163
Cowley County, KS	36,311	34,549	34,487	28,443
Harper County, KS	6,034	5,485	5,446	4,978
Kingman County, KS	7,858	7,470	7,284	5,751
Kiowa County, KS	2,553	2,460	2,422	782
Meade County, KS	4,575	4,055	3,949	3,193
Pratt County, KS	9,656	9,157	9,120	9,256
Sumner County, KS	24,132	22,382	22,386	17,781
Alfalfa County, OK	5,642	5,699	5,685	6,537
Beaver County, OK	5,636	5,049	5,041	5,070
Beckham County, OK	22,119	22,410	22,202	22,438
Blaine County, OK	11,943	8,735	8,603	6,695
Caddo County, OK	29,600	26,945	26,626	27,877
Canadian County, OK	115,541	154,405	162,621	205,460
Cleveland County, OK	255,755	295,528	297,545	318,471

Geographical Area	2010	2020	2023 Population Estimate	2040 Population Projection Estimates
Comanche County, OK	124,098	121,125	121,699	110,101
Custer County, OK	27,469	28,513	28,332	33,806
Dewey County, OK	4,810	4,484	4,433	5,745
Ellis County, OK	4,151	3,749	3,717	3,793
Garfield County, OK	60,580	62,846	62,322	64,905
Grady County, OK	52,431	54,795	55,868	53,801
Grant County, OK	4,527	4,169	4,137	4,598
Greer County, OK	6,239	5,491	5,498	5,411
Harper County, OK	3,685	3,272	3,231	3,635
Jackson County, OK	26,446	24,785	24,730	20,267
Kay County, OK	46,562	43,700	43,731	39,681
Kingfisher County, OK	15,034	15,184	15,288	17,619
Kiowa County, OK	9,446	8,509	8,458	7,759
Lincoln County, OK	34,273	33,458	33,917	34,279
Logan County, OK	41,848	49,555	50,905	56,322
McClain County, OK	34,506	41,662	43,779	43,932
Major County, OK	7,527	7,782	7,656	9,051
Noble County, OK	11,561	10,924	10,909	10,578
OK County, OK	718,633	796,292	800,487	921,555
Osage County, OK	47,472	45,818	45,963	44,181
Pawnee County, OK	16,577	15,553	15,689	15,389
Payne County, OK	77,350	81,646	82,290	90,086
Pottawatomie County, OK	69,442	72,454	73,011	75,526
Roger Mills County, OK	3,647	3,442	3,378	3,655
Washita County, OK	11,629	10,924	10,857	9,974
Woods County, OK	8,878	8,624	8,619	10,304
Woodward County, OK	20,081	20,470	20,260	21,069
Collingsworth County, TX	3,057	2,652	2,733	3,522
Hemphill County, TX	3,807	3,382	3,311	4,948
Lipscomb County, TX	3,302	3,059	2,964	4,011
Wheeler County, TX	5,410	4,990	4,902	6,019
Zone of Interest Total	2,050,800	2,205,546	2,224,316	2,033,726

Table 2.7 2023 Population Estimate by Gender

Geographical Area	Male	Female
Kansas	1,473,655	1,463,914
Oklahoma	1,988,686	2,006,574
Texas	14,789,987	14,850,356
Barber County, KS	2,155	1,998
Clark County, KS	1,009	978
Comanche County, KS	818	867
Cowley County, KS	17,552	16,935
Harper County, KS	2,714	2,732
Kingman County, KS	3,708	3,576
Kiowa County, KS	1,183	1,239
Meade County, KS	1,987	1,962
Pratt County, KS	4,634	4,486
Sumner County, KS	11,307	11,079
Alfalfa County, OK	3,592	2,093
Beaver County, OK	2,499	2,542
Beckham County, OK	12,515	9,687
Blaine County, OK	4,530	4,073
Caddo County, OK	15,027	11,599
Canadian County, OK	80,773	81,848
Cleveland County, OK	148,524	149,021

Geographical Area	Male	Female
Comanche County, OK	62,938	58,761
Custer County, OK	13,973	14,359
Dewey County, OK	2,201	2,232
Ellis County, OK	1,820	1,897
Garfield County, OK	31,274	31,048
Grady County, OK	28,043	27,825
Grant County, OK	2,088	2,049
Greer County, OK	3,123	2,375
Harper County, OK	1,599	1,632
Jackson County, OK	12,471	12,259
Kay County, OK	21,868	21,863
Kingfisher County, OK	7,616	7,672
Kiowa County, OK	4,058	4,400
Lincoln County, OK	17,001	16,916
Logan County, OK	25,442	25,463
McClain County, OK	21,864	21,915
Major County, OK	3,828	3,828
Noble County, OK	5,407	5,502
OK County, OK	393,285	407,202
Osage County, OK	23,200	22,763
Pawnee County, OK	7,889	7,800
Payne County, OK	42,085	40,205
Pottawatomie County, OK	35,093	37,918
Roger Mills County, OK	1,698	1,680
Washita County, OK	5,425	5,432
Woods County, OK	4,586	4,033
Woodward County, OK	10,521	9,739
Collingsworth County, TX	1,300	1,433
Hemphill County, TX	1,801	1,510
Lipscomb County, TX	1,407	1,557
Wheeler County, TX	2,456	2,446
Zone of Interest Total	1,11,887	1,112,429

Source: U.S. Census Bureau, 2023 American Community Survey 5-Year (2018-2023), U.S. Census Bureau, 2020 Census, U.S. Census Bureau, 2010 Census, Kansas Estimates (2039), Barton School of Business Wichita State University, Oklahoma Estimates 2025 Oklahoma Comprehensive Water Plan for 2040, Texas Estimates, 2021 Regional Texas Water Plan for 2040

From 2023 to 2040, the population in the zone of interest is expected to decrease by approximately 10.2% from 2,263,894 to 2,033,726. In comparison, the forecasted populations of Kansas, Oklahoma, and Texas are expected to increase by 11.7%, 6.0%, and 28.4%. Counties within the zone of interest that are expected to grow include: Hemphill County, TX (49.4%), Lipscomb County, TX (35.3%), Collingsworth County, TX (28.9% Counties forecasted to decrease in population include: Kiowa County, KS (-67.8%), Clark County, KS (-53.3%), Blaine County, OK (-22.2%). Population for the years 2010 and 2020 are included for historical reference.

The distribution of the population by gender (Table 2.7) approximately 50% male and 50% female. Figure 2.5 shows the population by age group for Oklahoma, Kansas, Texas, and the entire zone of interest. The zone of interest is consistent by age group when compared to the three states.

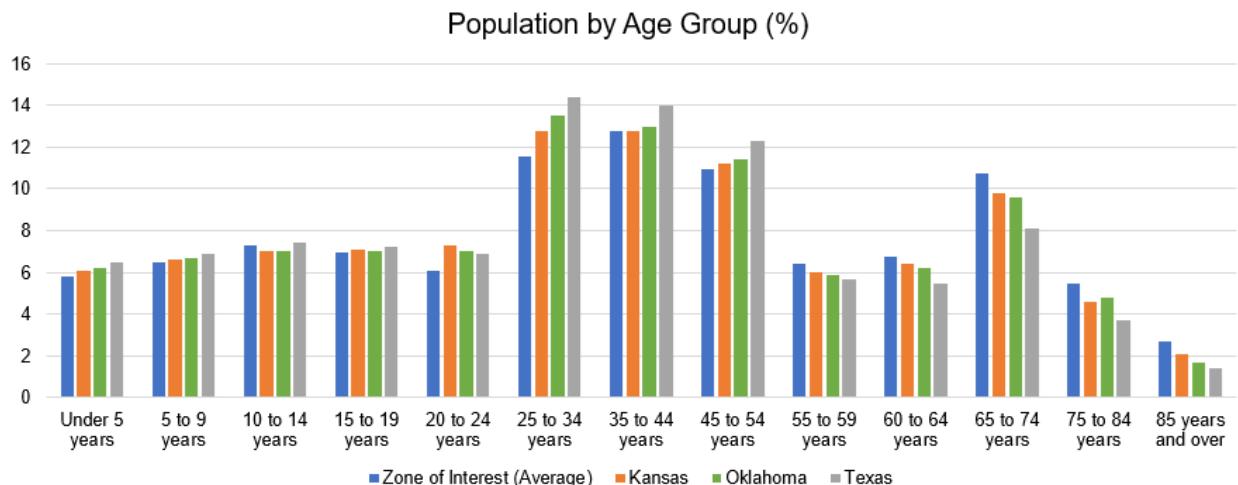


Figure 2.5 2021 Percent of Population by Age Group

Source: U.S. Census Bureau, 2023 American Community Survey 5-Year Estimates (2018-2023)

Population by race and Hispanic Origin is displayed in Table 2.8. The zone of interest is approximately 64.2% White, 14% Hispanic or Latino, 7.92% Black, 3.52% American Indian or Alaskan Native, 2.6% Asian, 0.19% Native Hawaiian/Other Pacific, 0.32% Some Other Race, and 7.9% Two or More Races. By comparison, the population in the state of Kansas is 73.4% White, 13.3% Hispanic or Latino, 5.3% Black, 0.43% American Indian or Alaskan Native, 2.9% Asian, 0.08% Native Hawaiian/Other Pacific, 0.38% Some Other Race, and 4.34% Two or More Races. Oklahoma is 62.8% White, 12.3% Hispanic or Latino, 6.9% Black, 6.8% American Indian or Alaskan Native, 2.3% Asian, 0.16% Native Hawaiian/Other Pacific, 0.28% Some Other Race, and 8.5% Two or More Races. Texas is 40% White, 39.5% Hispanic or Latino, 11.9% Black, 0.15% American Indian or Alaskan Native, 5.3% Asian, 0.08% Native Hawaiian/Other Pacific, 0.32% Some Other Race, and 2.9% Two or More Races.

Table 2.8 2021 Population Estimate by Race/Hispanic Origin

Area	White	Hispanic or Latino	Black	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some other race	Two or more races
Kansas	2,155,363	389,514	154,704	12,516	84,668	2,217	11,194	127,393
Oklahoma	2,509,923	490,797	274,899	271,284	92,345	6,313	11,236	338,463
Texas	11,832,668	11,697,134	3,528,533	44,974	1,557,270	24,165	105,597	850,002
Barber County, KS	3,687	254	7	85	21		10	89
Clark County, KS	1,673	127	0	37	38	0	6	106
Comanche County, KS	1,606	31	4	0	0	0	0	44
Cowley County, KS	26,639	4,098	763	411	642	70	49	1,815
Harper County, KS	4,740	421	46	14	11	6	13	195
Kingman County, KS	6,601	289	19	9	1	0	91	274
Kiowa County, KS	2,147	104	20	10	53	0	6	82
Meade County, KS	2,877	915	51	5	0	0	4	97
Pratt County, KS	7,773	755	189	17	20	0	52	314
Sumner County, KS	19,510	1,320	255	172	96	0	87	946

Area	White	Hispanic or Latino	Black	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some other race	Two or more races
Alfalfa County, OK	4,625	332	182	164	17	6	9	350
Beaver County, OK	3,335	1,381	14	48	5	0	17	241
Beckham County, OK	16,733	2,912	1,080	387	187	0	19	884
Blaine County, OK	6,117	1,012	352	517	0	0	0	605
Caddo County, OK	14,410	4,369	834	4,383	26	0	65	2,539
Canadian County, OK	116,087	18,557	5,800	4,410	5,061	136	1,326	11,244
Cleveland County, OK	202,169	31,631	14,113	10,214	13,690	21	919	24,788
Comanche County, OK	66,221	17,481	17,285	4,854	3,066	493	577	11,722
Custer County, OK	18,786	5,530	747	1,241	267	27	0	1,734
Dewey County, OK	3,597	267	1	204	2	0	0	362
Ellis County, OK	3,118	330	9	71	34	0	5	150
Garfield County, OK	44,145	9,234	1,176	859	780	2,433	9	3,686

Area	White	Hispanic or Latino	Black	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some other race	Two or more races
Grady County, OK	44,290	3,785	1,200	2,034	273	16	99	4,171
Grant County, OK	3,560	191	85	97	8	0	7	189
Greer County, OK	4,009	703	346	72	25	0	8	335
Harper County, OK	2,335	753	2	1	2	0	0	138
Jackson County, OK	15,210	6,075	1,464	281	370	25	43	1,262
Kay County, OK	31,195	3,833	868	3,422	234	20	148	4,011
Kingfisher County, OK	11,197	2,746	174	395	84	25	0	667
Kiowa County, OK	6,146	999	284	336	14	0	13	666
Lincoln County, OK	27,194	1,278	576	1,894	147	19	102	2,707
Logan County, OK	38,278	4,376	3,286	1,407	270	0	111	3,177
McClain County, OK	33,405	4,086	460	2,462	185	1	150	3,030
Major County, OK	6,308	808	2	58	35	0	21	424

Area	White	Hispanic or Latino	Black	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some other race	Two or more races
Noble County, OK	8,693	475	133	611	7	3	18	969
OK County, OK	423,239	157,068	113,402	18,389	26,901	602	2,585	58,301
Osage County, OK	28,602	2,051	4,676	4,881	92	8	83	5,570
Pawnee County, OK	11,755	558	151	1,395	54	42	49	1,685
Payne County, OK	61,125	5,287	2,989	3,165	3,296	61	126	6,241
Pottawatomie County, OK	51,198	4,501	2,249	8,373	590	93	118	5,889
Roger Mills County, OK	2,730	282	3	171	10	22	3	157
Washita County, OK	8,973	1,021	149	215	10	2	10	477
Woods County, OK	7,100	635	211	212	4	0	34	423
Woodward County, OK	15,521	3,021	248	376	78	3	21	992
Collingsworth County, TX	1,471	891	216	4	0	23	0	128
Hemphill County, TX	2,094	1,099	11	14	0	0	0	93

Area	White	Hispanic or Latino	Black	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some other race	Two or more races
Lipscomb County, TX	1,670	1,095	12	11	0	14	0	162
Wheeler County, TX	3,383	1,224	81	11	70	0	9	12
Zone of Interest Total	1,427,277	310,191	176,225	78,399	56,776	4,171	7,022	164,255

Source: U.S. Census Bureau, 2023 American Community Survey 5-Year (2018-2023)

2.11.3 Education and Employment

Table 2.9 displays the highest level of education attained by the population ages 25 and over. In the zone of interest, 3.7% of the population have less than a 9th grade education; another 6.6% have between a 9th and 12th grade education; 29.1% have at least a high school diploma or equivalent; 22.4% have some college education; 8.2% have an associate degree; 19.3% have a bachelor's degree; and 10.7% have a graduate or professional degree.

In Kansas, 3.4% of the population have less than a 9th grade education; another 4.7% have between a 9th and 12th grade education; 25.6% have at least a high school diploma or equivalent; 22.1% have some college education; 9.0% have an associate degree; 22% have a bachelor's degree; and 13.2% have a graduate or professional degree.

In Oklahoma, 3.8% of the population have less than a 9th grade education; another 7.1% have between a 9th and 12th grade education; 30.7% have at least a high school diploma or equivalent; 22.3% have some college education; 8.3% have an associate degree; 18.1% have a bachelor's degree; and 9.7% have a graduate or professional degree.

In Texas, 7.3% of the population have less than a 9th grade education; another 7% have between a 9th and 12th grade education; 24.3% have at least a high school diploma or equivalent; 20.6% have some college education; 7.8% have an associate degree; 21.1% have a bachelor's degree; and 11.9% have a graduate or professional degree

Table 2.9 2023 Population Estimate by Highest Level of Educational Attainment, Population 25 Years of Age and Older

Area	Population 25 years and over	Less than 9th grade	9th to 12th grade, no diploma	High school graduate (includes equivalency)	Some college, no degree	Associate degree	Bachelor's degree	Graduate or professional degree
Kansas	1,933,293	66,345	90,250	495,115	427,546	174,373	425,528	254,136
Oklahoma	2,641,325	100,466	186,612	811,387	588,667	220,400	478,236	255,557
Texas	19,294,631	1,414,661	1,345,062	4,691,708	3,966,494	1,494,735	4,078,930	2,303,041
Barber County, KS	2,824	37	132	911	688	290	617	149
Clark County, KS	1,389	35	70	367	321	166	319	111
Comanche County, KS	1,261	15	46	389	438	131	189	53
Cowley County, KS	22,736	619	1,294	7,043	5,422	2,843	3,518	1,997
Harper County, KS	3,678	148	230	1,372	902	229	571	226
Kingman County, KS	5,116	71	408	1,479	1,375	564	862	357
Kiowa County, KS	1,660	51	127	461	386	177	351	107
Meade County, KS	2,545	155	236	628	647	3	344	235
Pratt County, KS	5,836	169	281	1,753	1,514	569	991	559
Sumner County, KS	15,163	261	645	5,099	3,670	1,437	2,661	1,390
Alfalfa County, OK	4,342	147	468	1,543	963	322	587	312
Beaver County, OK	3,356	301	199	1,058	686	341	543	228
Beckham County, OK	15,133	654	1,720	6,351	3,132	1,265	1,299	712
Blaine County, OK	6,005	357	564	2,196	1,467	341	847	233
Caddo County, OK	18,165	813	1,596	8,443	3,600	903	2,107	703
Canadian County, OK	107,833	2,983	5,465	29,424	25,468	10,251	24,011	10,231
Cleveland County, OK	191,179	4,392	10,384	47,290	44,342	16,667	40,142	27,962

Area	Population 25 years and over	Less than 9th grade	9th to 12th grade, no diploma	High school graduate (includes equivalency)	Some college, no degree	Associate degree	Bachelor's degree	Graduate or professional degree
Comanche County, OK	78,537	2,227	5,177	25,881	20,222	6,047	12,247	6,736
Custer County, OK	16,639	832	1,092	4,724	3,362	1,084	3,672	1,873
Dewey County, OK	2,848	47	165	1,293	631	149	360	203
Ellis County, OK	2,598	151	155	968	636	169	367	152
Garfield County, OK	40,397	1,507	3,533	14,852	8,164	3,332	6,251	2,758
Grady County, OK	37,972	1,056	2,555	15,022	7,992	3,016	5,890	2,441
Grant County, OK	2,872	113	141	1,157	514	294	478	175
Greer County, OK	3,985	104	625	1,401	893	354	520	88
Harper County, OK	2,192	163	108	657	525	155	442	142
Jackson County, OK	15,910	1,005	1,118	4,311	3,685	1,941	2,498	1,352
Kay County, OK	28,985	565	2,180	10,254	7,100	3,517	3,746	1,623
Kingfisher County, OK	9,877	449	522	4,139	1,965	548	1,611	643
Kiowa County, OK	5,840	283	532	1,909	1,572	468	707	369
Lincoln County, OK	23,403	585	1,979	9,786	5,613	1,819	2,552	1,069
Logan County, OK	34,264	728	2,101	10,997	7,402	2,600	7,255	3,181
McClain County, OK	29,340	766	2,565	9,141	6,741	1,899	5,799	2,429
Major County, OK	5,206	234	280	2,216	1,127	414	694	241
Noble County, OK	7,545	251	422	2,660	1,853	829	1,066	464
Oklahoma County, OK	521,753	26,268	33,776	125,926	112,991	39,684	115,747	67,361
Osage County, OK	32,770	802	2,622	11,900	7,021	3,380	4,776	2,269
Pawnee County, OK	10,864	364	955	4,721	2,240	811	1,331	442

Area	Population 25 years and over	Less than 9th grade	9th to 12th grade, no diploma	High school graduate (includes equivalency)	Some college, no degree	Associate degree	Bachelor's degree	Graduate or professional degree
Payne County, OK	44,715	1,196	1,856	12,092	8,366	3,272	9,757	8,176
Pottawatomie County, OK	48,670	1,206	4,369	17,142	11,686	4,047	6,953	3,267
Roger Mills County, OK	2,333	40	110	839	623	164	365	192
Washita County, OK	7,458	158	670	2,960	1,677	473	951	569
Woods County, OK	5,358	228	384	1,699	1,073	231	1,216	527
Woodward County, OK	13,696	362	1,286	5,226	3,262	599	2,011	950
Collingsworth County, TX	1,720	126	297	353	339	157	321	127
Hemphill County, TX	2,209	204	138	727	384	216	459	81
Lipscomb County, TX	1,854	187	119	527	396	154	373	98
Wheeler County, TX	3,372	129	288	1,119	977	201	596	62
Zone of Interest	1,479,564	54,072	98,033	431,749	332,465	122,047	284,099	157,099

Source: U.S. Census Bureau, 2018-2023 American Community Survey 5-Year Estimates (2023 Estimate)

Employment by sector is presented in Figure 2.6 and Table 2.10. Figure 2.6 shows that the largest percentage of the zone of interest is employed in the educational services, and health care and social assistance sector at 23.6%. 11.8% of the population Retail Trade, 9.4% work in Professional, scientific, and management and administrative and waste management services 9.1% work in Arts, entertainment, and recreation, and accommodation and food services, 7.7% work in Manufacturing, 5.7% work in Finance and insurance, and real estate and rental and leasing, 5.6% in Transportation and warehousing and utilities, and 5.1% in Other services, except public administration. The remainder of the employment sectors each comprise less than 5% of the zone of interest's labor force.

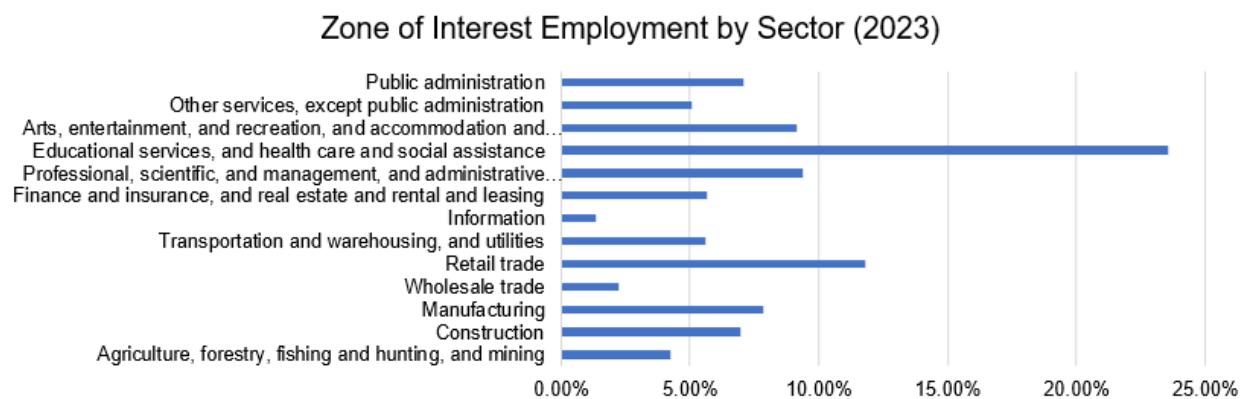


Figure 2.6 Zone of Interest Employment by Sector (2023)

Source: U.S. Census Bureau, 2023 American Community Survey 5-Year Estimates (2017-2023)

Table 2.10 Annual Average Employment by Sector (2023)

Employment Sector	Kansas	Oklahoma	Texas	Barber County, KS	Clark County, KS	Comanche County, KS	Cowley County, KS	Harper County, KS
Civilian employed population 16 years and over	1,454,760	1,808,400	14,140,748	2,105	949	841	15,226	2,271
Agriculture, forestry, fishing and hunting, and mining	45,519	70,517	344,777	478	143	186	660	317
Construction	92,579	130,633	1,222,119	124	56	56	797	86
Manufacturing	179,792	169,093	1,205,356	121	46	56	2,597	346
Wholesale trade	34,877	40,413	352,755	57	29	14	215	81
Retail trade	154,727	213,050	1,568,595	159	161	91	1,493	205
Transportation and warehousing, and utilities	78,346	107,007	925,629	96	45	36	953	124
Information	23,589	25,994	226,893	15	6	10	171	27
Finance and insurance, and real estate and rental and leasing	94,640	99,468	986,535	91	32	18	759	97
Professional, scientific, and management, and administrative and waste management services	145,304	165,980	1,774,719	45	63	20	788	56
Educational services, and health care and social assistance	361,409	416,261	3,055,393	637	240	294	4,237	617
Arts, entertainment, and recreation, and accommodation and food services	112,932	165,842	1,200,410	93	37	26	1,236	72
Other services, except public administration	63,842	92,278	695,175	80	40	21	621	129
Public administration	67,204	111,864	582,392	109	51	13	699	114

Source: U.S. Census Bureau, 2017-2023 American Community Survey 5-Year Estimates (2023 Estimate)

Employment Sector	Kingman County, KS	Kiowa County, KS	Meade County, KS	Pratt County, KS	Sumner County, KS	Alfalfa County, OK	Beaver County, OK	Beckham County, OK
Civilian employed population 16 years and over	3,599	1,233	1,883	4,250	10,000	2,052	2,307	8,227
Agriculture, forestry, fishing and hunting, and mining	392	211	311	488	357	375	467	1,449
Construction	256	68	246	201	675	185	172	580
Manufacturing	384	40	100	275	1,981	113	162	354
Wholesale trade	68	74	50	114	107	36	58	267
Retail trade	518	121	133	528	1,117	156	264	809
Transportation and warehousing, and utilities	152	77	141	302	549	204	120	502
Information	30	30	44	44	155	17	32	10
Finance and insurance, and real estate and rental and leasing	194	37	56	122	448	145	79	418
Professional, scientific, and management, and administrative and waste management services	126	73	36	159	666	126	97	552
Educational services, and health care and social assistance	860	316	478	1,267	2,433	320	463	1,444
Arts, entertainment, and recreation, and accommodation and food services	260	69	86	413	585	118	184	616
Other services, except public administration	204	59	125	110	455	112	121	644
Public administration	155	58	77	227	472	145	88	582

Source: U.S. Census Bureau, 2018-2023 American Community Survey 5-Year Estimates (2023 Estimate)

Employment Sector	Blaine County, OK	Caddo County, OK	Canadian County, OK	Cleveland County, OK	Comanche County, OK	Custer County, OK	Dewey County, OK	Ellis County, OK
Civilian employed population 16 years and over	3,074	10,624	81,501	148,104	45,237	14,146	1,844	1,640
Agriculture, forestry, fishing and hunting, and mining	517	1,330	3,250	2,551	584	1,301	351	336
Construction	264	750	4,358	9,666	2,536	778	95	125
Manufacturing	434	597	6,349	9,334	4,423	900	121	66
Wholesale trade	100	260	2,023	3,483	572	348	50	53
Retail trade	196	1,180	10,988	18,015	5,134	1,889	232	234
Transportation and warehousing, and utilities	159	897	4,924	7,518	2,105	812	154	90
Information	50	278	1,172	2,104	486	107	15	30
Finance and insurance, and real estate and rental and leasing	120	316	5,554	8,255	2,137	877	83	28
Professional, scientific, and management, and administrative and waste management services	152	502	8,684	15,214	3,525	645	97	51
Educational services, and health care and social assistance	540	2,093	18,032	38,257	12,949	3,685	245	314
Arts, entertainment, and recreation, and accommodation and food services	223	1,002	6,042	14,406	4,627	1,434	75	115
Other services, except public administration	121	528	3,871	7,119	2,048	756	187	82
Public administration	198	891	6,254	12,182	4,111	614	139	116

Source: U.S. Census Bureau, 2018-2023 American Community Survey 5-Year Estimates (2023 Estimate)

Employment Sector	Garfield County, OK	Grady County, OK	Grant County, OK	Greer County, OK	Harper County, OK	Jackson County, OK	Kay County, OK	Kingfisher County, OK
Civilian employed population 16 years and over	28,340	25,305	1,731	1,999	1,455	10,641	18,889	7,413
Agriculture, forestry, fishing and hunting, and mining	1,756	1,788	215	166	345	680	836	979
Construction	2,069	2,106	105	24	104	499	1,214	539
Manufacturing	3,144	2,306	96	131	41	925	2,838	512
Wholesale trade	737	579	86	12	0	237	293	149
Retail trade	3,838	3,021	208	121	170	1,311	2,540	642
Transportation and warehousing, and utilities	1,710	1,665	157	205	132	588	1,187	379
Information	189	221	13	8	0	123	140	323
Finance and insurance, and real estate and rental and leasing	847	1,333	101	78	51	403	649	408
Professional, scientific, and management, and administrative and waste management services	1,799	1,763	131	112	34	745	1,038	695
Educational services, and health care and social assistance	6,149	5,135	375	582	331	2,457	4,215	1,717
Arts, entertainment, and recreation, and accommodation and food services	2,730	2,050	81	138	57	942	1,888	408
Other services, except public administration	1,791	1,603	40	113	28	364	917	282
Public administration	1,581	1,735	123	309	162	1,367	1,134	380

Source: U.S. Census Bureau, 2018-2023 American Community Survey 5-Year Estimates (2023 Estimate)

Employment Sector	Kiowa County, OK	Lincoln County, OK	Logan County, OK	McClain County, OK	Major County, OK	Noble County, OK	OK County, OK	Osage County, OK
Civilian employed population 16 years and over	3,252	14,300	22,966	20,684	3,409	4,811	382,107	19,195
Agriculture, forestry, fishing and hunting, and mining	327	673	1,008	1,294	727	292	9,439	758
Construction	242	1,570	2,110	2,136	306	527	27,953	1,403
Manufacturing	206	1,255	1,125	1,543	281	868	25,661	2,108
Wholesale trade	17	228	756	339	149	252	8,982	347
Retail trade	346	1,698	2,477	1,970	305	334	45,479	2,333
Transportation and warehousing, and utilities	196	1,058	1,294	1,337	239	192	20,302	1,425
Information	56	125	195	220	16	16	6,077	361
Finance and insurance, and real estate and rental and leasing	232	897	1,087	998	138	244	26,322	901
Professional, scientific, and management, and administrative and waste management services	101	1,046	2,364	1,895	123	204	45,214	1,671
Educational services, and health care and social assistance	928	2,761	5,513	4,927	673	1,123	83,598	4,522
Arts, entertainment, and recreation, and accommodation and food services	238	1,069	1,965	1,303	175	226	36,644	1,748
Other services, except public administration	118	897	1,555	1,205	167	212	19,848	685
Public administration	245	1,023	1,517	1,517	110	321	26,588	933

Source: U.S. Census Bureau, 2018-2023 American Community Survey 5-Year Estimates (2023 Estimate)

Employment Sector	Pawnee County, OK	Payne County, OK	Pottawatomie County, OK	Roger Mills County, OK	Washita County, OK	Woods County, OK	Woodward County, OK	Collingsworth County, TX
Civilian employed population 16 years and over	37,189	29,922	1,472	4,686	4,059	9,750	1,372	37,189
Agriculture, forestry, fishing and hunting, and mining	1,267	1,011	321	556	697	1,286	127	1,267
Construction	2,275	2,161	48	443	112	715	103	2,275
Manufacturing	2,318	2,835	75	250	171	674	39	2,318
Wholesale trade	427	606	12	178	22	172	26	427
Retail trade	3,723	3,575	84	441	562	1,215	120	3,723
Transportation and warehousing, and utilities	1,318	1,567	152	462	161	574	130	1,318
Information	555	283	16	42	13	143	0	555
Finance and insurance, and real estate and rental and leasing	1,566	1,117	37	252	261	537	46	1,566
Professional, scientific, and management, and administrative and waste management services	2,466	2,128	155	202	181	469	138	2,466
Educational services, and health care and social assistance	13,754	6,970	268	866	1,148	1,966	396	13,754
Arts, entertainment, and recreation, and accommodation and food services	4,631	2,956	103	324	382	761	119	4,631
Other services, except public administration	1,417	1,525	58	431	64	522	59	1,417
Public administration	1,472	3,188	143	239	285	716	69	1,472

Source: U.S. Census Bureau, 2018-2023 American Community Survey 5-Year Estimates (2023 Estimate)

Employment Sector	Hemphill County, TX	Lipscomb County, TX	Wheeler County, TX	Zone of Interest
Civilian employed population 16 years and over	1,524	1,266	2,301	1,027,693
Agriculture, forestry, fishing and hunting, and mining	411	234	495	44,133
Construction	169	70	119	71,844
Manufacturing	43	85	65	79,159
Wholesale trade	3	35	43	22,835
Retail trade	101	50	145	121,155
Transportation and warehousing, and utilities	150	140	268	57,464
Information	14	6	15	14,054
Finance and insurance, and real estate and rental and leasing	65	33	44	58,783
Professional, scientific, and management, and administrative and waste management services	51	90	100	97,059
Educational services, and health care and social assistance	298	351	466	242,615
Arts, entertainment, and recreation, and accommodation and food services	60	46	295	93,506
Other services, except public administration	93	38	187	51,980
Public administration	66	88	59	73,106

Source: U.S. Census Bureau, 2018-2023 American Community Survey 5-Year Estimates (2023 Estimate)

A summary of the civilian labor force in the zone of interest is displayed in Table 2.11. In 2023, the zone of interest had an unemployment rate of 4.24%, lower than the unemployment rates of Oklahoma (4.9%) and Texas (5.10%), but higher than Kansas (3.9%).

Table 2.11 Labor Force, Employment and Unemployment Rates, 2023 Annual Averages

Geographic Area	Civilian Labor Force	Number Employed	Number Unemployed	Unemployment Rate
Kansas	1,513,914	1,454,760	59,154	3.90%
Oklahoma	1,901,599	1,808,400	93,199	4.90%
Texas	14,906,660	14,140,748	765,912	5.10%
Barber County, KS	2,154	2,105	49	2.30%
Clark County, KS	969	949	20	2.10%
Comanche County, KS	862	841	21	2.40%
Cowley County, KS	16,023	15,226	797	5.00%
Harper County, KS	2,354	2,271	83	3.50%
Kingman County, KS	3,738	3,599	139	3.70%
Kiowa County, KS	1,276	1,233	43	3.40%
Meade County, KS	1,905	1,883	22	1.20%
Pratt County, KS	4,414	4,250	164	3.70%
Sumner County, KS	10,633	10,000	633	6.00%
Alfalfa County, OK	2,145	2,052	93	4.30%
Beaver County, OK	2,352	2,307	45	1.90%
Beckham County, OK	8,734	8,227	507	5.80%
Blaine County, OK	3,322	3,074	248	7.50%
Caddo County, OK	11,227	10,624	603	5.40%
Canadian County, OK	84,907	81,501	3,406	4.00%
Cleveland County, OK	155,633	148,104	7,529	4.80%
Comanche County, OK	48,592	45,237	3,355	6.90%
Custer County, OK	14,665	14,146	519	3.50%
Dewey County, OK	1,930	1,844	86	4.50%
Ellis County, OK	1,754	1,640	114	6.50%
Garfield County, OK	29,590	28,340	1,250	4.20%
Grady County, OK	26,688	25,305	1,383	5.20%
Grant County, OK	1,804	1,731	73	4.00%

Geographic Area	Civilian Labor Force	Number Employed	Number Unemployed	Unemployment Rate
Greer County, OK	2,097	1,999	98	4.70%
Harper County, OK	1,487	1,455	32	2.20%
Jackson County, OK	11,229	10,641	588	5.20%
Kay County, OK	20,091	18,889	1,202	6.00%
Kingfisher County, OK	7,557	7,413	144	1.90%
Kiowa County, OK	3,398	3,252	146	4.30%
Lincoln County, OK	14,828	14,300	528	3.60%
Logan County, OK	23,756	22,966	790	3.30%
McClain County, OK	21,695	20,684	1,011	4.70%
Major County, OK	3,474	3,409	65	1.90%
Noble County, OK	4,924	4,811	113	2.30%
OK County, OK	401,554	382,107	19,447	4.80%
Osage County, OK	20,286	19,195	1,091	5.40%
Pawnee County, OK	6,783	6,542	241	3.60%
Payne County, OK	38,926	37,189	1,737	4.50%
Pottawatomie County, OK	31,626	29,922	1,704	5.40%
Roger Mills County, OK	1,523	1,472	51	3.30%
Washita County, OK	4,989	4,686	303	6.10%
Woods County, OK	4,355	4,059	296	6.80%
Woodward County, OK	10,237	9,750	487	4.80%
Collingsworth County, TX	1,389	1,372	17	1.20%
Hemphill County, TX	1,601	1,524	77	4.80%
Lipscomb County, TX	1,367	1,266	101	7.40%
Wheeler County, TX	2,383	2,301	82	3.40%
Zone of Interest	1,079,226	1,027,693	51,533	4.24%

Source: U.S. Census Bureau, 2023 American Community Survey 5-Year (2018-2023) (2023 averages)

2.11.4 Households, Income and Poverty

Table 2.12 displays the number of households and average household sizes in the state and zone of interest. There were approximately 858,788 households in the zone of interest with an average household size of 2.50.

Table 2.12 2023 Households and Household Size

Geographic Area	Total Households	Average Household Size
Kansas	1,160,715	2.46
Oklahoma	1,542,780	2.51
Texas	10,747,240	2.70
Barber County, KS	1,806	2.27
Clark County, KS	813	2.39
Comanche County, KS	821	1.98
Cowley County, KS	13,339	2.42
Harper County, KS	2,205	2.39
Kingman County, KS	3,088	2.31
Kiowa County, KS	948	2.32
Meade County, KS	1,496	2.58
Pratt County, KS	3,521	2.44
Sumner County, KS	8,974	2.45
Alfalfa County, OK	1,890	2.39
Beaver County, OK	1,695	2.92
Beckham County, OK	8,192	2.30
Blaine County, OK	3,393	2.25
Caddo County, OK	9,108	2.77
Canadian County, OK	57,464	2.79
Cleveland County, OK	115,293	2.47
Comanche County, OK	44,718	2.51
Custer County, OK	10,784	2.49
Dewey County, OK	1,595	2.73
Ellis County, OK	1,447	2.53
Garfield County, OK	23,910	2.53
Grady County, OK	20,540	2.67
Grant County, OK	1,555	2.61
Greer County, OK	2,030	2.24
Harper County, OK	1,255	2.53
Jackson County, OK	9,778	2.45
Kay County, OK	16,716	2.54
Kingfisher County, OK	5,639	2.67

Geographic Area	Total Households	Average Household Size
Kiowa County, OK	3,345	2.47
Lincoln County, OK	12,972	2.59
Logan County, OK	17,536	2.78
McClain County, OK	16,025	2.71
Major County, OK	3,201	2.36
Noble County, OK	4,203	2.52
OK County, OK	323,102	2.43
Osage County, OK	17,074	2.60
Pawnee County, OK	6,002	2.58
Payne County, OK	32,341	2.25
Pottawatomie County, OK	26,581	2.61
Roger Mills County, OK	1,423	2.36
Washita County, OK	4,101	2.59
Woods County, OK	3,488	2.20
Woodward County, OK	8,116	2.38
Collingsworth County, TX	947	2.82
Hemphill County, TX	1,368	2.38
Lipscomb County, TX	1,101	2.65
Wheeler County, TX	1,849	2.61
Zone of Interest	873,698	2.50

Source: U.S. Census Bureau, 2018-2023 American Community Survey 5-Year Estimates (2023 Estimate)

The median household income in the zone of interest ranged from \$42,063 in Kiowa County, OK to \$85,427 in Canadian County, OK in 2023, as displayed in Table 2.13. Per capita income in the zone of interest was \$32,959 in 2023, lower than the per capita income of the states of Oklahoma (\$34,859), Kansas (\$39,638) and Texas (\$39,446).

Table 2.13 2023 Median and Per Capita Income

Geographic Area	Median Household Income (All)	Per Capita Income
Kansas	\$72,639	\$39,638
Oklahoma	\$63,603	\$34,859
Texas	\$76,292	\$39,446
Barber County, KS	\$57,615	\$34,620

Geographic Area	Median Household Income (All)	Per Capita Income
Clark County, KS	\$65,515	\$35,022
Comanche County, KS	\$49,417	\$31,710
Cowley County, KS	\$58,263	\$31,072
Harper County, KS	\$55,417	\$28,555
Kingman County, KS	\$59,819	\$32,969
Kiowa County, KS	\$73,214	\$38,482
Meade County, KS	\$74,868	\$44,359
Pratt County, KS	\$64,348	\$33,584
Sumner County, KS	\$60,348	\$32,318
Alfalfa County, OK	\$67,870	\$29,173
Beaver County, OK	\$64,266	\$30,136
Beckham County, OK	\$52,323	\$26,675
Blaine County, OK	\$59,304	\$30,319
Caddo County, OK	\$52,817	\$25,741
Canadian County, OK	\$85,427	\$37,984
Cleveland County, OK	\$74,446	\$38,544
Comanche County, OK	\$59,000	\$30,670
Custer County, OK	\$57,562	\$31,487
Dewey County, OK	\$60,550	\$30,044
Ellis County, OK	\$56,992	\$31,354
Garfield County, OK	\$67,302	\$33,818
Grady County, OK	\$75,730	\$36,380
Grant County, OK	\$61,824	\$33,181
Greer County, OK	\$60,183	\$25,141
Harper County, OK	\$59,191	\$27,360
Jackson County, OK	\$61,497	\$32,371
Kay County, OK	\$56,673	\$31,190
Kingfisher County, OK	\$70,617	\$37,251
Kiowa County, OK	\$42,063	\$24,928
Lincoln County, OK	\$59,425	\$31,303
Logan County, OK	\$82,735	\$39,863
McClain County, OK	\$84,778	\$39,352

Geographic Area	Median Household Income (All)	Per Capita Income
Major County, OK	\$69,229	\$34,641
Noble County, OK	\$70,071	\$33,482
OK County, OK	\$65,374	\$38,438
Osage County, OK	\$60,482	\$32,096
Pawnee County, OK	\$57,551	\$28,961
Payne County, OK	\$48,937	\$28,980
Pottawatomie County, OK	\$60,828	\$29,013
Roger Mills County, OK	\$62,721	\$44,404
Washita County, OK	\$61,980	\$32,254
Woods County, OK	\$50,512	\$29,460
Woodward County, OK	\$65,060	\$35,404
Collingsworth County, TX	\$60,165	\$31,033
Hemphill County, TX	\$72,052	\$45,325
Lipscomb County, TX	\$71,442	\$34,127
Wheeler County, TX	\$67,964	\$30,869
Zone of Interest	\$63,245	\$33,030

Source: U.S. Census Bureau, 2018-2023 American Community Survey 5-Year Estimates (2023 Estimate)

Table 2.14 displays the percentage of persons and families whose incomes fell below the poverty level in the past twelve months as of 2021. Within the zone of interest, Collingsworth County, TX had the greatest share of people with incomes below the poverty level at 26.4%, followed by Kiowa County, OK at 25%. In terms of families below the poverty level, Hemphill County, TX has the lowest percentage with 1.7% and Collingsworth County, TX has the highest with 25.4%.

Table 2.14 Percent of Families and People Whose Income in the Past 12 Months is Below the Poverty Level (2023)

Geographic Area	All Families	All People
Kansas	7.70	11.50
Oklahoma	11.10	15.30
Texas	10.50	13.80
Barber County, KS	11.30	17.60
Clark County, KS	6.50	9.40
Comanche County, KS	8.80	11.20
Cowley County, KS	11.60	13.90

Geographic Area	All Families	All People
Harper County, KS	11.00	15.30
Kingman County, KS	5.50	9.40
Kiowa County, KS	4.30	5.70
Meade County, KS	7.70	6.60
Pratt County, KS	7.10	9.50
Sumner County, KS	7.60	10.80
Alfalfa County, OK	9.10	14.00
Beaver County, OK	5.50	9.80
Beckham County, OK	14.20	23.20
Blaine County, OK	12.00	15.30
Caddo County, OK	14.20	19.00
Canadian County, OK	5.80	8.60
Cleveland County, OK	7.70	12.80
Comanche County, OK	13.60	17.70
Custer County, OK	10.00	16.50
Dewey County, OK	10.20	14.40
Ellis County, OK	12.20	13.80
Garfield County, OK	10.00	12.70
Grady County, OK	8.50	12.30
Grant County, OK	9.60	13.50
Greer County, OK	10.10	14.70
Harper County, OK	10.80	15.90
Jackson County, OK	11.50	16.00
Kay County, OK	11.90	15.50
Kingfisher County, OK	9.00	11.70
Kiowa County, OK	22.70	25.00
Lincoln County, OK	12.80	16.50
Logan County, OK	9.40	13.70
McClain County, OK	6.30	7.80
Major County, OK	7.00	11.40
Noble County, OK	6.10	11.50
OK County, OK	11.60	15.70
Osage County, OK	9.10	12.60

Geographic Area	All Families	All People
Pawnee County, OK	12.50	17.00
Payne County, OK	12.10	23.90
Pottawatomie County, OK	11.70	15.70
Roger Mills County, OK	11.40	15.40
Washita County, OK	8.20	12.60
Woods County, OK	8.30	19.10
Woodward County, OK	11.60	11.10
Collingsworth County, TX	25.40	26.20
Hemphill County, TX	1.70	3.50
Lipscomb County, TX	13.00	13.60
Wheeler County, TX	14.70	14.20
Zone of Interest	10.27%	14.03%

Source: U.S. Census Bureau, 2023 American Community Survey 5-Y

2.12 RECREATION FACILITIES, ACTIVITIES, NEEDS, AND TRENDS

2.12.1 Visitation Profile

Visitation numbers are impacted by several factors including counting methodology, flooding, drought, COVID-19, and other environmental factors. Table 2.15 provides total visitation by year for FY 2019-2023. Other popular activities include picnicking and walking, hiking, and jogging. Overall, visitation is trending up with 2021 reporting 519,852 visitors.

Table 2.15 Canton Lake Total Visitation FY 2019-2023

	2019	2020	2021	2022	2023
TOTAL VISITATION	257,293	388,849	519,852	372,325	330,016

Source: USACE VERS (Visitation Estimation & Reporting System, 2019-2023)

2.12.2 Recreation Areas and Facilities

Canton Lake offers a variety of recreational opportunities. The quiet location provides a relaxing setting for camping, hunting, fishing, boating, hiking, or horseback riding. Table 2.15 provides a listing of areas as well as a general summary of the primary recreation facilities provided.

Table 2.16 Recreational Facilities and Operating Agencies

FACILITIES	Managing Entity	Designated Campsites	Boat Launching Ramps	Fishing Facilities	Picnic	Playground	Swimming Area	Trails
LOCATION								
Big Bend	U	*	*	D		*		
Big Bend Day Use Area	U		*	D	A GS			
Blaine Park	U	*		P		*		H
Canadian	U	*	*	D P				
Canadian Day Use Area	U		*	D	A GS	*		
Fairview	U	*			GS			
Longdale	U	*	*		A GS	*		
Sandy Cove	U	*						
Sandy Cove Day Use Area	U				A GS	*	*	
Thunder Road	U							
* Exists at lake Managing Entity O Other U USACE		Swimming BE Beach P Swimming Pool Trails B Bike Trails Q Equestrian Trails H Hiking Trails I Interpretive Hiking Trails M Multipurpose Trails						
Fishing D Fishing Docks P Fishing Piers								
Picnic A Picnic Area G Group Picnic GS Group Picnic Shelter								

Source: USACE 2016B

2.12.3 Fishing and Hunting

Canton Lake provides over 14,500 acres of public hunting land for a multitude of, wildlife species. Canton Lake also offers thousands of acres of water for fishing. Both hunting and fishing are described in more detail in Chapter 5 under Multiple Resource Management Lands Wildlife Management Areas.

2.12.4 Camping and Picnicking

USACE manages six parks at Canton Lake. Park areas include a variety of group and individual camping options with general hookups, restrooms, showering facilities, swim beach and fishing docks. Campgrounds are quiet and spacious, ranging from primitive nonelectric sites to paved camping pads with water and electricity for fully equipped recreational vehicles.

2.12.5 Water Sports

The lake offers a variety of recreational opportunities for boaters and non-boaters alike, including skiing, tubing, kayaking, swimming, or simply relaxing on or around Canton Lake. Three boat ramps are in the Big Bend Day Use Area, 1 in Big Bend A area, and 1 in Big Bend B area, 2 boat ramps in the Canadian Day Use Area, and 1 boat ramp between the Canadian A and B areas. Boating on the lake is in accordance with Oklahoma boating laws and USACE regulations. Just like traffic laws, boating laws exist to help prevent accidents. Sandy Cove has a large, designated swim beach at the North end of the parking lot.

2.12.6 Hiking

Canton Lake hiking is found at Frank Raab Nature Trail. The trail consists of four loops which share a common trail head. The first loop is 0.4 miles and contains interpretive information, the second loop is 0.9 miles, the third 1.6 miles and the fourth 1.8-mile loop makes up the hiking portion of the trail. The average width of the trail surface is maintained at approximately 4 feet. An information bulletin board is located at the trailhead. Trex posts with mileage, directional and trail management markers provide the hiker with additional information along the way. Two footbridges cross a stream, connecting the longer hiking portion of the trail to the shorter interpretive part. Two sets of steps are also maintained to assist visitors in negotiating the steeper grades. Both steps and bridges are equipped with handrails for safety.

2.12.7 Commercial Concession Leases

Concessionaires provide valuable services to the public at USACE lakes across the United States. USACE makes efforts to attract concessionaires that can establish suitable, well-maintained businesses offering desirable water-related services to the general public. Overlook Café currently serves as the only commercial concession lease at Canton Lake.

2.12.8 Recreation Analysis – Trends and Needs

The 2023 Statewide Comprehensive Outdoor Recreation Plan (SCORP) was referred to in preparing the Plan. Preparation of the 2023 SCORP included statewide surveys, outdoor recreation enthusiasts' survey, outdoor recreation providers' survey, and observations. In addition, the SCORP assessed public preferences through cited research pertinent to the recreation needs and issues of the people of Oklahoma and those who visit the state for recreational experiences.

The 2023 SCORP references data from a survey of statewide residents with questions pertaining to reasons and barriers to participation in outdoor recreation, funding priorities, use of technology while recreating, opinions about outdoor recreation issues, and demographics. The following are a list of findings from survey of statewide residents in the SCORP:

- 621 individuals completed the survey, with 96% of the respondents being Oklahoma residents.
- Over 70% of the respondents were female.
- 46% of the respondents indicated that they participate in outdoor recreation activities a few times per week.
- The top 5 most important reasons for participation are outdoor recreation actives were: (1) for relaxation, (2) connect with nature, (3) release from work/other pressures (4) release of personal pressure and stress, and (5) staying fit.
- The top 3 highest reasons identified as barriers to outdoor recreation participation were: (1) lack of time, (2) weather limiting options, and (3) sites/areas being too crowded.
- The top 5 rated outdoor recreation activities that people participate in are hiking/walking, camping, swimming, wildlife watching and fishing.
- The top funding priorities for respondents were: (1) improve/enhance existing parks and recreation areas and facilities, (2) increase outdoor recreation opportunities for children and youth, and (3) invest in new parks and recreation areas.
- 27% of respondents said that they participate less in outdoor recreation since the COVID-19 pandemic while 31% answered that they participate more.

The SCORP and related studies document national and regional trends showing the highest demand for unpaved trails for walking and hiking with demand expected to increase in the near future. Given the outdoor recreation trends, it is evident that future recreation development at Canton Lake should focus more on providing increased trail opportunities (of all kinds), more facilities for family and group gatherings, and more wildlife and nature-related viewing opportunities. With the popularity of hunting in Wildlife Management Areas, trails can be developed for hiking and nature viewing during non-hunting seasons and provide parking and trailheads that can be used for

both types of activities. The USACE should also place a high priority on the protection and retention of large, undeveloped parcels of public land. Doing so responds to outdoor recreation needs expressed in the SCORP and related studies. These large expanses of natural habitat on public land are held in high regard by the citizens throughout the zone of interest. This Plan responds to these needs through revised land classifications, new management objectives, and conceptual management plans for each land classification.

2.13 REAL ESTATE

A total of 19,890.92 acres of land were originally acquired in fee simple title for the Canton Lake project by USACE. There are 8.14 easement acres. Easement acres reflect all easements on the project and not solely flowage easements. These are the official acres from the Tulsa District Real Estate Division and may differ from those in other parts of this plan, which are for planning purposes only, due to improved measurement technology, erosion, and sedimentation.

2.13.1 Outgrants

The term “outgrant” is a broad term used by the USACE to describe a variety of real estate instruments wherein an interest in real property has been conveyed by the USACE to another party. Outgrants at Canton Lake include leases, licenses, easements, consents, permits, and others which include the following (including consents):

- 4 Easements
- 9 Leases
- 12 License
- 1 Permits

The demand for real estate outgrants at Canton Lake ranks fairly low among all USACE lake projects in terms of the total number and complexity. Management actions related to outgrants include routine inspections to ensure compliance with the terms of the outgrant, public safety requirements, and environmental compliance such as proper solid waste disposal and storage of pesticides. Additional actions include review of maintenance and construction proposals made by grantees. Leases are generally inspected annually for overall compliance, whereas minor outgrants are inspected approximately every five years or as needed. The management of outgrants is a major responsibility shared by the Operations and Real Estate Divisions of Tulsa District.

2.13.2 Guidelines for Property Adjacent to Public Land

It is the policy of the USACE to manage the natural, cultural, and developed resources of Canton Lake to provide the public with safe and healthful recreational opportunities, while protecting and enhancing those resources. While private exclusive use of public land is not permitted, property owners adjacent to public lands do have all the same rights and privileges as any other citizen on government owned property.

Therefore, the information contained in these policies is designed to acquaint the adjoining landowner and other interested persons with the types of property involved in the management of government land at Canton Lake.

2.13.3 Trespass and Encroachment

Government property is monitored by USACE personnel to identify and correct instances of unauthorized use, including trespasses and encroachments. The term "trespass" includes unauthorized transient use and occupancy, such as mowing, tree cutting and removal, livestock grazing, cultivation and harvesting crops, and any other alteration to Government property done without the USACE approval. Unauthorized trespasses may result in a Title 36 citation requiring violators to appear in Federal Magistrate Court, which could subject the violator to fines or imprisonment (See 36 C.F.R. Part 327 Rules and Regulations Governing Public Use of Water Resources Development Projects Administered by the Chief of Engineers). More serious trespasses will be referred to the USACE Office of Counsel for enforcement under state and federal law, which may require restoration of the premises and collection of monetary damages.

The term "encroachment" pertains to an unauthorized structure or improvement on Government property. When encroachments are discovered, lake personnel will attempt to resolve the issue at the project level. Where no resolution is reached, or where the encroachment is a permanent structure, the method of resolution will be determined by the USACE Real Estate Division, with recommendations from Operations Division and Office of Counsel. The USACE's general policy is to require removal of encroachments, restoration of the premises, and collection of appropriate administrative costs and fair market value for the term of the unauthorized use.

Incidents of unauthorized tree removal and mowing have occurred as well as the placement of personal property items such as outdoor furniture, firewood, boats, vehicles, and structures on USACE land. Trash dumping is an especially difficult and expensive problem at many USACE lakes. Efforts are continuously underway to resolve these unauthorized acts, but the sheer volume creates a workload that is difficult to accomplish.

CHAPTER 3 – RESOURCE GOALS AND OBJECTIVES

3.1 INTRODUCTION

The terms “goals” and “objectives” are often defined as synonymous, but in the context of this Master Plan resource goals express the overall desired end state of the Master Plan whereas resource objectives are specific task-oriented actions necessary to achieve the overall Master Plan goals.

3.2 RESOURCE GOALS

The following statements, paraphrased from EP 1130-2-550, Chapter 3, express the goals for the Canton Lake Master Plan:

GOAL A. Provide the best management practices to respond to regional needs, resource capabilities and capacities, and expressed public interests consistent with authorized project purposes.

GOAL B. Protect and manage the project’s natural and cultural resources through sustainable environmental stewardship programs.

GOAL C. Provide public outdoor recreation opportunities that support project purposes and public interests while sustaining the project’s natural resources.

GOAL D. Recognize the project’s unique qualities, characteristics, and potentials.

GOAL E. Provide consistency and compatibility with national objectives and other State and regional goals and programs.

In addition to the above goals, USACE management activities are guided by USACE-wide Environmental Operating Principles as follows:

- Foster sustainability as a way of life throughout the organization.
- Proactively consider environmental consequences of all USACE activities and act accordingly.
- Create mutually supporting economic and environmentally sustainable solutions.
- Continue to meet our corporate responsibility and accountability under the law for activities undertaken by USACE, which may impact human and natural environments.
- Consider the environment in employing a risk management and systems approach throughout the life cycles of projects and programs.

- Leverage scientific, economic and social knowledge to understand the environmental context and effects of USACE actions in a collaborative manner.
- Employ an open, transparent process that respects views of individuals and groups interested in USACE activities.

3.3 RESOURCE OBJECTIVES

Resource objectives are defined as clearly written statements that respond to identified issues and that specify measurable and attainable activities for resource development and/or management of the lands and waters under the jurisdiction of the Tulsa District, Canton Lake Project Office. The objectives stated in this Master Plan support the goals of the Master Plan, the USACE Environmental Operating Principles (EOPs), and applicable national performance measures. They are consistent with authorized project purposes, federal laws and directives, regional needs, resource capabilities, and they take public input into consideration. Recreational and natural resources carrying capacities are also accounted for during development of the objectives found in this Master Plan, as well as regional and state planning documents including:

- Oklahoma Comprehensive Wildlife Conservation Strategy
- Oklahoma Statewide Comprehensive Outdoor Recreation Plan

The objectives in this Master Plan are intended to provide project benefits, meet public needs, and foster environmental sustainability for Canton Lake to the greatest extent possible. Tables 3.1 through 3.5 list the resource objectives for Canton Lake. Objectives are subject to personnel and funding availability as well as recreational partners.

Table 3.1 Recreational Objectives

Recreation Objectives	Goals				
	A	B	C	D	E
Renovate existing facilities to provide a quality recreation experience, as funding becomes available, for visitors while protecting natural resources for use by others. Examples include provision of universally accessible facilities, improved electrical service at campsites.	*		*		
Provide affordable opportunities for day use activities, especially picnicking and swimming.	*		*		
Consider existing and future potential recreational opportunities for multiple user groups while ensuring visitor safety.	*		*	*	

Recreation Objectives	Goals				
	A	B	C	D	E
Manage recreation facilities in accordance with public demand. Examples include universally accessible fishing docks, playground equipment in day use and camping areas.	*		*		
Work with partners to improve existing trails and develop new ones.	*		*		*
Consider flood/conservation pool to address potential impact to recreational facilities (i.e., campsites, boat ramps, courtesy docks, etc.).	*	*	*	*	
Ensure consistency with USACE Natural Resource Management (NRM) Strategic Plan.					*
Monitor the Oklahoma SCORP to ensure that USACE is responsive to outdoor recreation trends, public needs and resource protection within a regional framework. All plans by others will be evaluated considering USACE policy and operational aspects of Canton Lake.			*		*

*Denotes that the objective helps to meet the specified goal.

Table 3.2 Natural Resource Management Objectives

Natural Resource Management Objectives	Goals				
	A	B	C	D	E
Give priority to the preservation and improvement of wild land values in public use planning, design, development, and management activities.	*	*		*	*
Work with Tribal Nations to provide access to any culturally significant sites and natural resources.		*		*	*
Consider flood/conservation pool levels to ensure that natural resources are managed in ways that are compatible with project purposes.	*	*		*	
Actively manage and conserve fish and wildlife resources, especially threatened and endangered species and Species of Greatest Conservation Need, by implementing ecosystem management principles. Key among these principles is the use of native species adapted to the Level III Central Great Plains and Level IV Broken Red Plains and Pleistocene Sand Dunes.	*	*		*	*
Manage high density and low-density recreation lands in ways that enhance benefits to wildlife.					*

Natural Resource Management Objectives	Goals				
	A	B	C	D	E
Optimize resources, labor, funds, and partnerships for protection and restoration of fish and wildlife habitats.		*			*
Minimize activities which disturb the scenic beauty and aesthetics of the lake.	*	*	*	*	
Stop unauthorized uses of public lands such as off-road vehicle (ORV) use, trash dumping, unauthorized fires, fireworks, poaching, clearing of vegetation, agricultural trespass, timber theft, unauthorized trails and paths, and placement of advertising signs that create negative environmental impacts.	*	*	*	*	*
Monitor lands and waters for invasive, non-native, and aggressively spreading native species and take action to prevent and/or reduce the spread of these species.	*	*		*	*
Protect and/or restore important native habitats such as prairies, bottomland hardwoods, riparian zones, and wetlands, where they occur, or historically occurred on project lands. Special emphasis should be taken to protect and/or restore special or rare plant species. Emphasize actions that promote butterfly and /or pollinator habitat, migratory bird habitat, habitat for birds listed by USFWS as Birds of Conservation Concern.	*	*		*	*

*Denotes that the objective helps to meet the specified goal.

Table 3.3 Visitor Information, Education, and Outreach Objectives

Visitor Information, Education, and Outreach Objectives	Goals				
	A	B	C	D	E
Provide opportunities (i.e., comment cards, updates to local municipalities, web page) for communication with agencies, special interest groups, and the general public. Utilize social media to inform visitors.	*			*	*
Provide educational, interpretive, and outreach programs at the lake office and around the lake. Topics to include history, lake operations (flood risk management and water supply), water safety, recreation, cultural resources, ecology, and USACE missions.	*	*	*	*	*
Promote USACE Water Safety message.	*		*	*	*
Educate adjacent landowners on policies and permit processes to reduce encroachment actions.	*	*	*	*	*

Visitor Information, Education, and Outreach Objectives	Goals				
	A	B	C	D	E
Work with Tribal Nations to provide educational and informational opportunities to the general public.	*	*	*	*	*

*Denotes that the objective helps to meet the specified goal.

Table 3.4 General Management Objectives

General Management Objectives	Goals				
	A	B	C	D	E
Maintain the public lands boundary line to ensure it is clearly marked and recognizable in all areas to reduce habitat degradation and encroachment actions.	*	*		*	
Identify safety hazards or unsafe conditions; correct infractions and implement safety standards in accordance with EM 385-1-1.					*
Ensure green design, construction, and operation practices, such as the Leadership in Energy and Environmental Design (LEED) criteria for government facilities, are considered as well as applicable Executive Orders.					*
Manage non-recreation outgrants such as utility and road easements in accordance with national guidance set forth in ER and EP 1130-2-550 and applicable chapters in ER 405-1-12.	*				*
The USACE will continue to monitor both current and projected climate change impacts to operations and the authorized project purposes within USACE federal fee boundary and react through adaptation and resiliency projects, as funding becomes available.	*	*	*		*

*Denotes that the objective helps to meet the specified goal.

Table 3.5 Cultural Resources Management Objectives

Cultural Resources Management Objectives	Goals				
	A	B	C	D	E
As funding permits, complete an inventory in accordance with Section 110 NHPA and prepare a Cultural Resources Management Plan.	*	*		*	*
Increase public awareness and education of regional and local Tribal histories.		*		*	*
Monitor and enforce Title 36 and ARPA to prevent unauthorized excavation and removal of cultural resources.		*		*	*

Cultural Resources Management Objectives	Goals				
	A	B	C	D	E
Provide access by Tribal Nations to any cultural resources, sacred sites, or other Traditional Cultural Properties.	*	*			
Preserve and protect cultural resources sites in compliance with existing federal statutes and regulations.	*	*	*	*	*

*Denotes that the objective helps to meet the specified goal.

CHAPTER 4 – LAND ALLOCATION, LAND CLASSIFICATION, WATER SURFACE, AND PROJECT EASEMENT LANDS

4.1 LAND ALLOCATION

All lands at USACE water resource development projects are allocated by USACE into one of four categories in accordance with the congressionally authorized purpose for which the project lands were acquired: Operations, Recreation, Fish and Wildlife, and Mitigation. Land allocations, unlike classifications, are assigned at the time of purchase and do not change unless authorized by congress. At Canton Lake, the land allocation categories that apply are Operations. Operations allocation is defined as those lands that are required to operate the project for the primary authorized purposes of flood control, water supply, fish and wildlife, and irrigation. Recreation allocation is defined as lands acquired specifically for the authorized purpose of recreation, referred to as separable recreation lands. The remaining allocations of Fish and Wildlife or Mitigation would apply only if lands had been acquired specifically for these purposes.

4.2 LAND CLASSIFICATION

4.2.1 General

The objective of classifying project lands is to identify how a given parcel of land shall be used now and in the foreseeable future. Land classification is a central component of this plan, and once a particular classification is established any significant change to that classification would require a formal process including public review and comment.

4.2.2 Prior Land Classifications

The previous version of the Canton Lake Master Plan included land classification criteria that were similar, but not identical to the current criteria. In the years since the previous Master Plan was published, wildlife habitat values, surrounding land use, and regional recreation trends have changed giving rise to the need for revised classifications. Table 4.1 identifies land and water surface classification changes from the 1975 Master Plan to the 2025 Master Plan.

Table 4.1 Change from 1975 Land and Water Surface Classifications to 2025 Land and Water Surface Classification

Prior Land Classifications (1975)	Acres	Proposed Land Classifications (2025)	Acres
Project Management Area	71	Project Operations (PO)	523
		Environmentally Sensitive Areas (ESA)	543
Public Use Areas	564	High Density Recreation (HDR)	635
State Wildlife Management	10,910	Multiple Resource Management – Wildlife Management (WM)	11,150
Not Classified	413		
Cheyenne-Arapaho Areas	530		
TOTAL LAND ACRES	12,488	TOTAL LAND ACRES	12,851
Prior Water Surface Classifications (1975)	Acres	Proposed Water Surface Classifications (2025)	Acres
Open Recreation	8,484	Open Recreation	7,557
		Designated No-Wake	13
		Restricted	40
TOTAL WATER SURFACE ACRES	8,484	TOTAL WATER SURFACE ACRES	7,610
TOTAL FEE	20,972	TOTAL FEE	20,461

Total fee simple title acreage differences from the 1975 total to the 2025 totals are due to improvements in measurement technology, deposition/siltation, and erosion. Totals also differ due to rounding while adding parcels.

4.2.3 Land and Water Surface Classifications

USACE regulations require project lands and waters to be classified in accordance with the primary use for which project lands are managed. There are five primary, and four subcategories of land classifications identified in USACE regulations, as well as four water classifications which are as follows:

- Project Operations
- High Density Recreation
- Mitigation
- Environmentally Sensitive Areas
- Multiple Resource Management Lands

- Low Density Recreation
- Wildlife Management
- Vegetative Management
- Future/Inactive Recreation
- Water Surface
 - Restricted Areas
 - Designated No Wake Areas
 - Fish and Wildlife Sanctuary
 - Open Recreation

The land and water surface classifications for Canton Lake were established after considering public comments, input from key stakeholders and lessees operating on USACE land, as well as USACE expert assessment. Additionally, wildlife habitat values identified in the WHAP and the trends analysis provided in the SCORP were used in land and water classification decision making. Furthermore, the USACE consulted with Tribal Nations who have cultural and historical interests in the lands at Canton Lake. Maps showing the various land classifications can be found in Appendix A. Each of the land classifications, including the acreage and description of allowable uses, is described in the following paragraphs.

4.2.4 Project Operations (PO)

This classification includes the lands managed for operation of the dam, stilling basin, project office, maintenance compound, spillway, and levee, all of which must be maintained to carry out the primary authorized purposes of flood risk management, water supply, recreation, and fish and wildlife. In addition to the operational activities taking place on these lands, limited recreational use may be allowed for activities such as public fishing access below the discharge outlet works. Regardless of any limited recreation use allowed on these lands, the primary classification of Project Operations will take precedent over other uses. There are 523 acres of Project Operations land specifically managed for this purpose.

4.2.5 High Density Recreation (HDR)

This classification includes lands developed, or available to be developed for intensive recreational activities including day use areas, campgrounds, marinas, and related concession areas. Recreation development by lessees operating on USACE lands must follow policy guidance contained in USACE regulations at ER 1130-2-550, Chapter 16. That policy includes the following statement:

“The primary rationale for any future recreation development must be dependent on the project’s natural or other resources. This dependency is typically reflected in facilities that accommodate, or support water-based activities, overnight use, and day use such as marinas, campgrounds, picnic areas, trails, swimming beaches, boat launching ramps, and comprehensive resort facilities. Examples that do not rely on the project’s natural or other resources include theme parks or ride-type attractions, sports or concert stadiums, and standalone facilities such as restaurants, bars, motels, hotels, non-transient trailers, and golf courses.

Normally, the recreation facilities that are dependent on the project's natural or other resources, and accommodate or support water-based activities, overnight use, and day use, are approved first as primary facilities followed by those facilities that support them. Any support facilities (e.g., playgrounds, multipurpose sports fields, overnight facilities, restaurants, camp stores, bait shops, comfort stations, and boat repair facilities) must also enhance the recreation experience, be dependent on the resource-based facilities, and be secondary to the original intent of the recreation development..."

Lands classified for High Density Recreation are suitable for the development of comprehensive resorts. The regulation cited above defines Comprehensive Resort as follows:

"Typically, multi-faceted developments with facilities such as marinas, lodging, conference centers, golf courses, tennis courts, restaurants, and other similar facilities."

At Canton Lake, there are 635 acres classified as High Density Recreation land. Each of the High Density Recreation Public Use Areas is described briefly in Chapter 5 of this Plan.

4.2.6 Mitigation

This classification is used only for lands set aside for mitigation for the purpose of offsetting losses associated with the development of the project. There are no lands at Canton Lake with this classification.

4.2.7 Environmentally Sensitive Areas (ESA)

These are areas where scientific, ecological, cultural, and aesthetic features have been identified. Several areas are designated as ESAs at Canton Lake primarily for the protection of a combination of sensitive habitats, aesthetics, and legally protected cultural resources. Each of these areas is discussed in Chapter 5 of this Plan and illustrated on the maps in Appendix A. Within those areas, hunting and other wildlife management activities are still permitted, but protection of sensitive resources takes priority over any other activity. The process of correspondence with Tribal Nations to designate ESAs is briefly described as a special topic in Chapter 6 of this Plan. There are 543 acres classified as ESA at Canton Lake.

4.2.8 Multiple Resource Management Lands (MRML)

This classification is divided into four sub-classifications identified as: Low Density Recreation, Wildlife Management, Vegetative Management, and Future/Inactive Recreation Areas. A given tract of land may be classified using one or more of these sub-classifications, but the primary sub classification should reflect the dominant use of the land. Typically, Multiple Resource Management Lands support only passive, non-intrusive uses with very limited facilities or infrastructure. Where needed, some areas may require basic facilities that include, but are not limited to minimal parking space, a

small boat ramp, and/or primitive sanitary facilities. There are 11,150 acres of land under this classification at Canton Lake. The following paragraphs list each of the sub-classifications, and the number of acres and primary uses of each.

Low Density Recreation (LDR)

These are lands that may support passive public recreational use (e.g., fishing, hunting, wildlife viewing, natural surface trails, hiking, etc.). There are 0 acres under this classification at Canton Lake.

Wildlife Management (WM)

This land classification applies to lands managed primarily for the conservation of fish and wildlife habitat. These lands generally include comparatively large contiguous parcels of land for passive recreation uses such as natural surface trails, fishing, hunting, and wildlife observation are compatible with this classification unless restrictions are necessary to protect sensitive species or to promote public safety. There are 11,150 acres of land included in this classification at Canton Lake.

Vegetative Management (VM)

These are lands designated for stewardship of forest, prairie, and other native vegetative cover. Passive recreation activities previously described may be allowed in these areas. There are no acres under this classification at Canton Lake.

Future or Inactive Recreation (FOIR)

These are lands with site characteristics compatible with High Density Recreation development but have been undeveloped or planned for very long-range recreation needs. These areas are typically closed to vehicular traffic and will be managed as multiple resource management lands until development takes place. There are no acres classified as Future or Inactive Recreation.

4.2.9 Water Surface

USACE regulations specify four possible sub-categories of water surface classification. These classifications are intended to promote public safety, protect resources, or protect project operational features such as the dam and spillway. These areas are typically marked by the USACE or lessees with navigational or informational buoys or signs or are denoted on public maps and brochures. The Water Surface Classification map can be found in Appendix A of this Plan. The four sub-categories of water surface classification are as follows:

Restricted

Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations, safety, and security purposes. The areas include the water surface immediately surrounding the gate control tower upstream of

the Canton Lake Dam, around the water intake structures, just below the dam, and at designated swim beaches. There are 40 acres of restricted water surface at Canton Lake.

Designated No-Wake

Designated No-Wake areas are intended to protect environmentally sensitive shorelines and improve boating safety near key recreational water access areas such as boat ramps. There are nine boat ramps at Canton Lake where no-wake restrictions are in place for reasons of public safety and protection of property. There are 13 acres of designated no-wake water surface at Canton Lake. No-wake areas are typically denoted by buoys in appropriate areas.

Fish and Wildlife Sanctuary

This water surface classification applies to areas with annual or seasonal restrictions to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning. Canton Lake has no acres of water surface designated as a Fish and Wildlife Sanctuary.

Open Recreation

Open Recreation includes all water surface areas available for year-round or seasonal water-based recreational use. This classification encompasses the majority of the lake water surface and is open to general recreational boating. Boaters are advised through maps and brochures, or signs at boat ramps, that navigational hazards may be present at any time and at any location in these areas. Operation of a boat in these areas is at the owner's risk. Specific navigational hazards may or may not be marked with a buoy. There are 7,557 acres of water surface at Canton Lake are designated as Open Recreation.

4.2.10 Project Easement Lands

Project Easement Lands are primarily lands on which easement interests were acquired. Fee title was not acquired on these lands, but the easement interests convey to the Federal government certain rights to use and/or restrict the use of the land for specific purposes. Easement lands are typically classified as Operations Easement, Flowage Easement, and/or Conservation Easement.

At Canton Lake there are easement lands where a flowage easement was acquired. A flowage easement, in general, grants to the government the perpetual right to temporarily flood/inundate private land during flood risk management operations and to prohibit activities on the flowage easement that would interfere with flood risk management operations such as placement of fill material or construction of habitable structures.

CHAPTER 5 – RESOURCE PLAN

5.1 RESOURCE PLAN OVERVIEW

This chapter describes the management plans for each land use classification within the Master Plan. Management plans describe how the project lands and water surface will be managed in broad terms. A more descriptive plan for managing these lands resides in the Canton Lake Operations Management Plan (OMP). The OMP is an annually updated, task and budget-oriented plan identifying tasks necessary to implement the Resource Plan and achieve the goals and objectives of the Master Plan. Management of all lands, recreation facilities, and related infrastructure must take into consideration the effects of pool fluctuations associated with authorized project purposes. Management actions are dependent on congressional appropriations, the financial capability of lessees and other key stakeholders, and the contributions of labor and other resources by volunteers. Acreages shown for the various land classifications were calculated using GIS technology and may not agree with lease documents, prior publications, or official land acquisition records.

5.2 PROJECT OPERATIONS

The Project Operations (PO) classification is land associated with the dam, spillway, levees, lake office, maintenance facilities, and other areas managed solely for the operation and fulfillment of the primary mission of the project. There are 523 acres of lands under this classification, all of which are managed by the USACE. The Project Operation land management plan consists of continuing to provide physical security necessary to ensure continued operation of the critical operational structures.

Public access to Project Operations lands is restricted although limited recreational access is permitted when lake operations allow. Regardless of any authorized public recreational use of lands that are classified as Project Operations, the operation, maintenance, and safety requirements of the dam and associated lands and infrastructure take priority over any recreational access.

5.3 HIGH DENSITY RECREATION

Canton Lake has 635 acres classified as High Density Recreation. These lands were developed for intensive recreational activities for the visiting public including day use and campgrounds. National USACE policy set forth in ER and EP 1130-2-550, Chapter 16, limits recreation development on USACE lands to those activities that are dependent on a project's natural resources and typically include water-based activities, overnight use, and day use such as campgrounds, picnic areas, trails, swimming beaches, boat launching ramps and comprehensive resorts. Examples of activities that are not dependent on a project's natural resources include theme parks or ride-type attractions, sports or concert stadiums, and stand-alone facilities such as restaurants, bars, motels, hotels, and golf courses.

The High-Density Recreation areas at Canton Lake include 6 (six) park areas that are managed by USACE. The USACE will continue to review requests and ensure compliance with applicable laws and regulations for proposed activities in all USACE-operated HDR areas. USACE will also continue to ensure that recreation areas are managed and operated in accordance with the objectives prescribed in Chapter 3. Additional best management practices to implement may include the following:

- Monitor the Oklahoma SCORP to ensure that USACE is responsive to outdoor recreation trends, public needs and resource protection within a regional framework. All plans by others will be evaluated considering USACE policy and operational aspects of Canton Lake. Preserve and restore wildlife habitat in high density recreation areas.
- Continue coordination with Oklahoma Forest Service regarding the management of emerald ash borer and sustaining general tree health in high density recreation areas.
- Work with Tribal Nations to provide educational and informational opportunities to the general public.

The following is a description of the parks operated by USACE at Canton Lake, some of which are highly developed, while others have only basic facilities and limited development. Classifications for the various parks at Canton Lake include Day Use, Class A (highly developed parks) and Class C (parks with basic facilities). Maps showing existing parks and facilities can be found in Appendix A.

5.3.1 USACE Managed High Density Recreation Areas

USACE is the largest federal provider of outdoor recreation, managing 12 million acres of lands and waters across the country. The recreation mission and overarching strategy of USACE is to manage and conserve natural resources while continuing to deliver a quality recreation program that is resilient considering today's fiscal realities and be responsive to the changing needs of the American people. The following parks are under USACE direct management.

Day Use Parks

- **Thunder Road**

Thunder Road is a 2-mile paved two lane road that meanders through the woods between Sandy Cove and Longdale campgrounds. It provides visitors an opportunity to enjoy nature's splendor and possibly wildlife. Frequently, deer can be seen browsing in open areas at dusk and early daylight hours. A variety of flowering shrubs, native grasses and wildflowers unfold a new panorama each season.



Photo 5.1 Thunder Road (Source: USACE)

Campgrounds

The campgrounds at Canton Lake are capable of hosting a large number of campers, picnickers, boaters, fishermen and hunters every year as one of the few places in western Oklahoma to offer so many activities. The shores of Canton Lake have several varieties of trees natural to the area which include eastern cottonwood, post, and blackjack oak, and black willow. Other trees planted in the campgrounds to

supplement the shade for campsites include American elm, sycamore, lacebark elm and silver maple.

- **Big Bend**

Big Bend Campground (Photo 5.2) is located on Canton Lake in northwest Oklahoma on the North Canadian River. The campground offers 58 campsites with 50-amp and 40 sites with 30-amp electricity plus water hookups. It also includes 17 non-electric campsites with some having water hookups, a shower house bathroom in the A area as well as the B area, and pit toilets scattered around the campground. Many of the campsites feature panoramic views of the lake. There is also a day-use group picnic shelter, 3 boat ramps at the day use area, 1 boat ramp in the A area, a ramp in the B area, and an 18-hole disc golf course. Most, if not all, campsites have a fire ring and grill as well.



Photo 5.2 Big Bend (Source: USACE)

- **Blaine Park**

Blaine Park is located on Canton Lake in northwest Oklahoma on the North Canadian River just 2.5 miles from the town of Canton. This campground's central location and scenic setting make it a very popular destination. It offers 13 non-electric tent sites, however the pads are big enough to accommodate camper trailers, you will

just need to bring a generator. Amenities include pit toilets, solar-powered-well drinking water, fire rings and grills, a nature trail, a playground, and good fishing areas within walking distance.

- **Canadian**

Canadian Campground is located at Canton Lake in northwest Oklahoma on the North Canadian River, just 2.5 miles from the town of Canton. This campground's central location, scenic setting, and excellent facilities make it a very popular destination. It offers 130 family sites that include water hookups, a fire ring, a grill, and 50-amp electric service at each site. The campground also offers 2 CXT concrete waterborne bathrooms and 8 showers in the A area, an older waterborne bathroom/shower house for men and women in the B area, a unisex pit toilet in between the A and B areas, 1 boat ramp, and 2 dump stations. The day use area has one day-use group picnic shelter with electrical and water hydrant, 1 set of men and women's pit toilets, 2 boat ramps, and a playground.

- **Fairview**

Fairview Campground is located at Canton Lake in northwest Oklahoma on the North Canadian River, 11 miles from the town of Canton. Fairview is a non-electric group campsite that's a popular destination for family reunions and other groups looking for a large, secluded camping area. It can accommodate up to 100 people, four RVs and several tents. Amenities include a large picnic shelter, pit toilet, and solar-powered-well drinking water.

Longdale

Longdale is located on Canton Lake in northwest Oklahoma on the North Canadian River, about 6 miles from the town of Canton and 2.5 miles from the town of Longdale. The campground offers some shade trees among its open grassy areas and some playground equipment. This year-round campground offers 34 non-electric campsites and one day-use group picnic shelter with electrical outlets. All campsites are nonelectric. Water hydrants are scattered throughout the campground. Drinking water is unavailable from November through March but during this time, camping is free.

Sandy Cove

Sandy Cove is located on the north end of Canton Lake in northwest Oklahoma on the North Canadian River, just 5 miles from the town of Canton. Though none of the campsites are adjacent to the lake, Sandy Cove is a very popular destination. It offers 35 family sites and one day-use group picnic shelter, all with 30-amp electrical hookups. Amenities include 1 waterborne bathroom/shower house with a men and women's side, water hookups scattered in different places of the camping area, and a large swim beach with its own waterborne bathroom for men and women, as well as a unisex pit toilet at the North end of the parking lot.

Trails

There is one trail at Canton Lake which is managed by USACE. The trail is open year-round and offer a variety of activities and experiences.

- **Frank Raab Nature Trail**

The Frank Raab Nature Trail (National Recreation Trail) is located below Canton Dam and adjacent to the spillway area of Canton Lake. The trail is a continuous trail consisting of four loops which share a common trail head. The first loop is the interpretive loop and is 0.4 miles in length. The second (0.9 miles), third (1.6 miles), and fourth (1.8 miles) loops make up the hiking portion of the trail. The average width of the trail surface is maintained at approximately 4 feet.

The Frank Raab Nature Trail provides scenic panorama of the region downstream of Canton Lake. A new and different view may be enjoyed throughout each loop. The terrain of the trail is that of gently rolling river bottom, characterized by sand dune topography and related sandy soil. Native vegetation, including Cottonwood, Chittamwood, Sand Plum, Virginia Creeper, Rough Leaf Dogwood, and Bluestem grasses are well represented along the entire trail. Deer, cottontail rabbits, fox squirrels and various songbirds are common in the area. A portion of the trail extends along a clear running stream, fed by the dam's toe drain system. The availability of water, cover and food makes the area an idea spot to observe wildlife. Several species of shoreline birds and waterfowl can be observed along the stream especially during the spring and fall migration periods. The trail also provides a scenic view of the North Canadian River and the Canton Dam structure.

An information bulletin board is located at the trailhead. Sign posts with mileage, directional and trail management markers provide the hiker with additional information along the way. The interpretive portion of the trail is self-guided. The metal framed interpretive markers mounted on metal posts are provided on the interpretive loop. Interpretive markers discuss different species with several learning aspects like sign language and brail to accommodate users. Two footbridges cross the forementioned stream, connecting the longer hiking segment of the trail to the shorter interpretive segment. Steps are present to assist visitors in negotiating the steeper grades. Both steps and bridges are equipped with handrails for safety.

Limited vehicle access allows for emergency equipment and vehicles to enter in the event of an accident or fire. The trail is located in an area that is patrolled regularly during the recreational season which helps to reduce vandalism and misuse of the facility.

Maintenance of the trail is accomplished by project personnel in conjunction with contract labor and volunteer groups. The earthen surface is continually improving due to increased use by hikers; however, periodic mowings are still performed from May through September annually. Litter pickup on the trail is part of the regular project

cleaning contract. Local fire departments respond in the event fire breaks out on the trail or in the surrounding area.

Frank Raab Nature Trail users are subject to the rules which apply to all USACE water resources development projects, and Title 36 of the Code of Federal Regulations. Camping and ground fires are prohibited on the trail. All trash must be removed and disposed of properly. No hunting or firearms are allowed.



Figure 5.1 Frank Raab Nature Trail (Source: USACE)

5.4 MITIGATION

The Mitigation classification is applied to lands that were acquired specifically for the purpose of offsetting losses associated with the development of the project. There are no acres at Canton Lake under this classification. USACE lands at Canton Lake where environmental mitigation activities have taken place in association with real estate easements or other outgrants are not included in lands classified for Mitigation.

5.5 ENVIRONMENTALLY SENSITIVE AREAS

Two (2) distinct areas totaling 543 acres are designated as Environmentally Sensitive Areas (ESA). These are areas where scientific, ecological, cultural, or aesthetic features have been identified. Designation of these lands is not limited to just lands that are otherwise protected by laws such as the Endangered Species Act, the National Historic Preservation Act (NHPA), or applicable state statutes. The primary management objective for ESAs is to allow existing compatible uses to continue but to protect sensitive resources from intensive development, use, or disturbance beyond that which currently exists. In general, these areas must be managed to ensure that they are not adversely impacted. With the exception of natural surface pedestrian trails and minimal visitor parking areas, limited or no development of public use facilities is allowed on these lands and no real estate outgrants for easements should be granted unless disturbance can be confined to the boundaries of existing easements. No agricultural or grazing uses are permitted on these lands unless necessary for a specific resource management benefit, such as prairie restoration or provision of supplemental browse and forage for wildlife. An ESA classification provides the highest level of ecological protection among the various land use classifications. Future management of ESAs includes monitoring and surveillance of cultural resource sites to ensure they are not damaged or destroyed. For a brief description of consultation with Tribal Nations for ESA and land classification changes, see Chapter 6.

The ESAs are listed and described in Table 5.1 and depicted in the map book found in Appendix A, number of acres for each ESA and a brief location description of the ESA. Many of the ESAs were designated to protect culturally and/or historically significant sites. Since the purpose of the ESA designation is to protect those sites, many of the ESAs have been expanded well beyond the known cultural site to avoid identifying the exact location of the site and to protect potential additional unidentified sites adjacent to those which are being protected.

Table 5.1 ESA Listing

ESA#	Acres	Location and Description
ESA 1	443	ESA 1 is located on the east side of the lake.
ESA 2	100	ESA 2 is located on the west end of the lake. The area is surrounded by wildlife management area.

5.6 MULTIPLE RESOURCE MANAGEMENT LANDS

Multiple Resource Management Lands (MRML) are, as the name implies, lands that serve multiple purposes, but that are sub-classified and managed for a predominant use. There are no lands sub-classified as Vegetation Management (VM) or Future or Inactive Recreation Areas at Canton Lake. The following paragraph describes the sub-classification, how they are managed, and provides the number of acres in each sub-classification.

5.6.1 Wildlife Management

There are 11,150 acres of MRML – Wildlife Management, which is the dominant land classification at Canton Lake. These are lands designated primarily for the stewardship of fish and wildlife resources but are available for passive recreation use such as natural surface trails, hiking, and nature study. The USACE objectives for these lands is to continue to ensure wildlife management practices are ecologically sustainable and provide the intended public benefits. In general, this land classification calls for managing the habitat to support native, ecologically adapted vegetation, which in turn supports native game and non-game wildlife species, with special attention given to federal and state-listed threatened and endangered species. Future management may include such activities as placement of nesting structures, construction of water features or brush piles, prescribed fire, fencing, removal of invasive species, and planting of specific food-producing plants that may be necessary to support wildlife needs. Additional best management practices may include use of erosion control blankets that do not pose entrapment hazards to wildlife; elimination of open-top vertical pipes that pose an entrapment hazard to wildlife; minimize nighttime lighting and only use down-shielded lighting to prevent disorientation of night-migrating birds; follow USFWS guidelines for building glass to prevent bird collisions; preserve and restore wildlife habitat in high density recreation areas; ensure that mowing practices provide standing tallgrass over winter to provide essential cover for wintering birds; and report sightings of state-listed species and presence of rare vegetative communities to USFWS and ODWC. Priority will be given to the improvement or restoration of existing wetlands, or the construction of wetlands where topography, soil type, and hydrology are appropriate.

Use of available funds for wildlife management must be prioritized to meet legal mandates and regional priorities. While exceptions can occur, management actions will be guided by the following, in order of priority: 1) Protect federal and state-listed threatened and endangered species. 2) Meet the needs of species protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. 3) Meet the needs of rare species and Species of Greatest Conservation Concern. 4) Meet the needs of resident species not included in the above priorities.

Additionally, agricultural leases for grazing or hay production may be employed when such actions are beneficial to long-term ecological management goals. Hunting and fishing activities are regulated by federal and state laws and special restrictions proposed by the USACE and approved through state regulatory processes. Natural surface pedestrian trails are appropriate for most areas designated as Wildlife Management and can be implemented through partnerships with other agencies.

Fishing and Hunting Opportunities

Nestled in the high plains of western Oklahoma, Canton Lake is Oklahoma's leading fisherman's paradise. Canton Lake provides several species of fish, including largemouth bass, crappie, white bass, white bass hybrids, and channel catfish. It is also widely known for an abundance of walleye. Walleye was the first of the "exotic species" of fish that was successfully stocked in Oklahoma, and Canton Lake has become the primary source of walleye eggs. They are taken by the Oklahoma Department of Wildlife Conservation for incubation in state fish hatcheries and ultimately stocked in other lakes.

A major attraction for hunters is the 14,862-acre public hunting area managed by the ODWC. The area primarily offers hunting for deer, waterfowl, wild turkey, squirrel, dove, and bobwhite quail. It is open all year. Public hunting maps are available at the Canton Lake Project Office and on the USACE Tulsa District website. State of Oklahoma hunting and fishing laws are enforced on project lands.

5.7 WATER SURFACE

At conservation pool level of 1615.4 NGVD29 there are 7,709 acres of water surface. The USACE is the primary agency responsible for managing the recreational use of the water surface at Canton Lake. Enforcement of water surface rules and regulations is a shared responsibility between the USACE, ODWC, and the Marine Enforcement Division of the Oklahoma Highway Patrol (OHP). Zoning of the water surface is intended to ensure the security of key operations infrastructure, promote public safety, and protect habitat. In accordance with national USACE policy set forth in EP 1130-2-550, the water surface of the lake at the conservation pool elevation may be designated using the following classifications:

5.7.1 Restricted

Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations and safety and security purposes. Vessels are not allowed to enter Restricted water surface. The total acreage of Restricted water surface is approximately 40 acres. The Restricted water surface at Canton Lake includes the area around the intake gate control tower near the dam, immediately below the dam which is restricted for safety and security concerns. Also, around the designated swimming beach. Future management calls for one or more of the following management measures: placement of buoys; placement of signs at swimming beach; and describing the areas on maps available to the public.

5.7.2 Designated No-wake

Designated No-Wake areas are intended to protect environmentally sensitive shorelines and improve visitor safety near key recreation water access areas such as boat ramps, and swim beaches. Designated No-Wake areas at Canton Lake include approximately 13 acres. Future plans include for No-wake Areas include continuing placement of buoys, placement of signs near boat ramps, and describing the areas on maps available to the public.

5.7.3 Open Recreation

Open Recreation includes all water surface areas available for year-round or seasonal water-based recreational use. Approximately 7,557 acres of Canton Lake water surface is designated as Open Recreation. Signs at boat ramps warn boaters that navigation hazards such as standing dead timber, shallow water, and floating debris may be present at any time and location and it is incumbent upon boat operators to exercise caution. Boating on the lake is in accordance with USACE regulations and water safety laws of Oklahoma. The USACE encourages all boaters and swimmers to wear lifejackets at all times and to learn to swim well.

5.7.4 Recreational Seaplane Operations

Recreation seaplane landings and takeoffs may occur on water surface areas where this activity is not prohibited. A map depicting areas where seaplane landings and takeoffs are prohibited can be found in Appendix A. The USACE imposed restrictions that apply to seaplane operations are published by the Federal Aviation Administration in their Notice to Airmen and are also set forth in Title 36 of the Code of Federal Regulations, Chapter III, Section 327.4. Note that once a seaplane is on the water it is considered to be a water vessel and falls under the guidelines for watercraft.

CHAPTER 6 – SPECIAL TOPICS/ISSUES/CONSIDERATIONS

6.1 COMPETING INTERESTS ON THE NATURAL RESOURCES

Canton Lake is a multi-purpose project with numerous authorized purposes. The authorized purposes accommodate the needs of federal, state, and municipal users which have developed over time and have contractual rights that must be honored. The benefits provided by virtue of authorized purposes are critical to the local and regional economies and are of great interest to the public. Aside from operating the reservoir to meet the needs of those entities with contractual rights, there are many competing interests for the utilization of federal lands including recreational users, adjacent landowners, those who own mineral rights, utility providers, and all entities that provide and maintain public roads. A growing population and increasing urbanization places additional stress on these competing interests through increased demand for water resources and recreation spaces as well as diminishing quality and space for natural habitat and open spaces. Balancing the interests of each of these groups to ensure that valid needs are met while at the same time protecting natural and cultural resources is a challenge. The purpose of this Plan is to guide management into the foreseeable future to ensure responsible stewardship and sustainability of the project's resources for the benefit of present and future generations.

6.2 UTILITY CORRIDORS

USACE policy allows for the establishment of designated corridors on project lands, where feasible, to serve as the preferred location for future outgrants such as easements for roads or utility lines. After obtaining public input and examining the location of existing roads and utility lines on project lands, and due to the relatively low demand for easements at Canton Lake, the USACE decided that the creation of utility corridors would not be necessary. Any entity seeking a utility easement to cross USACE property must research alternate routes around USACE property and demonstrate that a feasible alternative does not exist. Additionally, a NEPA review process would be required.

6.3 PUBLIC HUNTING ACCESS

Oklahoma has less public land available for hunting than many states, so public access on USACE lands is often the best opportunity for many Oklahoma residents for hunting. Hunting at all USACE projects is in accordance with applicable Federal and State regulations. Generally, all USACE hunting areas are open for public hunting of all legal species with the use of any legal weapon for that open season except in areas designated for restricted hunting. Hunting is prohibited in developed recreational areas, lands around dams, and around other structures. Vehicles must remain on established roads, and camping is allowed in designated areas only. Individuals interested in hunting on USACE lands should visit the Tulsa District Hunting Information webpage or visit the Canton Lake Office for more information. Hunting maps, guidelines, and restrictions are available at the USACE Tulsa District Website and Canton Lake Office.

6.4 CULTURAL RESOURCES AND CONSULTATION WITH TRIBAL NATIONS

It is required for federal agencies to consult with affiliated Native American Tribes on activities that take place on federal land under federal guidance including but not limited to Sections 106 and 110 of the National Historic Preservation Act (NHPA) of 1966 (as amended); Archaeological Resources Protection Act (ARPA) of 1979; Native American Graves Protection and Repatriation Act (NAGPRA); and 36 CFR Part 79, Curation of Federally-Owned and Administered Archeological Collections. Implementing regulations for Section 106 of the NHPA and NAGPRA are 36 CFR Part 800 and 43 CFR Part 10, respectively. All cultural resources laws and regulations should be addressed under the requirements of the 1969 NEPA as amended. USACE summarizes the guidance provided in these laws in ER and EP 1130-2-540. Additionally, Executive Order 13007 states that each federal agency with responsibility for the management of Federal lands shall accommodate access to and ceremonial use of Native American sacred sites by religious practitioners and avoid adversely affecting the physical integrity of such sacred sites.

The Tulsa District takes its responsibilities for consultation on a government-to-government basis very seriously and consulted extensively with Native American Tribes on the Canton Lake Master Plan. The Tulsa District consulted with Tribes primarily on developing ESA's and ensuring areas of Tribal concern were addressed. This process has allowed Tribes to become more familiar with USACE property at Canton Lake, and has increased USACE staff awareness of Tribal histories, sites, and concerns in the area. This exchange of knowledge from developing the master plan will allow USACE staff to better engage with Tribes on future projects at Canton Lake and will likely lead to more efficient reviews and better outcomes meeting objectives for both parties.

6.5 RECENTLY COMPLETED CONSTRUCTION AT CANTON LAKE

There have historically been three areas of concerns with respect to the performance of the dam including seepage and internal erosion through the foundation of the embankment, gated spillway instability and sliding due to high pool elevations and overtopping of the embankment during excessive inflows into the lake. To address these concerns, the Tulsa District pursued and conducted a Dam Safety Assurance Program (DSAP) including some risk-informed analysis related to consequences in downstream communities. The 2001 evaluation report confirmed engineering concerns related to the gated spillway sliding and potential overtopping of the embankment. To address potential deficiencies at the project, construction was approved to anchor the primary spillway weir to add resistance against sliding and the addition of an auxiliary spillway adjacent to the gated structure to increase release capacity at pool elevations near the top of dam. As a portion of this construction, waste material from upstream of the new auxiliary spillway was utilized to create a seepage berm downstream of the earthen embankment to address operational concerns related to seepage through the embankment. Construction for these modifications were completed in early 2017.

The auxiliary spillway at Canton Lake was chosen during design to be a system of hydraulic fusegates. These types of concrete retaining structures include pipes at the

base of the concrete walls which will fill with water from the lake at specific pool elevations. This waterflow at the base of the structure will cause certain sections of the wall to tip downstream due to the added buoyancy at designed pool elevations, increasing the release capacity of the project to avoid overtopping and subsequent failure of the main embankment. The Canton Lake auxiliary spillway includes nine concrete fusegates, with the first wall to tip over being the center section of the spillway at pool elevation EL 1640.5 NAVD88-ft (25-feet above normal pool elevation). As the pool elevations continue to increase, gates on either side of the new opening will continue to tip downstream until the entire auxiliary structure is flowing at EL 1642.12 NAVD88-ft. This additional release capacity was estimated during design to prevent overtopping of the embankment for the probable maximum flood approximated for the upstream basin.

In addition to the creation of the auxiliary spillway, construction included anchoring of the primary gated spillway and placement of a seepage collection berm on the downstream face of the main embankment. The primary spillway anchorage consisted of driving 64 high capacity, post-tensioned, high-strength rock anchors into the bedrock beneath the spillway weir. Anchor depth and angle were tested prior to placement to ensure stability at pool elevations approaching the top of dam. The seepage berm was added as an auxiliary benefit to reducing costs related to removing waste material from creation of the upstream/downstream approach channels for the auxiliary spillway. By placing the waste material on the downstream face of the embankment, trucking costs were reduced while addressing seepage and piping concerns related to the foundation underneath the embankment. The seepage berm is 200-feet wide extending from the contact of the primary gated spillway to the embankment crest access from Hwy 58A. A toe drain system was placed along the same interval at the base of the new stability berm to collect seepage flows moving through the foundation.

6.6 DISC GOLF

The “Sundance Ridge” Disc Golf Course, (Photo 6.1) located near the Big Bend Campground, is a free-to-use 18-hole course that is approximately 1.63 miles long. It hosts an annual tournament put on by the Oklahoma Disc Golf Association which brings in amateurs and professionals alike looking for a challenging course that brings a scenic environment to the players. It is open year-round which brings people from all over the local region to play and hone their skills.



Photo 6.1 Disc Golf (Source: USACE)

6.7 WALLEYE RODEO

The annual Canton Lake Walleye Rodeo (Picture 6.2) is a special event that is held once a year in May starting on the Thursday following Mother's Day and runs through Sunday. It is notably the oldest fishing tournament in Oklahoma and has brought in fisherman from across the country, let alone the state. The annual event usually marks the unofficial start of the summer for Canton Lake and its recreators, bringing in several hundred, if not over a thousand, participants. It is also a major contributor to the local commerce of the town of Canton as businesses and events are happening in town every day through the weekend, including a parade, rodeo, and sometimes fun in the park or town dance. On Sunday morning, a kid's fishing derby is held at the Canadian Day Use Area where families can register their children who are 12 and under for a chance at winning a free lifetime fishing license. The drawing is held at the awards ceremony that afternoon, which also brings a close to the annual walleye rodeo event. During the awards ceremony, prizes are given out to those who register during the tournament and cash prizes are also given out for placing in the top 5 biggest Walleye caught category, among other fish species based upon the weight of the fish.



Photo 6.2 Walleye Rodeo (Source: USACE)

CHAPTER 7 – PUBLIC AND AGENCY COORDINATION

7.1 PUBLIC AND AGENCY COORDINATION OVERVIEW

The USACE is dedicated to serving the public interests in support of the overall development of land uses related to land management for cultural, natural, and recreational resources of Canton Lake. An integral part of this effort is gathering public comment and engaging stakeholders in the process of planning. USACE policy guidance in ER and EP 1130-2-550 requires thorough public involvement and agency coordination throughout the master plan revision process including any associated NEPA process. Public involvement is especially important at Canton Lake to ensure that future management actions are environmentally sustainable and responsive to public outdoor recreation needs. The following milestones provide a brief look at the overall process of revising the Canton Lake Master Plan.

The USACE began planning to revise the Canton Lake Master Plan in the spring of 2024. The objectives for the Master Plan revision are to (1) revise land classifications to reflect changes in USACE land management policies since the 1975 Master Plan, (2) prepare new resource goals and objectives, and (3) revise the Master Plan to reflect new agency requirements for Master Plan documents in accordance with ER 1130-2-550, and EP 1130-2-550.

7.2 INITIAL STAKEHOLDER AND PUBLIC MEETINGS

On 23 July 2024 a public information meeting was held at Canton Elementary School to inform the public of the intent to revise the master plan. The public input period remained open for 38 days from 23 July 2024 to 30 August 2024. At the public information meeting a presentation was given that included the following topics:

- What is a Master Plan?
- What a Master Plan is Not
- Why Revise a Master Plan?
- Overview of the National Environmental Policy Act (NEPA) process
- Master Planning Process
- Instructions for submitting comments

For Canton Lake, USACE received one (1) comment.

Table 7.1 Comments from Initial Comment Period

Comment	Response
Comments from the EPA	
<p>The region 6 office of the U.S. Environmental Protection Agency (EPA) has reviewed the Tulsa District, U.S. Army Corps of Engineers (USACE), project requesting comments on environmental issues for the proposed revision of the Canton Lake Master Plan. The USACE defines the master plan (MP) as the strategic land use management document that guides the comprehensive management and development of all recreational, natural, and cultural resources throughout the life of the water resource development project. It defines "how" the resources will be managed for public use and resource conservation. The current MP, last approved in 1975, needs revision to address changes in regional land use, population, outdoor recreation trends, and the USACE management policy. The MP study area will include Canton Lake proper and all adjacent recreational and natural resources in USACE fee-owned property. To assist in the scoping process for the Project, EPA has identified significant areas for your attention. We offer the following comments for your consideration:</p> <p>Air Quality Comments</p> <p>EPA recommends that the environmental document provides a detailed discussion of ambient air conditions (baseline or existing conditions), National Ambient Air Quality Standards (NAAQS) and non-NAAQS pollutants, criteria pollutant nonattainment areas, and potential air quality impacts of the proposed project. Such an evaluation is necessary to understand the potential impacts from temporary, long-term, or cumulative degradation of air quality.</p>	<p>Noted. USACE seeks to address this comment through the Environmental Assessment. Currently there are no anticipated construction activities within the Master Plan. Any future construction would be required to complete necessary NEPA analysis.</p>

Comment	Response
<p>EPA recommends the environmental document describe and estimate air emissions from potential construction, maintenance, and operation activities, as well as proposed mitigation measures to minimize those emissions. We recommend an evaluation of the following measures to reduce emissions of criteria air pollutants and hazardous air pollutants (air toxics): For existing conditions, EPA recommends the environmental document provide a detailed discussion of ambient air conditions, NAAQS, and criteria pollutant nonattainment areas in the vicinity of the project.</p> <p>EPA recommends the environmental document estimate emissions of criteria and hazardous air pollutants (air toxics) from the proposed project and discuss the timeframe for release of these emissions over the lifespan of the project and describe and estimate emissions from potential construction activities, as well as proposed mitigation measures to minimize these emissions. The environmental document should also consider any expected air quality/visibility impacts to Class I Federal Areas identified in 40 CFR Part 81, Subpart D.</p> <p>EPA recommends the environmental document specify all emission sources by pollutant from mobile sources (on and off-road), stationary sources (including portable and temporary emission units), fugitive emission sources, area sources, and ground disturbance. This source specific information should be used to identify appropriate mitigation measures and areas in need of the greatest attention. EPA recommend the environmental document include a draft Construction Emissions Mitigation Plan and ultimately</p>	

Comment	Response
<p>adopt this plan in the Record of Decision. We recommend all applicable local, state (e.g., coordination of land-clearing activities with the state air quality agency to determine air quality conditions such as atmospheric inversions prior to performing open burning activities), or Federal requirements (e.g., certification of non-road engines as in compliance with the EPA Tier 4 regulations found at 40 CFR Parts 89 and 1039) be included in the Construction Emissions Mitigation Plan in order to reduce impacts associated with emissions of particulate matter and other toxics from any potential construction-related activities.</p> <p>National Pollutant Discharge Elimination System (NPDES) Comments</p> <p>EPA comments are specific to CWA Section 402, 40 CFR § 122.26(b)(14)(x) and 40 CFR § 122.26(b)(15)(i) National Pollutant Discharge Elimination System (NPDES) permitting regulations which authorize the discharge of stormwater from large and small construction activities in areas upland from a waterbody and not considered a jurisdictional wetland area, regardless of the land's designation as federal, state, Indian country or private.</p> <p>The USACE's Canton Lake, North Canadian River Master Plan Public Involvement presentation identified construction-related land classification definitions within the revision process including: Project Operations lands required for office, maintenance facilities and other areas used solely for project operations; High Density Recreation land developed for intensive recreational activities for the visiting public, including day use areas and campground areas for commercial concessions, and quasi-public development; and, Multiple Resource</p>	

Comment	Response
<p>Management Lands - Low Density Recreation lands with minimal development or infrastructure that support passive public recreational use (e.g., trails, primitive camping, wildlife observation, fishing and hunting). Additionally, the 1975 Amendments of the Revised Master Plan Canton Lake, North Canadian River Design Memorandum No. 1C identified seven recreational areas and proposals of additional and modification of facilities at all recreational areas, including for additional camping and picnic facilities, modifications to day-use facilities, swimming beaches, boat ramps and docks, playground facilities, toilets, showers, change houses, roadways, picnic shelters, water, electrical and septic systems, baseball diamond, tennis courts, café, sport shop concession, paved and gravel roads, parking, concession site with grocery store, guest establishment with rental units, trailer park with electrical hookups and water taps, beach areas. Also, five separate Supplements to Design Memorandum No. 1C Master Plan (Updated) from 1986-1992 have included construction of a waterborne shower/toilet building, group shelters for two recreational areas, an amphitheater, and additional dry boat storage; and, revision/updates to the three recreational area public use area plans.</p> <p>EPA recommends clarity at this time whether the Canton Lake, North Canadian River Master Plan Revisions will include construction-related activities included in, or similar to, the previous iteration and supplements of the master plan. Therefore, it is important to clarify that stormwater discharges from earth disturbances related to construction activities for buildings/shelters/change houses, trails,</p>	

Comment	Response
<p>roads, driveways, parking, housing/RV or trailer parks/guest establishments, cafes/sport shop/grocery stores, picnic shelters/group shelters, utilities, and other traditional construction activities identified above in the presentation and master plan/supplements do fall under Section 402 of the CWA and NPDES permitting program.</p> <p>For 40 CFR § 122.26(b)(14)(x) and 40 CFR § 122.26(b)(15)(i) NPDES regulations (applicable to State NPDES programs, see § 123.25) which authorize the discharge of stormwater from large and small construction activities, all entities associated with a construction project who:</p> <ol style="list-style-type: none"> 1) meet the NPDES permitting authority's definition of "operator," 2) cause an earth disturbance of 1 acre or greater, or less than one acre if part of a larger common plan of development or sale that ultimately disturbs 1 acre or greater, and 3) discharge stormwater from their construction activities (including any on- and off-site construction support activities), are required to obtain NPDES permit coverage via the Construction General Permit (CGP) or individual NPDES permit from the NPDES permitting authority prior to beginning construction activities and/or construction support activities. <p>EPA's 2022 CGP definition of construction activities refer to "earth-disturbing activities, such as the clearing, grading, and excavation of land, and other construction-related activities (e.g., grubbing; stockpiling of fill material; placement of raw materials at the site) that could lead to the generation of pollutants. Some of the types of pollutants that are typically found at construction sites are: sediment; nutrients; heavy metals; pesticides and herbicides; oil</p>	

Comment	Response
<p>and grease; bacteria and viruses; trash, debris, and solids; treatment polymers; and any other toxic chemicals." Therefore, demolition, building additions, renovations and new construction on existing pavement that results in earth disturbance and/or construction support activities (e.g., equipment staging yards, materials storage areas, excavated material disposal areas, etc.) that involve earth disturbance or pollutant-generating activities of its own, are considered construction-related activities that require NPDES permit coverage.</p> <p>Additionally, because it appears that the overall earth disturbance of this Canton Lake, North Canadian River Master Plan project will be greater than 1 acre, the larger common plan of development or sale will be triggered, therefore stormwater discharges from all construction activities and all -site or off-site construction support activities (i.e., borrow pits, staging areas, material storage areas, temporary batch plants, laydown areas, etc.) will be required to obtain NPDES permit coverage via the CGP or individual NPDES permit (except any portion of the project's construction activities that is covered by a CWA 404 permit or waived from permit coverage) regardless if the smaller project's earth disturbance in areas upland from the waterbody and not considered a jurisdictional wetland area is less than 1 acre. In Oklahoma, the Oklahoma Commission on Environmental Quality (ODEQ) is the NPDES permitting authority, except discharges in the State of Oklahoma 1) in areas under the authority of the Oklahoma Department of Agriculture and Forestry and 2) areas of Indian country covered by an extension of state program</p>	

Comment	Response
<p>authority pursuant to Section 10211 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA) and 3) areas associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171) of which EPA is the NPDES permitting authority.</p> <p>Pesticide Comments</p> <p>EPA recommends on page 105; the document should be updated to reference pesticide registration with the EPA as a requirement for use.</p> <p>RCRA Permits and Solid Waste Comments</p> <p>EPA recommends an assessment of the potential direct, indirect, and cumulative impacts of solid and hazardous waste from construction, maintenance, and operation of recreational facilities and access roads. EPA recommends identifying projected solid and hazardous waste types, volumes, and expected storage, disposal, and management plans.</p> <p>EPA recommends including a discussion on the applicability of state and federal hazardous waste requirements.</p> <p>EPA appreciates the opportunity to review the environmental issues and are available to discuss EPA's comments.</p>	

7.3 PUBLIC AND AGENCY REVIEW OF DRAFT MP, EA, AND FONSI

This section will be completed following the draft release, public input process, and 30-day comment period. Any comments received and government responses will be added.

CHAPTER 8 – SUMMARY OF RECOMMENDATIONS

8.1 SUMMARY OVERVIEW

The preparation of this Master Plan for Canton Lake followed the USACE master planning guidance in ER 1130-2-550 and EP 1130-2-550, both dated 30 January 2013. Three major requirements set forth in the guidance include the preparation of contemporary Resource Objectives, Classification of project lands using the approved classification standards, and the preparation of a Resource Plan describing in broad terms how the land in each of the land classifications will be managed into the foreseeable future. Additional important requirements include rigorous public involvement throughout the process, consideration of regional recreation and natural resource management priorities identified by other federal, state, and municipal authorities, and consultation with local Tribal Nations.

The study team endeavored to follow this guidance to prepare a Master Plan that will provide for enhanced recreational opportunities for the public, improve environmental quality, and foster a management philosophy conducive to existing and projected USACE staffing levels at Canton Lake as also reflected in ER 1130-2-540. Factors considered in the Plan development were identified through public involvement and review of regional and statewide planning documents including the 2023 Oklahoma SCORP, Mobility Plans by ODOT, EPA Ecoregion Handbook and descriptions, and the USFWS IPAC website. This Master Plan will guide the long-term sustainability of the outdoor recreation program and natural resources associated with Canton Lake.

8.2 LAND CLASSIFICATION PROPOSALS

A key component in preparing this Master Plan was examining prior land classifications and addressing the needed transition to the updated land classification standards that reflect how lands are being managed now and will be managed in the foreseeable future. The updated land classification standards will also comply with current USACE standards. Public comment was solicited to assist in making these land reclassification decisions. Consultation was also conducted with Tribal Nations to provide input on cultural and natural resources to help inform the land classification decisions. Chapter 7 of this Plan describes the public involvement process and Appendix E provides a summary of public comments received. After analyzing public comment, examining recreational trends, and taking into account regional natural resource management priorities, USACE team members reclassified the Federal lands and waters associated with Canton Lake as described in Table 8.1 and explained in Table 8.2.

Table 8.1 Change from 1975 Land and Water Surface Classifications to 2025 Land and Water Surface Classification

Prior Land Classifications (1975)	Acres	Proposed Land Classifications (2025)	Acres
Project Management Area	71	Project Operations (PO)	523
		Environmentally Sensitive Areas (ESA)	543
Public Use Areas	564	High Density Recreation (HDR)	635
State Wildlife Management	10,910	Multiple Resource Management – Wildlife Management (WM)	11,150
Not Classified	413		
Cheyenne-Arapaho Areas	530		
TOTAL LAND ACRES	12,488	TOTAL LAND ACRES	12,851
Prior Water Surface Classifications (1975)	Acres	Proposed Water Surface Classifications (2025)	Acres
Open Recreation	8,484	Open Recreation	7,557
		Designated No-Wake	13
		Restricted	40
TOTAL WATER SURFACE ACRES	8,484	TOTAL WATER SURFACE ACRES	7,610
TOTAL FEE	20,972	TOTAL FEE	20,461

Total fee simple title acreage differences from the 1975 total to the 2025 totals are due to improvements in measurement technology, deposition/siltation, and erosion. Totals also differ due to rounding while adding parcels.

Table 8.2 lists the descriptions and justifications for the reclassification of USACE lands at Canton Lake. The team examined numerous parcels that ranged from a few acres to hundreds of acres, and rather than describing how each individual parcel was reclassified, the changes are grouped by classification category. A few examples of changes made to individual parcels are provided to assist in understanding how and why changes were made. The prior land classification Public Use Area is similar to the current HDR classification; and the prior State Wildlife Management classification is similar to the current MRML – WM classification. The following table describes changes from the prior classification to current classifications but combines the similar classifications for ease of explaining changed acres.

Table 8.2 Changes and Justifications for Land and Water Surface Classifications ⁽¹⁾

Land and Water Classification	Description of Changes ⁽²⁾	Justification
Project Operations (PO)	<p>The net increase in Project Operations lands from 71 to 523 is due to the following:</p> <ul style="list-style-type: none"> • 76 acres of State Wildlife Area reclassified to PO • 199 acres of lands not classified in the 1975 Master Plan classified as PO • 153 acres of Public Use Area reclassified to PO • 70 acres of land classified as project operations in the 1975 Master Plan stayed in the classification of PO • 25 acres of water was reclassified to PO <p><i>* Any remaining acres not accounted for in above totals are attributed to changes in measuring technology.</i></p>	<p>All lands classified as PO are managed and used primarily in support of critical operational requirements related to the primary missions of flood risk management and water conservation, including lands that were previously classified as public use area.</p>
High Density Recreation (HDR)	<p>The net increase in High Density Recreation lands from 564 to 635 is due to the following:</p>	<p>The net increase in HDR was in part due to the reclassification of acres which were originally classified as Cheyenne-Arapaho Area. A small portion of water surface in the original land classification was also added to HDR. The</p>

Land and Water Classification	Description of Changes ⁽²⁾	Justification
	<ul style="list-style-type: none"> • 129 acres of lands previously classified as Cheyenne-Arapaho Area was reclassified to HDR • 26 acres of State Wildlife Area reclassified to HDR • 3 acres of land not classified in the 1975 Master Plan was classified as HDR • 390 acres of Public Use Area was reclassified to HDR • 71 acres of water was reclassified to HDR • 16 acres of land not in fee at the time of the 1975 Master Plan was classified as HDR <p><i>* Any remaining acres not accounted for in above totals are attributed to changes in measuring technology.</i></p>	reclassification of these acres reflects the current and future use.

Land and Water Classification	Description of Changes ⁽²⁾	Justification
Environmentally Sensitive Areas (ESA)	<p>The classification of 543 acres as Environmentally Sensitive Areas resulted from the following:</p> <ul style="list-style-type: none"> • 239 acres of State Wildlife Management Area were reclassified to ESA • 94 acres of land not classified in the 1975 Master Plan were classified to ESA • 211 acres of water was reclassified to ESA <p><i>* Any remaining acres not accounted for in above totals are attributed to changes in measuring technology.</i></p>	<p>Reclassification of 543 acres was determined by the study team to be necessary to provide a high level of protection for those areas supporting significant habitat, views, or cultural sites. Classifying these areas as ESA will afford these areas with the highest level of protection from disturbance.</p>

Land and Water Classification	Description of Changes ⁽²⁾	Justification
MRML – Wildlife Management (WM)	<p>The net increase in Wildlife Management lands from 10,910 acres to 11,150 acres is due to the following:</p> <ul style="list-style-type: none"> • 10,298 acres of State Wildlife Area was reclassified to WM • 24 acres of land not classified in the 1975 Master Plan were classified as WM • 1 acre of Public Use Area was reclassified as WM • 707 acres of water were reclassified as WM • 120 acres of land not classified in the 1975 Master Plan were classified as WM <p><i>* Any remaining acres not accounted for in above totals are attributed to changes in measuring technology.</i></p>	<p>Many islands previously classified as water were classified as WM due to adjacent land classifications. 239 WM acres were reclassified as ESA to allow for the highest level of protection from disturbance.</p>

Open Recreation	<p>The net decrease in Open Recreation water surface from 8,484 acres to 7,610 acres is due to the following:</p> <ul style="list-style-type: none"> • 40 acres of lands previously classified as Cheyenne-Arapaho Area was reclassified to Open Recreation • 88 acres of lands previously classified as State Wildlife Area was reclassified to Open Recreation • 90 acres of lands of Not Classified was classified to Open Recreation • 14 acres of land previously classified as Public Use Area was reclassified to Open Recreation • 707 acres of water previously classified as Open Recreation was reclassified to WM • 71 acres of water 	<p>Mapping accuracy and sedimentation has increased the amount of land surface and decreased the water surface resulting in adjustments to the land and water classifications. Many islands previously classified as water were classified as WM and ESA due to adjacent land classifications.</p>
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Land and Water Classification	Description of Changes ⁽²⁾	Justification
	<p>previously classified as Open Recreation was reclassified to HDR</p> <ul style="list-style-type: none"> • 25 acres of water previously classified as Open Recreation was reclassified to PO • 211 acres of water previously classified as Open Recreation was reclassified to ESA <p><i>* Any remaining acres not accounted for in above totals are attributed to changes in measuring technology.</i></p>	

(1) The land classification changes described in this table are the result of changes to individual parcels of land ranging from a few acres to several hundred acres. New acreages were measured using more accurate GIS technology, thus total changes will not equal individual changes. The acreage numbers provided are approximate.

(2) Acreages are based on GIS measurements and may vary from net difference detailed in Table 8.1.

CHAPTER 9 – BIBLIOGRAPHY

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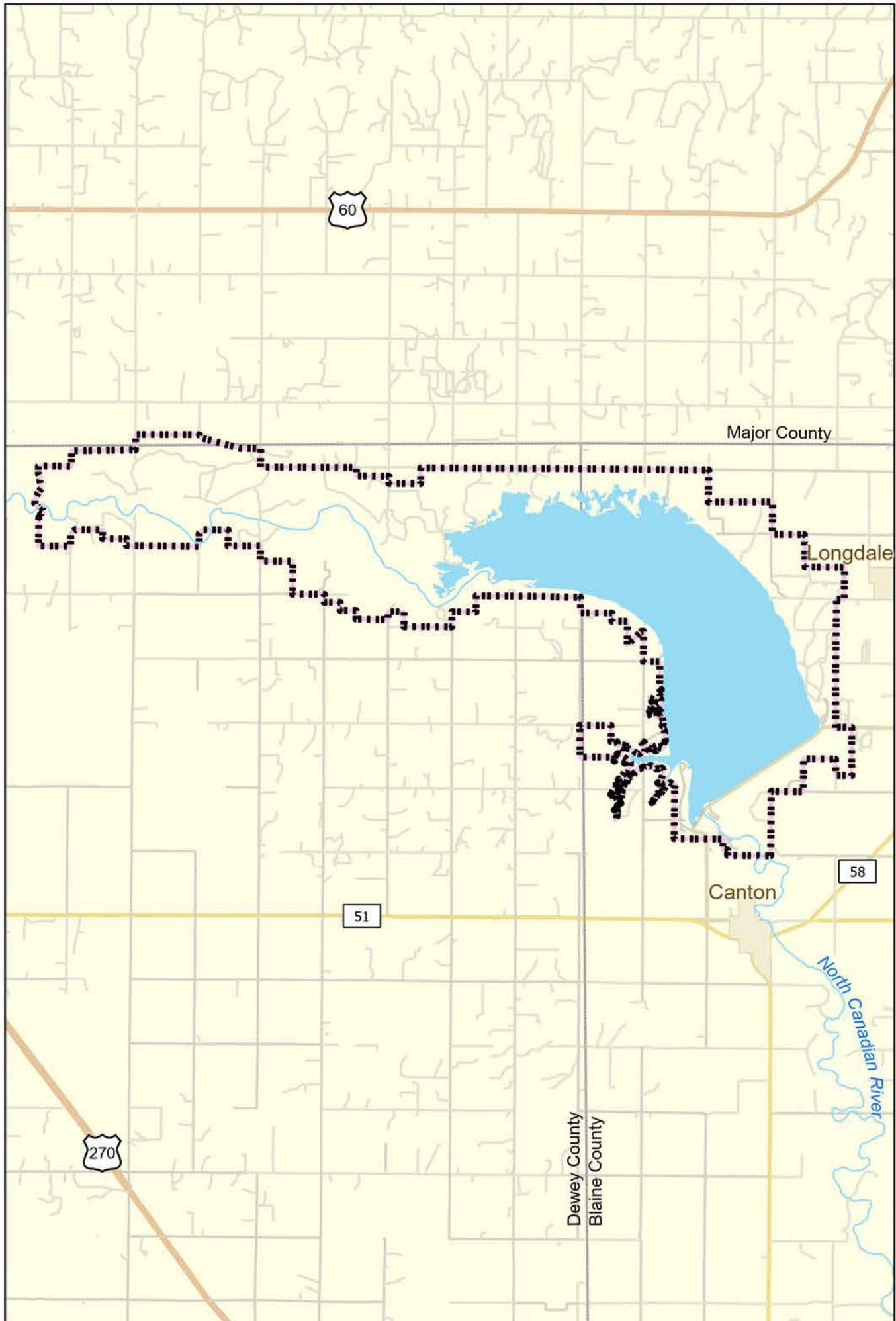
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APPENDIX A – LAND CLASSIFICATION, MANAGING AGENCIES, AND RECREATION MAPS



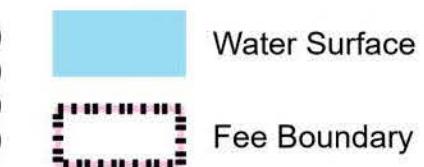
INDEX TO MASTER PLAN MAPS

GENERAL

MAP NO.	TITLE
CAN25MP-OI-00	PROJECT LOCATION & INDEX TO MAPS
CAN25MP-OM-01	LAND MANAGING ENTITIES
CAN25MP-OP-01	SEAPLANE GUIDE
CSN25MP-OW-01	WATER SURFACE CLASSIFICATIONS

LAND AND WATER CLASSIFICATIONS

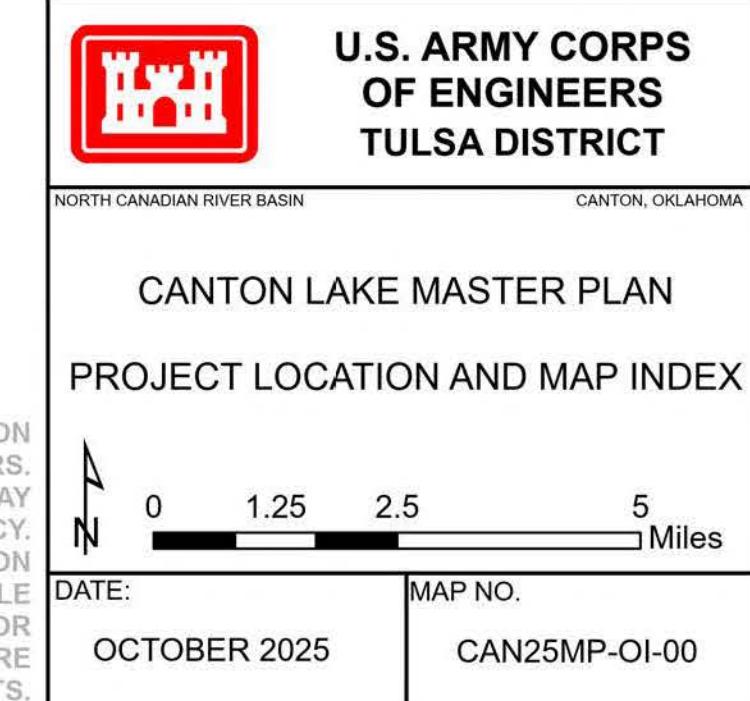
MAP NO.	TITLE
CAN25MP-OC-00	LAND AND WATER CLASSIFICATIONS (00)
CAN25MP-OC-01	LAND AND WATER CLASSIFICATIONS (01)
CAN25MP-OC-02	LAND AND WATER CLASSIFICATIONS (02)
CAN25MP-OC-03	LAND AND WATER CLASSIFICATIONS (03)

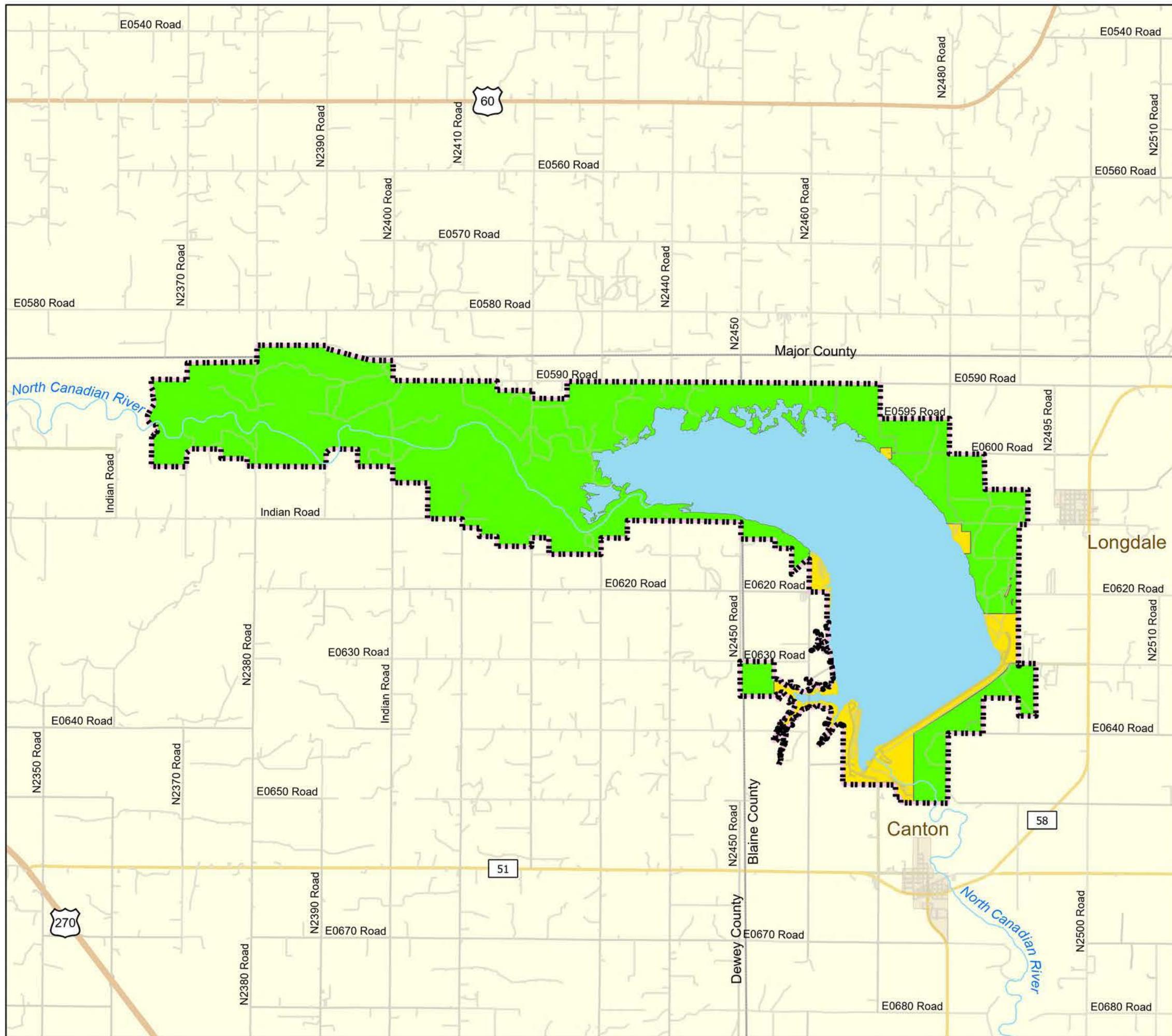


RECREATIONAL AREAS

MAP NO.	TITLE
CAN25MP-OR-0A	MANAGED RECREATIONAL AREAS
CAN25MP-OR-0B	PARK PLATE INDEX
CAN25MP-OR-01	FAIRVIEW
CAN25MP-OR-02	LONGDALE
VAN25MP-OR-03	SANDY COVE
CAN25MP-OR-04	BLAINE PARK
CAN25MP-OR-05A	CANADIAN A
CAN25MP-OR-05B	CANADIAN B
CAN25MP-OR-06A	BIG BEND A
CAN25MP-OR-06B	BIG BEND B

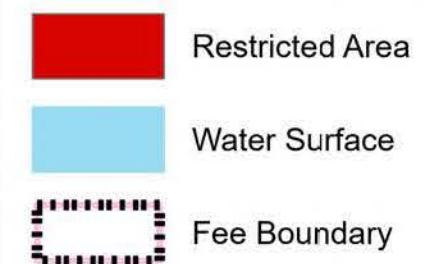
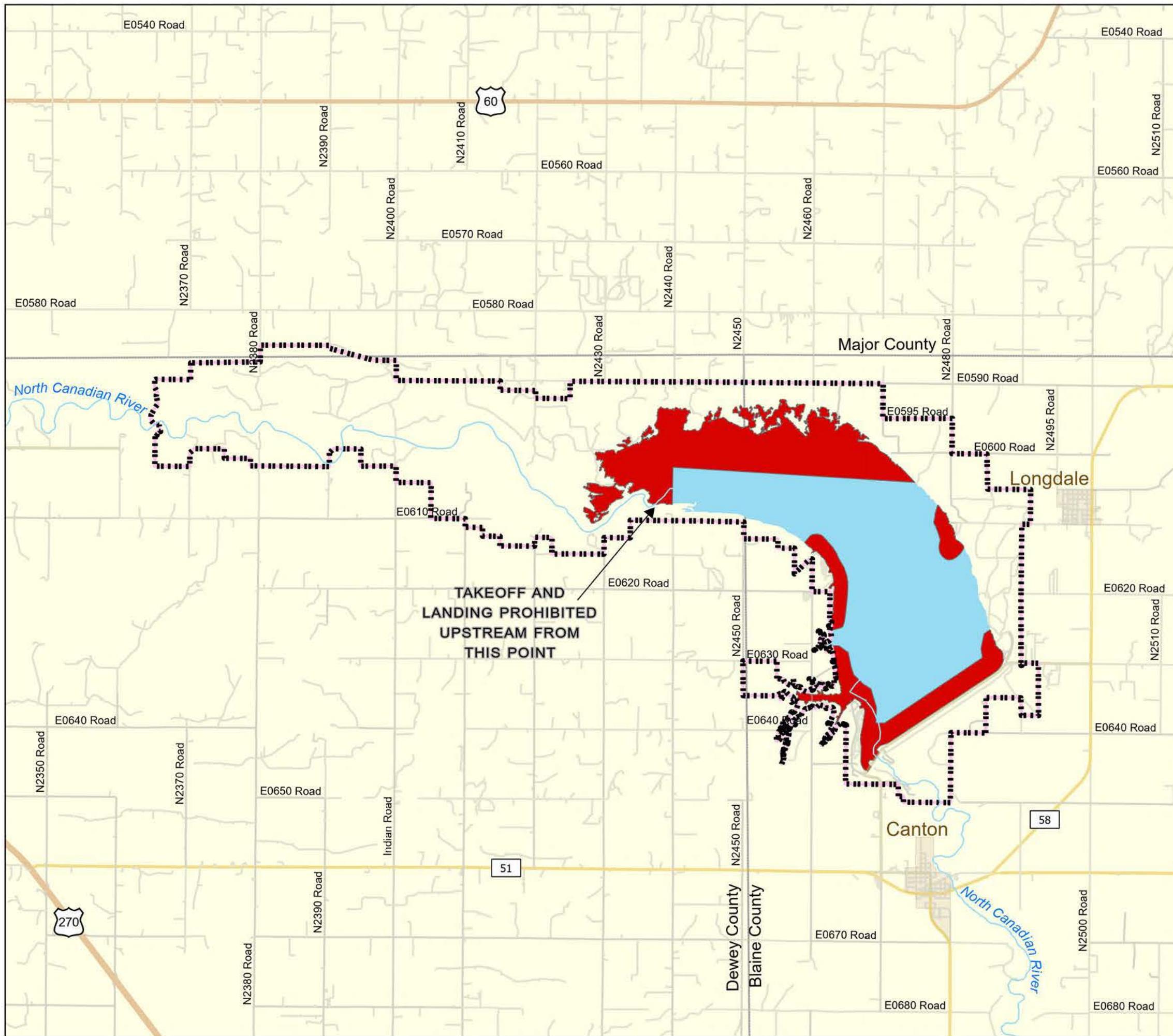
THIS PRODUCT IS REPRODUCED FROM GEOSPATIAL INFORMATION PREPARED BY THE U.S. ARMY CORPS OF ENGINEERS. GIS DATA AND PRODUCT ACCURACY MAY VARY. THEY MAY BE DEVELOPED FROM SOURCES OF DIFFERING ACCURACY. ACCURATE ONLY FOR CERTAIN SCALES, BASED ON MODELING OR INTERPRETATION, INCOMPLETE WHILE BEING CREATED OR REVISED. USING GIS PRODUCTS FOR PURPOSES OTHER THAN THOSE FOR WHICH THEY WERE CREATED MAY YIELD INACCURATE OR MISLEADING RESULTS.





- U.S. Army Corps of Engineers
- Oklahoma Department of Wildlife Conservation
- Water Surface
- Fee Boundary





**TAKEOFF AND LANDING
PROHIBITED WITHIN 1,000 FEET OF
DAM STRUCTURE AND RECREATION
AREAS.**

**OPERATION OF A SEAPLANE AT
U.S. ARMY CORPS OF ENGINEERS
PROJECTS IS AT RISK OF THE
PLANES OWNER, OPERATOR,
AND/OR PASSENGER(S).**

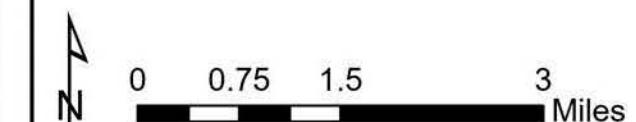


**U.S. ARMY CORPS
OF ENGINEERS
TULSA DISTRICT**

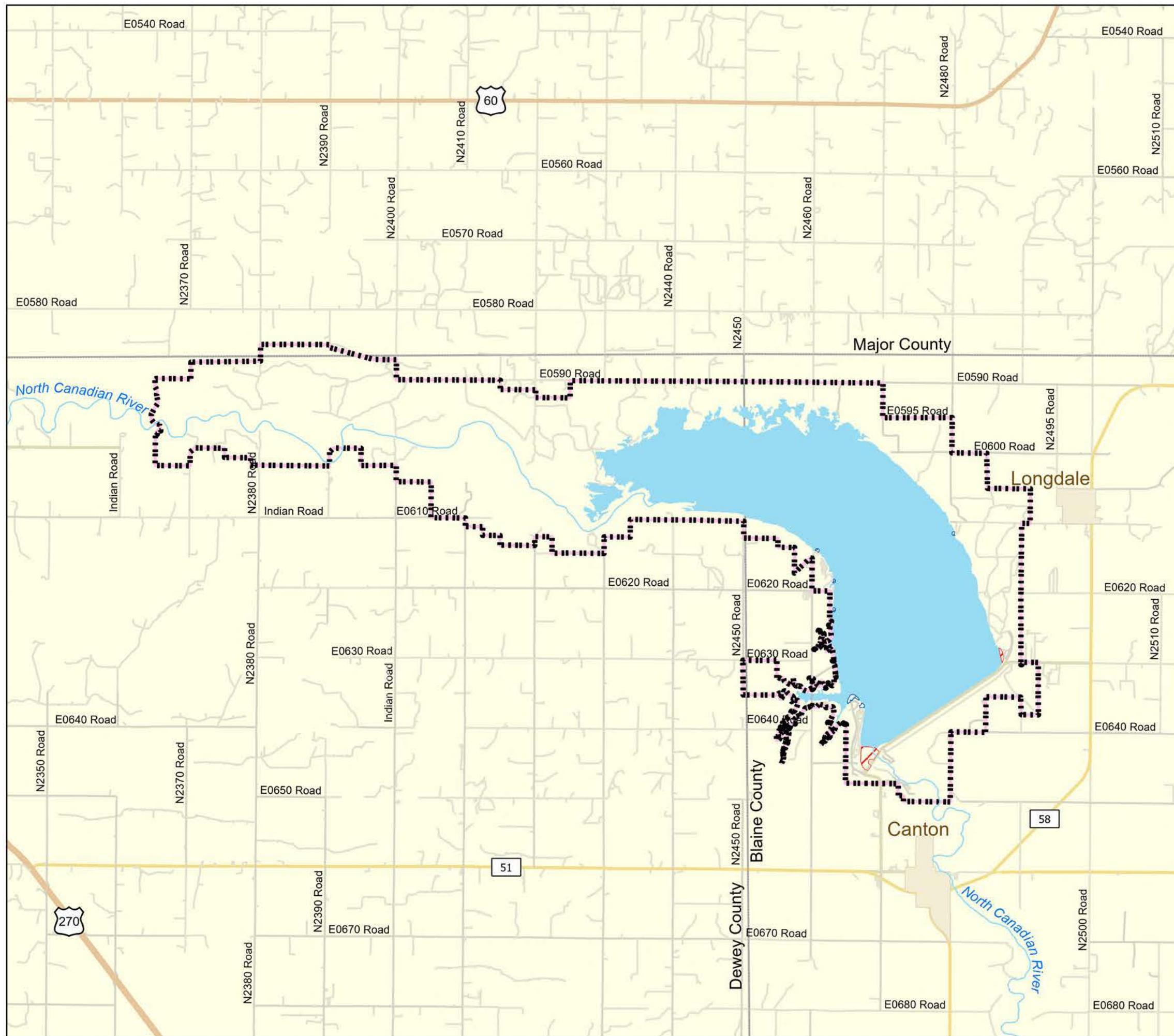
NORTH CANADIAN RIVER BASIN CANTON, OKLAHOMA

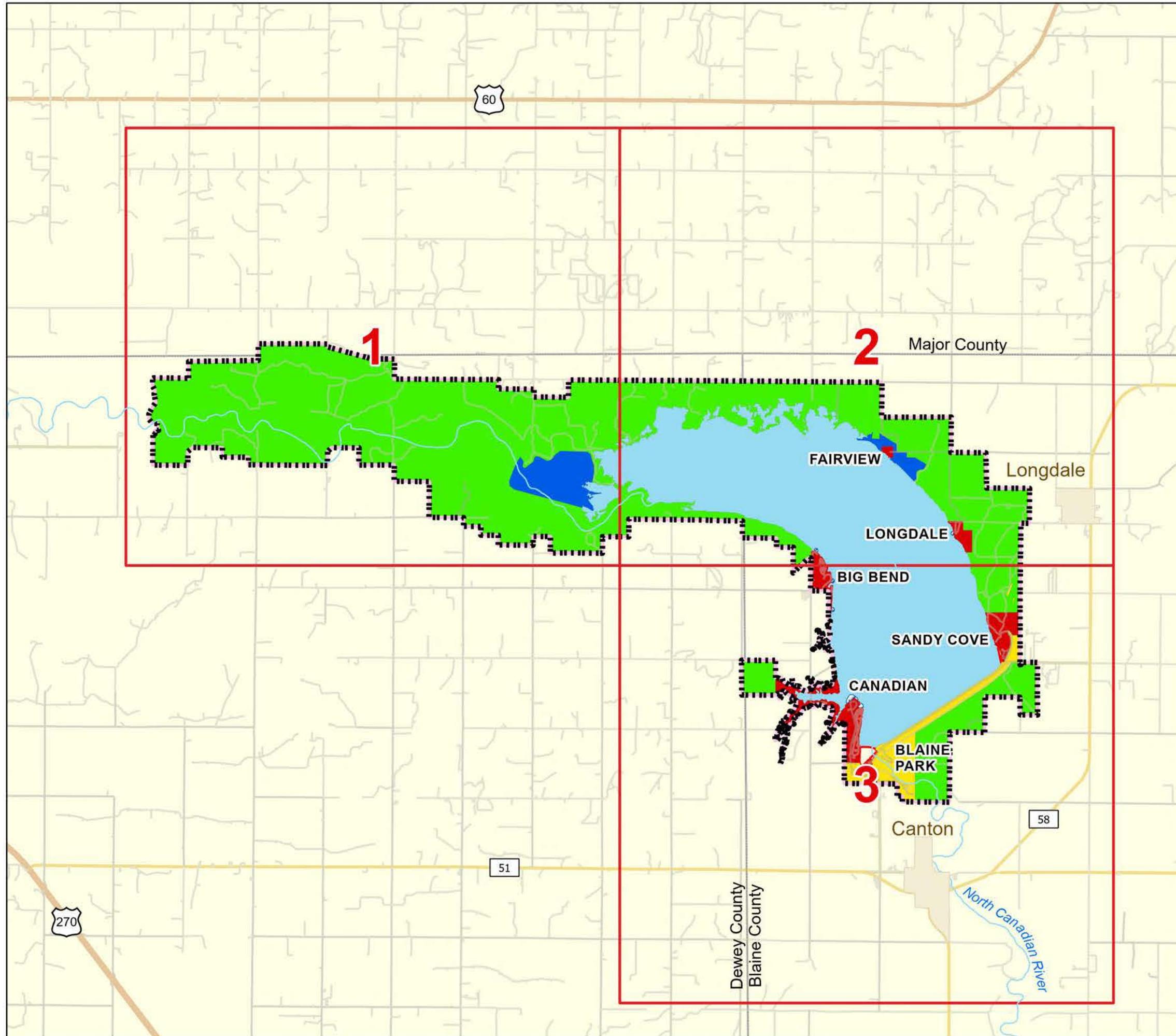
CANTON LAKE MASTER PLAN

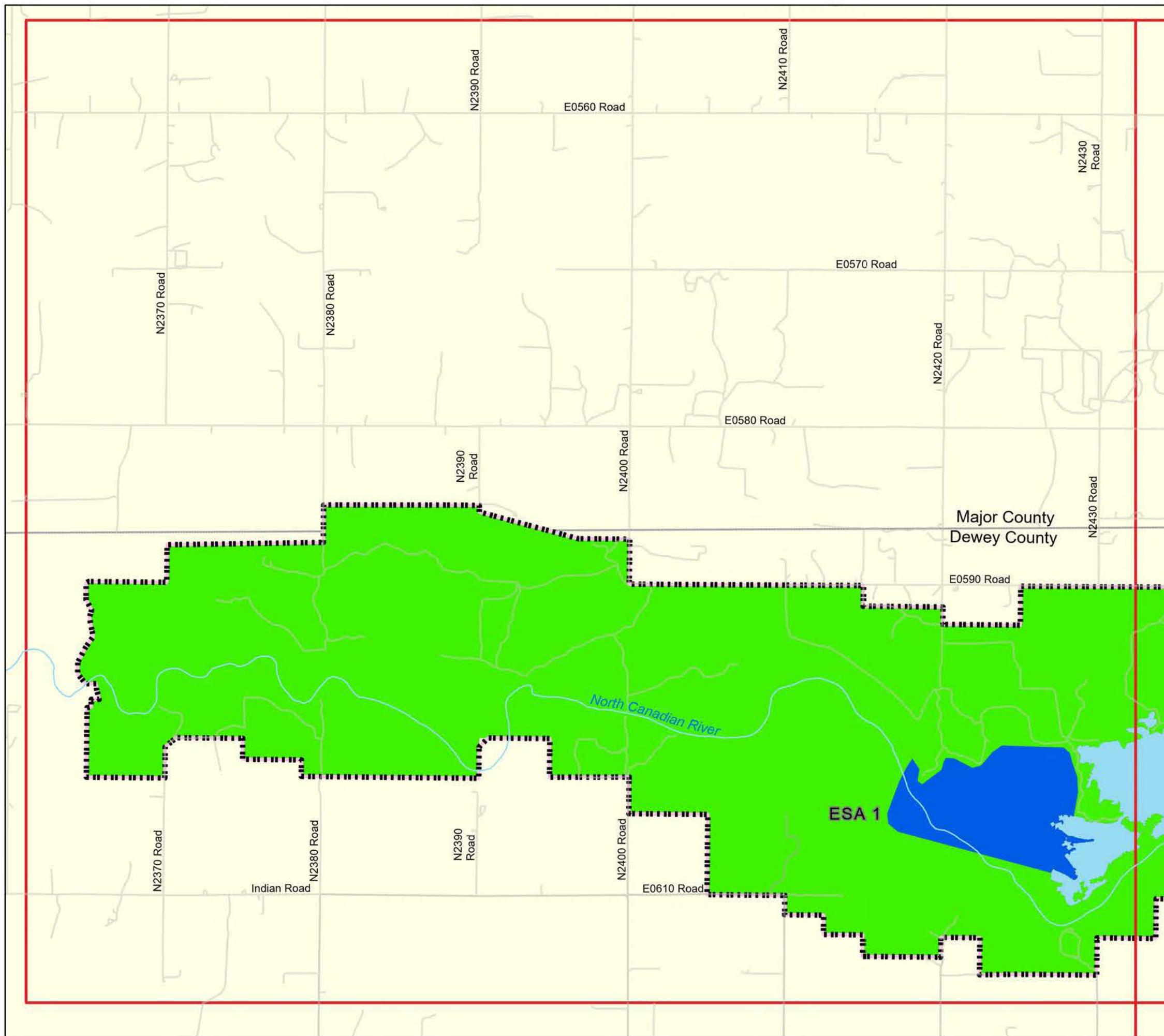
SEA PLANE GUIDE

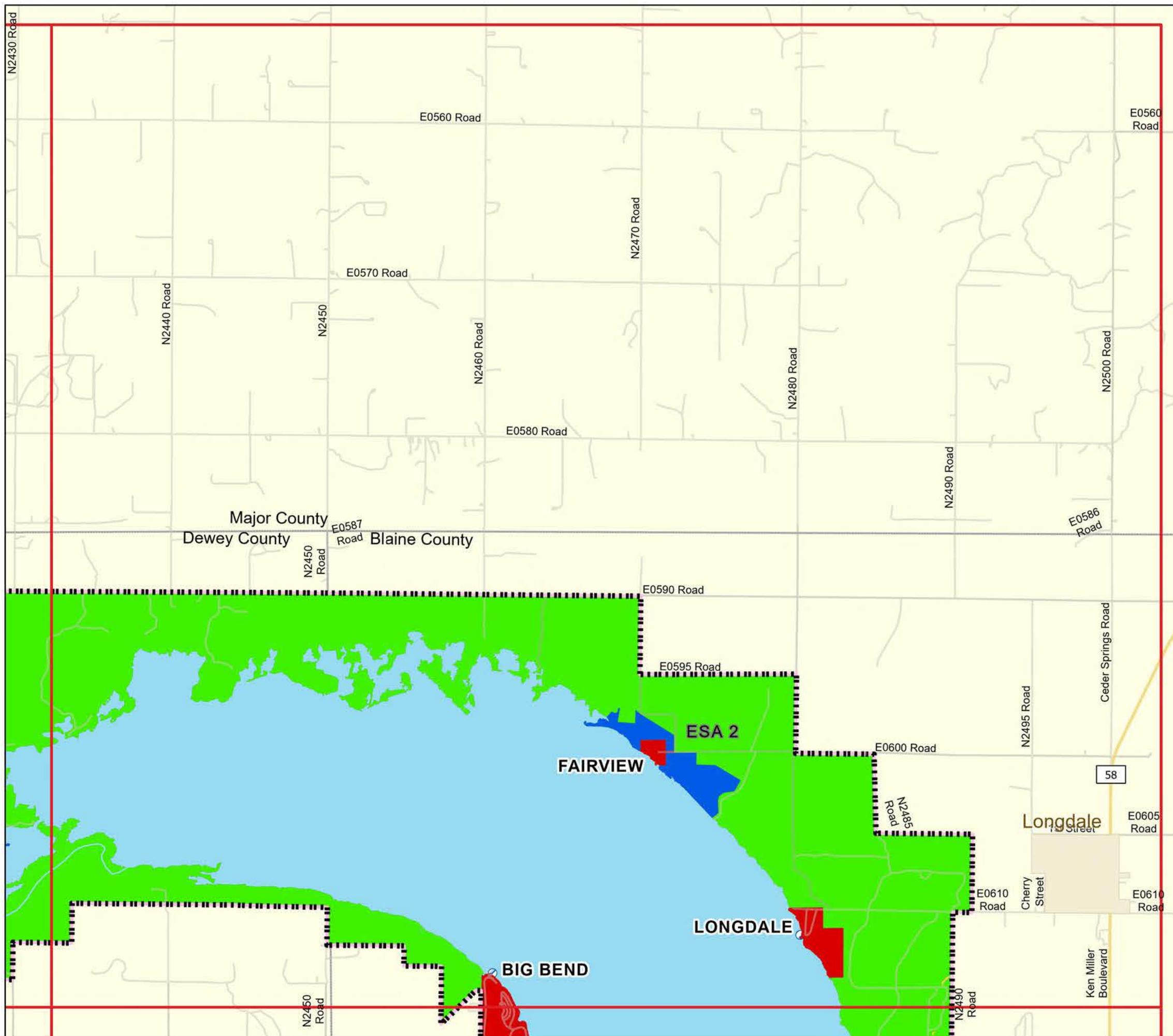


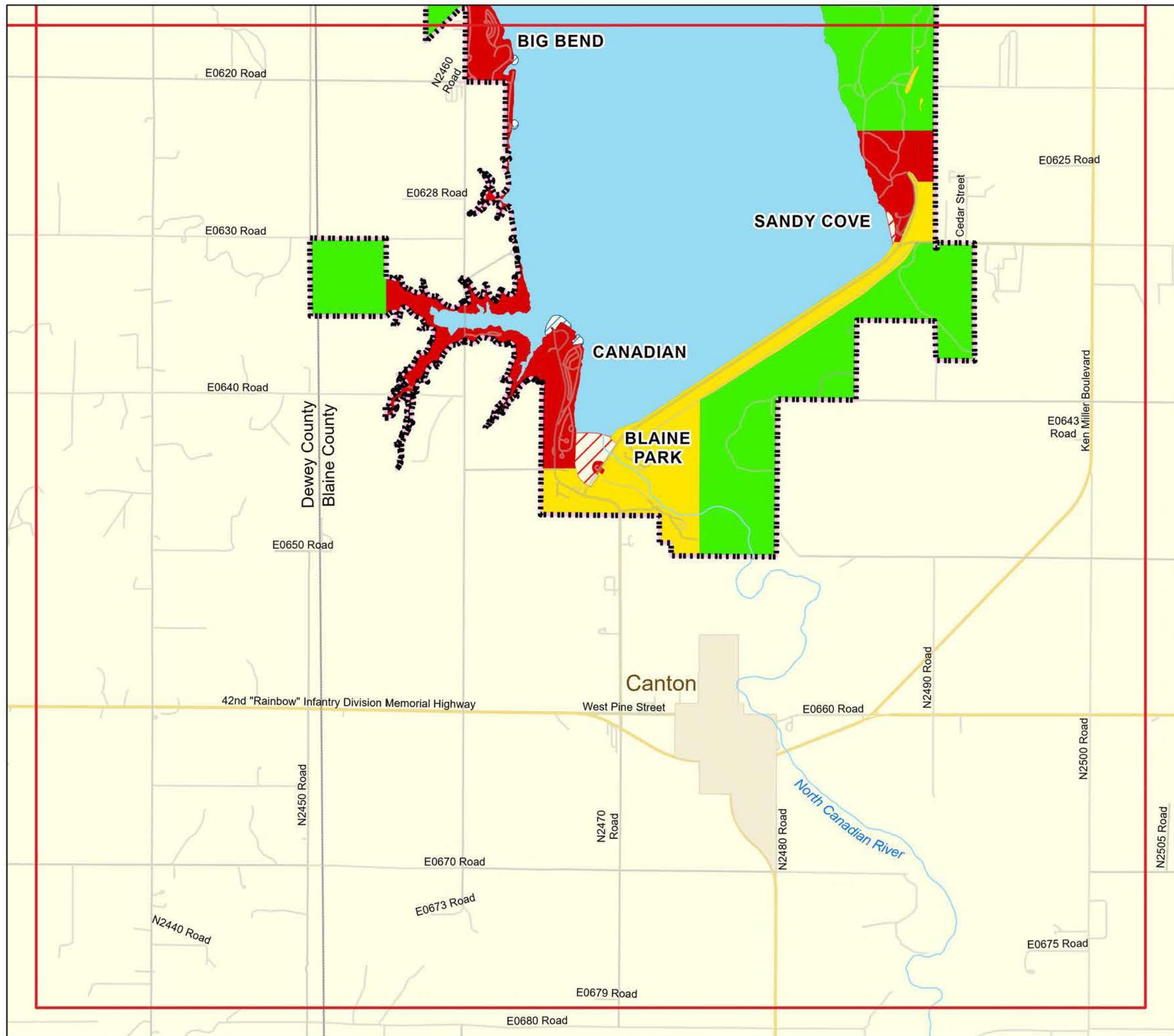
DATE: OCTOBER 2025	MAP NO. CAN25MP-OP-01
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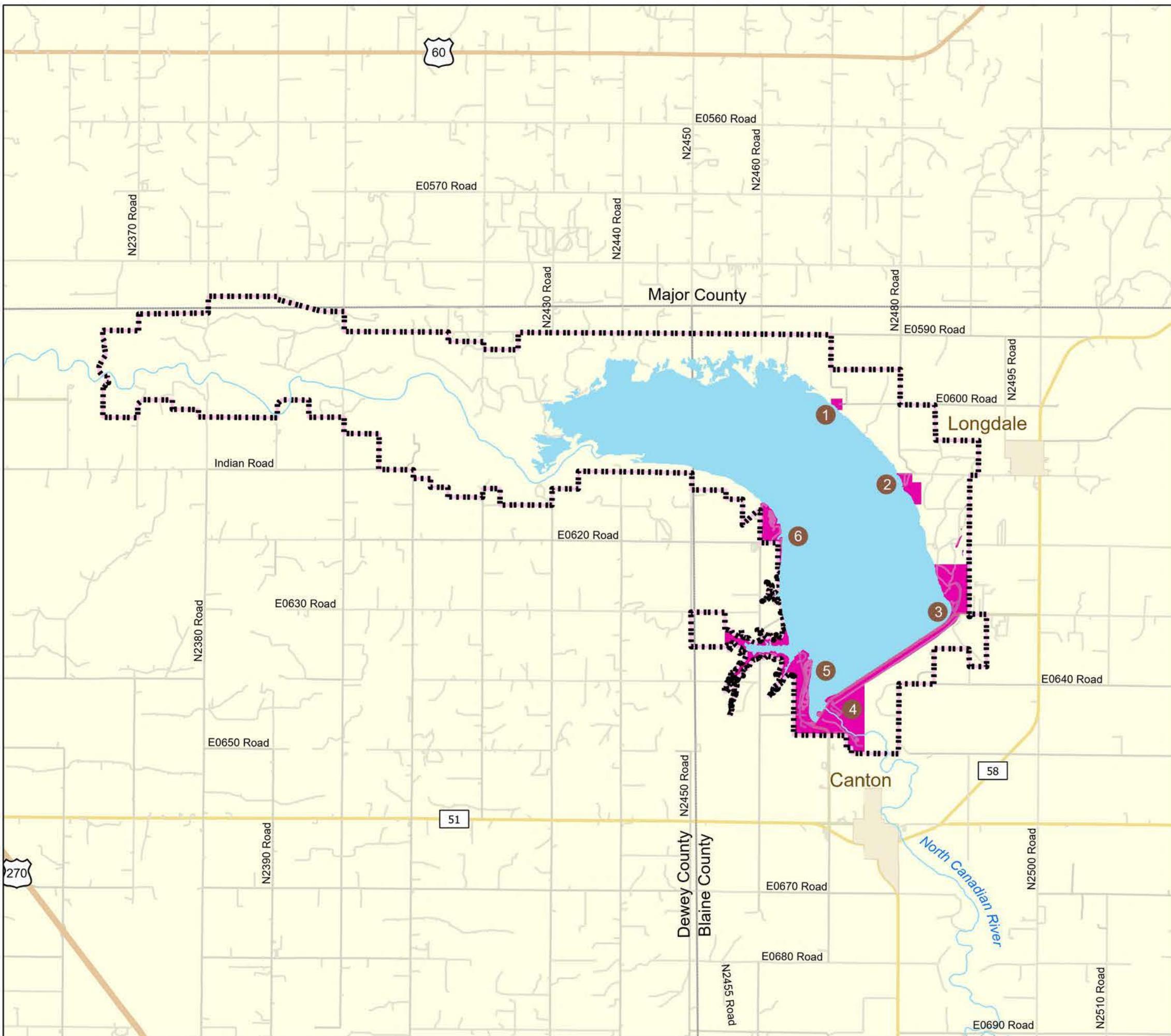


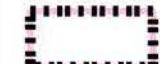










 U.S. Army Corps of Engineers
 Fee Boundary

KEY TO PARKS

- 1. FAIRVIEW
- 2. LONGDALE
- 3. SANDY COVE
- 4. BLAINE PARK
- 5. CANADIAN
- 6. BIG BEND

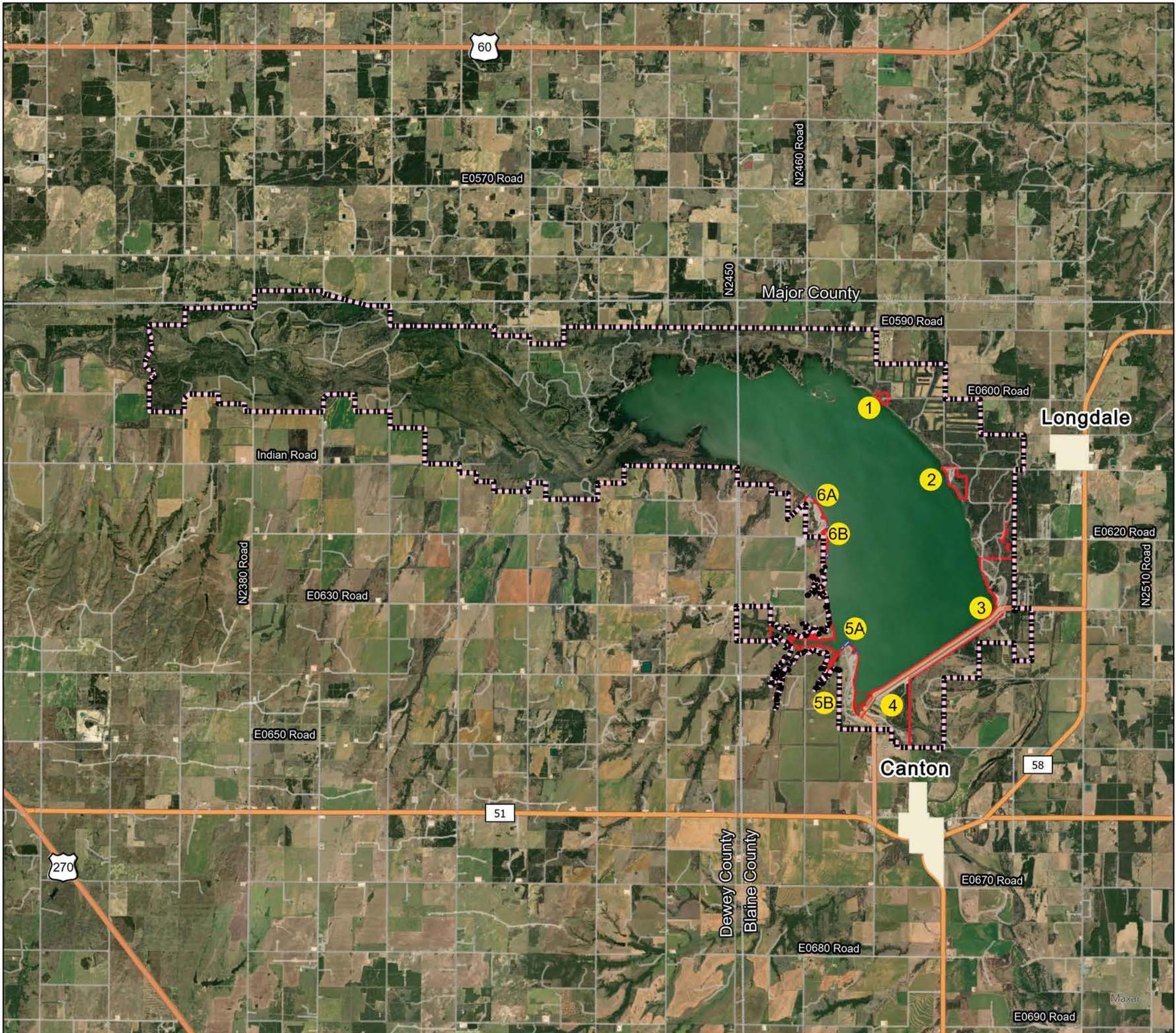
 **U.S. ARMY CORPS
OF ENGINEERS
TULSA DISTRICT**
 NORTH CANADIAN RIVER BASIN CANTON, OKLAHOMA

CANTON LAKE MASTER PLAN

MANAGED RECREATIONAL AREAS

 0 0.75 1.5 3 Miles

DATE:	MAP NO.
OCTOBER 2025	CAN25MP-OR-0A



The diagram consists of two rectangular outlines. The top one is a dashed black rectangle with the label "Fee Boundary" to its right. The bottom one is a solid red rectangle with the label "Park Limit" to its right.

RECREATION AREAS		
ID#	NAME	SHEET#
1	FAIRVIEW	CAN25MP-OR-01
2	LONGDALE	CAN25MP-OR-02
3	SANDY COVE	CAN25MP-OR-03
4	BLAINE PARK	CAN25MP-OR-04
5A	CANADIAN A	CAN25MP-OR-05A
5B	CANADIAN B	CAN25MP-OR-05B
6A	BIG BEND A	CAN25MP-OR-06A
6B	BIG BEND B	CAN25MP-OR-06B



**U.S. ARMY CORPS
OF ENGINEERS
TULSA DISTRICT**

ASSESSING CANADIAN RIVER BASIN

SHANTON, SIC NOMINA

CANTON LAKE MASTER PLAN

PARK PLATE INDEX

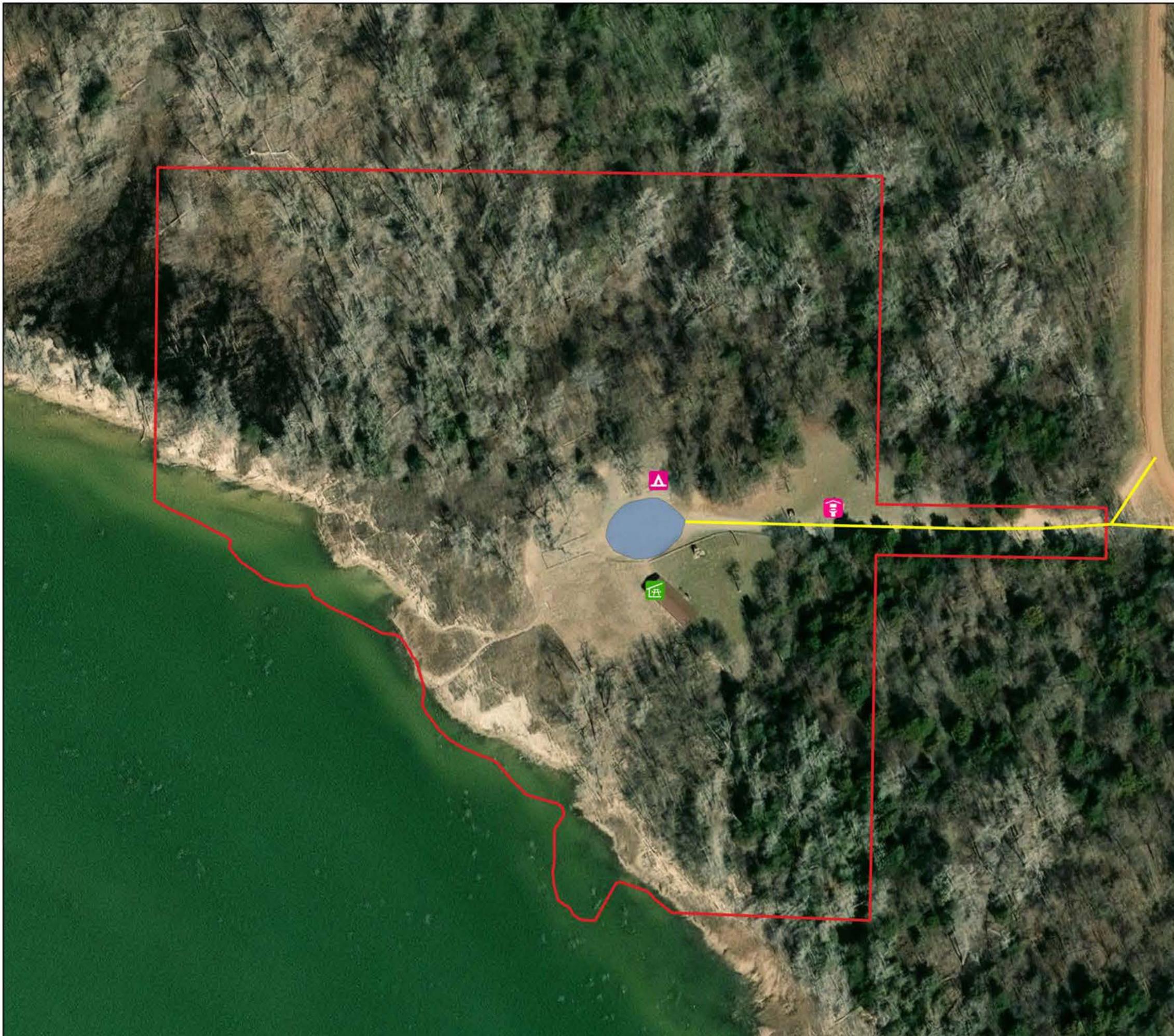
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DATE:

MAP NO

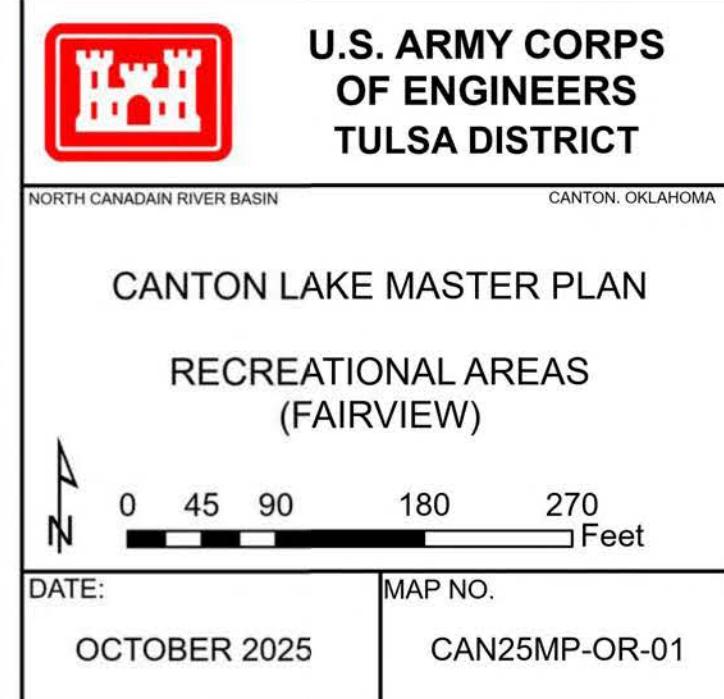
OCTOBER 2025

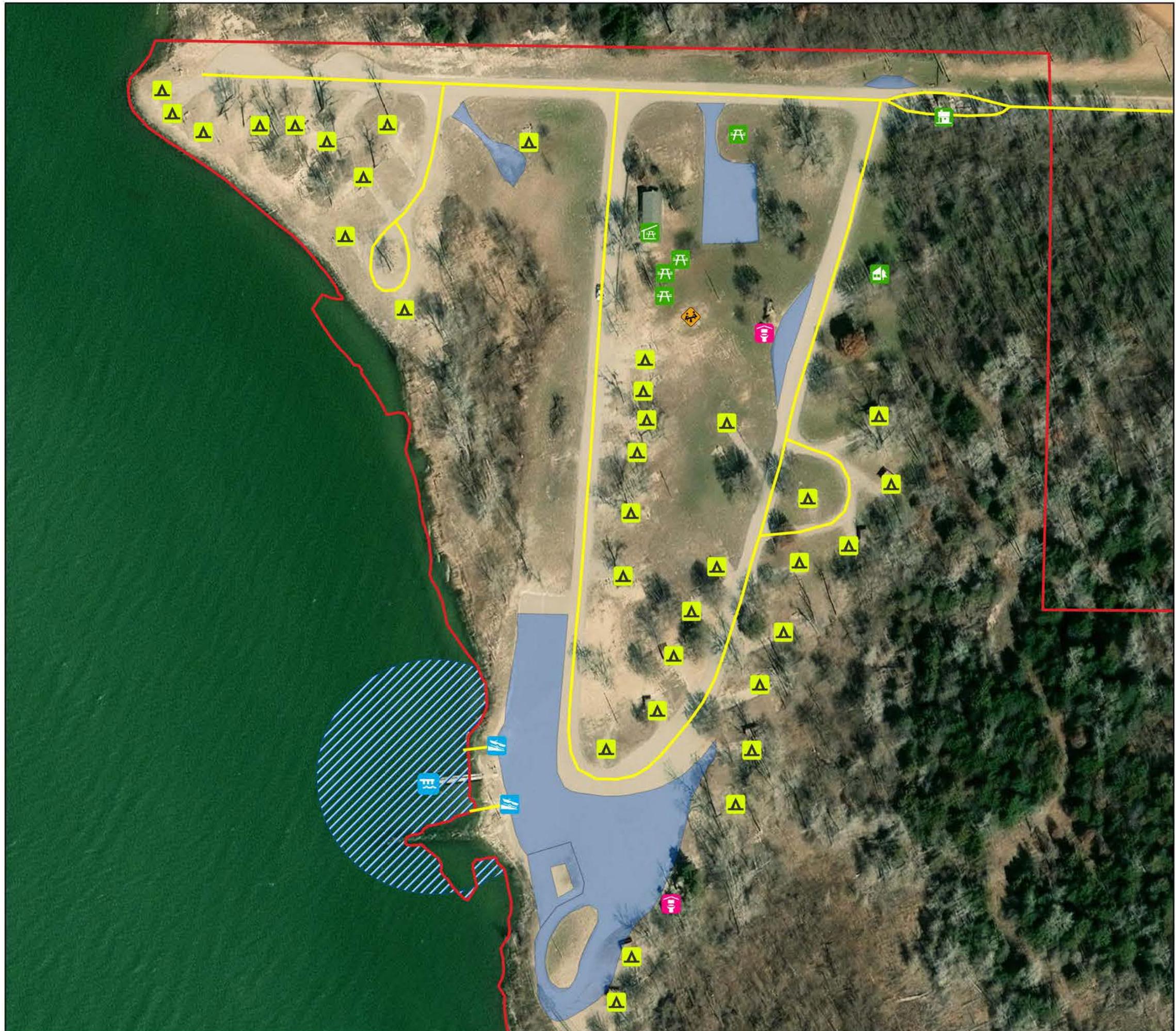
CAN25MP-OR-0B



ITEM	EXISTING
GROUP CAMP AREA	1
GROUP PICNIC SHELTER	1
VAULT TOILET	1

-  Group Camp Area
-  Group Picnic Shelter
-  Vault Toilet
-  Park Road
-  Parking
-  Park Limit





ITEM	EXISTING
BOAT RAMP	2
CAMPSITE - IMPROVED	34
COURTESY DOCK	1
ENTRANCE GATE	1
GROUP PICNIC SHELTER	1
PICNIC SITE	4
PLAYGROUND	1
VAULT TOILET	2



**U.S. ARMY CORPS
OF ENGINEERS
TULSA DISTRICT**

NORTH CANADIAN RIVER BASIN CANTON, OKLAHOMA

CANTON LAKE MASTER PLAN

RECREATIONAL AREAS
(LONGDALE)

DATE: OCTOBER 2025 MAP NO. CAN25MP-OR-02

0 50 100 200 300 Feet





ITEM	EXISTING
CAMPSITE - IMPROVED	13
FISHING DOCK/ ACCESS	2
HIKING TRAIL/ TRAILHEAD	1
PLAYGROUND	1
RESTAURANT	1
VAULT TOILET	1
VISITOR CENTER	1

- Campsite - Improved
- Fishing Dock/ Access
- Hiking Trail/Trailhead
- Visitor Center
- Playground
- Restaurant
- Vault Toilet
- Park Road
- Parking
- Water Surface: Restricted
- Fee Boundary
- Park Limit



**U.S. ARMY CORPS
OF ENGINEERS
TULSA DISTRICT**

NORTH CANADIAN RIVER BASIN

CANTON, OKLAHOMA

CANTON LAKE MASTER PLAN

RECREATIONAL AREAS (BLAINE PARK)

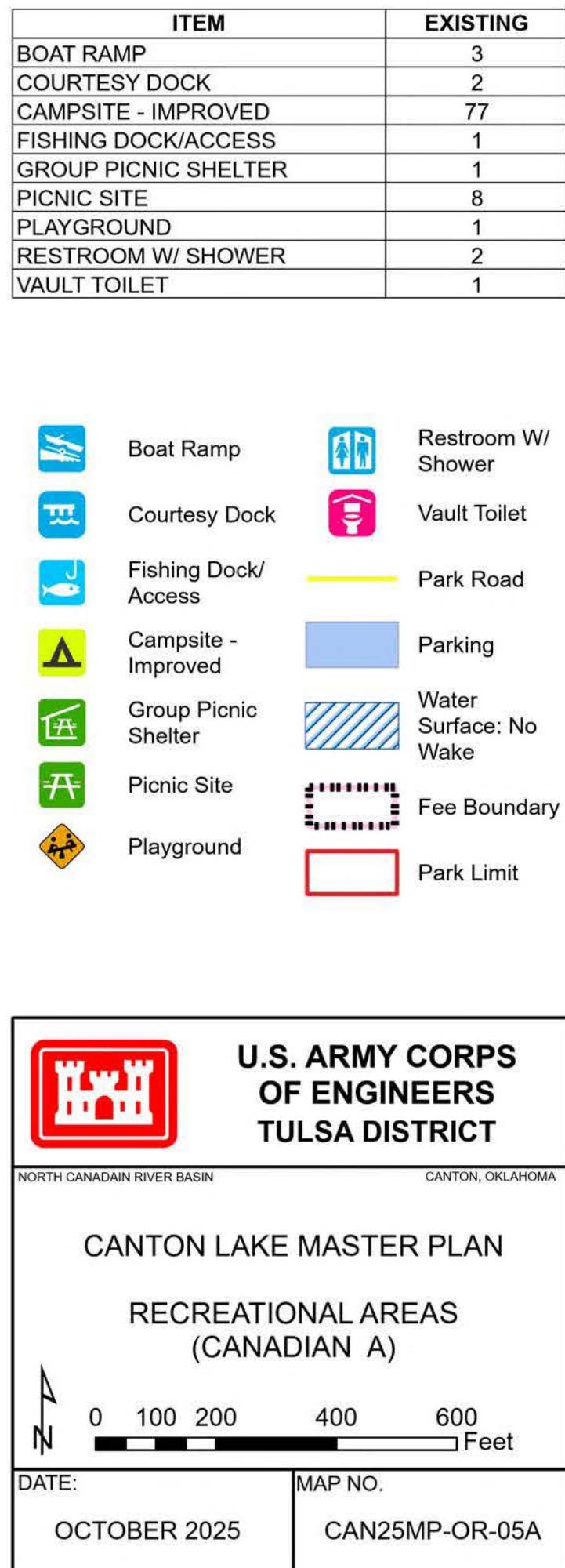
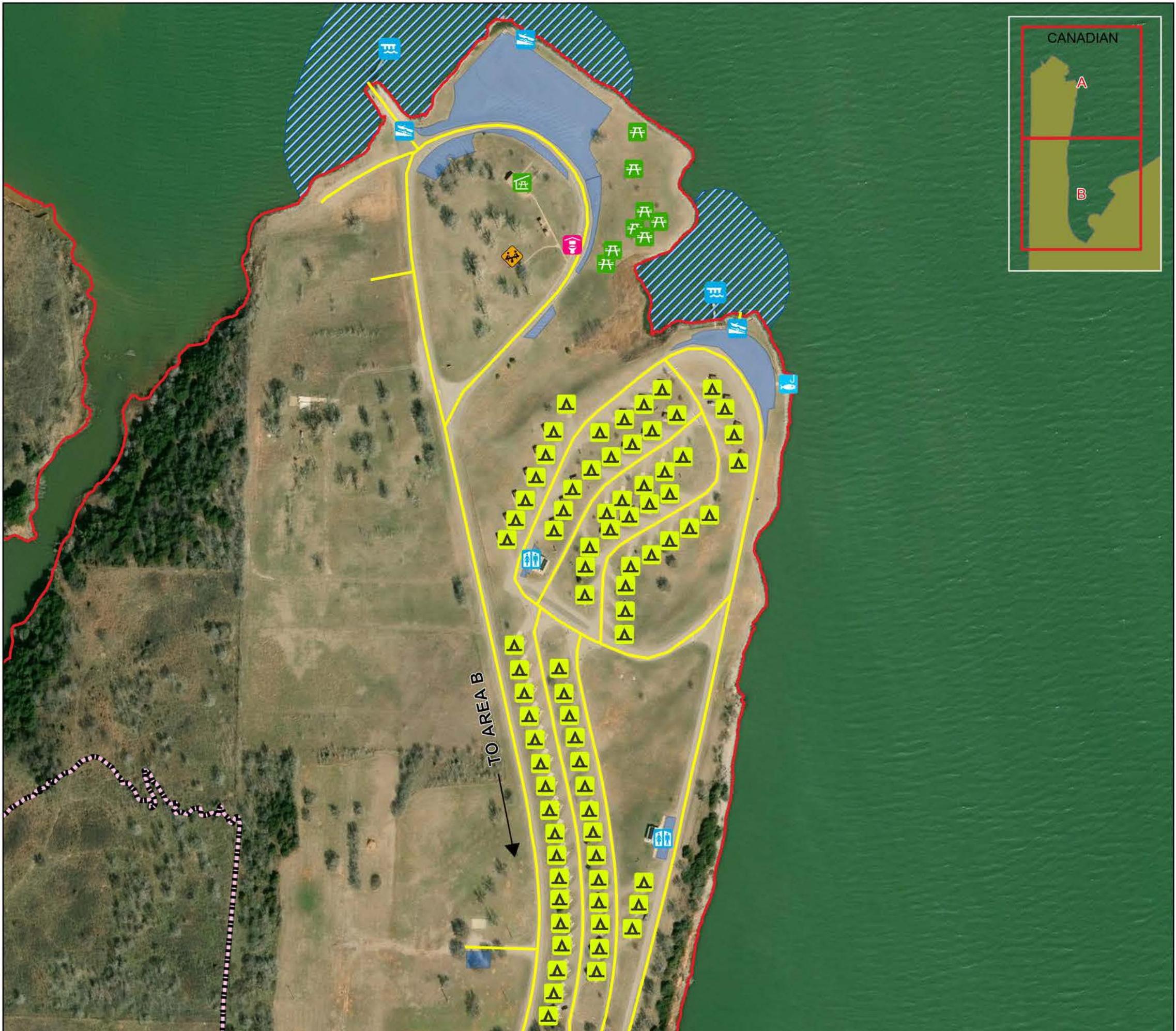


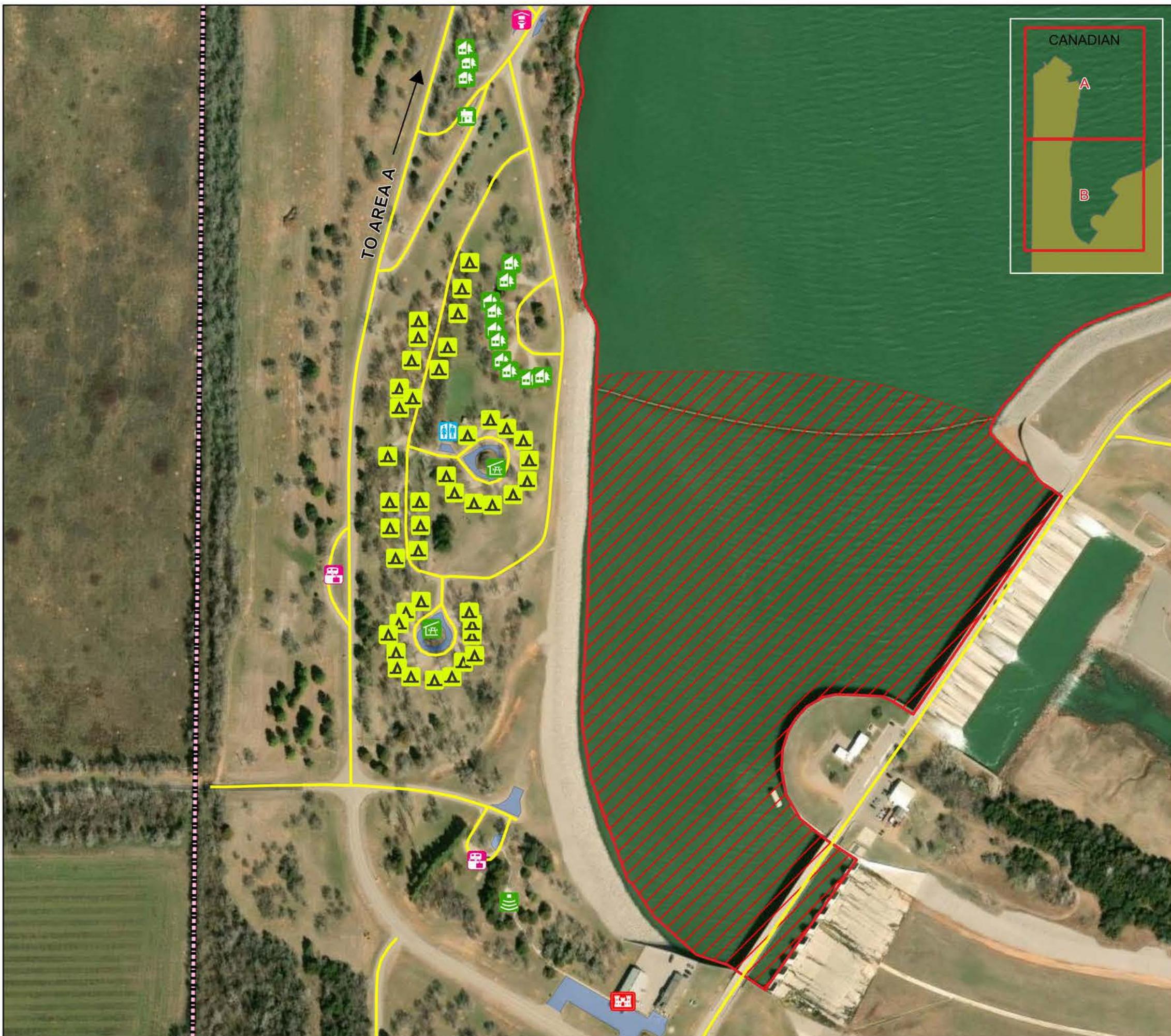
DATE:

OCTOBER 2025

MAP NO.

CAN25MP-OR-04





ITEM	EXISTING
AMPHITHEATER	1
CAMPSITE - IMPROVED	43
ENTRANCE GATE	1
GROUP PICNIC SHELTER	2
RESTROOM W/ SHOWER	1
RV DUMP STATION	2
VAULT TOILET	1

- Campsite - Improved
- Vault Toilet
- Park Host/ Volunteer
- Lake Office
- Entrance Gate
- Park Road
- Amphitheater
- Parking
- Group Picnic Shelter
- RV Dump Station
- Restroom W/ Shower
- Water Surface: Restricted
- Fee Boundary
- Park Limit

**U.S. ARMY CORPS
OF ENGINEERS
TULSA DISTRICT**

NORTH CANADIAN RIVER BASIN CANTON, OKLAHOMA

CANTON LAKE MASTER PLAN

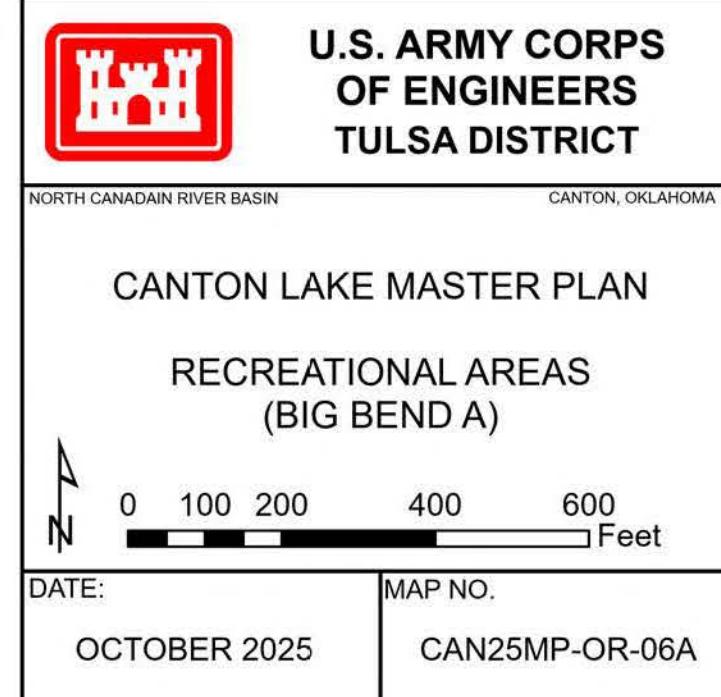
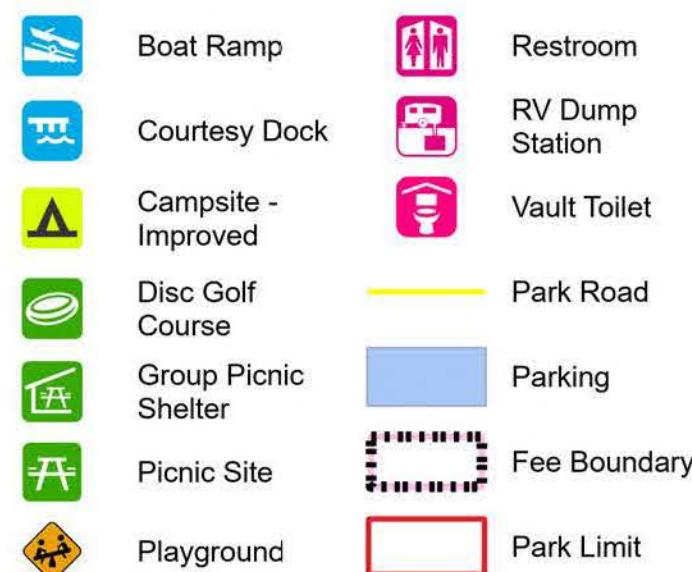
RECREATIONAL AREAS (CANADIAN B)

0 120 240 480 720
Feet

DATE:	MAP NO.
OCTOBER 2025	CAN25MP-OR-05B



ITEM	EXISTING
BOAT RAMP	2
COURTESY DOCK	1
CAMPSITE - IMPROVED	62
DISC GOLF COURSE	2
GROUP PICNIC SHELTER	1
PICNIC SITE	8
PLAYGROUND	1
RESTROOM	1
RV DUMP STATION	1
VAULT TOILET	2





ITEM	EXISTING
BOAT RAMP	1
COURTESY DOCK	1
CAMPSITE - IMPROVED	53
ENTRANCE GATE	1
PLAYGROUND	1
RESTROOM W/ SHOWER	1
VAULT TOILET	1

-  Boat Ramp
-  Restroom W/ Shower
-  Courtesy Dock
-  Vault Toilet
-  Campsite - Improved
-  Park Road
-  Park Host/ Volunteer
-  Parking
-  Entrance Gate
-  Fee Boundary
-  Playground
-  Park Limit

 **U.S. ARMY CORPS
OF ENGINEERS
TULSA DISTRICT**

NORTH CANADIAN RIVER BASIN CANTON, OKLAHOMA

CANTON LAKE MASTER PLAN

**RECREATIONAL AREAS
(BIG BEND B)**

DATE: **OCTOBER 2025** MAP NO. **CAN25MP-OR-06B**

0 110 220 440 660 Feet

APPENDIX B – NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) DOCUMENTATION

DRAFT

**FINDING OF NO SIGNIFICANT IMPACT ENVIRONMENTAL ASSESSMENT FOR
THE 2025 CANTON LAKE MASTER PLAN
NORTH CANADIAN BASIN
BLAINE, DEWEY, and MAJOR COUNTIES, OKLAHOMA**

In accordance with the National Environmental Policy Act of 1969, as amended, including in the Fiscal Responsibility Act of 2023 and U.S. Army Corps of Engineers (USACE) regulations, including 33 CFR Part 230, the Tulsa District and the Regional Planning and Environmental Center (RPEC) of the USACE have assessed the potential environmental impacts of the 2025 Canton Lake Master Plan (MP) revision.

Engineering Regulation (ER) 1130-2-550 and Engineering Pamphlet (EP) 1130-2-550 require Master Plans for USACE water resources development projects having a federally owned land base. The proposed revision of the 1975 Canton Lake MP and 1992 Supplement was conducted pursuant to this ER and EP, and is necessary to reflect current ecological, socio-demographic, and outdoor recreation trends that are affecting the lake, as well as those anticipated to occur within the planning period of 2025 to 2050. The recommendation is contained in Chapter 8 of the 2025 Canton Lake MP.

The proposed revision of the 1975 Canton Lake MP is a framework built collaboratively to serve as a guide toward appropriate stewardship of USACE administered resources at Canton Lake over the next 25 years.

The Environmental Assessment (EA) for the draft 2025 Canton Lake MP evaluated two alternatives. In addition to a “No Action” Alternative, one alternative (Proposed Action) was evaluated that fully meets the project purposes and current USACE policies. A summary of potential effects of the Proposed Action are included in Table 1.

Section 2 of the draft EA discusses the alternative formulation and selection, as well as a summary of the new goals and objectives. Chapter 8, Tables 8-1, and 8-2 of the Master Plan summarize the changes to the land classifications. The Proposed Action includes coordination with the public, updates to comply with the USACE regulations and guidance, and reflects changes in land management and land uses that have occurred since 1975 and 1992 supplement to the Master Plan. Land classifications were refined to meet authorized project purposes and current resource objectives that address a mix of natural resources and recreation management objectives that are compatible with regional goals, recognize outdoor recreation trends, and are responsive to public comments.

Table 1: Summary of Potential Effects of the Proposed Plan

Resource	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Aesthetics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aquatic resources/wetlands	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Climate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cultural resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Invasive species	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fish and wildlife habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Threatened/Endangered species/critical habitat	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Historic properties	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other cultural resources	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floodplains	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hazardous, toxic & radioactive waste	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Health & Safety	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hydrology	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Land use	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Socio-economics	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Soils	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Topography, Geology, and Soils	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All practicable and appropriate means to avoid or minimize adverse environmental effects have been analyzed and incorporated into the recommended plan. The recommended plan will not entail any ground-disturbing activities. Future ground-disturbing activities on USACE property will be subject to all necessary environmental evaluations and compliance regulations.

No compensatory mitigation is required as part of the recommended plan Proposed Action.

Public review of the Draft Master Plan, Environmental Assessment, and FONSI will begin on December 17th, 2025. All comments submitted during the public review period will be responded to in the final Master Plan and Environmental Assessment.

Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the USACE determined that the recommended plan will have no effect on federally listed species or their designated critical habitat.

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the USACE determined that the proposed plan will have no potential to effect on historic properties.

All applicable environmental laws were considered and coordination with appropriate agencies and officials has been completed.

All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the reviews by other Federal, State, and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended plan will not cause significant adverse impacts on the quality of the human environment, therefore, preparation of an Environmental Impact Statement is not required.

DRAFT

Date

JESSICA D. GOFFENA
Colonel, EN
Commanding

Environmental Assessment for the 2025 Canton Lake Master Plan Revision

North Canadian River Basin

Blaine, Dewey and Major Counties, Oklahoma

December 2025

EAXX-202-00-M5O-1760956977



**US Army Corps
of Engineers ®**
Tulsa District

ENVIRONMENTAL ASSESSMENT ORGANIZATION

This Environmental Assessment (EA) evaluates the potential environmental and socioeconomic impacts of the 2025 Canton Lake and Dam Master Plan Revision. This EA would facilitate the decision process regarding the Proposed Action and alternatives.

SECTION 1 *INTRODUCTION* of the Proposed Action summarizes the purpose of and need for the Proposed Action, provides relevant background information, and describes the scope of the EA.

SECTION 2 *PROPOSED ACTION AND ALTERNATIVES* examines alternatives for implementing the Proposed Action and describes the recommended alternative.

SECTION 3 *AFFECTED ENVIRONMENT* describes the existing environmental and socioeconomic setting.

SECTION 4 *ENVIRONMENTAL CONSEQUENCES* identifies the potential environmental and socioeconomic effects of implementing the Proposed Action and alternatives.

SECTION 5 *CUMULATIVE IMPACTS* describes the impact on the environment that may result from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions.

SECTION 6 *COMPLIANCE WITH ENVIRONMENTAL LAWS* provides a listing of environmental protection statutes and other environmental requirements.

SECTION 7 *IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES* identifies any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action.

SECTION 8 *PUBLIC AND AGENCY COORDINATION* provides a listing of individuals and agencies consulted during preparation of the EA.

SECTION 9 *ACRONYMS/ABBREVIATIONS*

ATTACHMENT A *LIST OF PREPARERS* identifies persons who prepared the document and their areas of expertise.

ATTACHMENT A National Environmental Policy Act (NEPA) Coordination and Scoping

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ENVIRONMENTAL ASSESSMENT
2025 Canton Lake Master Plan Revision

Canton Lake and Dam
Blaine and Dewey Counties, Oklahoma

SECTION 1: INTRODUCTION

This Environmental Assessment (EA) has been prepared by the United States Army Corps of Engineers (USACE) to evaluate the 2025 Canton Lake Master Plan (MP). The 2025 MP is a programmatic document that is subject to evaluation under the National Environmental Policy Act (NEPA) of 1969, (42 U.S. Code [U.S.C.] 4321 et seq.). This document provides an assessment of potential impacts that could result with the implementation of either the No Action or Proposed Action and has been prepared in accordance with the National Environmental Policy Act (42 U.S.C. 4321 et seq.) as amended, including in the Fiscal Responsibility Act of 2023, and USACE regulations, including 33 CFR Part 230: Procedures for Implementing NEPA (1988).

The 2025 MP is a strategic land use management plan that provides direction to the orderly development, administration, maintenance, preservation, enhancement, and management of all natural, cultural and recreational resources of a USACE water resource project, which includes all government-owned lands in and around a reservoir. It is a vital tool for responsible stewardship and sustainability of the project's natural and cultural resources, as well as the provision of outdoor recreation facilities and opportunities on Federal lands associated with Canton Lake for the benefit of present and future generations. The 2025 MP identifies conceptual types and levels of activities, but does not include designs, project sites, or estimated costs. All actions carried out by the USACE, other agencies, and individuals granted leases to USACE lands must be consistent with the 2025 MP. Therefore, the MP must be revised in order to provide effective guidance in USACE decision-making.

1.1 PROJECT LOCATION AND SETTING

Canton Lake is a multi-purpose reservoir located approximately 6 miles North of the town of Canton in Blaine County, Oklahoma. The Canton Dam is located at river-mile 394 of the North Canadian River, 2 miles north from Canton, Oklahoma, 50 miles southwest of Enid, Oklahoma, and 75 miles northwest of Oklahoma City, Oklahoma. Construction of the dam began in 1940 and was completed in late 1948 and formally dedicated in 1949. Canton Lake is a unit of the North Canadian River basin, which has a drainage area span of approximately 15,212 square miles. Above Canton Dam, the watershed consists of approximately 12,782 square mile drainage area.

Construction of Canton Lake and Dam was authorized by the Flood Control Act of 1938 and is currently managed by the Tulsa District of USACE for the authorized purposes of flood control, water supply, irrigation, recreation, and fish and wildlife. Canton Lake spans approximately 20,460 acres total, 7,709 acres of which are water surface area at the conservation pool of approximately 1,613 feet National Geodetic

Vertical Datum of 1929 (NGVD29). For more information on Canton Dam and its spillway, outlet, levee, and drainage system, please refer to Section 1.5 of the 2025 MP.

The existing Land Classifications from the 1975 Canton Lake MP are presented alongside the proposed Land Classifications for the 2025 Canton Lake and Dam MP in Table 1.1. Descriptions of each Land Classification type are included at the beginning of Section 2 of this EA.

Table 1.1 Existing and Proposed Land Classifications

Prior Land Classifications (1975)	Acres	Proposed Land Classifications (2025)	Acres
Project Management Area	71	Project Operations (PO)	523
		Environmentally Sensitive Areas (ESA)	543
Public Use Areas	564	High Density Recreation (HDR)	635
State Wildlife Management	10,910	Multiple Resource Management – Wildlife Management (WM)	11,150
Not Classified	413	-	-
Cheyenne-Arapaho Areas	530	-	-
TOTAL	12,488		12,851
Prior Water Surface Classifications (1975)	Acres	Proposed Water Surface Classifications (2025)	Acres
Open Recreation	8,484	Open Recreation	7,557
		Designated No-Wake	13
		Restricted	40
TOTAL	8,484		7,610

* Total Acreage differences from the 1975 total to the 2025 totals are due to improvements in measurement technology, real estate actions, deposition/siltation, and erosion. Acres were lost and gained due to the Cheyenne Arapaho Area were outside of fee boundary in 1974 and then some acres were acquired after 1974 and minor fee boundary adjustments between the years.

1.2 PURPOSE AND NEED FOR THE ACTION

The purpose of the Proposed Action is to ensure that the conservation and sustainability of the land, water, and recreational resources at Canton Lake comply with applicable environmental laws and regulations and to maintain quality lands for future

public use. The 2025 MP is intended to serve as a comprehensive land and recreation management plan with an effective life of approximately 25 years.

The Canton Lake Master Plan must be kept current in order to provide effective guidance in decision-making that responds to changing regional and local needs, resource capabilities and suitability, and expressed public interests consistent with authorized project purposes and pertinent legislation and regulations. The current 1975 Canton Lake Master Plan is over 50 years old and does not currently reflect ecological, socio-political, and socio-demographic changes that are currently affecting Canton Lake, or those changes anticipated to occur through 2050. Changes in outdoor recreation trends, regional land use, population, current legislative requirements and USACE management policy have indicated the need to revise the plan. Additionally, increasing fragmentation of wildlife habitat, national policies related to changing conditions, a growing demand for recreational access, and protection of natural resources are all factors impacting public lands both nationwide and regionally, and have the potential to affect the Canton Lake Project. In response to these continually evolving trends, the USACE determined that a full revision of the 1975 MP is needed.

The master planning process encompasses a series of interrelated and overlapping tasks involving the examination and analysis of past, present, and future environmental, recreational, and socioeconomic conditions and trends. With a generalized conceptual framework, the process focuses on the following four primary components:

- Regional and ecosystem needs
- Project resource capabilities and suitability
- Expressed public interests that are compatible with Canton Lake's authorized purposes
- Environmental sustainability elements

1.3 SCOPE OF THE ACTION

This EA was prepared to evaluate existing conditions and potential impacts of proposed alternatives associated with the implementation of the 2025 Master Plan (MP). The alternative considerations were formulated with special attention given to revised land reclassifications, new resource management objectives, and a conceptual resource plan for each land reclassification category. The proposed 2025 MP is currently available and is incorporated into this EA by reference. This EA was prepared pursuant to the NEPA, (42 U.S.C 4321 et seq.) as amended. The application of NEPA to more strategic decisions not only meet the Fiscal Responsibility Act of 2023 and USACE regulations for implementing NEPA (USACE 1988) but also allows the USACE to consider the environmental consequences of its actions long before any physical activity is implemented. Multiple benefits can be derived from such early consideration. Effective and early NEPA integration with the master planning process can significantly increase the usefulness of the 2025 MP to the decision maker.

SECTION 2: PROPOSED ACTION AND ALTERNATIVES

During the alternative development process, the Project Delivery Team (PDT) utilized an iterative process to evaluate different land classes for each parcel of USACE land. This evaluation included consideration of the multiple Congressionally authorized missions of the Project, public and agency comments, USACE staff knowledge, and potential impacts to the social, cultural, and environmental resources, to determine the primary use for each parcel (i.e. land classification). USACE regulations specify five possible categories of land reclassification: Project Operations (PO), High Density Recreation (HDR), Mitigation, Environmentally Sensitive Areas (ESA), and Multiple Resource Managed Lands (MRML). MRML are divided into four subcategories: Low Density Recreation (MRML-LDR), Wildlife Management (MRML-WM), Vegetation Management (MRML-VM), and Inactive/Future Recreation (MRML-IFR) Areas.

Two alternatives were developed in detail and brought forward for evaluation, including a No Action Alternative and a Proposed Action Alternative. The Proposed Action Alternative is the culmination of the iterative evaluation process described above and best meets the Purpose and Need identified in Section 1.2 of this document and Section 1.4 of the 2025 MP revision. The No Action Alternative, while it does not meet the purpose and need, serves as a benchmark of existing conditions against which Federal actions can be evaluated, and, therefore, is included in this EA.

The goals for the 2025 MP include the following:

GOAL A. Provide the best management practices to respond to regional needs, resource capabilities and capacities, and expressed public interests consistent with authorized project purposes.

GOAL B. Protect and manage the project's natural and cultural resources through sustainable environmental stewardship programs.

GOAL C. Provide public outdoor recreation opportunities that support project purposes and public interests while sustaining the project's natural resources.

GOAL D. Recognize the project's unique qualities, characteristics, and potentials.

GOAL E. Provide consistency and compatibility with national objectives and other State and regional goals and programs.

In addition to the above goals, USACE management activities are guided by USACE-wide Environmental Operating Principles as follows:

- Strive to achieve environmental sustainability. An environment maintained in a healthy, diverse, and sustainable condition is necessary to support life.
- Recognize the interdependence of life and the physical environment. Proactively consider environmental consequences of USACE programs and act accordingly in all appropriate circumstances.

- Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.
- Continue to accept corporate responsibility and accountability under the law for activities and decisions under our control that impact human health and welfare and the continued viability of natural systems.
- Seek ways and means to assess and mitigate cumulative impacts to the environment; bringing systems approaches to the full life cycle of our processes and work.
- Build and share an integrated scientific, economic, and social knowledge base that supports a greater understanding of the environment and impacts of our work.
- Respect the views of individuals and groups interested in USACE activities; listen to them actively and learn from their perspective in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment.

Specific resource objectives to accomplish these goals can be found in Chapter 3 of the 2025 MP.

The USACE will not address the flood risk management or water supply authorized purposes of Canton Lake under either the No Action or Proposed Action alternatives.

2.1 ALTERNATIVE 1: NO ACTION ALTERNATIVE

The No Action Alternative serves as a basis for comparison to the anticipated effects of the other action alternatives, and its inclusion in this EA is required by NEPA. Under the No Action Alternative, the USACE would not revise the 1975 MP or adopt the implementation of the 2025 MP. Instead, the USACE would continue to manage Canton Lake's natural resources as set forth in the 1975 MP. The 1975 MP would continue to provide the only source of comprehensive management guidelines and philosophy.

2.2 ALTERNATIVE 2: PROPOSED ACTION

Under the Proposed Action, the USACE will adopt and implement the 2025 MP, which guides and articulates USACE responsibilities pursuant to Federal laws to preserve, conserve, restore, maintain, manage, and develop the land, water, and associated resources. The 2025 MP will replace the 1975 MP and provide an up-to-date management plan that follows current Federal laws and regulations while sustaining the project's natural resources and providing recreational opportunities for the next 25 years through the planning horizon of 2050. The Proposed Action will meet regional goals associated with good stewardship of land, water, and recreational resources; address identified recreational trends; and allow for continued use and development of project lands without violating national policies or public laws.

The 2025 MP will classify all Federal land lying above elevation 1615.4 feet NGVD29 into management reclassification categories. These management reclassification categories will allow uses of Federal property that meet the definition of the assigned category and ensure the protection of natural resources and environmental stewardship while allowing maximum public enjoyment of the lake's resources.

The land reclassification categories to be used are defined as follows:

- Project Operations: Lands required for the dam, spillway, switchyard, levees, dikes, offices, maintenance facilities, and other areas used solely for the operation of Canton Lake.
- High Density Recreation: Lands developed for the intensive recreational activities for the visiting public including day use and campgrounds. These areas could also be for commercial concessions and quasi-public development.
- Environmentally Sensitive Areas: Areas where scientific, ecological, cultural, or aesthetic features have been identified.
- Multiple Resource Management Lands (MRML): Allows for the designation of a predominate use with the understanding that other compatible uses may also occur on these lands.
 - MRML Low Density Recreation: Lands with minimal development or infrastructure that support passive recreational use (primitive camping, fishing, hunting, trails, wildlife viewing, etc.)
 - MRML Wildlife Management: Lands designated for stewardship of fish and wildlife resources.
 - MRML Vegetation Management: Lands designated for stewardship of vegetative resources.
 - MRML Inactive/Future Recreation: Areas with site characteristics compatible with potential future recreational development or recreation areas that are closed. Until there is an opportunity to develop or reopen these areas, they will be managed for multiple resources.
- Surface Water: Allows for surface water zones.
 - Restricted: Water areas restricted for Canton Lake operations, safety, and security.
 - Designated No-Wake: Water areas to protect environmentally sensitive shoreline areas and recreational water access areas from disturbance and areas to protect public safety.

- Open Recreation: Water areas available for year-round or seasonal water-based recreational use.

Table 2.1 shows the prior land classifications from the 1975 MP, the proposed land classifications from the 2025 MP, and the net difference between the two.

Table 2.1 Prior Land Classifications (1975) and Proposed Land Classifications (2025) with Net Acreage Differences

Prior Land Classifications (1975)	Acres	Proposed Land Classifications (2025)	Acres	Net Difference
Project Management Area	71	Project Operations	523	+452
-	-	Environmentally Sensitive Areas	543	+543
Public Use Areas	564	High Density Recreation	635	+71
State Wildlife Management	10,910	MRML-Wildlife Management	11,150	+240
Not Classified	413	N/A	-	-
Cheyenne-Arapaho Areas	530	N/A	-	-
LAND TOTAL	12,488	LAND TOTAL	12,851	+363
Prior Water Surface Classifications (1975)	Acres	Water Surface Classifications (2024)	Acres	Net Difference
Open Recreation	8,484	Open Recreation	7,557	-927
-	-	Designated No-Wake	13	+13
-	-	Restricted	40	+40
WATER TOTAL	8,484	WATER TOTAL	7,610	-874
TOTAL FEE	20,972	TOTAL FEE	20,460	+512

Table 2.2 catalogs each change proposed by the 2025 MP and the associated justification for that change.

Table 2.2 Changes and Justifications for Proposed Land Classifications

Land and Water Classification	Description of Changes*	Justification
Project Operations (PO)	<p>The net increase in Project Operations lands from 71 to 523 is due to the following:</p> <ul style="list-style-type: none">• 76 acres of State Wildlife Area reclassified to PO• 199 acres of lands not classified in the 1975 Master Plan classified as PO• 153 acres of Public Use Area reclassified to PO• 70 acres of land classified as project operations in the 1975 Master Plan stayed in the classification of PO• 25 acres of water was reclassified to PO	All lands classified as PO are managed and used primarily in support of critical operational requirements related to the primary missions of flood risk management and water conservation, including lands that were previously classified as public use area.

Land and Water Classification	Description of Changes*	Justification
High Density Recreation (HDR)	<p>The net increase in High Density Recreation lands from 564 to 635 is due to the following:</p> <ul style="list-style-type: none"> • 129 acres of lands previously classified as Cheyenne-Arapaho Area was reclassified to HDR • 26 acres of State Wildlife Area reclassified to HDR • 3 acres of land not classified in the 1975 Master Plan was classified as HDR • 390 acres of Public Use Area was reclassified to HDR • 71 acres of water was reclassified to HDR • 16 acres of land not in fee at the time of the 1975 Master Plan was classified as HDR 	<p>The net increase in HDR was in part due to the reclassification of acres which were originally classified as Cheyenne-Arapaho Area. A small portion of water surface in the original land classification was also added to HDR. The reclassification of these acres reflects the current and future use.</p>
Environmentally Sensitive Areas (ESA)	<p>The classification of 543 acres as Environmentally Sensitive Areas resulted from the following:</p> <ul style="list-style-type: none"> • 239 acres of State Wildlife Management Area were reclassified to ESA • 94 acres of land not classified in the 1975 Master Plan were classified to ESA • 211 acres of water was reclassified to ESA 	<p>Reclassification of 543 acres was determined by the study team to be necessary to provide a high level of protection for those areas supporting significant habitat, views, or cultural sites. Classifying these areas as ESA will afford these areas with the highest level of protection from disturbance.</p>

Land and Water Classification	Description of Changes*	Justification
MRML – Wildlife Management (WM)	<p>The net increase in Wildlife Management lands from 10,910 acres to 11,150 acres is due to the following:</p> <ul style="list-style-type: none"> • 10,298 acres of State Wildlife Area was reclassified to WM • 24 acres of land not classified in the 1975 Master Plan were classified as WM • 1 acre of Public Use Area was reclassified as WM • 707 acres of water were reclassified as WM • 120 acres of land not classified in the 1975 Master Plan were classified as WM 	Many islands previously classified as water were classified as WM due to adjacent land classifications. 239 WM acres were reclassified as ESA to allow for the highest level of protection from disturbance.
Open Recreation	<p>The net decrease in Open Recreation water surface from 8,484 acres to 7,610 acres is due to the following:</p> <ul style="list-style-type: none"> • 40 acres of lands previously classified as Cheyenne-Arapaho Area was reclassified to Open Recreation • 88 acres of lands previously classified as State Wildlife Area was reclassified to Open Recreation • 90 acres of lands of Not Classified was classified to Open Recreation 	Mapping accuracy and sedimentation has increased the amount of land surface and decreased the water surface resulting in adjustments to the land and water classifications. Many islands previously classified as water were classified as WM and ESA due to adjacent land classifications.

Land and Water Classification	Description of Changes*	Justification
	<ul style="list-style-type: none"> • 14 acres of land previously classified as Public Use Area was reclassified to Open Recreation • 707 acres of water previously classified as Open Recreation was reclassified to WM • 71 acres of water previously classified as Open Recreation was reclassified to HDR • 25 acres of water previously classified as Open Recreation was reclassified to PO • 211 acres of water previously classified as Open Recreation was reclassified to ESA <p><i>* Any remaining acres not accounted for in above totals are attributed to changes in measuring technology.</i></p>	

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

As previously discussed in this Section, other alternatives to the Proposed Action were initially considered as part of the alternative development process for the MP revision. However, none met the Purpose and Need for the Proposed Action, current USACE regulations and guidance, or addressed public and agency comments or concerns. Therefore, no other alternatives are being carried forward for analysis in this EA.

SECTION 3: AFFECTED ENVIRONMENT AND CONSEQUENCES

This section of the EA describes the potential impacts of the No Action and Proposed Action alternatives on the natural, cultural, and social resources found within the USACE Canton Lake Fee Boundary. A description of the existing conditions of resources can be found in Chapter 2 of the 2025 MP. Only those resources that have the potential to be affected by implementation of either alternative will be analyzed in this EA.

Impacts (consequence or effect) can be either beneficial or adverse and can be either directly related to the action or indirectly caused by the action. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or further removed in distance but are still reasonably foreseeable. As discussed in this section, the alternatives may create temporary (less than 1 year), short-term (up to 3 years), long-term (3 to 10 years following the master plan revision), or permanent effects.

In considering whether the effects of the Proposed Action are significant, agencies shall analyze the potentially affected environment and degree of the effects of the action. In considering the potentially affected environment, agencies should consider, as appropriate to the specific action, the affected area (national, regional, or local) and its resources, such as listed species and designated critical habitat under the Endangered Species Act. In considering the degree of the effects, agencies should consider the following, as appropriate to the specific action: both short-and long-term effects, both beneficial and adverse effects, effects on public health and safety, effects that will violate Federal, State, Tribal, or local law protecting the environment. For the purpose of this analysis, the intensity of impacts will be classified as negligible, minor, moderate, or major. The intensity thresholds are defined as follows:

- **Negligible:** A resource would not be affected, or the effects would be at or below the level of detection, and changes would not be of any measurable or perceptible consequence.
- **Minor:** Effects on a resource would be detectable, although the effects would be localized, small, and of little consequence to the sustainability of the resource. Mitigation measures, if needed to offset adverse effects, would be simple and achievable.
- **Moderate:** Effects on a resource would be readily detectable, long-term, localized, and measurable. Mitigation measures, if needed to offset adverse effects, would be extensive and likely achievable.
- **Major:** Effects on a resource would be obvious and long-term and would have substantial consequences on a regional scale. Mitigation measures to offset the adverse effects would be required and extensive, and success of the mitigation measures would not be guaranteed.

3.1 LAND USE

Please refer to Sections 1.5, 2.5 and 2.6 of the 2025 MP for existing land use information in and around Canton Lake and Dam.

3.1.1 Alternative 1: No Action Alternative

Under the No Action Alternative, USACE would not implement the 2025 MP, and existing land use management would not be updated to reflect current and projected future needs and demands. The operation and maintenance of USACE lands at Canton Lake would continue as outlined in the 1975 MP to the extent that current and future laws and regulations would permit. Management would have difficulty meeting the current and future recreational needs identified through scoping efforts and USACE Project staff experience and recommendations. If the 1975 MP is kept and implemented, this would not align with current and future operations and recreation trends or needs for the Lake. This divergence would create a patchwork of management requirements that would be inefficient for Canton Lake staff to implement. The management would also increasingly lack transparency to the public, or alternately create more of a burden to staff to communicate how the lake management differs from that in the 1975 MP. Implementation of the No Action Alternative would have moderate, adverse, long-term impacts on land use within and on fee-owned Canton Lake project lands due to conflicting guidance and management of USACE lands.

3.1.2 Alternative 2: Proposed Action

The objectives for revising the 1975 MP describe current and foreseeable land uses while considering expressed public opinion, regional trends, and USACE policies that have evolved to meet day-to-day operational needs. The reclassifications in the 2025 MP were developed to help fulfill regional goals associated with good stewardship of land and water resources that will allow for continued use and development of project lands.

The 1975 MP classified 71 acres as Project Management Area, which is a category no longer used by the USACE for Master Plans. The proposed action establish a total of 523 acres of Project Operations lands. The 523 acre total for PO lands reflects the conversion of 76 acres of State Wildlife Areas, 199 acres of unclassified lands, 153 acres of Public Use Area, and 25 acres of water surface. Additionally, the existing 71 acres of Project Management Area was retained and reclassified as PO lands. These changes account for a 452 acre net increase in PO. The overall increase in PO lands for Canton Lake reflects current needs for project access and management to support critical operational requirements for flood risk management and water conservation.

The 1975 MP established 564 acres of Public Use Areas, while the proposed action would establish a total of 635 acres of HDR. While HDR is technically a new management classification for Canton Lake, the bulk of the 635 acres of HDR land is from areas previously classified as Public Use Area. The proposed action would result in a net increase of 71 acres of HDR, from 564 acres to 635 acres. The increase in HDR lands results from the conversion of 129 acres of Cheyenne-Arapaho Area lands, 26

acres of State Wildlife Areas, 3 acres of unclassified lands, 390 acres of Public Use Areas, 71 acres of water, and 16 acres of newly classified fee lands. The primary reason for the net increase in HDR lands reflects current and foreseeable recreational trends for the area.

Approximately 543 acres of Canton Lake would be reclassified as Environmentally Sensitive Areas. ESA lands are a new land classification for Canton Lake, as the 1975 MP did not establish a comparable land classification. The 543 acre net increase in ESA reflects the conversion of 239 acres of State Wildlife Management Area, 211 acres of Water Land Classification, and 94 acres of unclassified lands from the 1975 MP. The conversion of other land and water classifications into ESA from the 1975 MP was determined by the study team to provide high levels of protection for those areas. The purpose of the reclassification is to support significant, habitat, views, or cultural sites.

The 1975 MP established 10,910 acres as State Wildlife Management, which is a land management classification no longer used by the USACE for Master Plans. The proposed action would establish a total of 11,150 acres of MRML-WM by converting 10,395 acres of SWM to MRML-WM, as well as 144 acres of previously unclassified lands, 1 acres of Public Use Areas and 707 acres of water. The land classification changes proposed by the 2025 MP would result in a total of 11,246 acres of MRML-WM, with a net increase of 240 acres. The overall increase in MRML-WM lands will help establish the necessary acreage for the USACE to conserve, manage, and supplement wildlife areas at Canton Lake appropriately and efficiently.

On the waters of Canton Lake, the 2025 MP will add established surface water use categories in addition to the current ad hoc management of the lake. The 2025 MP would establish 7,557 acres of Open Recreation, 13 acres of Designated No-Wake, and 40 acres of Restricted water surface areas. The proposed water surface classifications will allow for better delineated and safer management of the lake's waters when the lake is at conservation pool. These reclassifications will help to improve safety of those recreating on and around Canton Lake by restricting boat access and speeds around certain parts of the lake, as well as establishing areas that boating can occur in. The Canton Lake office will still maintain the authority to make ad hoc adjustments as needed by lake level, which will prevent the reclassifications from being overly rigid or even ineffectual in various lake level conditions. This 927-acre difference in water surface areas between the 1975 MP and the 2025 MP is a result of changes in measuring technology, real estate actions, and sediment deposition and erosion.

The current and foreseeable land use demand and patterns for Canton Lake does not entail the need of utility corridors, therefore, none will be implemented in the 2025 MP. However, if needed, current USACE policy dictates that all utilities must go around USACE property unless no other feasible alternative exists. If a feasible alternative does not exist, then the utility must go through the NEPA review process prior to approval and implementation.

The majority of the land use reclassifications in the 2025 MP will maintain and improve the functional management that is currently occurring. While the terminology updates appear substantial, they have been implemented after considerable public input

and seek to maintain the values the public holds highest at Canton Lake. Additionally, the land reclassifications provide a balance between public use, both intensive and passive, and natural resources conservation. Therefore, the implementation of the proposed action will have moderate, long-term beneficial impacts to land use as the land reclassifications further refine areas for appropriate activities and provide more efficient land management.

3.2 WATER RESOURCES

Please refer to Section 2.5 in the 2025 MP for more information on existing conditions for hydrology (including surface and ground water), water quality, and wetlands, respectively.

3.2.1 Alternative 1: No Action Alternative

There would be no impacts to any water resources as a result of implementing the No Action Alternative, since there would be no changes or additions to the existing 1975 MP that would affect any of these resources.

3.2.2 Alternative 2: Proposed Action

The 2025 MP would increase MRML-WM by 240 acres and ESA lands by 543 acres which would help to conserve, protect, and manage habitat and vegetation that help to reduce erosion due to shoreline stabilization. Increased shoreline stabilization and decreased erosion may also help improve water clarity and therefore quality, resulting in minor, long-term benefits to water resources. Conversely, the 71 acre increase in HDR lands would result in minor, long-term, adverse impacts to water resources, as increased anthropogenic presence in recreation areas may exacerbate erosion issues negatively affecting water quality. Since the 2025 MP would increase total recreation lands by 71 acres but increase ESA by 543 acres and MRML-WM by 240 acres, the net benefits from increases in ESA and MRML-WM outweigh the adverse impacts from increases in HDR. Overall, the 2025 MP would provide minor, long-term, beneficial impacts to water resources.

3.3 CLIMATE

For more information on existing conditions for Climate and Changing Conditions, please refer to section 2.2 and 2.3 of the 2025 MP.

3.3.1 Alternative 1: No Action Alternative

The No Action Alternative would not result in any changes in climate or changing conditions at Canton Lake. Implementation of the 1975 MP would have no impact (beneficial or adverse) on existing or future climate conditions. Current policy (Executive Orders [EO] 13834 and 13783, and related USACE policy) requires project lands and recreational programs be managed in a way that advances broad national changing conditions mitigation goals including, but not limited to, changing conditions resilience and carbon sequestration. Changing conditions were not evaluated in the 1975 MP, as such the 1975 MP does not align with current laws and regulations. This non-

compliance has no impact on climate or changing conditions because the 1975 MP does not have any action that impacts existing conditions.

3.3.2 Alternative 2: Proposed Action

The 2025 MP will have negligible, long-term, beneficial impacts to climate or changing conditions in the region. These benefits will come from the promotion of land management practices and design standards that promote sustainability. Management under the 2025 MP will follow current USACE policy to meet changing conditions goals as described for the No Action Alternative. Any ground disturbing activities considered under the 2025 MP will be evaluated and analyzed for impacts to climate under NEPA and design processes prior to implementation.

3.4 AIR QUALITY

For more information on existing conditions for Air Quality at Canton Lake and the surrounding area, please refer to Section 2.3 in the 2025 MP.

3.4.1 Alternative 1: No Action Alternative

The continued implementation of the 1975 MP would not result in any changes to current and reasonably foreseeable future air quality in the region. No new increase in vehicular traffic, mass permanent vegetation removal, or large construction activities would occur as result of implementing this alternative. The No Action Alternative would remain compliant with the Clean Air Act because the 1975 MP only includes guidelines and does not incorporate actions which produce or contribute to criteria pollutants or Greenhouse Gases (GHG). The No Action Alternative will not produce any impacts on air quality.

3.4.2 Alternative 2: Proposed Action

Similar to the No Action Alternative, the 2025 MP will not result in any change to current and reasonably foreseeable air quality in the region. The Proposed Action will not implement any actions (i.e. ground disturbing activities) that directly or indirectly produce criteria pollutants or regulated pollutants such as GHGs (i.e. total emissions are 0); therefore, implementation of the Proposed Action will remain compliant with the Clean Air Act and State Implementation Plan and is not subject to a conformity determination. Long-term, negligible air quality benefits may be realized as a result of the 240 acre net increase in WM lands and 543 acre net increase in ESA lands. The added protection these reclassifications provide will benefit native vegetation communities that filter and sequester air pollutants.

3.5 TOPOGRAPHY, GEOLOGY, AND SOILS

Please refer to Section 2.4 of the 2025 MP for more information on existing conditions for topography, geology, and soils at Canton Lake.

3.5.1 Alternative 1: No Action Alternative

The No Action Alternative would have minor, adverse, long-term impacts to topography, geology, or soils since the 1975 MP would not be revised. Continued implementation of the 1975 MP would not provide any benefits to topography, geology, and soils such as increased habitat protection, reduced erosion, or shoreline stabilization, since there would be no land reclassifications that could potentially benefit these resources.

3.5.2 Alternative 2: Proposed Action

The Proposed Action takes into consideration the various topographical, geological, and soils aspects of USACE Canton Lake project lands. The establishment of 543 acres of ESA land and classification of 11,150 acres as MRML-WM lands (+240 acres) will help to increase the long-term preservation and stabilization of soils within USACE Canton Lake project lands. Implementation of the Proposed Action will have minor, beneficial, long-term impacts on soil conservation and topography, and geology at Canton Lake.

3.6 NATURAL RESOURCES

For more information on the existing conditions for natural resources (including fish and wildlife resources and vegetation resources), please refer to Sections 2.8 and 2.9 of the 2025 MP.

3.6.1 Alternative 1: No Action Alternative

The No Action Alternative would not update land management policies, as well as not provide any updated land classifications that could affect natural resources at Canton Lake. The No Action Alternative would cause minor, long-term adverse impacts to natural resources since they would not be managed by current policies and needs at Canton Lake.

3.6.2 Alternative 2: Proposed Action

The Proposed Action would bring land management policies up to date with current needs and natural resource requirements at Canton Lake. The implementation of the proposed land classifications will allow project lands to further support the USACE and Oklahoma Department of Wildlife Conservation (ODWC) missions for wildlife conservation, as well as implementation of operational procedures that will protect and enhance wildlife and fishery populations and habitat. The 2025 MP resource goals and objectives aim to further enhance, conserve, and protect natural resources at Canton Lake, including Species of Greatest Conservation Need (SGCN) and State and Federally Listed species. The establishment of ESA lands (+543 acres) and increase in MRML-WM lands (+240 acres) will help protect and conserve natural resources from various types of adverse impacts such as disturbance and habitat fragmentation. Therefore, the Proposed Action would provide moderate short and long-term benefits to natural resources.

3.7 THREATENED AND ENDANGERED SPECIES

The Endangered Species Act of 1973 (16 U.S.C. § 1531 et seq., as amended) defines an endangered species as a species “in danger of extinction throughout all or a significant portion of its range.” A threatened species is a species “likely to become endangered within the foreseeable future throughout all or a significant portion of its range.” Proposed species are those that have been proposed in the Federal Register (FR) to be listed under Section 4 of the Endangered Species Act. Species may be considered endangered or threatened “because of any of the following factors: (1) the present or threatened destruction, modification, or curtailment of its habitat or range; (2) overutilization for commercial, recreational, scientific, or educational purpose; (3) disease or predation; (4) the inadequacy of existing regulatory mechanisms; and (5) other natural or human-induced factors affecting continued existence.” USFWS has identified species that are candidates for listing as a result of identified threats to their continued existence. The candidate designation includes those species for which the USFWS has sufficient information to support proposals to list as endangered or threatened under the Endangered Species Act.

Section 7(a)(2) of the Endangered Species Act requires Federal agencies to ensure that any action authorized, funded, or carried out by such agency is not likely to 1) jeopardize the continued existence of any endangered or threatened species, or 2) result in the destruction or adverse modification of critical habitat. The term "jeopardize the continued existence of" means to appreciably reduce the likelihood of both the survival and recovery of listed species in the wild by reducing the species' reproduction, numbers, or distribution. Jeopardy opinions must present reasonable evidence that the project will jeopardize the continued existence of the listed species or result in destruction or adverse modification of critical habitat.

Using the Information for Planning and Consultation tool (IPaC), an official species list was obtained on January 14, 2025 from the USFWS Oklahoma Ecological Services Field Office. A copy of this list is available in Appendix C. All Federally listed Threatened and Endangered species as well as Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Act (BGEA) species reported on the official USFWS species are described in Table 3.1.

Table 3.1 Federal and State Listed Conservation Species Potentially Occurring at the Canton Lake and Dam Project Area (USFWS, 2025)

Species	Federal Status	State Status
Lesser Prairie-chicken (<i>Tympanuchus pallidicinctus</i>)	Threatened	None
Piping Plover (<i>Charadrius melanotos</i>)	Threatened	None
Rufa Red Knot (<i>Calidris canutus rufa</i>)	Threatened	None

Species	Federal Status	State Status
Whooping Crane (<i>Grus americana</i>)	Endangered	None
Monarch Butterfly (<i>Danaus plexippus</i>)	Proposed Threatened	None
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	MBTA / BGEPA Protected	Threatened
Golden Eagle (<i>Aquila chrysaetos</i>)	MBTA/ BGEPA Protected	None
Black-Billed Cuckoo (<i>Coccyzus erythrophthalmus</i>)	MBTA Bird of Conservation Concern	None
Carolina Chickadee (<i>Poecile carolinensis</i>)	MBTA Bird of Conservation Concern	None
Bobolink (<i>Dolichonyx oryzivorus</i>)	MBTA Bird of Conservation Concern	None
Canada Warbler (<i>Cardellina canadensis</i>)	MBTA Bird of Conservation Concern	None
Cerulean Warbler (<i>Dendroica cerulea</i>)	MBTA Bird of Conservation Concern	None
Chimney Swift (<i>Chaetura pelagica</i>)	MBTA Bird of Conservation Concern	None
Northern Saw-whet Owl (<i>Aegolius acadicus acadicus</i>)	MBTA Bird of Conservation Concern	None
Prairie Warbler (<i>Dendroica discolor</i>)	MBTA Bird of Conservation Concern	None
Prothonotary Warbler (<i>Protonotaria citrea</i>)	MBTA Bird of Conservation Concern	None
Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	MBTA Bird of Conservation Concern	None
Rusty Blackbird (<i>Euphagus carolinus</i>)	MBTA Bird of Conservation Concern	None
Wood Thrush (<i>Hylocichla mustelina</i>)	MBTA Bird of Conservation Concern	None

3.7.1 Alternative 1: No Action Alternative

The No Action Alternative would have no effect on any Threatened and Endangered species, that may occur at Canton Lake. Migratory bird species protected under the

MBTA as well as the Bald and Golden Eagle Act protected species would not be adversely affected. Threatened and Endangered species would continue to be managed with existing USACE guidelines established under the 1975 MP, Section 7 of the ESA, the MBTA, the BGEA, and Oklahoma State Law.

3.7.2 Alternative 2: Proposed Action

The implementation of the 2025 MP will allow for better cooperative management plans with the USFWS and Oklahoma Department of Wildlife Conservation that will help to preserve, enhance, and protect vegetation and wildlife habitat resources that are essential to various endangered and threatened species that may be found within USACE Canton Lake federal project lands. To strengthen management opportunities and beneficially impact habitat diversity, the reclassifications in the 2025 MP include a 240-acre net increase for MRML-WM lands, as well as the classification of 543 acres as ESA lands. The net increase in wildlife management lands and establishment of ESA lands will provide updated and more effective land management practices for any federally listed species, providing long-term, minor benefits to these resources over the life of the 2025 MP.

The resource objectives will require that threatened and endangered species are managed by various ecosystem management principles, which will further help those species. Any future activities that could potentially result in impacts to Federally listed species will be coordinated with USFWS through Section 7 of the Endangered Species Act (ESA). Within the context of the ESA, the USACE has determined that the implementation of the Proposed Action will have No Effect on any federally listed or proposed threatened, endangered, or candidate species that may occur within the Canton Lake federal fee boundary.

3.8 INVASIVE SPECIES

Please refer to Section 2.12 for information on the existing condition of invasive species at Canton Lake in the 2025 MP.

3.8.1 Alternative 1: No Action Alternative

The No Action Alternative would have no effect on invasive species. The 1975 MP would not be updated. No changes to policies or guidelines at Canton Lake concerning invasive species would occur as a result of the No Action Alternative.

3.8.2 Alternative 2: Proposed Action

The reclassifications of land classes, improvement of resource management objectives, and the overall improvement of the 2025 MP will allow invasive species within USACE Canton Lake federal project lands to be better managed. The establishment of ESA land (+543 acres) and classifying 11,150 acres as MRML-WM (+240 acres) lands helps to protect natural resources from various types of adverse impacts such as habitat fragmentation which increases the opportunity for the spread of invasive species. These areas will also receive updated invasive species management efforts. The resource goals and objectives will require monitoring and reporting of

invasive species, as well as action items to prevent and/or reduce the spread of these species. Therefore, under the Proposed Action, there will be long-term minor, beneficial impacts on invasive species management as a result of implementing the 2025 MP.

3.9 CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES

Cultural resources preservation and management is an equal and integral part of all resource management at USACE-administered water resources projects. The term “cultural resources” is a broad term that includes but is not limited to historic and prehistoric archaeological sites, deposits, and features; burials and cemeteries; historic and prehistoric districts comprised of groups of structures or sites; cultural landscapes; built environment resources such as buildings, structures (such as bridges), and objects; Traditional Cultural Properties (TCP) and sacred sites. These property types may be listed on the National Register of Historic Places (NRHP) if they meet the criteria specified by 36 CFR 60.4 as authorized by the National Historic Preservation Act (NHPA), reflecting significance in architecture, history, archaeology, engineering, and culture. Cultural resources that are identified as eligible for listing in the NRHP are referred to as “historic properties,” regardless of category. A TCP is a property that is eligible for inclusion in the NRHP based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community. Ceremonies, hunting practices, plant-gathering, and social practices which are part of a culture’s traditional lifeways, are also cultural resources.

Stewardship of cultural resources on USACE Civil Works water resources projects is an important part of the overall Federal responsibility. Numerous laws pertaining to identification, evaluation, and protection of cultural resources, Native American Indian rights, curation and collections management, and the protection of resources from looting and vandalism establish the importance of cultural resources to our Nation’s heritage. With the passage of these laws, the historical intent of Congress has been to ensure that the Federal government protects cultural resources. Guidance is derived from a number of cultural resources laws and regulations, including but not limited to Sections 106 and 110 of the NHPA of 1966 (as amended); Archaeological Resources Protection Act (ARPA) of 1979; Native American Graves Protection and Repatriation Act (NAGPRA); and 36 CFR Part 79, Curation of Federally Owned and Administered Archeological Collections. Implementing regulations for Section 106 of the NHPA and NAGPRA are 36 CFR Part 800 and 43 CFR Part 10, respectively. All cultural resources laws and regulations should be addressed under the requirements of the National Environmental Policy Act (NEPA) of 1969 (as amended), as applicable. USACE summarizes the guidance provided in these laws in ER and EP 1130-2-540.

For information on the existing conditions of Cultural, Historical, and Archaeological Resources at Canton Lake, please refer to Section 2.14 of the 2025 MP.

3.9.1 Alternative 1: No Action Alternative

The No Action Alternative would not have any impacts to Cultural Resources identified in Section 2.14 of the 2025 MP. No changes to Cultural Resources Management at Canton Lake would occur.

3.9.2 Alternative 2: Proposed Action

The Proposed Action would provide long-term protection measures for Cultural Resources Management efforts at Canton Lake and Dam. The 2025 MP will have no potential to affect historic properties eligible or listed on the NRHP, but instead would provide updated monitoring and protection for historic properties over the next 25 years. As a result, the 2025 MP would provide minor, long-term benefits to Cultural Resources over the planning horizon of 25 years.

3.10 SOCIOECONOMICS AND DEMOGRAPHICS

For more information on the existing conditions of socioeconomics and demographics, please refer to Section 2.15 of the 2025 MP.

EO 13045 requires each federal agency “to identify and assess environmental health risks and safety risks that may disproportionately affect children” and “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” This EO was prompted by the recognition that children, still undergoing physiological growth and development, are more sensitive to adverse environmental health and safety risks than adults. The potential for impacts on the health and safety of children is greater where projects are located near residential areas.

3.10.1 Alternative 1: No Action Alternative

The No Action Alternative would not have any impacts on socioeconomics or demographics. The 2025 MP would not be implemented, and Canton Lake would continue to be managed based on the 1975 MP and subsequent updates. The No Action alternative would not disproportionately affect children.

3.10.2 Alternative 2: Proposed Action

The Proposed Action would implement the 2025 MP and would not have any impacts on socioeconomics or demographics since no construction or changes that could affect local socioeconomic/demographic factors would occur; the changes proposed in the 2025 MP would not affect the local economy or local populations in any perceivable way. The Proposed Action would not disproportionately affect children.

3.11 RECREATION

For information on the existing conditions of recreation and the zone of influence for Canton Lake, please refer to Section 2.16 of the 2025 MP.

3.11.1 Alternative 1: No Action Alternative

The No Action Alternative would keep the 1975 MP in place, which would cause moderate, long-term adverse impacts to recreation. These impacts would result from lack of updates in land management as well as land classifications related to recreation that would not reflect current recreation needs at Canton Lake.

3.11.2 Alternative 2: Proposed Action

The Proposed Action would implement the 2025 MP, which provides updates to both recreation policies and goals, as well as large-scale changes to recreation land classifications. The 2025 MP would cause a 71 acre net increase in HDR land. These land classification changes reflect current recreation needs, as well as the increase of HDR lands that were never developed or are currently unused, and ultimately provide updated and more effective land management in the context of recreation and recreational access to the public, as well as more streamlined and current recreation management opportunities for the USACE. The overall updates and land classification changes presented by the 2025 MP would provide moderate, long-term benefits to recreation at Canton Lake.

3.12 AESTHETIC RESOURCES

For information on the existing conditions of aesthetic resources at Canton Lake, please refer to Section 2.13 of the 2025 MP.

3.12.1 Alternative 1: No Action Alternative

There would be no impacts on aesthetic resources as a result of the No Action Alternative, as there would be no changes to the existing 1975 MP.

3.12.2 Alternative 2: Proposed Action

The Proposed Action may have negligible, long-term, positive impacts to aesthetic resources due to a net increase in MRML-WM lands and establishment of ESA lands. Benefits to aesthetic resources may occur due to overall less disturbance of aesthetic nature areas in ESA lands as well as an increase in MRML-WM lands.

3.13 HAZARDOUS, TOXIC, AND RADIOLOGICAL (HTRW)

For information on the existing conditions of HTRW at Canton Lake, please refer to Section 2.6 of the 2025 MP.

3.13.1 Alternative 1: No Action Alternative

There would be no impacts to HTRW resources as a result of the No Action Alternative, as there would be no changes to the existing 1975 MP, and no known HTRW resources or facilities in the immediate vicinity of Canton Lake would be affected by keeping the 1975 MP implemented.

3.13.2 Alternative 2: Proposed Action

The Proposed Action seeks to implement the 2025 MP which is a land management document that does not involve construction or ground-disturbing activities. There would be no impacts to any HTRW facilities or resources identified in the vicinity of Canton Lake.

3.14 HEALTH AND SAFETY

For information on the existing conditions of health and safety at Canton Lake, please refer to Section 2.7 of the 2025 MP.

3.14.1 Alternative 1: No Action Alternative

There would be no impacts to health and safety as a result of implementing the No Action Alternative, as there would be no changes made to the 1975 MP. Health and safety would continue to be managed and follow guidelines from the 1975 MP.

3.14.2 Alternative 2: Proposed Action

The Proposed Action would adopt and implement the 2025 MP which would change land management policies and land classifications at Canton Lake. The Proposed Action does not involve any construction or ground-disturbing activities. The addition of 40 acres of Restricted and 13 acres of Designated No-wake water surface classifications will provide minor, long-term, benefits to health and safety since they enhance public safety near the dam and the swimming beach.

3.15 SUMMARY OF CONSEQUENCES AND BENEFITS

Table 3.2 provides a tabular summary of the consequences and benefits for the No Action and Proposed Action alternatives for each of the assessed resource categories in Section 3.

Table 3.2 Summary of Consequences and Benefits

Resource	Change Resulting from 2025 MP (Proposed Action)	Environmental Consequences: No Action Alternative	Environmental Consequences: Proposed Action	Benefits Summary
Land Use	<p>Updates to land management policies and land reclassifications:</p> <ul style="list-style-type: none"> • PO: 523 acres (+452) • ESA: 543 (+543) • HDR: 635 (+71) • MRML-WM: 11,150 (+240) 	Moderate, long-term, adverse impacts due to outdated land management policies and land classifications.	Moderate, long-term beneficial impacts due to updated land management policies, updated land classifications, and updated resource goals and objectives.	Benefits caused by updated land management policies, land classifications, and updated resource goals and objectives that better align land management at Canton Lake with current needs and trends, allowing for more effective and appropriate Land Use.
Water Resources Including Groundwater, Wetlands, and Water Quality	<p>Updates to water resource reclassifications:</p> <ul style="list-style-type: none"> • Restricted: 40 (+40) • Open Recreation: 7,557 (+927) • No Wake (+13) 	No effect.	Minor, long-term, beneficial impacts due to increased soil stabilization and reduced erosion that may enhance water quality.	Benefits caused by increases in MRML-WM and ESA lands that may enhance or preserve shoreline habitat that may reduce erosion by stabilizing soils, which reduces sediment runoff into the aquatic environment.
Climate	No change.	No effect.	Negligible, long-term beneficial impacts due to updated management practices and resource goals and objectives relevant to climate.	Benefits caused by updated management practices and resource goals and objectives that are conscious of the climate.

Resource	Change Resulting from 2025 MP (Proposed Action)	Environmental Consequences: No Action Alternative	Environmental Consequences: Proposed Action	Benefits Summary
Air Quality	No change.	No effect.	Negligible, long-term beneficial impacts due to enhancement and preservation of native vegetation that may filter and sequester air pollutants.	Benefits occur from the preservation and enhancement of wildlife habitat (vegetation) due to increase in ESA lands and increase MRML-WM lands. Vegetation can remove and sequester air pollutants over time, providing localized benefits to air quality.
Topography, Geology and Soils	No change.	No effect.	Minor, long-term benefits due to decreased erosion and soil disturbance.	Benefits occur from decreased erosion and soil disturbance due to ESA lands and increased MRML-WM lands. Soil erosion is also decreased by the conservation and enhancement of vegetation that further stabilizes soils.
Natural Resources	Establishment of ESA lands (+543 acres) and increase in e MRML-WM lands (+240).	Minor, long-term adverse impacts due to outdated land management policies and land classifications that do not reflect current needs for Natural Resources.	Moderate, short and long-term benefits due to updated land management policies and land classifications that align with current needs for Natural Resources.	Benefits occur due to updated land management policies and land classifications that would enhance and preserve wildlife habitat. Increase ESA lands and increased MRM-WM lands would provide more managed wildlife habitat and less habitat disturbance due to anthropogenic activities.

Resource	Change Resulting from 2025 MP (Proposed Action)	Environmental Consequences: No Action Alternative	Environmental Consequences: Proposed Action	Benefits Summary
Threatened and Endangered Species, including SGCN and PA-CNHI species.	The implementation of the 2025 MP will allow for better cooperative management plans with the USFWS and Oklahoma Department of Wildlife Conservation that will help to preserve, enhance, and protect vegetation and wildlife habitat resources that are essential to various endangered and threatened species that may be found within USACE Canton Lake federal project lands.	No effect.	Minor, long-term beneficial impacts on T&E species habitat, no effects on T&E species in the context of Section 7 of the Endangered Species Act.	Benefits would occur due to updated land management policies and land classifications that would enhance and conserve wildlife habitat, including potential T&E/SGCN/PA-CNHI species' habitat. Establishing ESA lands and increased MRML-WM lands provides less potential disturbance to any of the listed species and their habitat.
Invasive Species	No change.	No effect.	Minor, long-term beneficial impacts due to update land management policies and land classifications allowing for updated and more effective invasive species management.	Benefits occur from updated land management and land classifications allowing invasive species to be more effectively managed based on current needs at Canton Lake.
Cultural Resources	Updated long-term goals and objectives for Cultural Resources.	No effect.	Minor, long-term benefits due to updated goals and objectives.	Benefits would occur due to updated long-term goals and objectives that would provide updates to Cultural Resource management at Canton Lake.
Socioeconomics and Demographics	No change.	No effect.	No effect.	No added benefit.

Resource	Change Resulting from 2025 MP (Proposed Action)	Environmental Consequences: No Action Alternative	Environmental Consequences: Proposed Action	Benefits Summary
Recreation	No change.	Moderate, long-term adverse impacts since there would be no updates to reflect current recreation trends and needs at Canton Lake.	Moderate, long-term benefits since the 2025 MP would update land classifications to reflect current needs and trends in recreation at Canton Lake.	Benefits occur from updates to land classifications (increased HDR lands) that reflect current recreation trends and needs at Canton Lake. These changes allow recreation to be more effectively managed.
Aesthetic Resources	No change.	No effect.	Negligible, long-term benefits due to increased MRML-WM lands and ESA lands that may enhance aesthetic areas.	Benefits occur from increased MRML-WM lands and ESA lands that may provide more opportunities for less disturbed natural areas to become aesthetic.
Hazardous, Toxic, and Radioactive Waste	No change.	No effect.	No effect.	No added benefit.
Health and Safety	No change.	No effect.	No effect.	No effect.

SECTION 4: CUMULATIVE IMPACTS

Federal agencies are required to analyze the reasonably foreseeable effects of the proposed action consistent with Section 102 of NEPA. In accordance with CEQ guidance on the implementation of Section 102 of NEPA (seen below), the USACE also evaluates cumulative impacts. Cumulative impacts are defined as an impact on the environment that results from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from actions with individually minor but collectively significant effects taking place over a period of time. Impacts can be adverse or beneficial.

By Memorandum dated June 24, 2005 from the Chairman of the CEQ to the Heads of Federal Agencies entitled “Guidance on the Consideration of Past Actions in Cumulative Effects Analysis”, CEQ made clear its interpretation that “...generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions...” and that the “...CEQ regulations do not require agencies to catalogue or exhaustively list and analyze all individual past actions.” CEQ guidance also recommends narrowing the focus of cumulative impacts analysis to important issues of national, regional, or local significance.

The initial step of the cumulative impact analysis uses information from the evaluation of direct and indirect impacts in the selection of environmental resources that should be evaluated for cumulative impacts. A Proposed Action would not contribute to a cumulative impact if it would not have a direct or indirect effect on the resource.

Based on a review of the likely environmental impacts analyzed in Section 3 (Affected Environment and Consequences) the USACE determined that the analysis of cumulative impacts will not include the following resources: socioeconomics and demographics, cultural resources, health and safety, HTRW. With respect to these resource topics in Section 3, both the No Action and Proposed Action alternatives will either:

1. Not result in any direct or indirect impacts and therefore will not contribute to a cumulative impact; or,
2. That the nature of the resource is such that impacts do not have the potential to cumulate. For example, impacts related to geology are site specific and do not cumulate; or,
3. That the future with or future without project condition analysis is a cumulative analysis and no further evaluation is required. For example, because changing conditions are global in nature, the future without project condition and future with project condition analysis is inherently a cumulative impact assessment.

For each resource topic carried forward for cumulative impact analysis, the timeframe for analysis is the time since the 1975 MP and 50 years following the revised

MP (2025-2050). The zone of interest for all resources are the 48 counties in a 100-mile radius of Canton Lake defined in Section 2.15.1 of the 2025 MP.

4.1 PAST IMPACTS WITHIN THE ZONE OF INTEREST

Construction of Canton Lake was authorized by the Flood Control Act of 1938 and is currently managed by the Tulsa District of USACE for the authorized purposes of flood control, water supply, recreation, fish and wildlife, and irrigation along the North Canadian River. Canton Lake spans approximately 20,460 acres total, 7,709 acres of which are water surface area at the conservation pool elevation of 1,615.4 feet NGVD29.

4.2 CURRENT AND REASONABLY FORESEEABLE PROJECTS WITHIN AND NEAR THE ZONE OF INTEREST

Potential future development or material placement on Flowage Easement Lands at Canton Lake may result in cumulative impacts. Future management of the Flowage Easement Lands at Canton Lake includes routine inspection of these areas to ensure that the Government's rights specified in the easement deeds are protected. In almost all cases, the Government acquired the right to prevent placement of fill material or habitable structures on the easement area. Placement of any structure that may interfere with the USACE flood risk management and water conservation missions may also be prohibited.

At the time of this publication, there are many foreseeable road projects within the zone of interest by the Oklahoma Department of Transportation.

National USACE policy set forth in ER 1130-2-550, Appendix H, states that USACE lands will, in most cases, only be made available for roads that are regional arterials or freeways (as defined in ER 1130-2-550). All other types of proposed roads, including driveways and alleys, are generally not permitted on USACE lands. Any proposed expansion or widening of existing roadways on USACE lands will be considered on a case-by-case basis.

4.3 ANALYSIS OF CUMULATIVE IMPACTS

Impacts on each resource were analyzed according to how other actions and projects within the zone of interest might be affected by the No Action Alternative and Proposed Action. Impacts can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. For the purpose of this analysis the intensity of impacts will be classified as negligible, minor, moderate, or major. These intensity thresholds were previously defined in Section 3.0. Moderate growth and development are expected to continue in the vicinity of Canton Lake and cumulative adverse impacts on resources will not be expected when added to the impacts of activities associated with the Proposed Action or No Action Alternative. A summary of the anticipated cumulative impacts on each resource is presented below.

4.3.1 Land Use

A major impact would occur if any action were inconsistent with adopted land use plans or if an action would substantially alter those resources required for, supporting, or benefiting the current use. Land use around Canton Lake and within the Northern Canadian River watershed is primarily agricultural with mixed urban areas, disc golf courses, forests, and open spaces. Under the No Action Alternative, land use would not change. The Proposed Action will result in the reclassification of project lands, the reclassifications were developed to help fulfill regional goals associated with good stewardship of land resources that would allow for continued use of project lands.

Therefore, cumulative impacts on land use within the area surrounding Canton Lake, when combined with past and future actions in the region, are anticipated to be negligible.

4.3.2 Water Resources

A major impact would occur if any action were inconsistent with adopted surface water classifications or water use plans, or if an action would substantially alter those resources required for, supporting, or benefiting the current use. Canton Lake was developed for water supply, flood control, and low flow augmentation purposes and is secondarily authorized for recreation and water quality control. The reclassifications and resource objectives required to revise the 1975 MP are compatible with water use plans and surface water classification; further, they were developed to help fulfill regional goals associated with good stewardship of water resources that will allow for continued use of water resources associated with Canton Lake. Therefore, cumulative impacts on water resources within the area surrounding Canton Lake, when combined with past and proposed actions in the region, are anticipated to be negligible.

4.3.3 Climate

Under the Proposed Action, current Canton Lake project management plans and monitoring programs will not be changed. In the event that GHG emission issues become significant enough to impact the current operations at Canton Lake, the 2025 MP and all associated documents will be reviewed and revised as necessary. Therefore, implementation of the 2025 MP, when combined with other existing and proposed projects in the region, will result in negligible reasonably foreseeable future impacts on climate and changing conditions.

4.3.4 Air Quality

There are many highway projects in the zone of interest for Canton Lake and many potential proposed projects that may contribute to the amount of new emissions that could potentially affect air quality within the region. The Proposed Action will only have negligible, beneficial impacts to air quality localized to Canton Lake. Vehicle traffic along park and area roadways and routine daily activities in nearby communities contribute to current and future emission sources; however, the impacts associated with the Proposed Action will be negligible in comparison. The use of gas-powered equipment by the USACE to manage vegetation already occurs at Canton Lake, and the Proposed

Action would not contribute to a regional increase in criteria pollutant or regulated pollutant emissions that would degrade air quality. Therefore, there would be negligible cumulative impacts to air quality resulting from the Proposed Action when combined with past and future proposed action in the area.

4.3.5 Topography, Geology, and Soils

A major impact could occur if a proposed future Action exacerbates or promotes long-term erosion, if the soils are inappropriate for the proposed construction and would create a risk to life or property, or if there would be a substantial reduction in agricultural production or loss of Prime Farmland soils. The Proposed Action does not include any construction or ground-disturbing activities. The potential repeated removal or mowing of vegetation at Canton Lake consistent with current use and as a result of the Proposed Action may contribute to negligible amounts of soil loss in the forecasted 25-year period of analysis. The Proposed Action is also expected to provide minor, long-term benefits to these resources by stabilizing the soil and reducing erosion due to enhanced vegetative habitat. Cumulative impacts on topography, geology, and soils within the area surrounding Canton Lake, when combined with past and proposed actions in the region, are anticipated to be negligible.

4.3.6 Natural Resources

The significance threshold for natural resources would include a substantial reduction in ecological processes, communities, or populations that would threaten the long-term viability of a species or result in the substantial loss of a sensitive community that could not be offset or otherwise compensated. Past, present, and future projects are not anticipated to impact the viability of any plant species or community, rare or sensitive habitats, or wildlife. The Proposed Action is expected to have moderate, short and long-term impacts due to enhanced preservation and conservation of natural resources. The Proposed Action would not threaten viability of any natural resources or contribute to any substantial losses of communities. Therefore, there would be negligible cumulative impacts as a result of the Proposed Action when combined with past and future proposed actions in the area.

4.3.7 Threatened and Endangered Species

The Proposed Action is not expected to affect any Threatened and Endangered species within the context of Section 7 of the ESA. The Proposed Action is expected to provide minor, long-term benefits to wildlife habitat that Threatened and Endangered species may utilize at Canton Lake.

Should Federally listed species change in the future (delisting of species or listing of new species), associated requirements will be reflected in revised land management practices in coordination with the USFWS. The USACE will continue cooperative management plans with the USFWS and ODWC to preserve, enhance, and protect critical wildlife resources. Therefore, there would be negligible cumulative impacts as a result of the Proposed Action when combined with past and future proposed actions in the area.

4.3.8 Invasive Species

The land reclassifications required to revise the 1975 MP are compatible with Canton Lake invasive species management practices. Therefore, there will be minor long-term beneficial impacts on reducing and preventing invasive species within the area surrounding Canton Lake, resulting in negligible cumulative impacts when combined with past and future actions in the area.

4.3.9 Recreation

Canton Lake provides regionally significant outdoor recreation benefits including a variety of recreation opportunities. The Proposed Action is expected to provide moderate, long-term benefits to recreation due to updated land classifications that reflect current recreation trends and needs at Canton Lake. Cumulative impacts to recreation are expected to be negligible as a result of the Proposed Action combined with past and future actions in the area.

4.3.10 Aesthetic Resources

The Proposed Action is expected to have negligible, long-term benefits to aesthetic resources due to conservation and enhancement of natural environments across Canton Lake as a result of increase ESA lands and increased MRML-WM lands. Cumulative impacts to aesthetic resources are expected to be negligible as a result of the Proposed Action combined with past and future actions in the area.

SECTION 5: COMPLIANCE WITH ENVIRONMENTAL LAWS

This EA has been prepared to satisfy the requirements of all applicable environmental laws and regulations and has been prepared in accordance with the NEPA, the Fiscal Responsibility Act of 2023, and USACE NEPA procedures. The proposed revision of the 1975 MP is consistent with the USACE's Environmental Operating Principles. The following is a list of applicable environmental laws and regulations that were considered in the planning of this project and the status of compliance with each:

Bald and Golden Eagle Protection Act (BGEPA), as amended – Consultation under the BGEPA is not necessary for the proposed action because it would have no impact to preferred nesting, rearing, or foraging habitat and no “take” of bald or golden eagles. USACE would follow the USFWS National Bald Eagle Management Guidelines (May 2007) prior to implementing any future action prescribed by this Master Plan. Therefore, the 2025 MP is compliant with the BGEPA

CEQ Memorandum dated August 11, 1980, Prime or Unique Farmlands – Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The Proposed Action will not impact Prime Farmland present on Canton Lake project lands.

Clean Air Act of 1977, as amended – The USEPA established nationwide air quality standards to protect public health and welfare. Existing operation and management of the reservoir is compliant with the Clean Air Act and will not change with the 2025 MP. A General Conformity Determination is not required since the emissions of either alternative are negligible at best and are otherwise de minimis.

CWA of 1977, as amended – The Proposed Action will comply with all state and Federal CWA regulations and requirements and is regularly monitored by the USACE and the Oklahoma Department of Environmental Quality for water quality. A state water quality certification pursuant to Section 401 of the CWA is not required for the 2025 MP. There will be no change in the existing management of the reservoir that will impact water quality, but minor, long-term benefits to water quality are expected from the Proposed Action.

Endangered Species Act of 1973, as amended – Current lists of threatened or endangered species were compiled for the 2025 MP. The USACE has determined that no Federally Listed Species, State Listed Species or Species of Greatest Conservation Need would be affected by either the No Action Alternative or The Proposed Action.

Executive Order 11988, Floodplain Management, as amended – This EO directs Federal agencies to evaluate the potential impacts of proposed actions in floodplains. Both alternatives comply with EO 11988, as neither will have impacts to the existing floodplain at Canton Lake.

Executive Order 11990, Protection of Wetlands, as amended – EO 11990 requires Federal agencies to minimize the destruction, loss, or degradation of wetlands, and to

preserve and enhance the natural and beneficial values of wetlands in executing Federal projects. The Proposed Action complies with EO 11990.

Executive Order 13045, Protection of Children From Environmental Health Risk and Safety Risk – The proposed land classifications would not impact environmental health or safety in a way that disproportionately affects children. Therefore, the proposed action is compliant with EO 13045.

Executive Order 13186 (Migratory Bird Habitat Protection) – Sections 3a and 3e of EO 13186 direct Federal agencies to evaluate the impacts of their Actions on migratory birds, with emphasis on species of concern, and inform the USFWS of potential negative impacts on migratory birds. The 2025 MP would not result in adverse impacts on migratory birds or their habitat.

Farmland Protection Policy Act (FPPA) of 1980 and 1995 – The FPPA's purpose is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. There are Prime Farmland and farmland of state importance on Canton Lake project lands, but these will not be impacted.

Fish and Wildlife Coordination Act of 1958, as amended – The USACE initiated public involvement and agency scoping activities to solicit input on the 2025 MP EA, and to identify significant issues related to the Proposed Action. Information provided by USFWS and ODWC on fish and wildlife resources has been utilized in the development of the 2025 MP.

Fish and Wildlife Coordination Act (FWC), as amended – The proposed action is not a water-resource development program, nor would it impound, divert, deepen, control, or modify a body of water. Therefore, coordination with USFWS, NMFS, and ODFW under the FWCA is not applicable to the proposed Project. The USACE would coordinate with USFWS, NMFS, and ODFW as necessary prior to implementing any water-resource development action that may occur because of the proposed action. Therefore, the 2025 MP is compliant with the FWCA.

Migratory Bird Treaty Act, as amended – The Migratory Bird Treaty Act of 1918 extends Federal protection to migratory bird species. The nonregulated “take” of migratory birds is prohibited under this act in a manner similar to the prohibition of “take” of threatened and endangered species under the Endangered Species Act. The timing of resource management activities at Canton Lake would be coordinated to avoid impacts on migratory and nesting birds.

National Historic Preservation Act (NHPA) of 1966, as amended – Compliance with the NHPA of 1966, as amended, requires identification of all properties in the project area listed in, or eligible for listing in, the NRHP. All previous surveys, site testing, and excavations will be coordinated with the Oklahoma State Historic Preservation Officer and Native American Tribes with interest in the project area. Known sites are mapped and avoided by maintenance activities with review and approval from District Archeologist. Areas that have not undergone cultural resources surveys or evaluations

will need to do so prior to any earthmoving or other potentially impacting activities, as determined by the District Archeologist during review of the project.

Native American Graves Protection and Repatriation Act (NAGPRA) – Consultation under NAGPRA is not needed for the proposed action as the updates would not adversely affect resources protected under this regulation. The USACE would coordinate with the relevant Tribes if any Native American remains, or cultural items are discovered during future actions that may be implemented under this Master Plan. Therefore, the 2025 MP is compliant with the NAGPRA.

SECTION 6: IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES

NEPA requires that Federal agencies identify “any irreversible and irretrievable commitments of resources which will be involved in the Proposed Action should it be implemented” (42 U.S.C. § 4332). An irreversible commitment of resources occurs when the primary or secondary impacts of an Action result in the loss of future options for a resource. Usually, this is when the Action affects the use of a nonrenewable resource, or it affects a renewable resource that takes a long time to regenerate. An irretrievable commitment of resources is typically associated with the loss of productivity or use of a natural resource (e.g., loss of production or harvest). No irreversible or irretrievable impacts on Federally protected species or their habitat is anticipated from implementing the 2025 MP.

SECTION 7: PUBLIC AND AGENCY COORDINATION

In accordance with NEPA, the USACE initiated public involvement and agency scoping activities to solicit input on the proposed revision of the 1975 MP, as well as identifying any issues related to the Proposed Action. The initial scoping meeting was a public open house held at the Canton Elementary School Gymnasium in Canton, OK to inform the public of the intent to revise the master plan. The public input period remained open for 30 days from July 23, 2024 to August 22, 2024. An extension of the comment period for Canton remained open from August 22, 2024 to August 30, 2024. The public input period resulted in 1 comment, which can be found in Appendix E of the 2025 MP.

A public open house was held for the Canton Lake Master Plan revision at the Canton Elementary School Gymnasium, Highway 58 South, Canton, OK 73724 on July 23, 2024 from 5-7 p.m. The purpose of this open house was to provide attendees with information regarding the proposed Master Plan revision as well as to provide them with the opportunity to provide comments on the proposed Canton Draft Master Plan, Environmental Assessment, and Finding of No Significant Impact. The open house included the following topics:

- What is a Master Plan?
- What a Master Plan is Not;
- Why Revise a Master Plan?
- Overview of the National Environmental Policy Act (NEPA) process;
- Master Planning process;
- Proposed Changes to the Master Plan; and
- Instructions for submitting comments.

The public input period remained open for from July 23, 2024, to August 30, 2024. During the comment period, the USACE received 1 comment. This comment and the USACE response can be found in Chapter 7 of the 2025 MP.

Attachment A to this EA includes the news release, agency coordination letters, and the distribution list for all coordination letters. The EA has been coordinated with agencies having legislative and administrative responsibilities for environmental protection.

SECTION 8: ACRONYMS AND ABBREVIATIONS

%	Percent
°	Degrees
§	Section
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO ₂	Carbon Dioxide
CO ₂ e	CO ₂ -equivalent
CRMP	Cultural Resources Management Plan
CWA	Clean Water Act
DOE	Department of Energy
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EP	Engineer Pamphlet
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ER	Engineer Regulation
F	Fahrenheit
Ft	Feet
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection and Policy Act
FY	Fiscal Year
GHG	Greenhouse Gas
GPM	Gallons Per Minute
HPMP	Historic Properties Management Plan
HTRW	Hazardous, Toxic, Radioactive Wastes
IPaC	Information for Planning and Consultation (USFWS)
LDA	Limited Development Area
LDR	Low Density Recreation
MBTA	Migratory Bird Treaty Act
MP	Master Plan
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NO ₂	Nitrogen Dioxide
NOX	Nitrogen Oxide
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRM	Natural Resources Management tool
NWI	National Wetlands Inventory (USFWS)
NWS	National Weather Service
ODWC	Oklahoma Department of Wildlife Conservation

Pb	Lead
PBO	Programmatic Biological Opinion
PL	Public Law
PM _{2.5}	Particulate Matter Less than 2.5 Microns
PM ₁₀	Particulate Matter Less than 10 Microns
RPEC	Regional Planning and Environmental Center
SGCN	Species of Greatest Conservation Need
SO ₂	Sulfur Dioxide
TCP	Traditional Cultural Properties
TDS	Total Dissolved Solids
TSI	Trophic State Index
TMDL	Total Maximum Daily Load
U.S.	United States
U.S.C.	U.S. Code
USCB	United States Census Bureau
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Service
VOC	Volatile Organic Compound
WMA	Wildlife Management Area
WSST	Web Soil Survey Tool

SECTION 9: LIST OF PREPARERS

Sylvester Rodriguez: USACE Regional Planning and Environmental Center, 5 Years of Experience

Blake Westmoreland: USACE Regional Planning and Environmental Center, 7 Years of Experience

Attachment A: Public and Agency Coordination



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
2488 EAST 81st STREET
TULSA, OKLAHOMA 74137-4290

July 11th, 2024

PUBLIC NOTICE

**OPEN HOUSE FOR CANTON LAKE MASTER PLAN REVISION
CANTON LAKE, OKLAHOMA**

The Tulsa District, U.S. Army Corps of Engineers (USACE), is revising the Canton Lake Master Plan. The USACE defines the master plan (MP) as the strategic land use management document that guides the comprehensive management and development of all recreational, natural, and cultural resources throughout the life of the water resource development project. It defines "how" the resources will be managed for public use and resource conservation. The current MP, last approved in 1975, needs revision to address changes in regional land use, population, outdoor recreation trends, and the USACE management policy.

Revision of the MP will not detail the technical or operational aspects of the lake related to flood risk management, the water conservation missions of the project, or the shoreline management program, which specifies what private uses are permitted along the shoreline. The MP study area will include Canton Lake proper and all adjacent recreational and natural resources in USACE fee-owned property.

An open house will be held from 4:00 pm to 6:00 pm on July 23, 2024, at the Canton Elementary School Gymnasium, located at Highway 58 South, Canton, Oklahoma 73724. The open house will provide attendees with information regarding the revision content and process and a general schedule. Attendees can view current land use classification maps and ask USACE staff questions.

Key topics to be discussed in the revised MP include revised land use classifications, new natural and recreational resource management objectives, recreation facility needs, and special issues such as invasive species management and threatened and endangered species habitat. A 30-day public comment period will begin July 23, 2024, and end August 22, 2024. During this time, the public can send comments, suggestions, and concerns. Public participation is critical to the successful revision of the MP. Information provided at the open house, including the existing MP, may be viewed on the Tulsa District website at the following link.

<https://www.swt.usace.army.mil/Missions/Recreation/Master-Plans/>

Written comments can be submitted in writing at the scheduled open house or mailed to the USACE, Lake Manager, 64600 North 2466 Road, OK 73724. Comments can also be emailed to CESWT-OD-NR@usace.army.mil.

Sincerely,

Robert Morrow, PMP

Robert Morrow, PMP
Chief, Environmental Branch
Regional Planning and Environmental Center



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
2488 EAST 81st STREET
TULSA, OKLAHOMA 74137-4290

July 30th, 2024

PUBLIC NOTICE

**EXTENSION OF THE COMMENT PERIOD FOR CANTON, KAW, AND SKIATOOK LAKES
MASTER PLAN REVISION**

The Tulsa District, U.S. Army Corps of Engineers (USACE), is revising the Canton, Kaw, and Skiatook Lake Master Plans. Due to a server error the information posted on our website about the Master Plan update for each of these lakes was temporarily unavailable. The issue began on July 23rd and was resolved before close of business on July 24th. We want to ensure that all members of the public can access the Master Plan update materials. To ensure this we will be extending the public comment period for all three lakes until 5:00 P.M. on August 30th.

During this time, the public can send comments, suggestions, and concerns. Public participation is critical to the successful revision of the Master Plans. Information provided at the open houses for each of the lakes, including the existing Master Plans, can be viewed on the Tulsa District website at the following link.

<https://www.swt.usace.army.mil/Missions/Recreation/Master-Plans/>

Sincerely,

Brandon Perry
Acting Chief, Natural Resources and
Recreation Branch
Operations Division
U.S. Army Corps of Engineers
Tulsa District



NEWS RELEASE

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

For Immediate Release: NR ##-###

USACE to host in-person public open house review of the Canton Lake Master Plan revision

Canton, Oklahoma – The Tulsa District, U.S. Army Corps of Engineers will host a public open house from 4 p.m. – 6 p.m., July 23, 2024, at the Canton Elementary School Gymnasium Highway 58 South, Canton, OK 73724 to provide information and receive public input on the Canton Lake Master Plan and Environmental Assessment.

The meeting will be an open house format for the public to view the current land use maps, ask questions, and provide comments about the project. If unable to attend the in-person meeting, documents will be available for comment at <https://www.swt.usace.army.mil/Missions/Recreation/Master-Plans/>

Documents posted for online public review include:

- 1975 Master Plan for Canton Lake
- 1975 Land Classification Map
- Comment Form
- Downloadable Presentation

USACE defines the Master Plan as the strategic land use management document that guides the comprehensive management and development of all recreational, natural, and cultural resources throughout the life of the water resource development project. Public participation is critical to the successful revision of the Master Plan.

The Master Plan study area includes Canton Lake proper and all adjacent recreational and natural resource properties under USACE administration. Canton Lake is a multi-purpose reservoir constructed and managed for flood control, water supply, irrigation, recreation and fish and wildlife. The current Master Plan for Canton Lake is dated 1975. The revision is needed to address changes in regional land use, population, outdoor recreation trends, and USACE management policy.

Key topics addressed in the Master Plan include updated land and water classifications, new natural and recreational resource management objectives, recreation facility needs, and special topics such as public hunting. The Master Plan **does not** address in detail the technical operational aspects of the lake related to the flood risk management of the project.

Comments may be submitted online by filling out the Comment Form and emailing or mailing comments to the address below. Only written comments will be accepted. The comment period begins July 23, 2024 and ends August 23, 2024.

Questions pertaining to the Master Plan or public meeting can be addressed to: USACE, Lake Manager, 64600 North 2466 Road Canton, OK 73724 or sent via email to CESWT-OD-NR@usace.army.mil.

-30-

Project	Stakeholder	Address	City	State	Zip	Phone #	email Address
Canton	Oklahoma Department of Wildlife Conservation - Thad Potts Canton WMA	1801 N. Lincoln	Oklahoma City	OK	73105	580-541-5319	thad.potts@odwc.ok.gov
Canton	Canton Lake Association	PO Box 693-207 West Main	Canton	OK	73724	580-623-2324	cantonlakeassn@gmail.com
Canton	Walleye Rodeo Association	202 W Main Street	Canton	OK	73724	580-886-4886	jean@cscanton.com
Canton	OKC Disc Golf Association	4141 Highline Blvd Ste. 180	Oklahoma City	OK	73108	405-830-6626	info@okdga.com
Canton	Canton Chamber of Commerce	210 W. Main Street	Canton	OK	73724	580-886-2216	cantonchamber@gmail.com
Canton	Oklahoma City Utilities Department	420 West Main Street, Suite 500	Oklahoma City	OK	73102	405-297-2827	chris.browning@okc.gov
Canton	Oklahoma Water Resources Board	3800 N Clasen Blvd	Oklahoma City	OK	73118	405-530-8800	julie.cunningham@owrb.ok.gov
Canton	Blaine County Commissioner District 2 - Brandon Schultz	P.O. Box 795	Okeene	OK	73763	580-822-3359	blco2@pldi.net
Canton	State Representative House District 59 Mike Dobrinski	2300 N. Lincoln Blvd., Room 300	Oklahoma City	OK	73105	405-557-7407	
Canton	State Representative House District 58 Carl Newton	2300 N. Lincoln Blvd., Room 507	Oklahoma City	OK	73105	405-557-7339	
Canton	State Senate District 27 Casey Murdock	2300 N. Lincoln Blvd., Room 431	Oklahoma City	OK	73105	405-521-5626	
Canton	State Senate District 26 Darcy Jech	2300 N. Lincoln Blvd., Room 234	Oklahoma City	OK	73105	405-521-5545	
Canton	US Senate James Lankford	1015 N. Broadway Ave. Suite 310	Oklahoma City	OK	73102	405-231-4941	
Canton	US Senate Markwayne Mullin	3817 NW Expressway #780	Oklahoma City	OK	73112	405-246-0025	
Canton	Cheyenne & Arapaho Tribes	100 Red Moon Circle	Concho	OK	73022	405-262-0345	info@cheyenneandrapaho-nsn.gov
Canton	Canadian Rec Area D.B.A Sportsman Park, Lakeside Landing and The Overlook - Carol Gilchrist	PO Box 125	Canton	OK	73724	580-886-4012	

CANTON LAKE MASTER PLAN REVISION:

PUBLIC INVOLVEMENT PRESENTATION



U.S. Army Corps of Engineers
Tulsa Worth District



US Army Corps
of Engineers®



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Purpose of Presentation

- Inform the public and stakeholders that a master plan revision has started
- **Define** a master plan
- **Describe** the master plan **revision process**
- **Provide instructions** on how to participate in the revision process
- **Encourage** participation
- **Provide links** to documents

The Corps defines a Master Plan as...

“The strategic land use management document that guides the comprehensive management and development of all project recreational, natural and cultural resources throughout the life of the water resource development project.”

Source: Chapter 3 of EP 1130-2-550 available at
www.usace.army.mil/library/publications



Presentation Topics

What is a master plan?

Why do a revision?

What is the revision process?

What is not part of a master plan?

What is changing in the plan?

How can I participate?

Who can I talk to about the plan?

When will the master plan be done?



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What is a master plan?

- The master plan is a **25 year comprehensive land use management guide** for recreational, natural, and cultural resources
- **Adheres to Federal laws** to preserve, conserve, restore, maintain, manage, and develop project lands, waters, and associated resources, including the National Environmental Policy Act (NEPA) for environmental stewardship and outdoor recreation
- Provides **land classifications** and **resource management objectives** that are broad and adaptive over time
- Requires and encourages **public involvement**



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Why do a revision?

- The current master plan is **out of date** and is **no longer compliant** with new regulations
- **Substantial changes in** environmental, cultural, social, and recreational **conditions have occurred** since the current master plan was approved
- **Re-examine land classification** due to these substantial changes
- The master plan **provides long-term goals** and **consistent management objectives** to guide balanced management of resources and public recreation



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What is the revision process?

The process is a cover-to-cover **review and revision of the entire plan** and is accomplished by:

- **A team of Corps employees** including Operations, Real Estate, Master Planning, and Environmental Compliance subject matter experts
- **Receive input from and collaboration with** partners, neighbors, stakeholders, elected officials, resource agencies, and the public
- A thorough review and update of **land and water surface classifications**
- Developing appropriate **NEPA compliance** documents



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What is the revision process?

PHASE 1 SCOPING

Project Initiation/Data Collection

Agency/Public Scoping
Notification & Comment
Period (30* days)

PHASE 2 DRAFT

Development of Draft
Master Plan Report and
Environmental
Assessment (EA)

Agency/Public Draft
Document Notification &
Comment Period (30 days)

PHASE 3 FINAL

Development of
Final Master Plan
Report and EA

Publish Final Master
Plan Report and EA



Where we are today
U.S. Army
Corps of Engineers®



What is the revision process?

Land Classifications

Source: Engineering Pamphlet (EP) 1130-2-550

Land Classification	Definition
Project Operations	Lands required for the dam, spillway, levees, office, maintenance facilities and other areas that are used solely for project operations.
High Density Recreation	Land developed for intensive recreational activities for the visiting public, including day use areas and campground areas for commercial concessions, and quasi-public development.
Multiple Resource Management Lands	Low Density Recreation: Lands with minimal development or infrastructure that support passive public recreational use (e.g., trails, primitive camping, wildlife observation, fishing and hunting). Wildlife Management: Lands designated for the stewardship of fish and wildlife resources. Vegetative Management: Lands designated for the stewardship of forest, prairie, and other native vegetative cover. Inactive and/or Future Recreation Areas: Recreation areas planned for the future or that have been temporarily closed.
Environmentally Sensitive Areas	Areas where scientific, ecological, cultural or aesthetic features have been identified. These areas must be considered by management to ensure they are not adversely impacted.
Mitigation	Lands acquired or designated specifically for offsetting losses associated with development of the project. Lands allocated as separable mitigation lands can be given this classification.



What is the revision process?

Water Surface Classifications

Source: Engineering Pamphlet (EP) 1130-2-550

Water Surface Classification	Definition
Open Recreation	Those waters available for year-round or seasonal water-based recreational use.
Restricted	Water areas restricted for project operations, safety, and security purposes.
Designated No-Wake	To protect environmentally sensitive shoreline areas, recreational water access areas from disturbance, and for public safety.
Fish and Wildlife Sanctuary	Annual or seasonal restrictions on areas to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning.

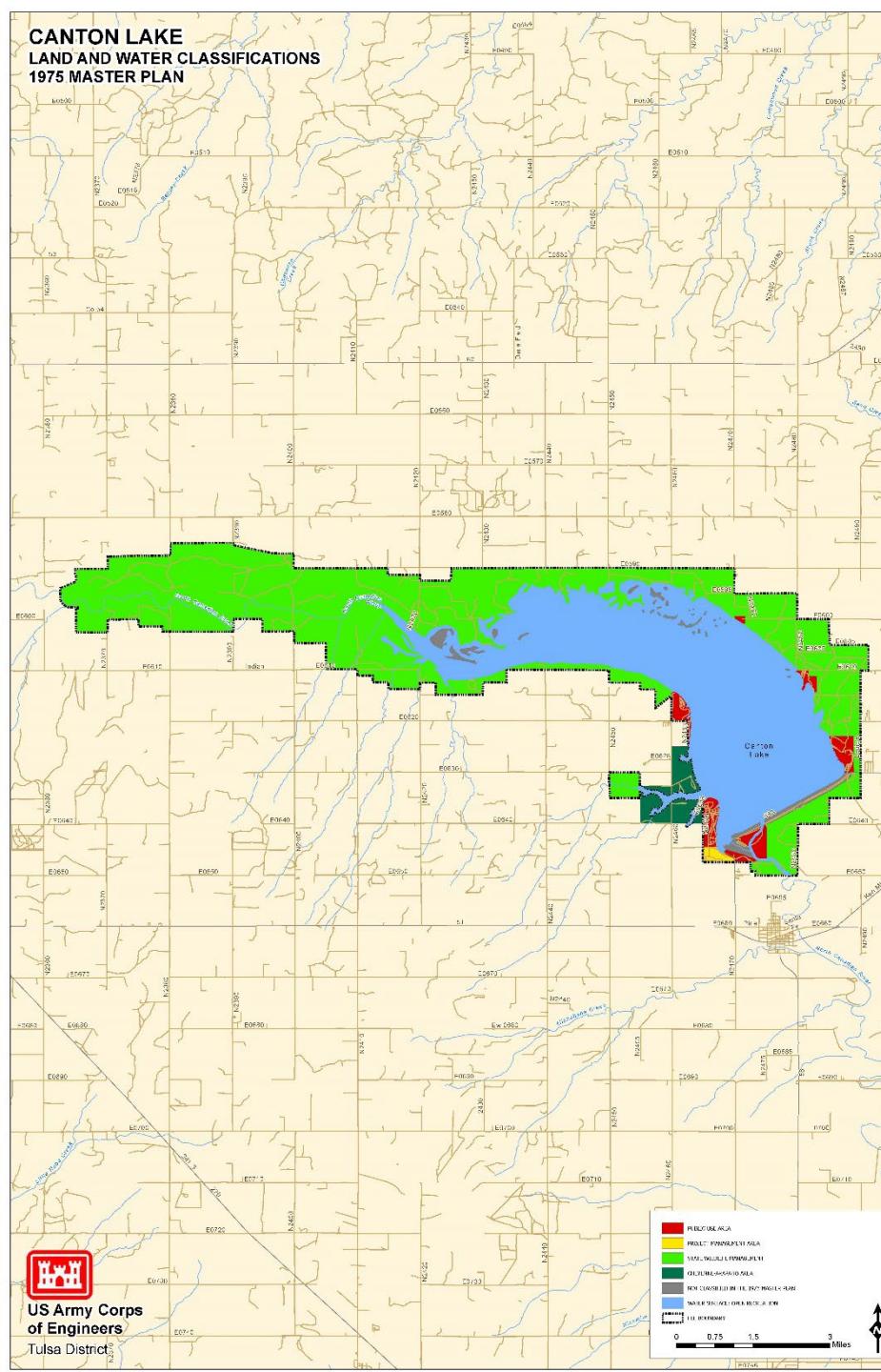


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What is the revision process?

Land Use Map from 1975 Master Plan



What is the revision process?

NEPA Compliance

National Environmental Policy Act (NEPA)

Purpose of NEPA is to:

- Ensure federal agencies give proper **consideration to the environment** prior to undertaking a federal action
- **Involve the Public** (scoping) in the decision-making process
- **Document the process** by which agencies make informed decisions

NEPA Scoping Process:

- Opportunity for **public comments and questions** on the potential impacts of proposed federal actions
- Includes comments from other federal, state, and local governments, and Tribal Nations



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What is not part of a master plan?

- Facility **design details**
- Details of **daily project administration**
- Technical aspects of:
 - Water management for **flood risk management**
 - Regional **water quality**
 - **Water supply**
 - **Shoreline management**
 - **Water level management**
 - **Hydropower**
 - **Navigation**



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What is changing in the plan?

At this point in the revision process **there are no proposed changes**

The Corps is **requesting written comments for RECOMMENDED changes** to the existing master plan

Possible Changes to the Revised Mater Plan Could Include:

- Change Land and Water Classification
- Change Resource Goals and Objectives
- Create Utility Corridors



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Submit written comments!

Review all documents available on the USACE website:

<https://www.swt.usace.army.mil/Missions/Recreation/Master-Plans/>

Documents available on the website include:

- Project maps
- Comment form
- Presentation

Spread the word by telling your colleagues, friends and neighbors to participate



How can I participate?

Comments will be accepted only **in writing**, some of the methods for submitting a comment include:

- You may **download the comment form** provided on the website, fill it out electronically, and email it to the Corps using the submit button on the comment form
- Or you may **print the comment form** provided on the website, fill it out by hand, and mail it to the Corps at the address on the comment form
- Or you may **write a comment or send an email** without using the comment form, and mail or email it to the Corps at the address provided on the website
- Comments are due by close of business on **August 22, 2024**



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Who can I talk to about the plan?

Talk to anyone from the USACE at the meeting to answer your questions.

- Call the Lake Office at:
580-886-2989
- Visit the Lake Office at:
64600 N 2466 RD
Canton, OK 73724-9522
- Email us your questions at:
ceswt-od-nr@usace.army.mil



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- The master plan will take **18-24 months** to complete
- Projected milestones/schedule

Public Notification for Scoping

23 July

Public Comment Period (30 days)

23 July– 22 August 2024

Draft Master Plan/EA Public Notification

October 2025*

Public Comment Period (30 days)

November 2025*

Final Master Plan/EA Approved

May 2026*

* Projected



Thank you for viewing this presentation and participating in the master plan revision process at Canton Lake.

Website address:

<https://www.swt.usace.army.mil/Missions/Recreation/Master-Plans/>

Email:

ceswt-od-nr@usace.army.mil

Mail:

USACE
Lake Manager
64600 N 2466 RD
Canton, OK 73724-9522



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Comment	Response
Comments from the EPA	
<p>The region 6 office of the U.S. Environmental Protection Agency (EPA) has reviewed the Tulsa District, U.S. Army Corps of Engineers (USACE), project requesting comments on environmental issues for the proposed revision of the Canton Lake Master Plan. The USACE defines the master plan (MP) as the strategic land use management document that guides the comprehensive management and development of all recreational, natural, and cultural resources throughout the life of the water resource development project. It defines "how" the resources will be managed for public use and resource conservation. The current MP, last approved in 1975, needs revision to address changes in regional land use, population, outdoor recreation trends, and the USACE management policy. The MP study area will include Canton Lake proper and all adjacent recreational and natural resources in USACE fee-owned property.</p> <p>To assist in the scoping process for the Project, EPA has identified significant areas for your attention. We offer the following comments for your consideration:</p> <p>Air Quality Comments</p> <p>EPA recommends that the environmental document provides a detailed discussion of ambient air conditions (baseline or existing conditions), National Ambient Air Quality Standards (NAAQS) and non-NAAQS pollutants, criteria pollutant nonattainment areas, and potential air quality impacts of the proposed project. Such an evaluation is necessary to understand the potential impacts from temporary, long-term, or cumulative degradation of air quality. EPA recommends the environmental document describe and estimate air emissions from potential construction, maintenance, and operation activities, as well as proposed mitigation measures to minimize those emissions. We recommend an evaluation of the following measures to reduce emissions of criteria air pollutants and hazardous air pollutants (air toxics):</p> <p>For existing conditions, EPA recommends the environmental document provide a detailed discussion of ambient air conditions, NAAQS, and criteria pollutant nonattainment areas in the vicinity of the project.</p>	<p>Noted. USACE seeks to address this comment through the Environmental Assessment section on Air Quality. Currently there are no anticipated construction activities within the Master Plan. Any future construction would be required to complete necessary NEPA analysis.</p>

Comment	Response
<p>EPA recommends the environmental document estimate emissions of criteria and hazardous air pollutants (air toxics) from the proposed project and discuss the timeframe for release of these emissions over the lifespan of the project and describe and estimate emissions from potential construction activities, as well as proposed mitigation measures to minimize these emissions. The environmental document should also consider any expected air quality/visibility impacts to Class I Federal Areas identified in 40 CFR Part 81, Subpart D.</p> <p>EPA recommends the environmental document specify all emission sources by pollutant from mobile sources (on and off-road), stationary sources (including portable and temporary emission units), fugitive emission sources, area sources, and ground disturbance. This source specific information should be used to identify appropriate mitigation measures and areas in need of the greatest attention.</p> <p>EPA recommend the environmental document include a draft Construction Emissions Mitigation Plan and ultimately adopt this plan in the Record of Decision. We recommend all applicable local, state (e.g., coordination of land-clearing activities with the state air quality agency to determine air quality conditions such as atmospheric inversions prior to performing open burning activities), or Federal requirements (e.g., certification of non-road engines as in compliance with the EPA Tier 4 regulations found at 40 CFR Parts 89 and 1039) be included in the Construction Emissions Mitigation Plan in order to reduce impacts associated with emissions of particulate matter and other toxics from any potential construction-related activities.</p> <p>National Pollutant Discharge Elimination System (NPDES) Comments</p> <p>EPA comments are specific to CWA Section 402, 40 CFR § 122.26(b)(14)(x) and 40 CFR § 122.26(b)(15)(i) National Pollutant Discharge Elimination System (NPDES) permitting regulations which authorize the discharge of stormwater from large and small construction activities in areas upland from a waterbody and not considered a jurisdictional wetland area, regardless of the land's designation as federal, state, Indian country or private.</p>	

Comment	Response
<p>The USACE's Canton Lake, North Canadian River Master Plan Public Involvement presentation identified construction-related land classification definitions within the revision process including: Project Operations lands required for office, maintenance facilities and other areas used solely for project operations; High Density Recreation land developed for intensive recreational activities for the visiting public, including day use areas and campground areas for commercial concessions, and quasi-public development; and, Multiple Resource Management Lands - Low Density Recreation lands with minimal development or infrastructure that support passive public recreational use (e.g., trails, primitive camping, wildlife observation, fishing and hunting). Additionally, the 1975 Amendments of the Revised Master Plan Canton Lake, North Canadian River Design Memorandum No. 1C identified seven recreational areas and proposals of additional and modification of facilities at all recreational areas, including for additional camping and picnic facilities, modifications to day-use facilities, swimming beaches, boat ramps and docks, playground facilities, toilets, showers, change houses, roadways, picnic shelters, water, electrical and septic systems, baseball diamond, tennis courts, café, sport shop concession, paved and gravel roads, parking, concession site with grocery store, guest establishment with rental units, trailer park with electrical hookups and water taps, beach areas. Also, five separate Supplements to Design Memorandum No. 1C Master Plan (Updated) from 1986-1992 have included construction of a waterborne shower/toilet building, group shelters for two recreational areas, an amphitheater, and additional dry boat storage; and, revision/updates to the three recreational area public use area plans. EPA recommends clarity at this time whether the Canton Lake, North Canadian River Master Plan Revisions will include construction-related activities included in, or similar to, the previous iteration and supplements of the master plan. Therefore, it is important to clarify that stormwater discharges from earth disturbances related to construction activities for buildings/shelters/change houses, trails, roads, driveways, parking, housing/RV or trailer parks/guest establishments, cafes/sport shop/grocery stores,</p>	

Comment	Response
<p>picnic shelters/group shelters, utilities, and other traditional construction activities identified above in the presentation and master plan/supplements do fall under Section 402 of the CWA and NPDES permitting program.</p> <p>For 40 CFR § 122.26(b)(14)(x) and 40 CFR § 122.26(b)(15)(i) NPDES regulations (applicable to State NPDES programs, see § 123.25) which authorize the discharge of stormwater from large and small construction activities, all entities associated with a construction project who: 1) meet the NPDES permitting authority's definition of "operator," 2) cause an earth disturbance of 1 acre or greater, or less than one acre if part of a larger common plan of development or sale that ultimately disturbs 1 acre or greater, and 3) discharge stormwater from their construction activities (including any on- and off-site construction support activities), are required to obtain NPDES permit coverage via the Construction General Permit (CGP) or individual NPDES permit from the NPDES permitting authority prior to beginning construction activities and/or construction support activities.</p> <p>EPA's 2022 CGP definition of construction activities refer to "earth-disturbing activities, such as the clearing, grading, and excavation of land, and other construction-related activities (e.g., grubbing; stockpiling of fill material; placement of raw materials at the site) that could lead to the generation of pollutants. Some of the types of pollutants that are typically found at construction sites are: sediment; nutrients; heavy metals; pesticides and herbicides; oil and grease; bacteria and viruses; trash, debris, and solids; treatment polymers; and any other toxic chemicals." Therefore, demolition, building additions, renovations and new construction on existing pavement that results in earth disturbance and/or construction support activities (e.g., equipment staging yards, materials storage areas, excavated material disposal areas, etc.) that involve earth disturbance or pollutant-generating activities of its own, are considered construction-related activities that require NPDES permit coverage.</p> <p>Additionally, because it appears that the overall earth disturbance of this Canton Lake, North Canadian River Master Plan project will be greater than 1 acre, the larger common plan of development or sale will</p>	

Comment	Response
<p>be triggered, therefore stormwater discharges from all construction activities and all -site or off-site construction support activities (i.e., borrow pits, staging areas, material storage areas, temporary batch plants, laydown areas, etc.) will be required to obtain NPDES permit coverage via the CGP or individual NPDES permit (except any portion of the project's construction activities that is covered by a CWA 404 permit or waived from permit coverage) regardless if the smaller project's earth disturbance in areas upland from the waterbody and not considered a jurisdictional wetland area is less than 1 acre. In Oklahoma, the Oklahoma Commission on Environmental Quality (ODEQ) is the NPDES permitting authority, except discharges in the State of Oklahoma 1) in areas under the authority of the Oklahoma Department of Agriculture and Forestry and 2) areas of Indian country covered by an extension of state program authority pursuant to Section 10211 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA) and 3) areas associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171) of which EPA is the NPDES permitting authority.</p> <p>Pesticide Comments</p> <p>EPA recommends on page 105; the document should be updated to reference pesticide registration with the EPA as a requirement for use.</p> <p>RCRA Permits and Solid Waste Comments</p> <p>EPA recommends an assessment of the potential direct, indirect, and cumulative impacts of solid and hazardous waste from construction, maintenance, and operation of recreational facilities and access roads.</p> <p>EPA recommends identifying projected solid and hazardous waste types, volumes, and expected storage, disposal, and management plans.</p> <p>EPA recommends including a discussion on the applicability of state and federal hazardous waste requirements.</p> <p>EPA appreciates the opportunity to review the environmental issues and are available to discuss EPA's comments.</p>	

APPENDIX C – WILDLIFE DOCUMENTS

TRUST RESOURCES REPORT – USFWS

OFFICIAL SPECIES LIST – USFWS

LIST OF SGCN SPECIES

WHAP REPORT



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467

In Reply Refer To:

11/24/2025 16:32:06 UTC

Project Code: 2025-0041794

Project Name: Canton

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Oklahoma Ecological Services Field Office

9014 East 21st Street
Tulsa, OK 74129-1428
(918) 581-7458

PROJECT SUMMARY

Project Code: 2025-0041794

Project Name: Canton

Project Type: Land Management Plans - NWR

Project Description: Master Plan Revision

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@36.11924709999995,-98.59236916111641,14z>



Counties: Blaine , Dewey , and Major counties, Oklahoma

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Lesser Prairie-chicken <i>Tympanuchus pallidicinctus</i>	Threatened
Population: Northern DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1924	
Piping Plover <i>Charadrius melanotos</i>	Threatened
Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	
Rufa Red Knot <i>Calidris canutus rufa</i>	Threatened
There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1864	
Whooping Crane <i>Grus americana</i>	Endangered
Population: Wherever found, except where listed as an experimental population There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i>	Proposed
There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2](#) and the Migratory Bird Treaty Act (MBTA) [1](#). Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

1. The [Bald and Golden Eagle Protection Act](#) of 1940.
2. The [Migratory Birds Treaty Act](#) of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Jul 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "["Supplemental Information on Migratory Birds and Eagles"](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

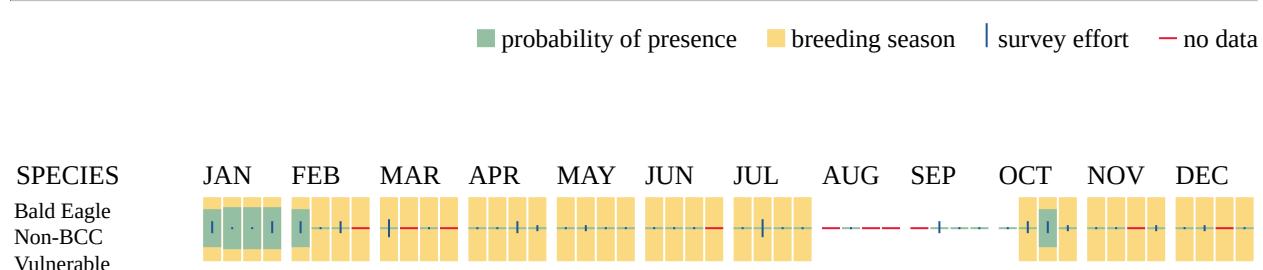
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (-)

A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>

- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA)¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover <i>Pluvialis dominica</i>	Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	
Bald Eagle <i>Haliaeetus leucocephalus</i>	Breeds Oct 15 to Jul 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	
Black Tern <i>Chlidonias niger surinamensis</i>	Breeds May 15 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	
Hudsonian Godwit <i>Limosa haemastica</i>	Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9482	

NAME	BREEDING SEASON
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Pectoral Sandpiper <i>Calidris melanotos</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Western Grebe <i>aechmophorus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10669	Breeds Apr 20 to Aug 5

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (-)

A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

LAKE

- L1UBH
- L1UBHh

FRESHWATER EMERGENT WETLAND

- PEM1C
- PEM1Af
- PEM1F
- PEM1Fx
- PEM1Fh
- PEM1Ah
- PEM1A
- PEM1Ch
- PEM1Cx

RIVERINE

- R4SBA
- R2UBF
- R4SBC
- R5UBH
- R5UBFx
- R2UBH

FRESHWATER POND

- PUBF
- PUSCf
- PUSA
- PUBHh
- PUBHx
- PUBH

- PUBFh
- PUSC
- PUSCx
- PUBFx

FRESHWATER FORESTED/SHRUB WETLAND

- PSS1A
- PFO1Ah
- PSS2A
- PFO1Fh
- PFO1C
- PSS1C
- PFO1Fx
- PSS1F
- PFO1F
- PFO1Ch
- PFO1A

IPAC USER CONTACT INFORMATION

Agency: Army Corps of Engineers
Name: Sylvester Rodriguez
Address: 819 Taylor Street
City: Fort Worth
State: TX
Zip: 76102
Email: sylvester.i.rodriguez@usace.army.mil
Phone: 8178861486

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Project information

NAME

Canion

LOCATION

Blaine , Dewey , and Major counties, Oklahoma



DESCRIPTION

Some(Master Plan Revision)

Local office

Oklahoma Ecological Services Field Office

☎ (918) 581-7458

📠 (918) 581-7467

9014 East 21st Street

Tulsa, OK 74129-1428

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Lesser Prairie-chicken <i>Tympanuchus pallidicinctus</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1924	Threatened
Piping Plover <i>Charadrius melanotos</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6039	Threatened
Rufa Red Knot <i>Calidris canutus rufa</i> Wherever found There is proposed critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane <i>Grus americana</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/758	Endangered

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found There is proposed critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information](#)

[on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the

maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

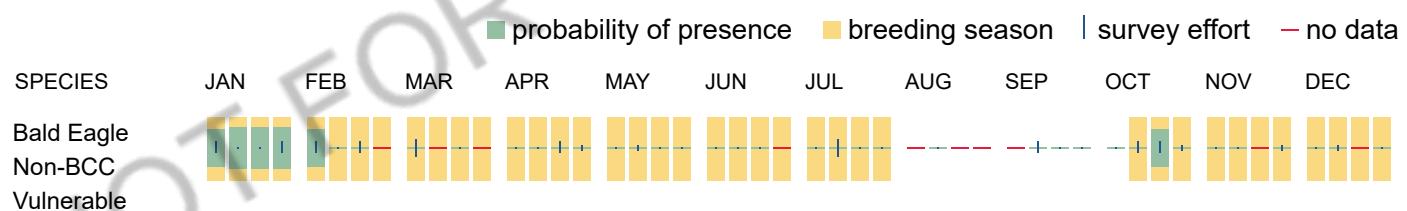
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low

survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases [birds of concern](#), including [Birds of Conservation Concern \(BCC\)](#), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the [Nationwide avoidance and minimization measures for birds](#) document, and any other project-specific avoidance and minimization measures suggested at the link [Measures for avoiding and minimizing impacts to birds](#) for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles document](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME

BREEDING SEASON

American Golden-plover <i>Pluvialis dominica</i>	Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	
Bald Eagle <i>Haliaeetus leucocephalus</i>	Breeds Oct 15 to Jul 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	
Black Tern <i>Chlidonias niger surinamenensis</i>	Breeds May 15 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	
https://ecos.fws.gov/ecp/species/3093	
Hudsonian Godwit <i>Limosa haemastica</i>	Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	
Lesser Yellowlegs <i>Tringa flavipes</i>	Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	
https://ecos.fws.gov/ecp/species/9679	
Pectoral Sandpiper <i>Calidris melanotos</i>	Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i>	Breeds May 10 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	
Western Grebe <i>aechmophorus occidentalis</i>	Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	
https://ecos.fws.gov/ecp/species/6743	
Willet <i>Tringa semipalmata</i>	Breeds Apr 20 to Aug 5
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

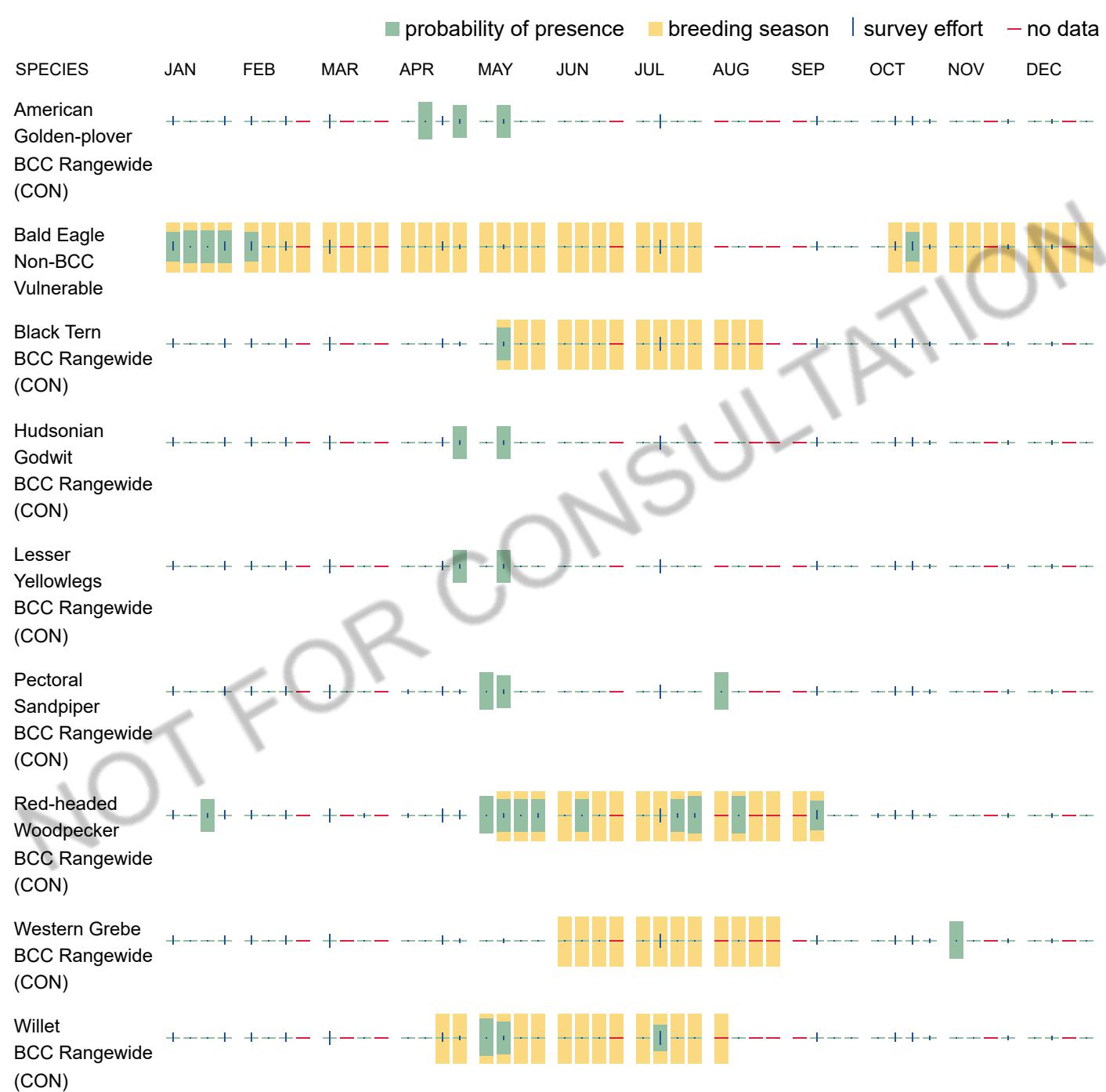
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird

species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Bald and Golden Eagle Protection Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1F](#)
[PEM1C](#)
[PEM1Fh](#)
[PEM1A](#)
[PEM1Ch](#)
[PEM1Ah](#)
[PEM1Cx](#)
[PEM1Fx](#)
[PEM1Af](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PFO1C](#)
[PFO1F](#)
[PFO1A](#)
[PSS1C](#)
[PFO1Ah](#)
[PSS1A](#)
[PSS1F](#)
[PFO1Ch](#)
[PFO1Fh](#)
[PSS2A](#)

[PFO1Fx](#)

FRESHWATER POND

[PUBF](#)

[PUBH](#)

[PUBFh](#)

[PUSC](#)

[PUBHh](#)

[PUBFx](#)

[PUSA](#)

[PUBHx](#)

[PUSCf](#)

[PUSCx](#)

LAKE

[L1UBHh](#)

[L1UBH](#)

RIVERINE

[R2UBH](#)

[R2UBF](#)

[R4SBC](#)

[R5UBH](#)

[R5UBFx](#)

[R4SBA](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubificid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Validated Scientific Name	Validated Common Name	Source State	Source Year	Validated Taxonomic Rank	Validated Taxonomic Category
<i>Ambystoma annulatum</i>	Ringed Salamander	Oklahoma	2016	Species	Amphibians
<i>Ambystoma talpoideum</i>	Mole Salamander	Oklahoma	2016	Species	Amphibians
<i>Amphiuma tridactylum</i>	Three-toed Amphiuma	Oklahoma	2016	Species	Amphibians
<i>Anaxyrus debilis</i>	Green Toad	Oklahoma	2016	Species	Amphibians
<i>Anaxyrus speciosus</i>	Texas Toad	Oklahoma	2016	Species	Amphibians
<i>Desmognathus brimleyorum</i>	Ouachita Salamander	Oklahoma	2016	Species	Amphibians
<i>Dryophytes avivoca</i>	Bird-voiced Treefrog	Oklahoma	2016	Species	Amphibians
<i>Eurycea multiplicata</i>	Many-ribbed Salamander	Oklahoma	2016	Species	Amphibians
<i>Eurycea spelaea</i>	Grotto Salamander	Oklahoma	2016	Species	Amphibians
<i>Eurycea tynerensis</i>	Oklahoma Salamander	Oklahoma	2016	Species	Amphibians
<i>Hemidactylum scutatum</i>	Four-toed Salamander	Oklahoma	2016	Species	Amphibians
<i>Lithobates areolatus</i>	Crawfish Frog	Oklahoma	2016	Species	Amphibians
<i>Plethodon angusticlavius</i>	Ozark Salamander	Oklahoma	2016	Species	Amphibians
<i>Plethodon kiamichi</i>	Kiamichi Slimy Salamander	Oklahoma	2016	Species	Amphibians
<i>Plethodon ouachitae</i>	Rich Mountain Salamander	Oklahoma	2016	Species	Amphibians
<i>Plethodon sequoyah</i>	Sequoah Slimy Salamander	Oklahoma	2016	Species	Amphibians
<i>Plethodon serratus</i>	Southern Red-backed Salamander	Oklahoma	2016	Species	Amphibians
<i>Scaphiopus hurterii</i>	Hurter's Spadefoot	Oklahoma	2016	Species	Amphibians
<i>Siren intermedia</i>	Lesser Siren	Oklahoma	2016	Species	Amphibians
<i>Crosbyella spinturnix</i>	a cave harvestman *	Oklahoma	2016	Species	Arachnids
<i>Islandiana unicornis</i>	a cave obligate spider *	Oklahoma	2016	Species	Arachnids
<i>Ammospiza leconteii</i>	LeConte's Sparrow	Oklahoma	2016	Species	Birds
<i>Ammospiza nelsoni nelsoni</i>	Nelson's Sparrow	Oklahoma	2016	Subspecies	Birds
<i>Anas acuta</i>	Northern Pintail	Oklahoma	2016	Species	Birds
<i>Anthus spragueii</i>	Sprague's Pipit	Oklahoma	2016	Species	Birds
<i>Antrostomus vociferus</i>	Eastern Whip-poor-will	Oklahoma	2016	Species	Birds
<i>Aquila chrysaetos</i>	Golden Eagle	Oklahoma	2016	Species	Birds
<i>Asio flammeus</i>	Short-eared Owl	Oklahoma	2016	Species	Birds
<i>Athene cunicularia</i>	Burrowing Owl	Oklahoma	2016	Species	Birds
<i>Aythya affinis</i>	Lesser Scaup	Oklahoma	2016	Species	Birds
<i>Aythya valisineria</i>	Canvasback	Oklahoma	2016	Species	Birds
<i>Baeolophus ridgwayi</i>	Juniper Titmouse	Oklahoma	2016	Species	Birds
<i>Bartramia longicauda</i>	Upland Sandpiper	Oklahoma	2016	Species	Birds
<i>Buteo regalis</i>	Ferruginous Hawk	Oklahoma	2016	Species	Birds
<i>Buteo swainsoni</i>	Swainson's Hawk	Oklahoma	2016	Species	Birds
<i>Calcarius ornatus</i>	Chestnut-collared Longspur	Oklahoma	2016	Species	Birds
<i>Calcarius pictus</i>	Smith's Longspur	Oklahoma	2016	Species	Birds
<i>Calidris canutus rufa</i>	Red Knot	Oklahoma	2016	Subspecies	Birds
<i>Calidris mauri</i>	Western Sandpiper	Oklahoma	2016	Species	Birds

<i>Calidris subruficollis</i>	Buff-breasted Sandpiper	Oklahoma	2016	Species	Birds
<i>Callipepla squamata</i>	Scaled Quail	Oklahoma	2016	Species	Birds
<i>Centronyx bairdii</i>	Baird's Sparrow	Oklahoma	2016	Species	Birds
<i>Centronyx henslowii</i>	Henslow's Sparrow	Oklahoma	2016	Species	Birds
<i>Charadrius alexandrinus</i>	Kentish Plover	Oklahoma	2016	Species	Birds
<i>Charadrius melanotos</i>	Piping Plover	Oklahoma	2016	Species	Birds
<i>Charadrius montanus</i>	Mountain Plover	Oklahoma	2016	Species	Birds
<i>Colinus virginianus</i>	Northern Bobwhite	Oklahoma	2016	Species	Birds
<i>Coturnicops noveboracensis</i>	Yellow Rail	Oklahoma	2016	Species	Birds
<i>Cygnus buccinator</i>	Trumpeter Swan	Oklahoma	2016	Species	Birds
<i>Egretta caerulea</i>	Little Blue Heron	Oklahoma	2016	Species	Birds
<i>Egretta thula</i>	Snowy Egret	Oklahoma	2016	Species	Birds
<i>Elanoides forficatus</i>	American Swallow-tailed Kite	Oklahoma	2016	Species	Birds
<i>Empidonax traillii</i>	Willow Flycatcher	Oklahoma	2016	Species	Birds
<i>Euphagus carolinus</i>	Rusty Blackbird	Oklahoma	2016	Species	Birds
<i>Falco mexicanus</i>	Prairie Falcon	Oklahoma	2016	Species	Birds
<i>Falco peregrinus</i>	Peregrine Falcon	Oklahoma	2016	Species	Birds
<i>Geothlypis formosa</i>	Kentucky Warbler	Oklahoma	2016	Species	Birds
<i>Grus americana</i>	Whooping Crane	Oklahoma	2016	Species	Birds
<i>Gymnorhinus cyanocephalus</i>	Pinyon Jay	Oklahoma	2016	Species	Birds
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Oklahoma	2016	Species	Birds
<i>Helmitheros vermivorum</i>	Worm-eating Warbler	Oklahoma	2016	Species	Birds
<i>Hylocichla mustelina</i>	Wood Thrush	Oklahoma	2016	Species	Birds
<i>Icterus bullockii</i>	Bullock's Oriole	Oklahoma	2016	Species	Birds
<i>Lanius ludovicianus</i>	Loggerhead Shrike	Oklahoma	2016	Species	Birds
<i>Laterallus jamaicensis</i>	Black Rail	Oklahoma	2016	Species	Birds
<i>Leuconotopicus borealis</i>	Red-cockaded Woodpecker	Oklahoma	2016	Species	Birds
<i>Limnothlypis swainsonii</i>	Swainson's Warbler	Oklahoma	2016	Species	Birds
<i>Limosa haemastica</i>	Hudsonian Godwit	Oklahoma	2016	Species	Birds
<i>Melanerpes aurifrons</i>	Golden-fronted Woodpecker	Oklahoma	2016	Species	Birds
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	Oklahoma	2016	Species	Birds
<i>Mycteria americana</i>	Wood Stork	Oklahoma	2016	Species	Birds
<i>Numenius americanus</i>	Long-billed Curlew	Oklahoma	2016	Species	Birds
<i>Parkesia motacilla</i>	Louisiana Waterthrush	Oklahoma	2016	Species	Birds
<i>Passerina ciris</i>	Painted Bunting	Oklahoma	2016	Species	Birds
<i>Peucaea aestivalis</i>	Bachman's Sparrow	Oklahoma	2016	Species	Birds
<i>Peucaea cassinii</i>	Cassin's Sparrow	Oklahoma	2016	Species	Birds
<i>Phalaropus tricolor</i>	Wilson's Phalarope	Oklahoma	2016	Species	Birds
<i>Pluvialis dominica</i>	Lesser Golden-Plover	Oklahoma	2016	Species	Birds
<i>Protonotaria citrea</i>	Prothonotary Warbler	Oklahoma	2016	Species	Birds

<i>Rallus elegans</i>	King Rail	Oklahoma	2016	Species	Birds
<i>Rhynchophanes mccownii</i>	Thick-billed Longspur	Oklahoma	2016	Species	Birds
<i>Scolopax minor</i>	American Woodcock	Oklahoma	2016	Species	Birds
<i>Setophaga cerulea</i>	Cerulean Warbler	Oklahoma	2016	Species	Birds
<i>Setophaga citrina</i>	Hooded Warbler	Oklahoma	2016	Species	Birds
<i>Setophaga discolor</i>	Prairie Warbler	Oklahoma	2016	Species	Birds
<i>Setophaga pinus</i>	Pine Warbler	Oklahoma	2016	Species	Birds
<i>Sitta pusilla</i>	Brown-headed Nuthatch	Oklahoma	2016	Species	Birds
<i>Sternula antillarum athalassos</i>	Interior Least Tern *	Oklahoma	2016	Subspecies	Birds
<i>Tringa solitaria</i>	Solitary Sandpiper	Oklahoma	2016	Species	Birds
<i>Tympanuchus cupido</i>	Greater Prairie-Chicken	Oklahoma	2016	Species	Birds
<i>Tympanuchus pallidicinctus</i>	Lesser Prairie-Chicken	Oklahoma	2016	Species	Birds
<i>Tyto alba</i>	Common Barn-Owl	Oklahoma	2016	Species	Birds
<i>Vermivora chrysoptera</i>	Golden-winged Warbler	Oklahoma	2016	Species	Birds
<i>Vireo atricapilla</i>	black-capped vireo	Oklahoma	2016	Species	Birds
<i>Vireo bellii</i>	Bell's Vireo	Oklahoma	2016	Species	Birds
<i>Zonotrichia querula</i>	Harris' Sparrow	Oklahoma	2016	Species	Birds
<i>Allocrangonyx pellucidus</i>	Oklahoma cave amphipod	Oklahoma	2016	Species	Crustaceans
<i>Amerigoniscus centralis</i>	a cave obligate isopod *	Oklahoma	2016	Species	Crustaceans
<i>Bactrurus hubrichti</i>	Kansas well bactrurid	Oklahoma	2016	Species	Crustaceans
<i>Caecidotea acuticarpa</i>	a cave obligate isopod *	Oklahoma	2016	Species	Crustaceans
<i>Caecidotea adenta</i>	a cave obligate isopod *	Oklahoma	2016	Species	Crustaceans
<i>Caecidotea aencyla</i>	a cave obligate isopod *	Oklahoma	2016	Species	Crustaceans
<i>Caecidotea antricola</i>	a cave obligate isopod *	Oklahoma	2016	Species	Crustaceans
<i>Caecidotea mackini</i>	a cave obligate isopod *	Oklahoma	2016	Species	Crustaceans
<i>Caecidotea macropropoda</i>	bat cave isopod	Oklahoma	2016	Species	Crustaceans
<i>Caecidotea oculata</i>	a cave obligate isopod *	Oklahoma	2016	Species	Crustaceans
<i>Caecidotea simulator</i>	a cave obligate isopod *	Oklahoma	2016	Species	Crustaceans
<i>Caecidotea stiladactyla</i>	a cave obligate isopod *	Oklahoma	2016	Species	Crustaceans
<i>Cambarus subterraneus</i>	Delaware County cave crayfish	Oklahoma	2016	Species	Crustaceans
<i>Cambarus tartarus</i>	Oklahoma cave crayfish	Oklahoma	2016	Species	Crustaceans
<i>Eubranchipus oregonus</i>	Oregon fairy shrimp	Oklahoma	2016	Species	Crustaceans
<i>Fallicambarus tenuis</i>	Ouachita Mountain Crayfish	Oklahoma	2016	Species	Crustaceans
<i>Faxonella blairi</i>	Blair's Fencing Crayfish	Oklahoma	2016	Species	Crustaceans
<i>Faxonius deanae</i>	Conchas crayfish	Oklahoma	2016	Species	Crustaceans
<i>Faxonius difficilis</i>	painted crayfish	Oklahoma	2016	Species	Crustaceans
<i>Faxonius macrus</i>	Neosho midget crayfish	Oklahoma	2016	Species	Crustaceans
<i>Faxonius meeki</i>	Meek crayfish	Oklahoma	2016	Species	Crustaceans
<i>Faxonius menae</i>	Mena Crayfish	Oklahoma	2016	Species	Crustaceans
<i>Faxonius nana</i>	Midget Crayfish	Oklahoma	2016	Species	Crustaceans

<i>Faxonius saxatilis</i>	Kiamichi crayfish	Oklahoma	2016	Species	Crustaceans
<i>Lirceus trilobus</i>	a cave obligate isopod *	Oklahoma	2016	Species	Crustaceans
<i>Miktoniscus oklahomensis</i>	a cave obligate isopod *	Oklahoma	2016	Species	Crustaceans
<i>Stygobromus bowmani</i>	Bowman's cave amphipod	Oklahoma	2016	Species	Crustaceans
<i>Stygobromus ozarkensis</i>	Ozark cave amphipod	Oklahoma	2016	Species	Crustaceans
<i>Alosa alabamae</i>	Alabama shad	Oklahoma	2016	Species	Fishes
<i>Amblyopsis rosae</i>	Ozark cavefish	Oklahoma	2016	Species	Fishes
<i>Ameiurus nebulosus</i>	Brown Bullhead	Oklahoma	2016	Species	Fishes
<i>Ammocrypta clara</i>	Western Sand Darter	Oklahoma	2016	Species	Fishes
<i>Ammocrypta vivax</i>	Scaly Sand Darter	Oklahoma	2016	Species	Fishes
<i>Anguilla rostrata</i>	American eel	Oklahoma	2016	Species	Fishes
<i>Atractosteus spatula</i>	alligator gar	Oklahoma	2016	Species	Fishes
<i>Crystallaria asprella</i>	crystal darter	Oklahoma	2016	Species	Fishes
<i>Cycleptus elongatus</i>	Blue Sucker	Oklahoma	2016	Species	Fishes
<i>Cyprinella camura</i>	Bluntnose Shiner	Oklahoma	2016	Species	Fishes
<i>Cyprinella spiloptera</i>	Spotfin Shiner *	Oklahoma	2016	Species	Fishes
<i>Cyprinodon rubrofluviatilis</i>	Red River pupfish	Oklahoma	2016	Species	Fishes
<i>Etheostoma artesiae</i>	Redspot Darter	Oklahoma	2016	Species	Fishes
<i>Etheostoma collettei</i>	Creole Darter	Oklahoma	2016	Species	Fishes
<i>Etheostoma cragini</i>	Arkansas Darter	Oklahoma	2016	Species	Fishes
<i>Etheostoma histrio</i>	Harlequin Darter	Oklahoma	2016	Species	Fishes
<i>Etheostoma microperca</i>	Least Darter	Oklahoma	2016	Species	Fishes
<i>Etheostoma mihileze</i>	Sunburst Darter	Oklahoma	2016	Species	Fishes
<i>Etheostoma parvipinne</i>	Goldstripe Darter	Oklahoma	2016	Species	Fishes
<i>Etheostoma radiosum</i>	Orangebelly Darter	Oklahoma	2016	Species	Fishes
<i>Etheostoma whipplei</i>	Redfin Darter	Oklahoma	2016	Species	Fishes
<i>Fundulus sciadicus</i>	plains topminnow	Oklahoma	2016	Species	Fishes
<i>Hiodon tergisus</i>	mooneye	Oklahoma	2016	Species	Fishes
<i>Hybognathus hayi</i>	Cypress Minnow	Oklahoma	2016	Species	Fishes
<i>Hybognathus placitus</i>	Plains Minnow	Oklahoma	2016	Species	Fishes
<i>Hybopsis amnis</i>	Pallid Shiner	Oklahoma	2016	Species	Fishes
<i>Ichthyomyzon gagei</i>	southern brook lamprey	Oklahoma	2016	Species	Fishes
<i>Ictiobus niger</i>	Black Buffalo	Oklahoma	2016	Species	Fishes
<i>Luxilus cardinalis</i>	Cardinal Shiner	Oklahoma	2016	Species	Fishes
<i>Lythrurus nelsoni</i>	Ouachita Shiner	Oklahoma	2016	Species	Fishes
<i>Macrhybopsis aestivalis</i>	Speckled Chub	Oklahoma	2016	Species	Fishes
<i>Macrhybopsis australis</i>	Prairie Chub	Oklahoma	2016	Species	Fishes
<i>Moxostoma macrolepidotum</i>	Shorthead Redhorse	Oklahoma	2016	Species	Fishes
<i>Nocomis asper</i>	Redspot Chub	Oklahoma	2016	Species	Fishes
<i>Notropis atrocaudalis</i>	Blackspot Shiner	Oklahoma	2016	Species	Fishes

<i>Notropis bairdi</i>	Red River Shiner	Oklahoma	2016	Species	Fishes
<i>Notropis chalybaeus</i>	Ironcolor Shiner	Oklahoma	2016	Species	Fishes
<i>Notropis girardi</i>	Arkansas River Shiner	Oklahoma	2016	Species	Fishes
<i>Notropis greenei</i>	Wedgespot Shiner	Oklahoma	2016	Species	Fishes
<i>Notropis maculatus</i>	Taillight Shiner	Oklahoma	2016	Species	Fishes
<i>Notropis nubilus</i>	Ozark Minnow	Oklahoma	2016	Species	Fishes
<i>Notropis ortebrugeri</i>	Kiamichi Shiner	Oklahoma	2016	Species	Fishes
<i>Notropis perpallidus</i>	Peppered Shiner	Oklahoma	2016	Species	Fishes
<i>Notropis potteri</i>	Chub Shiner	Oklahoma	2016	Species	Fishes
<i>Notropis shumardi</i>	Silverband Shiner	Oklahoma	2016	Species	Fishes
<i>Notropis suttkusi</i>	Rocky Shiner	Oklahoma	2016	Species	Fishes
<i>Noturus eleutherus</i>	Mountain Madtom	Oklahoma	2016	Species	Fishes
<i>Noturus placidus</i>	Neosho Madtom	Oklahoma	2016	Species	Fishes
<i>Percina maculata</i>	blackside darter	Oklahoma	2016	Species	Fishes
<i>Percina nasuta</i>	longnose darter	Oklahoma	2016	Species	Fishes
<i>Percina pantherina</i>	leopard darter	Oklahoma	2016	Species	Fishes
<i>Percina shumardi</i>	river darter	Oklahoma	2016	Species	Fishes
<i>Platygobio gracilis</i>	Flathead Chub	Oklahoma	2016	Species	Fishes
<i>Polyodon spathula</i>	paddlefish	Oklahoma	2016	Species	Fishes
<i>Pteronotropis hubbsi</i>	Bluehead Shiner	Oklahoma	2016	Species	Fishes
<i>Scaphirhynchus platorynchus</i>	shovelnose sturgeon	Oklahoma	2016	Species	Fishes
<i>Allocapnia jeanae</i>	Osage Snowfly	Oklahoma	2016	Species	Insects
<i>Allocapnia peltoides</i>	Shield Snowfly	Oklahoma	2016	Species	Insects
<i>Amblyscirtes linda</i>	Linda's Roadside-Skipper	Oklahoma	2016	Species	Insects
<i>Apobaetis futilis</i>	a mayfly *	Oklahoma	2016	Species	Insects
<i>Argia bipunctulata</i>	Seepage Dancer	Oklahoma	2016	Species	Insects
<i>Atrytone arogos iowa</i>	Arogos Iowa Skipper *	Oklahoma	2016	Subspecies	Insects
<i>Bombus fraternus</i>	Southern plains bumble bee	Oklahoma	2016	Species	Insects
<i>Bombus pensylvanicus</i>	bumble bee	Oklahoma	2016	Species	Insects
<i>Bombus variabilis</i>	Variable Cuckoo Bumble Bee	Oklahoma	2016	Species	Insects
<i>Cogia outis</i>	Outis Skipper	Oklahoma	2016	Species	Insects
<i>Cordulegaster talaria</i>	Ouachita Spiketail	Oklahoma	2016	Species	Insects
<i>Cylindera celeripes</i>	Swift Tiger Beetle	Oklahoma	2016	Species	Insects
<i>Dromochorus belfragei</i>	Loamy-ground Dromo Tiger Beetle	Oklahoma	2016	Species	Insects
<i>Dubiraphia parva</i>	Little Dubiraphian Riffle Beetle *	Oklahoma	2016	Species	Insects
<i>Elliptoptera lepida</i>	Ghost Tiger Beetle	Oklahoma	2016	Species	Insects
<i>Eximacris phenax</i>	Big Cedar Grasshopper *	Oklahoma	2016	Species	Insects
<i>Gomphus oklahomensis</i>	Oklahoma Clubtail	Oklahoma	2016	Species	Insects
<i>Gomphus ozarkensis</i>	Ozark Clubtail	Oklahoma	2016	Species	Insects
<i>Gryllotalpa major</i>	Prairie Mole Cricket *	Oklahoma	2016	Species	Insects

<i>Hemileuca slosseri</i>	Slosser's Buckmoth	Oklahoma	2016	Species	Insects
<i>Hesperia attalus</i>	Dotted Skipper	Oklahoma	2016	Species	Insects
<i>Hydroptila protera</i>	a microcaddisfly *	Oklahoma	2016	Species	Insects
<i>Libellula composita</i>	Bleached Skimmer	Oklahoma	2016	Species	Insects
<i>Mayatrachia ponta</i>	a microcaddisfly *	Oklahoma	2016	Species	Insects
<i>Melanoplus oklahomae</i>	Oklahoma Spur-throat Grasshopper *	Oklahoma	2016	Species	Insects
<i>Metrichia nigrita</i>	a spring caddisfly *	Oklahoma	2016	Species	Insects
<i>Nicrophorus americanus</i>	American burying beetle	Oklahoma	2016	Species	Insects
<i>Nixe flowersi</i>	a mayfly *	Oklahoma	2016	Species	Insects
<i>Ochrotrichia weddleae</i>	a microcaddisfly *	Oklahoma	2016	Species	Insects
<i>Papaipema eryngii</i>	Rattlesnake Master Borer	Oklahoma	2016	Species	Insects
<i>Perlesta bolukta</i>	Truncate Stonefly *	Oklahoma	2016	Species	Insects
<i>Perlesta browni</i>	Toothed Stonefly *	Oklahoma	2016	Species	Insects
<i>Problema byssus</i>	Byssus Skipper	Oklahoma	2016	Species	Insects
<i>Somatochlora ozarkensis</i>	Ozark Emerald	Oklahoma	2016	Species	Insects
<i>Speyeria diana</i>	Diana Fritillary	Oklahoma	2016	Species	Insects
<i>Speyeria idalia</i>	Regal Fritillary	Oklahoma	2016	Species	Insects
<i>Triaenodes tridontus</i>	Three-toothed Caddisfly *	Oklahoma	2016	Species	Insects
<i>Tricorythodes curvatus</i>	a mayfly *	Oklahoma	2016	Species	Insects
<i>Zealeuctra cherokee</i>	Cherokee Needlefly *	Oklahoma	2016	Species	Insects
<i>Bassariscus astutus</i>	Ringtail	Oklahoma	2016	Species	Mammals
<i>Conepatus leuconotus leuconotus</i>	Hog-nosed Skunk *	Oklahoma	2016	Subspecies	Mammals
<i>Corynorhinus rafinesquii</i>	Eastern Big-eared Bat	Oklahoma	2016	Species	Mammals
<i>Corynorhinus townsendii ingens</i>	Ozark big-eared bat	Oklahoma	2016	Subspecies	Mammals
<i>Corynorhinus townsendii pallescens</i>	pale Townsend's big-eared bat	Oklahoma	2016	Subspecies	Mammals
<i>Cratogeomys castanops</i>	Yellow-faced Pocket Gopher	Oklahoma	2016	Species	Mammals
<i>Cynomys ludovicianus</i>	Arizona black-tailed prairie dog	Oklahoma	2016	Species	Mammals
<i>Dipodomys elator</i>	Texas Kangaroo Rat	Oklahoma	2016	Species	Mammals
<i>Geomys breviceps</i>	Mer Rouge pocket gopher	Oklahoma	2016	Species	Mammals
<i>Lasiurus seminolus</i>	Seminole Bat	Oklahoma	2016	Species	Mammals
<i>Mustela frenata</i>	Long-tailed Weasel	Oklahoma	2016	Species	Mammals
<i>Myotis austroriparius</i>	Southeastern Myotis	Oklahoma	2016	Species	Mammals
<i>Myotis grisescens</i>	Gray Myotis	Oklahoma	2016	Species	Mammals
<i>Myotis leibii</i>	Small-footed Myotis	Oklahoma	2016	Species	Mammals
<i>Myotis septentrionalis</i>	Northern Long-eared Bat	Oklahoma	2016	Species	Mammals
<i>Myotis sodalis</i>	Indiana Myotis	Oklahoma	2016	Species	Mammals
<i>Neotoma leucodon</i>	White-toothed Woodrat	Oklahoma	2016	Species	Mammals
<i>Notiosorex crawfordi</i>	gray shrew	Oklahoma	2016	Species	Mammals
<i>Ochrotomys nuttalli</i>	Golden Mouse	Oklahoma	2016	Species	Mammals
<i>Oryzomys couesi</i>	Coues's Rice Rat	Oklahoma	2016	Species	Mammals

<i>Perimyotis subflavus</i>	Tricolored Bat	Oklahoma	2016	Species	Mammals
<i>Peromyscus nasutus</i>	Northern Rock Mouse	Oklahoma	2016	Species	Mammals
<i>Peromyscus pectoralis</i>	White-ankled Deermouse	Oklahoma	2016	Species	Mammals
<i>Puma concolor</i>	Cougar	Oklahoma	2016	Species	Mammals
<i>Reithrodontomys humulis</i>	Eastern Harvest Mouse	Oklahoma	2016	Species	Mammals
<i>Spilogale putorius</i>	Eastern Spotted Skunk	Oklahoma	2016	Species	Mammals
<i>Sylvilagus aquaticus</i>	Swamp Rabbit	Oklahoma	2016	Species	Mammals
<i>Tadarida brasiliensis</i>	Brazilian Free-tailed Bat	Oklahoma	2016	Species	Mammals
<i>Tamias quadrivittatus</i>	Colorado Chipmunk	Oklahoma	2016	Species	Mammals
<i>Vulpes velox</i>	Swift Fox	Oklahoma	2016	Species	Mammals
<i>Zapus hudsonius</i>	Meadow Jumping Mouse	Oklahoma	2016	Species	Mammals
<i>Alasmidonta marginata</i>	elktoe	Oklahoma	2016	Species	Mollusks
<i>Arcidens wheeleri</i>	Wheeler's pearly mussel	Oklahoma	2016	Species	Mollusks
<i>Catinella wandae</i>	slope ambersnail	Oklahoma	2016	Species	Mollusks
<i>Cyprogenia aberti</i>	western fanshell	Oklahoma	2016	Species	Mollusks
<i>Ellipsaria lineolata</i>	butterfly mussel	Oklahoma	2016	Species	Mollusks
<i>Euchemotrema wichitorum</i>	Wichita Mountains pillsnail	Oklahoma	2016	Species	Mollusks
<i>Fusconaia ozarkensis</i>	Ozark pigtoe	Oklahoma	2016	Species	Mollusks
<i>Helicodiscus nummus</i>	wax coil	Oklahoma	2016	Species	Mollusks
<i>Helicodiscus tridens</i>	crosstlimbers coil	Oklahoma	2016	Species	Mollusks
<i>Inflectarius edentatus</i>	smooth-lip shagreen	Oklahoma	2016	Species	Mollusks
<i>Lampsilis cardium</i>	plain pocketbook	Oklahoma	2016	Species	Mollusks
<i>Lampsilis hydiana</i>	Louisiana fatmucket	Oklahoma	2016	Species	Mollusks
<i>Lampsilis rafinesqueana</i>	Neosho mucket	Oklahoma	2016	Species	Mollusks
<i>Leaunio lienosus</i>	little spectaclecase	Oklahoma	2016	Species	Mollusks
<i>Ligumia recta</i>	black sandshell	Oklahoma	2016	Species	Mollusks
<i>Megalonaia nervosa</i>	washboard	Oklahoma	2016	Species	Mollusks
<i>Megapallifera ragsdalei</i>	Ozark mantleslug	Oklahoma	2016	Species	Mollusks
<i>Millerelix deltoidea</i>	Oklahoma liptooth	Oklahoma	2016	Species	Mollusks
<i>Millerelix simpsoni</i>	Wyandotte liptooth	Oklahoma	2016	Species	Mollusks
<i>Neohelix iowderma</i>	Tulsa whitelip	Oklahoma	2016	Species	Mollusks
<i>Obovaria arkansasensis</i>	Ouachita creekshell	Oklahoma	2016	Species	Mollusks
<i>Obovaria arkansasensis</i>	Ouachita creekshell	Oklahoma	2016	Species	Mollusks
<i>Pallifera tournescalis</i>	Ouachita mantleslug	Oklahoma	2016	Species	Mollusks
<i>Patera indianorum</i>	lidded oval	Oklahoma	2016	Species	Mollusks
<i>Pleurobema rubrum</i>	pyramid pigtoe	Oklahoma	2016	Species	Mollusks
<i>Potamilus leptodon</i>	scaleshell	Oklahoma	2016	Species	Mollusks
<i>Ptychobranchus occidentalis</i>	Ouachita kidneyshell	Oklahoma	2016	Species	Mollusks
<i>Pustulosa nodulata</i>	wartyback	Oklahoma	2016	Species	Mollusks
<i>Quadrula fragosa</i>	winged mapleleaf	Oklahoma	2016	Species	Mollusks

<i>Stenotrema pilsbryi</i>	Rich Mountain slitmouth	Oklahoma	2016	Species	Mollusks
<i>Stenotrema unciferum</i>	Ouachita slitmouth	Oklahoma	2016	Species	Mollusks
<i>Theliderma cylindrica</i>	rabbitsfoot	Oklahoma	2016	Species	Mollusks
<i>Theliderma metanevra</i>	monkeyface	Oklahoma	2016	Species	Mollusks
<i>Toxolasma lividum</i>	purple lilliput	Oklahoma	2016	Species	Mollusks
<i>Toxolasma texasiense</i>	Texas lilliput	Oklahoma	2016	Species	Mollusks
<i>Zonitoides kirbyi</i>	shadow gloss	Oklahoma	2016	Species	Mollusks
<i>Pseudosinella dubia</i>	a cave springtail *	Oklahoma	2016	Species	Other Invertebrates
<i>Pygmarshopalites jay</i>	a cave springtail	Oklahoma	2016	Species	Other Invertebrates
<i>Trigenotyla blacki</i>	a cave obligate millipede *	Oklahoma	2016	Species	Other Invertebrates
<i>Trigenotyla vaga</i>	a cave obligate millipede *	Oklahoma	2016	Species	Other Invertebrates
<i>Alligator mississippiensis</i>	American Alligator	Oklahoma	2016	Species	Reptiles
<i>Apalone mutica</i>	Smooth Softshell	Oklahoma	2016	Species	Reptiles
<i>Apalone spinifera</i>	Spiny Softshell	Oklahoma	2016	Species	Reptiles
<i>Aspidoscelis tesselatus</i>	Common Checkered Whiptail	Oklahoma	2016	Species	Reptiles
<i>Cemophora coccinea copei</i>	Northern Scarlet Snake	Oklahoma	2016	Subspecies	Reptiles
<i>Crotalus atrox</i>	Western Diamondback Rattlesnake	Oklahoma	2016	Species	Reptiles
<i>Deirochelys reticularia miaria</i>	Western Chicken Turtle	Oklahoma	2016	Subspecies	Reptiles
<i>Farancia abacura reinwardtii</i>	Western Mud Snake	Oklahoma	2016	Subspecies	Reptiles
<i>Graptemys geographicus</i>	Northern Map Turtle	Oklahoma	2016	Species	Reptiles
<i>Graptemys ouachitensis ouachitensis</i>	Ouachita Map Turtle	Oklahoma	2016	Subspecies	Reptiles
<i>Graptemys pseudogeographica kohnii</i>	Mississippi Map Turtle	Oklahoma	2016	Subspecies	Reptiles
<i>Holbrookia maculata</i>	Lesser Earless Lizard	Oklahoma	2016	Species	Reptiles
<i>Lampropeltis gentilis</i>	Central Plains Milkshake	Oklahoma	2016	Species	Reptiles
<i>Liodytes rigida sinicola</i>	Gulf Swampsnake	Oklahoma	2016	Subspecies	Reptiles
<i>Macrochelys temminckii</i>	Alligator Snapping Turtle	Oklahoma	2016	Species	Reptiles
<i>Phrynosoma cornutum</i>	Texas Horned Lizard	Oklahoma	2016	Species	Reptiles
<i>Phrynosoma modestum</i>	Round-tailed Horned Lizard	Oklahoma	2016	Species	Reptiles
<i>Pseudemys concinna</i>	River Cooter	Oklahoma	2016	Species	Reptiles
<i>Rhinocheilus lecontei</i>	Long-nosed Snake	Oklahoma	2016	Species	Reptiles
<i>Sistrurus tergeminus tergeminus</i>	Prairie Massasauga	Oklahoma	2016	Subspecies	Reptiles
<i>Sternotherus carinatus</i>	Razor-backed Musk Turtle	Oklahoma	2016	Species	Reptiles
<i>Thamnophis cyrtopsis</i>	Black-necked Garter Snake	Oklahoma	2016	Species	Reptiles
<i>Thamnophis sirtalis annectens</i>	Texas Garter Snake	Oklahoma	2016	Subspecies	Reptiles

WILDLIFE HABITAT APPRAISAL PROCEDURE (WHAP)

SUMMARY REPORT

CANTON LAKE MASTER PLAN

BLAINE AND DEWEY COUNTY, OKLAHOMA

May 20th, 2025



**US Army Corps
of Engineers ®**

Tulsa District

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Introduction

Habitat assessments were conducted at Canton Lake on June 15-18th, 2024 using Texas Parks and Wildlife Department's (TPWD) Wildlife Habitat Appraisal Procedure (WHAP) (TPWD 1995). WHAP survey point locations were based on points believed or known to have various habitat types and features based on aerial imagery from existing Geographical Information Systems (GIS) data as well as from local knowledge of the area. A total of 65 WHAP points were surveyed, all within U.S. Army Corps of Engineers (USACE) fee boundary (Figures X, X², X³).

The purpose of this report is to describe wildlife habitat quality within the USACE Canton Lake fee-owned property in Blaine and Dewey Counties, Oklahoma. This report is being prepared by the USACE Regional Planning and Environmental Center to provide habitat quality information and inform land classifications as part of the Canton Lake Master Plan revision process.

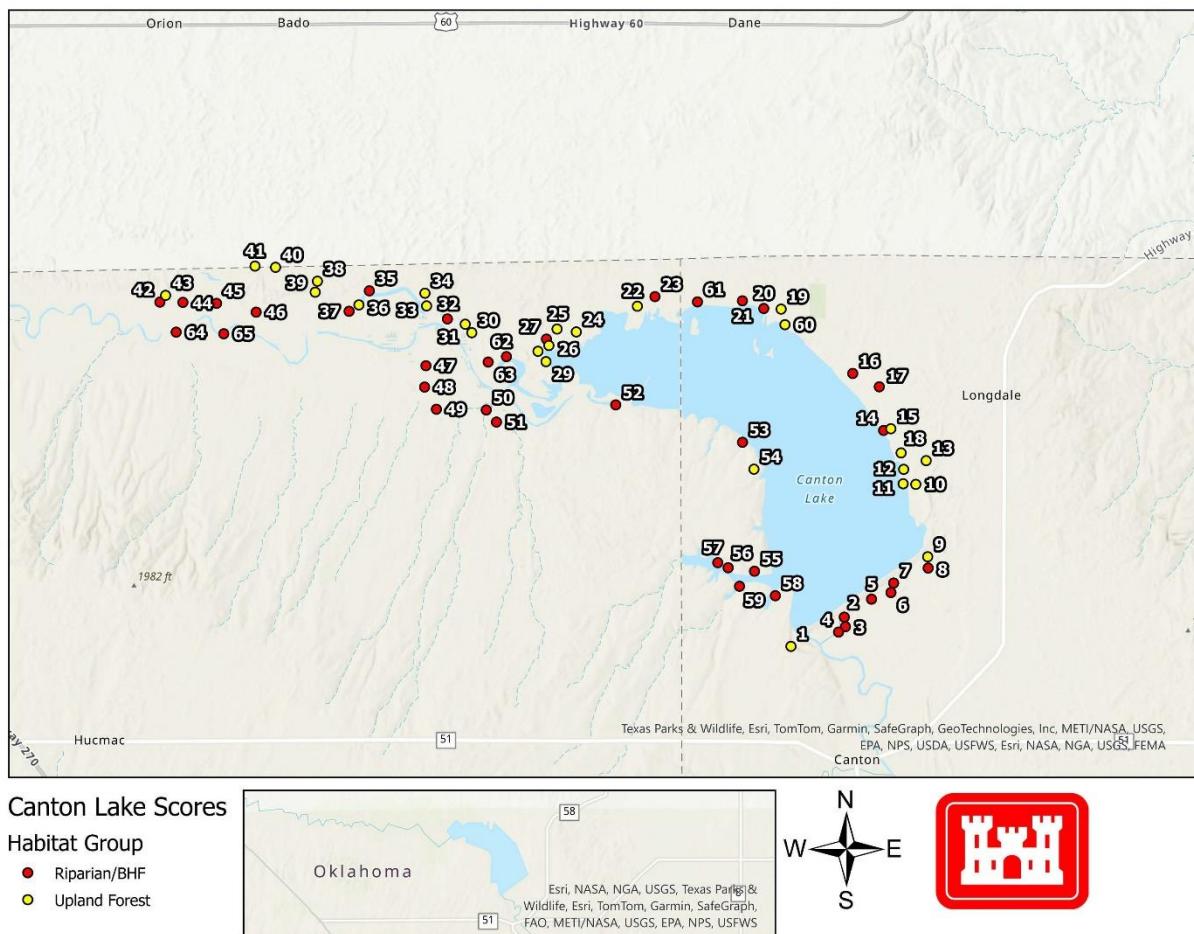


Figure 1. Distribution of WHAP Points within Canton Lake with Habitat Types

Study Area

The study area for the WHAP consist of approximately 12,356 acres of USACE fee owned property at Canton Lake, located northwest of Oklahoma City, Oklahoma and is near to the locations of Canton, Fairview and Selling. USACE property at Canton Lake is located within the Central Great Plains ecoregion as defined by the Environmental Protection Agency (EPA).

Methodology

The WHAP requires evaluating representative sites of each cover type present within an area of interest. For this project, a search area of 0.1 acre (circle with radius of 37.2 feet) was used at each WHAP site to compile a list of plant species occurring at each site and to complete the Biological Components Field Evaluation Form (TPWD 1995). Field data collected on the form at each WHAP site included the following components:

1. Site Potential
2. Temporal Development of Existing Successional Stage
3. Uniqueness and Relative Abundance
4. Vegetation Species Diversity
5. Vertical Vegetation Stratification
6. Additional Structural Diversity
7. Condition of Existing Vegetation

The TPWD developed the WHAP to allow qualitative holistic evaluation of wildlife habitat for tracts of land statewide without imposing significant time requirements regarding field work and compilation of data (TPWD 1995). The WHAP was not designed to evaluate habitat quality in relation to specific wildlife species.

The WHAP is based on the following assumptions:

1. Vegetation structure including species composition and physiognomy is itself sufficient to define the habitat suitability for wildlife;
2. A positive relationship exists between vegetation diversity and wildlife species diversity;
3. Vegetation composition and primary productivity directly influence population densities of wildlife species.

As designed, the WHAP is intended to be used for the following applications:

1. Evaluating impacts upon wildlife populations from specific development project alternatives.
2. Establishing baseline data prior to anticipated or proposed changes in habitat conditions for specific areas.
3. Comparing tracts of land that are candidates for land acquisition or mitigation.
4. Evaluating general habitat quality and wildlife management potential for tracts of land over large geographical areas, including wildlife planning units.

At each site, a 1/10th acre plot (circle with radius of 37.2 feet) was evaluated, and points were assigned to all applicable components based on field conditions. A habitat quality score, where values range from 0.0 (low quality) to 1.0 (high quality), was then calculated for each site by adding together all points and

multiplying by 0.01. Habitat quality was then determined for all sites within the same habitat type. The scores for each site can be found in Attachment A. Photographs were taken at each site and are included as Attachment B.

The WHAP protocol can be used to assess a wide range of habitats; however, it was originally developed to assess and develop mitigation requirements for loss of bottomland hardwoods and other aquatic habitats. Scores can yield higher results for these habitats based on how the scoring is allotted to each WHAP habitat component. Upland forest and grassland habitat types cannot reach a score indicative of high-quality habitat, although they may exhibit high quality features. Subsequently, high quality upland habitat may not be identified or can be overlooked.

Grasslands fall into this category. The Site Potential component has a maximum score of 0.25 points and allocates more points based on higher hydrologic connectivity. To receive the highest score for this component, the area must exhibit at least one of the following: periodically support predominately hydrophytic vegetation, have predominately undrained hydric soil and supports or can support hydrophytic vegetation, and/or is saturated with water or covered by shallow water during 1-2 months of the growing season each year. In a grassland setting, when conditions become conducive to hydrophytic plant growth, a successional shift from a grassland to herbaceous wetlands, swamps, or riparian forest is likely to occur. Therefore, grasslands would almost always be limited to a maximum score of 0.12 points (uplands with thick surface layers).

Similarly, grasslands would be limited to a maximum of 0.12 points for the Temporal Development of Existing Successional Stage component, whereas other forested habitats could receive the full 0.25 points.

High value grasslands may not have any woody vegetation, nor vegetation that is more than 12 feet tall, and very little additional structural components. To account for this, total scores for areas categorized as grasslands do not reflect the Vegetation Species Diversity component and makes the maximum score for Vertical Vegetation Stratification component as a value of 4 and Additional Structural Diversity component as 1.

These components regularly exclude grassland habitat from receiving the maximum score of 1.00 on the WHAP point scale. To identify the maximum score each habitat type can receive, USACE environmental staff scored each criteria given ideal conditions for riparian/bottomland hardwood forest (BHF), upland forest (includes all non-riparian/BHF forests), grassland, and marsh habitats. The maximum value scores, shown in Table 1, where then used to normalize scores for habitats that are prevented from reaching the maximum WHAP score. This is primarily due to arbitrary low scores in the two WHAP components described above. Normalizing habitat scores will identify high quality habitat that would otherwise not be detected.

Cover Type	Component 1	Component 2	Component 3	Component 4	Component 5	Component 6	Component 7	Component 8	Maximum Total Value
Marsh	25	20	20	20	N/A	5	10	N/A	1.00
Riparian /BHF	25	20	20	15	5	5	5	5	1.00
Upland Forest	12	20	20	15	5	5	5	5	0.87
Grassland	12	12	20	6	3	5	5	5	0.68

Table 1. Cover Types and Maximum Total Scores

Riparian/BHF habitats can achieve the maximum score, therefore, no normalization of scores were made for that habitat type. Upland forest and grasslands, however, can only reach within 0.87 and 0.68 points of the maximum WHAP score, even in ideal conditions.

To evaluate all habitat types on an even scoring basis, upland forest and grassland scores were normalized by dividing their original scores by the maximum possible score for their respective habitat types. For example, if a grassland site received an initial score of 0.42, it would be divided by the maximum total points a grassland site can receive, 0.68. The normalized total score used for further analysis for the grassland site would be 0.62.

This adjustment allows habitat type scores to be analyzed and compared to their corresponding habitat type maximum total score. Rather than, for instance, a grassland being evaluated on a bottomland hardwood scoring scale.

All WHAP scores analyzed and discussed from here forward reflect the normalized total scores. As mentioned above riparian/BHF habitat was not normalized because it already can achieve the maximum score. Grassland scores were normalized by dividing initial scores by 0.68, while all upland forest scores were normalized by dividing the initial score by 0.87.

Site potential allocates more points based on soil substrates characteristics and hydrologic connectivity that can support hydrophytic habitats, such as marshes, swamps, and bottomland hardwood forests that are often considered to be higher quality, more diverse habitat. This allows areas to score higher even though a recent disturbance, such as fire or flood, may have removed most of the vegetation. Areas scoring high in site potential but low in other metrics can be targeted for management efforts as these areas' vegetation community response should be favorable, thus increasing habitat value.

Successional stage refers to the age of the vegetative community. Older, mature forests and climax prairies, score higher than younger pole stands or disturbed grasslands because they provide more diverse forage, cover, and niche habitats. These scores are expected to increase across the habitats, except in areas that may not have the soil types to support hydrophytic vegetation or are flooded frequently enough to limit upland forest or grassland growth and development.

Uniqueness and Relative Abundance takes into consideration the rarity of a habitat or vegetative community and its abundance in the region. Current and past agricultural and forestry practices have significantly influenced the region's remaining habitat composition.

Habitat

Canton Lake lies within the Central Great Plains – Pleistocene Sand Dunes and Central Great Plains – Rolling Red Hills ecoregion (Level III).

The Central Great Plains – Prairie Tableland ecoregion extends from Nebraska to central Texas, passing through the western half of Oklahoma. Grasslands cover most of the ecoregion with woodlands are along the ravines and streams. The native grassland species in the Central Great Plains are little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), and several other short grass species (ODWC, 28-29).

Riparian/Bottomland Hardwood Forest – Riparian/Bottomland hardwoods are found along rivers and streams, mostly in broad floodplains. They are commonly found in areas where the rivers or streams are flooding beyond their channel confines. Common species found in riparian/bottomland hardwood forest can be made up of different Gum (*Nyssa* sp.) and Oak (*Quercus* sp.) and Bald Cypress (*Taxodium distichum*) (EPA, May 2024). This habitat type acts as a natural buffer between uplands and adjacent water bodies, they act as natural filters of nonpoint source pollutants (EPA, October 2024).

Marsh – Marshes are wetlands that are frequently inundated with water and are characterized by emergent soft-stemmed vegetation that can withstand the saturated soil conditions. Most marshes receive most of their water from surface water, and many marshes are also fed by ground water (EPA, April 2024).

Upland Forest – Post oaks (*Quercus stellata*), blackjack oaks (*Quercus marilandica*), and black hickories (*Carya texana*) are found in upland forest in Oklahoma. Low shrubby plants like buckbrush (*Ceanothus cuneatus*) and fragrant sumac (*Rhus aromatica*) provide habitat for wildlife species (Crawford, 2024).

Grassland – Grasslands are found in areas that don't get enough rain to become a forest, but just enough to where deserts can form. Grasslands support a variety of species for animal species to graze and utilize (Nunez, 2024). Some of the common grasses that can be found in Oklahoma are little bluestem (*Schizachyrium scoparium*) and big bluestem (*Andropogon gerardii*).

Table 2 displays the number of habitats surveyed and the number of points surveyed within each respective habitat type.

Habitat Type	Points Surveyed
Riparian/BHF	38
Marsh	0
Upland Forest	27
Grassland	0
Total Points Surveyed	65

Table 2. Survey Points per Habitat Type

Results and Discussion

The total habitat scores for each point surveyed is a representation of multiple habitat attributes including vegetative diversity and structure, site soil potential, successional stage, and uniqueness of the habitat across the landscape. Data analysis highlights are discussed below, while detailed data for each point surveyed can be found in Attachment A: Canton Lake WHAP Summary Results of this report.

In Figure 1 and Table 3, the upland forest habitat type occurred 27 times with a score range of 0.44 – 0.76 and the riparian/BHF habitat occurred 38 times with a score range of 0.43 – 0.69. Both the marsh habitat type and grasslands habitat type did not occur at all during the survey. Figure 1 displays the locations of where each habitat type was found around Canton Lake while Figure 2 show the score range for all 65 surveyed points. Having a low habitat score doesn't mean that the area is in poor condition or does not provide value to the environment but that it can be improved over time.

Habitat Type	Average Total Score	Maximum Total Score	Minimum Total Score
Riparian/BHF	0.57	0.69	0.43
Marsh	None	None	None
Upland Forest	0.58	0.76	0.44
Grassland	None	None	None

Table 3. Average, Minimum, and Maximum Scores per Habitat Type

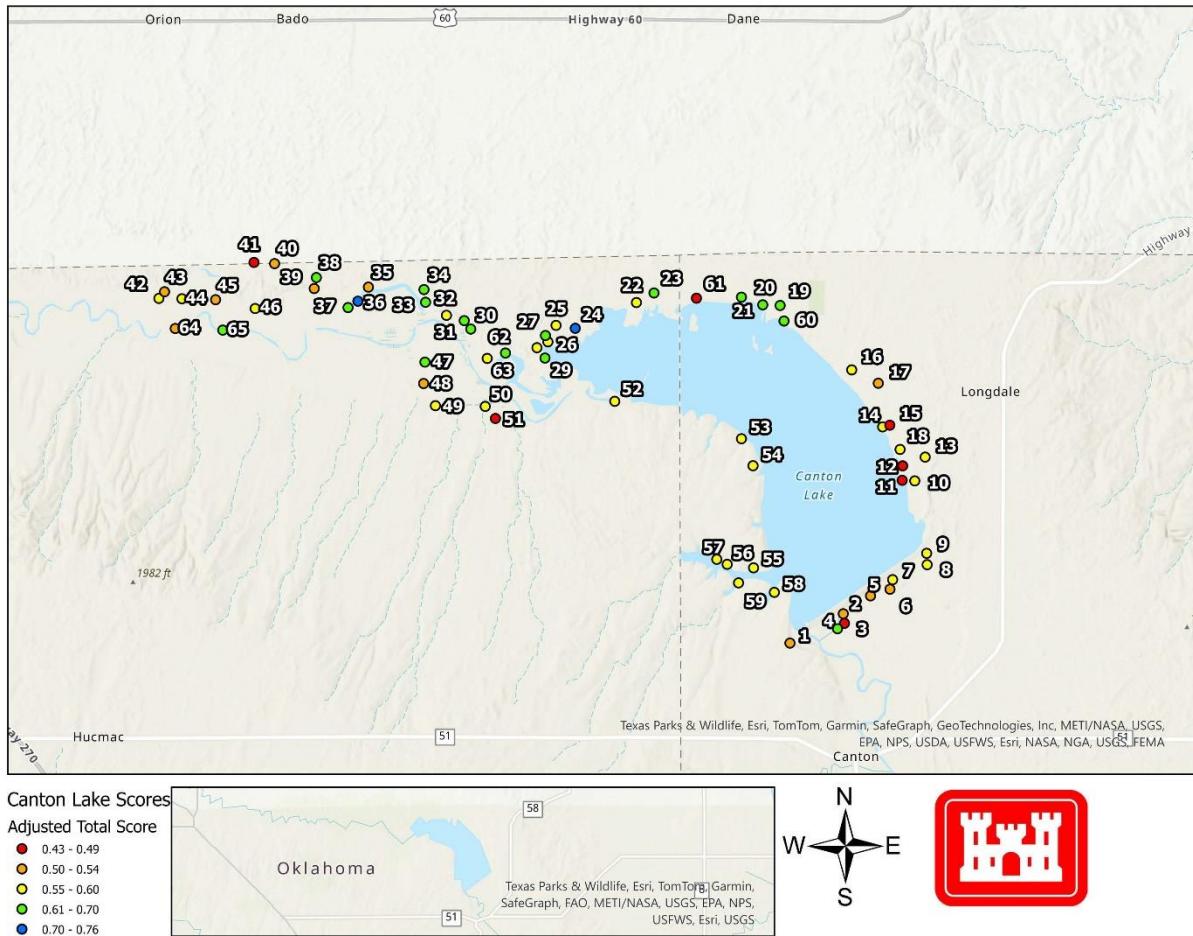


Figure 2. Distribution of WHAP Points within Canton Lake with Adjusted Total Score

Habitat Type	Average Site Potential	Average Successional Stage	Average Uniqueness and Relative Abundance
Riparian/BHF	11.53	10.39	10.53
Marsh	None	None	None
Upland Forest	13.7	10.93	9.81
Grassland	None	None	None

Table 4. Average Site Potential, Successional Stage, and Uniqueness and Relative Abundance Scores per Habitat Type

Recommendations

[Insert any recommendations]

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Attachment A: Canton Lake WHAP Results Summary

Point_Number	Point_X	Point_Y	Habitat	Habitat Group	Adjusted Total Score	Total Score	Site Potential	Successional Stage	Uniqueness and Relative Abundance	Diversity of Woody Species	Number of Woody Species	Vertical Stratification	Additional Structural Diversity	Condition of Woody Vegetation	Herbaceous_Vegetation	Berry_Drupe	Legume_Pod	Acorn	Nut_Nutlike	Samara	Cone	Achene	All_Others	Herbaceous_Species
1	36.078998	-98.606439	Ruderal Deciduous Woodland	Upland Forest	0.54	54	12	12	10	5	3	3	3	5	1	gum bumelia	catalpa		american elm	eastern redcedar		cottonwood, prickly pear	whitemouth dayflower, johnson grass, slender grama	
2	36.085485	-98.591798	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.51	51	7	6	10	5	3	5	5	5	5	western soapberry, dogwood, huckleberry, sumac		post oak		american elm	eastern redcedar		silver wormwood, buttonbush	western ironweed, camphorweed, yarrow, pokeweed, thymelaeid sandmat, palmer's spectaclepod, groundcherries, whitemouth dayflower, 3-seeded mercury
3	36.083367	-98.591466	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.46	46	7	6	10	3	1	4	5	5	5	huckleberry, gum bumelia	scarlet pea		black walnut					pokeweed, ragweed, camphorweed, groundcherries, thin paspalum, horseweed, tall witchgrass, cowpea daisy, lemon beebee
4	36.082169	-98.593363	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.61	61	12	12	10	4	3	5	5	5	5	western soapberry, sumac, gum bumelia			eastern black walnut		eastern redcedar		prickly pear	camphorweed, groundcherries, ragweed, hoary vervain, johnson grass, fish on a fishing pole, horseweed, panic grass
5	36.089471	-98.584315	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.53	53	7	12	10	3	1	5	5	5	5	sumac							cottonwood	ragweed, goldenrod, wood sage, daisy fleabane, american germander, camphorweed, switchgrass, prairie broomweed
6	36.090937	-98.578969	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.53	53	7	12	10	3	3	5	5	5	3	sumac				eastern redcedar			cottonwood, silver wormwood, great plains false willow	ragweed, poverty weed, switchgrass, johnson grass, cherokee sedge
7	36.093045	-98.578235	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.57	57	12	12	10	5	5	4	3	5	1	coralberry, western soapberry, greenbriar, dogwood, virginia creeper, huckleberry	redbud	post oak		american elm	eastern redcedar			lemon's marigold
8	36.096375	-98.56876	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.56	56	12	6	10	5	3	5	5	5	5	sand plum	lespedeza, scarlet pea, prairie clover	post oak, blackjack oak		american elm			cottonwood	ragweed, pokeweed, western ironweed, nightshade sp., little bluestem, broom, hoary vervain, fourpoint evening primrose
9	36.098875	-98.568978	Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.58	58	12	12	10	4	3	4	3	5	5	virginia creeper, huckleberry, sand plum, greenbriar, persimmon		blackjack oak		american elm	eastern redcedar			four point evening primrose, ragweed, whitemouth dayflower, groundcherry, sand milkweed, fish on a fishing pole, rough buttonweed, american germander
10	36.114934	-98.57215	Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.55	55	12	12	5	4	3	4	5	5	5	greenbriar, gum bumelia								
11	36.115066	-98.575624	High Plains: Bottomland Hardwood Forest	Upland Forest	0.48	48	7	6	10	4	3	5	5	5	3	huckleberry, sand plum				american elm	eastern redcedar		cottonwood, buttonbush	ragweed, american germander, turkey tangle frogfruit, little bluestem, switchgrass
12	36.118261	-98.575478	Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.49	49	7	12	10	2	1	4	5	5	3			post oak			eastern redcedar		pokeweed, ragweed, hoary vervain, switchgrass	
13	36.120194	-98.569304	Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.55	55	12	12	10	4	3	4	5	5	0	coralberry, greenbriar, virginia creeper, poison ivy	eastern redbud	post oak, blackjack oak			eastern redcedar			
14	36.126889	-98.580987	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.55	55	7	12	10	5	3	5	5	5	3	coralberry	honey locust			american elm	eastern redcedar		buttonbush, black willow	ragweed, goldenrod, groundcherry, switchgrass, yarrow, bonset
15	36.127262	-98.579003	Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.49	49	12	12	5	2	1	4	5	5	3	western soapberry, virginia creeper, huckleberry	black locust							johnson grass, fish on a fishing pole, pokeweed, virginia wild rye
16	36.139523	-98.589473	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.58	58	12	12	10	3	3	5	5	5	3	fragrant sumac, virginia creeper, poison ivy, smooth sumac, sand plum, soap berry					eastern redcedar		cottonwood	johnson grass, foxtail grass, groundcherries, american germander, switchgrass
17	36.136564	-98.582178	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.54	54	12	12	10	2	3	4	5	5	1	coralberry, poison ivy, virginia creeper, western soapberry, mulberry				eastern redcedar				pokeweed, western horsetail
18	36.21908	-98.576181	Pleistocene Sands: Blackjack Oak - Eastern Redcedar Woodland	Upland Forest	0.56	56	12	12	10	4	3	4	5	5	1	poison ivy, virginia creeper, coralberry		post oak		american elm	eastern redcedar			american germander, fleabane
19	36.153784	-98.609141	Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.61	61	12	12	10	4	3	5	5	5	5	mulberry, coralberry, virginia creeper, greenbriar, blackberry	eastern redbud			american elm			cottonwood	groundcherries, boneset, goldenrod, johnson grass, american germander, bigelow's beggarbits, bitter lettuce, flowering spurge
20	36.153924	-98.613909	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.61	61	12	12	10	4	3	5	5	5	5	poison ivy, greenbriar, soapberry, carolina snailseed, virginia creeper, mulberry, poison ivy	eastern redbud			american elm	eastern redcedar			johnson grass, ragweed, switchgrass, rosette grass, american germander, western ironweed, hoary vervain, horseweed
21	36.155626	-98.619772	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.62	62	12	12	10	3	5	5	5	5	5	western soapberry, carolina snailseed, roughleaf dogwood, muscadine grape, virginia creeper, mulberry, poison ivy					eastern redcedar		cottonwood, buttonbush	american germander, common reed, switchgrass, turkey tangle frogfruit, velvet weed, whitemouth dayflower, johnson grass
22	36.154424	-98.64862	Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.59	59	12	12	10	5	5	4	3	3	5	carolina snailseed, coralberry, western soapberry, groundcherries, poison ivy, mulberry, winged sumac	mimosa, wild licorice	bur oak			eastern redcedar		eastern cottonwood	virginia wild rye, panicles, ragweed, tall goldenrod, american germander, lovegrass, johnson grass, whiteface dayflower
23	36.156554	-98.643791	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.66	66	12	12	15	4	7	5	1	5	5	virginia creeper, poison ivy, coralberry, dogwood, kentucky coffee tree, huckleberry, carolina snailseed, winged sumac, gum bumelia, dewberry, western soapberry, greenbriar	honey locust			american elm	eastern redcedar			virginia wild rye, beggars ticks, whitemouth dayflower, broomedge, american geranium, ironweed, daisy, sedge sp.

24		Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.74	74	12	20	15	4	5	5	3	5	5	gum bumelia, virginia creeper, mulberry, coralberry, carolina snailseed, western soapberry, dogwood	redbud				eastern redcedar		buttonbush, yucca	spanish needles, beggers ticks, ragweed, american germander, johnson grass, sedge sp., wild rye, goldenrods	
25		Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.55	55	12	12	10	3	3	4	1	5	5					cedar elm	eastern redcedar		button bush, yucca	ragweed, american germander, foxtail, goldenrod, mules tail, cordgrass, snow on the mountain, gum weed, rush	
26		Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.59	59	20	6	10	3	3	4	5	3	5	carolina snailseed, grape, mulberry, gum bumelia					eastern redcedar		black willow, buttonbush	boneset, pokeweed, sedge sp., rawweed, johnson grass, silver wormwood, american germander, whitemouth dayflower, goldenrods, turkey tangle frogfruit, rush	
27		High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.69	69	20	12	10	5	5	4	5	3	5	grape, carolina snailseed, dewberry, coralberry	mimosa, redbud, honey locust			american elm	eastern redcedar	button bush, black willow, eastern cottonwood	boneset, american germander, ragweed, turkey tangle frogfruit, knotroot bristlegrass, water horehound, johnson grass, sedge sp.		
28		Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.58	58	12	6	15	5	5	4	3	3	5	sant plum, fragrant sumac, smooth sumac, gum bumelia, western soapberry, dogwood, coralberry	redbud, chinese bush clover			american elm	eastern redcedar		prickly pear, yucca	sage brush, whitemouth dayflower, bee balm, palmer's spectacledopter, johnson grass, mules tail, goldenrods, broomsedge bluestem, sedge sp., rawweed	
29		Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.61	61	20	12	10	4	3	3	1	3	5	gum bumelia, coralberry, dogwood, creeping cucumber		bur oak			eastern redcedar		eastern cottonwood	ragweed, pimpernel, broomsedge bluestem, turkey tangle frogfruit, whitemouth dayflower, american germander, bristlegrass, goldenrods, johnson grass, crotons	
30		Pleistocene Sands: Blackjack Oak - Eastern Redcedar Woodland	Upland Forest	0.66	66	20	12	10	3	3	5	5	5	5	vines, virginia creeper				american elm, siberian elm	eastern redcedar			johnson grass, milkweed, sedge sp., bee balm, purple flower, canadian wild rye, foxtail	
31		Pleistocene Sands: Blackjack Oak - Eastern Redcedar Woodland	Upland Forest	0.66	66	20	12	10	3	3	5	5	5	5	vines, virginia creeper				american elm, siberian elm	eastern redcedar			johnson grass, milkweed, sedge sp., bee balm, purple flower, canadian wild rye, foxtail	
32		High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.57	57	20	5	10	5	3	3	3	3	5	poison ivy, virginia creeper				pecan	siberian elm			cottonwood	bee balm, canadian wild rye, oats, sedge sp., johnson grass, foxtail, milkweed
33		Pleistocene Sands: Blackjack Oak - Eastern Redcedar Woodland	Upland Forest	0.66	66	20	12	10	3	3	5	5	5	3	virginia creeper	black locust			pecan	siberian elm			cottonwood	bee balm, canadian wild rye, oats, sedge sp., johnson grass, foxtail, milkweed
34		Pleistocene Sands: Blackjack Oak - Eastern Redcedar Woodland	Upland Forest	0.68	68	20	12	10	5	3	5	5	5	3	virginia creeper, poison ivy, vines				pecan	siberian elm	eastern redcedar		cottonwood	johnson grass, canadian wild rye, sea oats, sedge sp., bee balm
35		High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.53	53	12	6	10	4	5	5	1	5	5	virginia creeper, winged sumac, hawberry, kentucky coffeetree, greenbrier, carolina snailseed, dogwood, coralberry, western soapberry	redbud	burr oak			eastern redcedar			white avens, begger's tick, virginia wild rye, sedge sp., woodland lettuce, yellow aster, trumpet vine, whitegrass	
36		Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.76	76	20	12	15	6	5	5	3	5	5	virginia creeper, dogwood, kentucky coffeetree, hawberry, grape	honey locust	burr oak		american elm	eastern redcedar			buttonbush, willow	sedge sp., plume thistle, white avens, foxtail, lanceleaf frogfruit, hibiscus, turkey tangle frogfruit, prickly lettuce, pinkweed
37		High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.67	67	20	12	10	4	3	5	3	5	5	dogwood, carolina snailseed, balloon vine, poison ivy	honey locust			american elm				buttonbush, black willow	brookweed, turkey tangle frogfruit, virginia wild rye, hibiscus, tall deck
38		Pleistocene Sands: Blackjack Oak - Eastern Redcedar Woodland	Upland Forest	0.62	62	12	12	10	4	7	4	3	5	5	dogwood, virginia creeper, grape, western soapberry, carolina snailseed, hawberry, coralberry, groundcherries, gum bumelia, smooth sumac				black walnut	eastern redcedar			cottonwood, buttonbush, black willow	american germander, white vervain, ragweed, foxtails, panicgrass, sedge sp., wild rye, palmer's specklepod, mullein
39		Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.53	53	12	6	10	5	5	4	3	3	5	nightshade, smooth sumac, hawberry, gum bumelia, coralberry, greenbrier	chinese bush clover			black walnut	eastern redcedar				muletail, sage brush, ragweed, wild rye, bee balm, palmer's specklepod, whitemouth dayflower, pokeweed, sand bar
40		Pleistocene Sands: Blackjack Oak - Eastern Redcedar	Upland Forest	0.51	51	12	6	10	4	5	5	1	3	5	hawberry, gum bumelia, wild grape, greenbrier, carolina snailseed, western soapberry	chinese bush clover, redbud			american elm	eastern redcedar				whitemouth dayflower, cowpen daisy, pokeweed, blenstem, sedge sp., palmer's specklepod, broom, white aster, plainain
41		Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.44	44	12	5	5	3	5	3	1	5	5	nightshade, greenbrier, carolina snailseed, western soapberry, virginia creeper	kentucky coffeetree				eastern redcedar				whitemouth dayflower, cowpen daisy, pokeweed, cherokee sedge, foxtails, carolina snailseed, american germander, thistle poppy, panicgrass
42		High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.56	56	12	12	10	5	3	3	1	5	5	Gum bumelia, poison ivy, hawberry, sand plum	indigos			american elm	eastern redcedar			prickly pear	sage brush, palmers spectral pod, ragweed, sand bars, queen's delight, whitemouth dayflower, sandbeal, bee balm
43		Pleistocene Sands: Blackjack Oak Woodland	Upland Forest	0.51	51	12	12	5	5	3	3	1	5	5	hawberry, coralberry, grape, gum bumelia, western soapberry, poison ivy	indigos, lespediza			american elm	eastern redcedar			foxtail cactus, prickly pear cactus	sage brush, little bluestem, bee balm, queen's delight, whitemouth dayflower, stiffleaf false yellow aster, ragweed, hairy crabgrass, panicgrass, ragweed, sand bar
44		High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.60	60	12	12	10	5	5	3	3	5	5	virginia creeper, poison ivy, wild grape	lespediza			american elm	eastern redcedar				osage orange, buttonbush, prickly pear, black willow
45		High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.52	52	12	6	10	4	5	4	3	5	3	hawberry, coralberry, grape, gum bumelia, western soapberry, poison ivy	trailing lespediza			american elm	eastern redcedar				virginia wild rye, johnson grass, carolina snailseed, prickly lettuce, violets
46		High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.56	56	12	6	10	5	5	5	3	5	5	virginia creeper, hawberry, western soapberry, coralberry, grape, poison ivy, buttonbush	kentucky coffeetree			hickory, black walnut	american elm	eastern redcedar			carolina snailseed, sedge sp., violets, whitegrass, virginia wild rye, boneset, snow on the mountain, panicgrass

47	36.141238	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.67	67	20	12	10	4	1	5	5	5	5		black locust	oak			eastern redcedar		cottonwood	basketflower, bermuda grass, johnson grass, bunchflower, multistall, milkweed, bluestem, inland sea oats, wild barley, fescue grass	
48	36.136505	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.53	53	12	12	10	4	3	3	1	5	3	poison ivy, poison oak, virginia creeper				american elm	eastern redcedar		cottonwood, osage orange	johnson grass, sedge sp., bunchflower, turkey tangle frogfruit, bluestem	
49	36.131587	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.55	55	12	12	10	2	1	5	3	5	5	virginia creeper				siberian elm				ragweed, johnson grass, mint, basketflower, thistle poppy, ironweed, cowpen daisy, prairie sunflower, yellow foxtail, sedge sp.	
50	36.131418	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.56	56	7	12	10	4	5	5	3	5	5	creeping cucumber, greenbriar, grape vine, poison ivy, poison oak, virginia creeper, western soapberry	black locust			american elm			cottonwood	johnson grass, wood sedge, milkweed, mint, oats, sedge sp., virginia wild rye, yellow foxtail, bunchflower, american pokeweed	
51	36.12875	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.43	43	7	6	10	2	1	4	3	5	5	virginia creeper							salt cedar	milkweed, johnson grass, bunchflower, inland sea oats, sorgum, rye sedge sp., canadian wild rye, wood sage	
52	36.132555	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.56	56	7	12	10	4	3	5	5	5	5	carolina snailseed, hackberry, creeping cucumber, western soapberry, virginia creeper			american elm	eastern redcedar		siberian elm	sedge sp., johnson grass, american pokeweed, switchgrass, canadian wild rye, panicum, dill, barley		
53	36.12426	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.57	57	12	12	10	4	3	5	3	5	3	poison sumac, mulberry, huckleberry, poison ivy, western soapberry			pecan	siberian elm, american elm	eastern redcedar			sedge sp., johnson grass, bermuda grass, big blue stem, american pokeweed, clovers, canadian wild rye	
54	36.118293	Ruderal Deciduous Woodland	Upland Forest	0.56	56	12	12	10	4	3	4	3	5	3	red mulberry, poison ivy, creeping cucumber, american pokeweed			siberian elm, american elm	eastern redcedar		cottonwood, kentucky coffee tree	canadian wild rye, sedge sp., johnson grass, dandelions, bermuda grass, foxtail		
55	36.095672	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.59	59	12	12	15	5	3	3	1	5	3	poison ivy, western soapberry		oak	pecan	siberian elm	eastern redcedar			johnson grass, canadian wild rye, little bluestem, big bluestem	
56	36.096444	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.55	55	12	12	10	4	3	5	3	5	1	chinaberry, sand plum	eastern redbud			siberian elm	eastern redcedar			johnson grass, big bluestem	
57	36.097563	High Plains: Riparian Hardwood Woodland	Riparian/BHF	0.55	55	12	12	10	4	3	5	3	5	1	chinaberry, sand plum	eastern redbud			siberian elm	eastern redcedar			johnson grass, big bluestem	
58	36.090239	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.59	59	12	12	10	5	3	4	3	5	5	scarlet pea, poison sumac		oak	pecan	american elm, siberian elm	eastern redcedar			johnson grass, inland sea oats, sedge sp., foxtail, bermuda grass, ragweed, sandbur, switchgrass	
59	36.092329	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.60	60	12	12	10	5	3	5	3	5	5	dogwood, poison sumac	black locust			siberian elm, american elm	eastern redcedar		buttonbush	johnson grass, foxtail, muletail, little bluestem, thistle, bermuda grass, bunchflower, oats, milkweed	
60	36.150334	Pleistocene Sands: Black Jack Oak Woodland	Upland Forest	0.62	62	12	12	10	5	3	5	5	5	5	gum bumelia, blackberry, fragrant sumac	eastern redbud			american elm	eastern redcedar		cottonwood	ragweed, lemon bedslain, whitemouth dayflower, turkey tangle frogfruit, johnson grass, switchgrass, pokeweed, common reed	
61	36.155386	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.45	45	7	6	10	2	1	4	5	5	5		illinois bundleflower							buttonbush, cottonwood	tory's rush, ragweed, american germander, grass-leaved rush, turkey tangle frogfruit, panicgrass, dogbane
62	36.143257	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.65	65	12	12	15	3	3	5	5	5	5	heart vine, virginia creeper, vines				siberian elm	eastern redcedar			foxtail, johnson grass, carex, dandelion, canadian wild rye, panicum, mint, carex	
63	36.142046	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.57	57	12	6	15	3	3	5	5	5	3	poison ivy, virginia creeper, heartvine, vines				siberian elm	eastern redcedar			johnson grass, sunflowers, blue flower, carex, carex, milkweed	
64	36.148679	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.53	53	7	12	10	5	3	5	3	5	3	chinaberry, poison ivy, ivy, western soapberry, sand plum, poison sumac		bur oak		elm	eastern redcedar		cottonwood	johnson grass, canadian wild rye, red winter wheat, sedge sp., muletail	
65	36.148319	High Plains: Bottomland Hardwood Forest	Riparian/BHF	0.65	65	12	12	10	6	5	5	5	5	5	rough dogwood, poison ivy, western soapberry, sand plum, poison sumac	catalpa	oak		field elm, american elm	eastern redcedar		willow	milkweed, muletail, inland sea oats, turkey tangle frogfruit, whitemouth dayflower, bunchflower, indian blanket, johnson grass, fescue grass	

Attachment B: Canton Lake WHAP Point Photos

1, N E S W



2, N E S W



3, N E S W



4, N E S W



5, NESW



7, NESW



10, N E S W



11, N E S W



12, N E S W



13, N E S W



14, N E S W



15, N E S W



16, N E S W



17, N E S W



18, N E S W



19, N E S W



20, N E S W



21, N E S W



22, N E S W



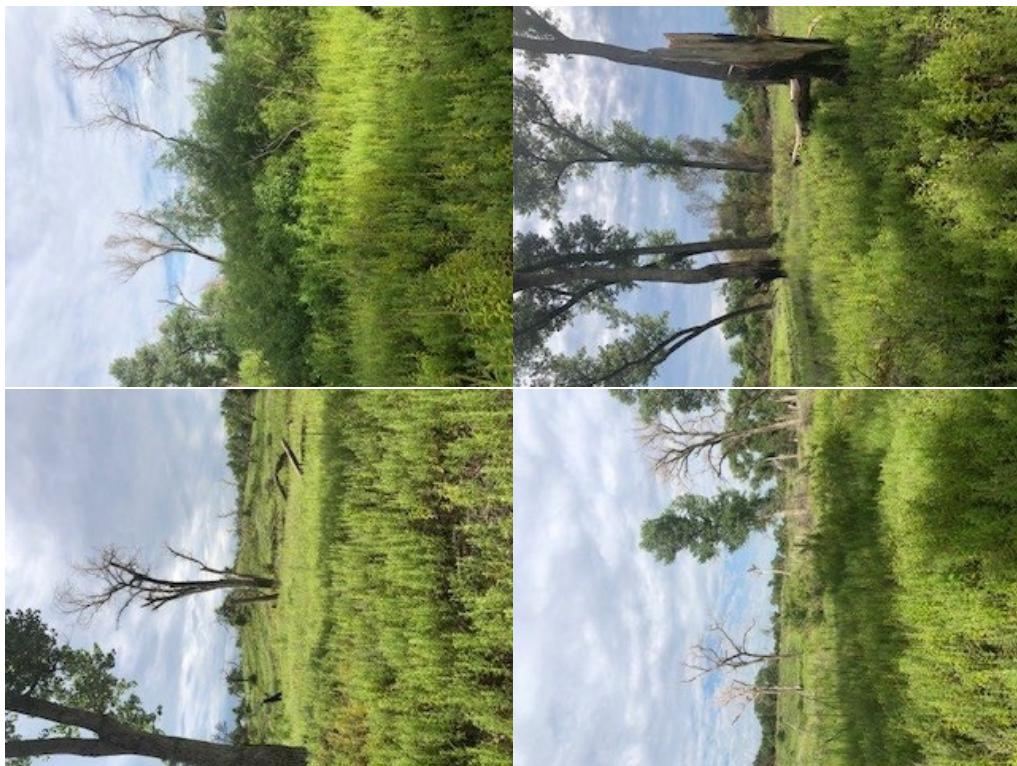
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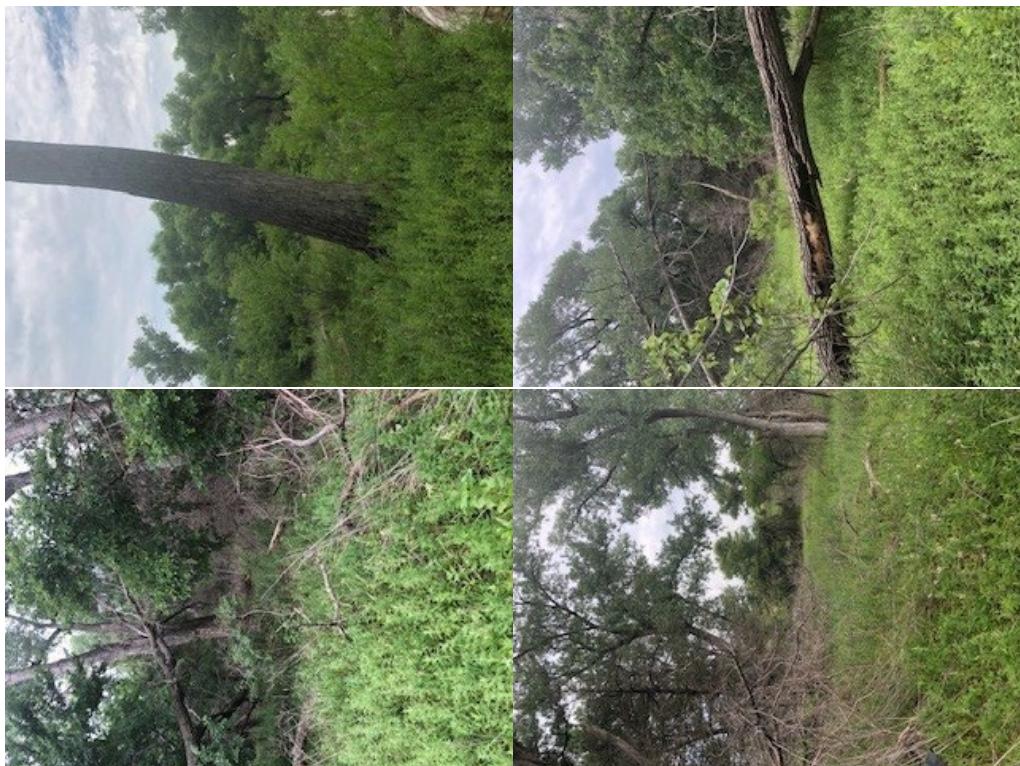
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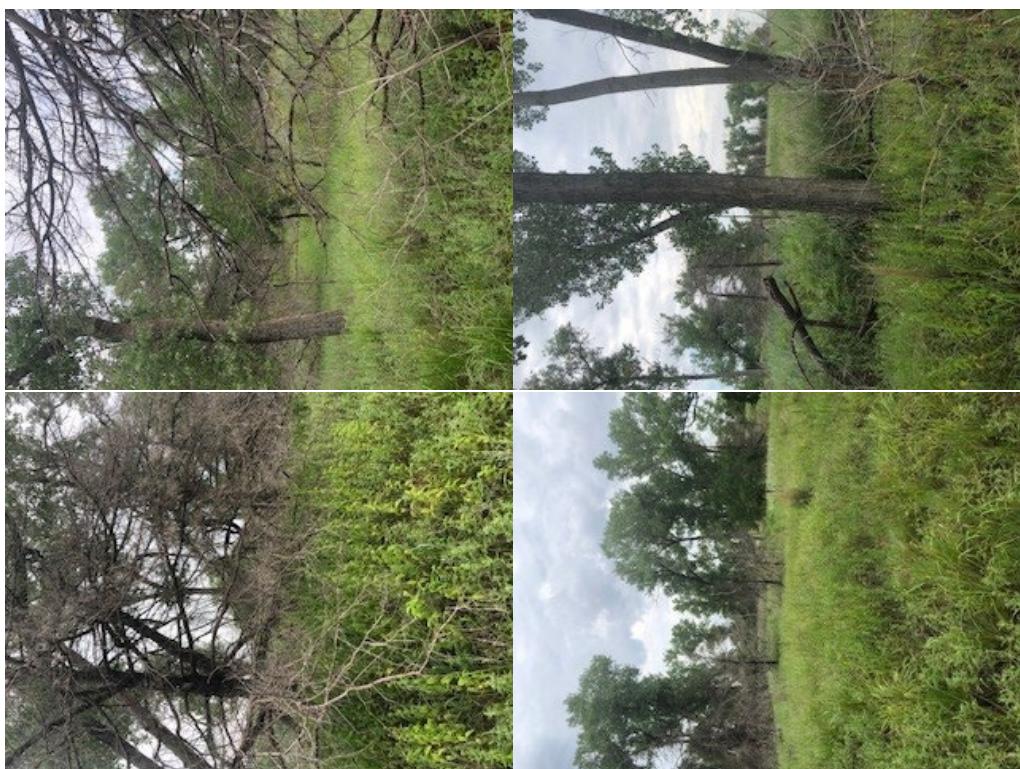
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30, N E S W



31, N E S W



34, N E S W



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36, N E S W



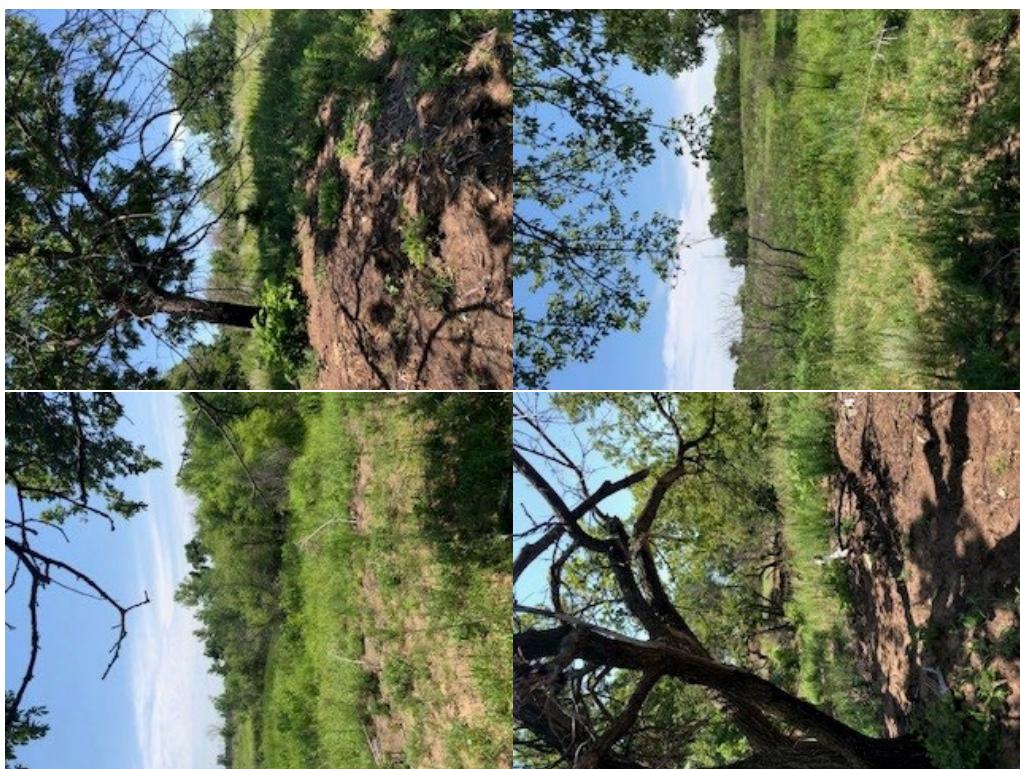
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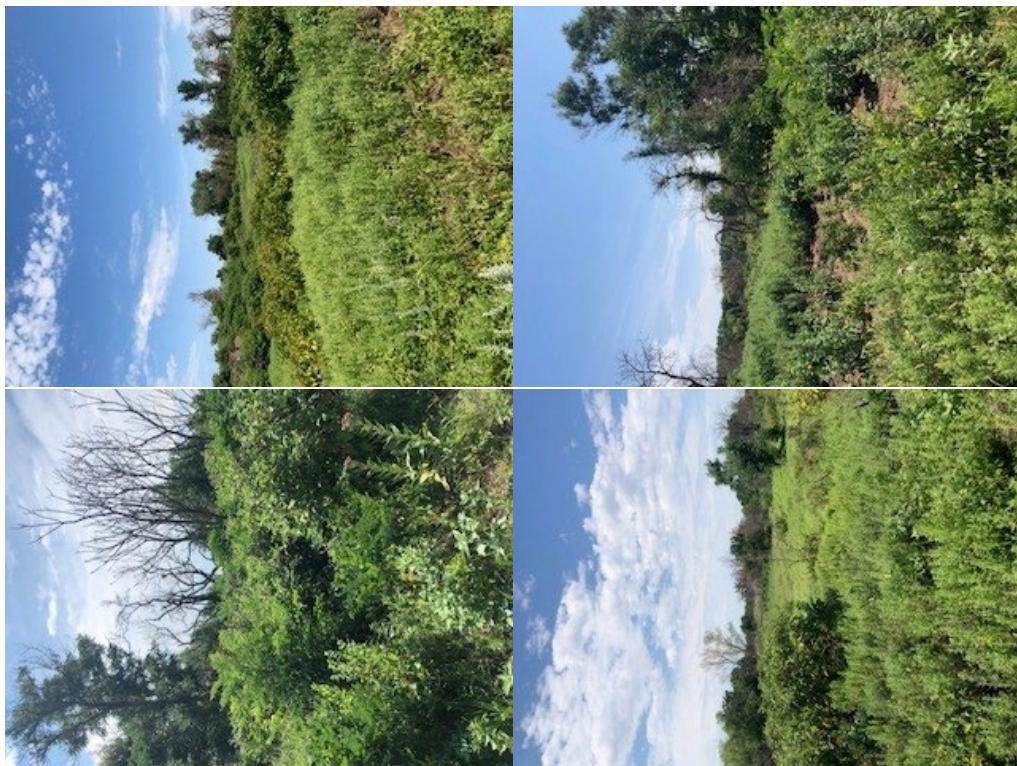
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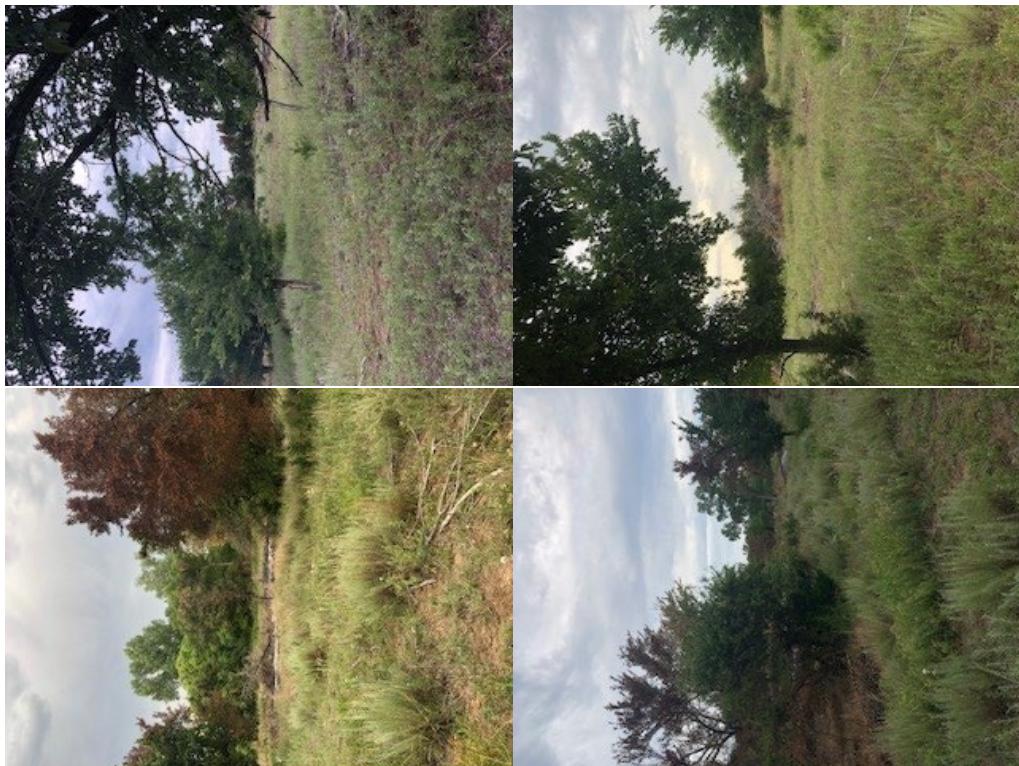
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42, N E S W



43, N E S W



44, N E S W



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46, N E S W



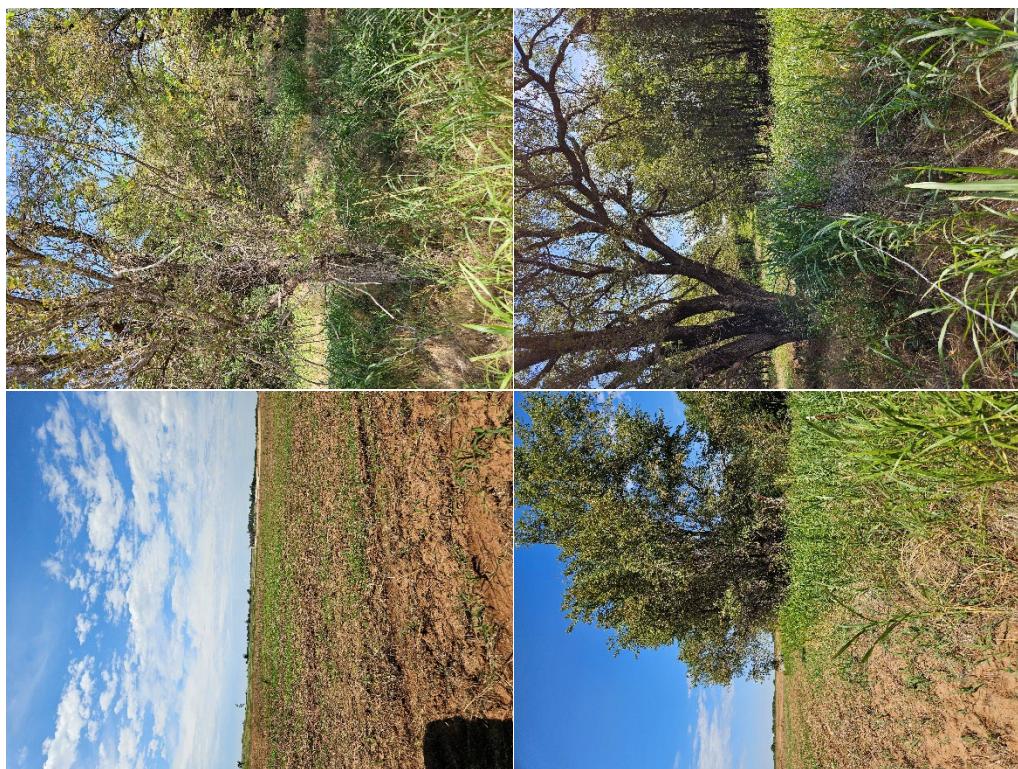
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48, N E S W



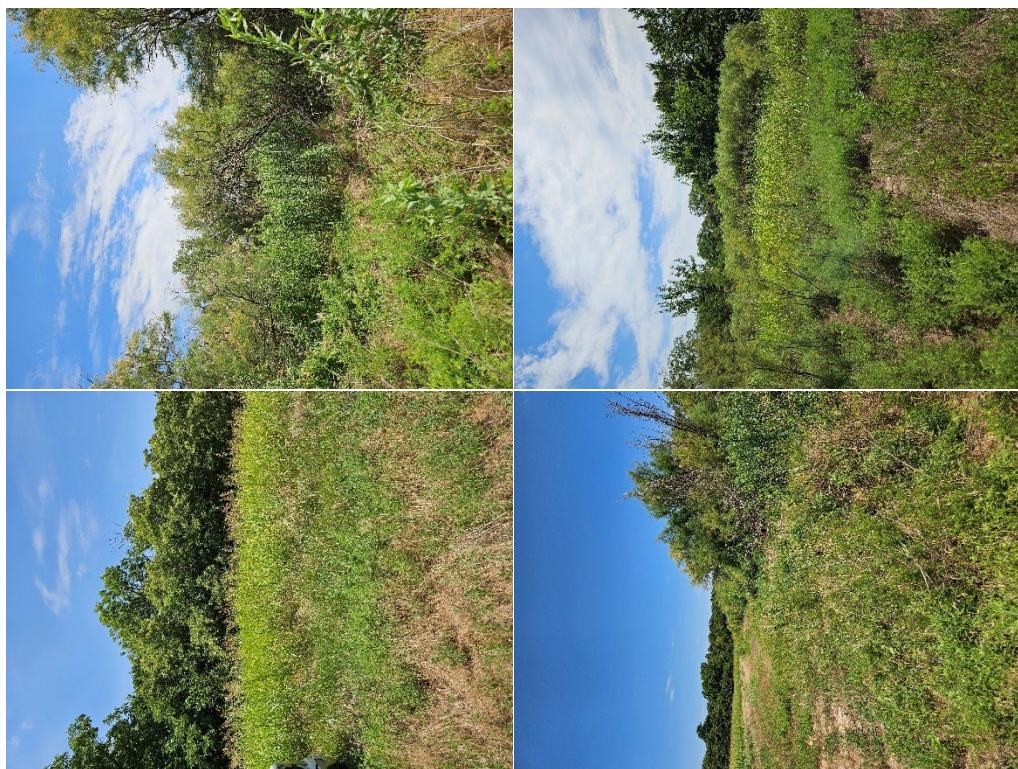
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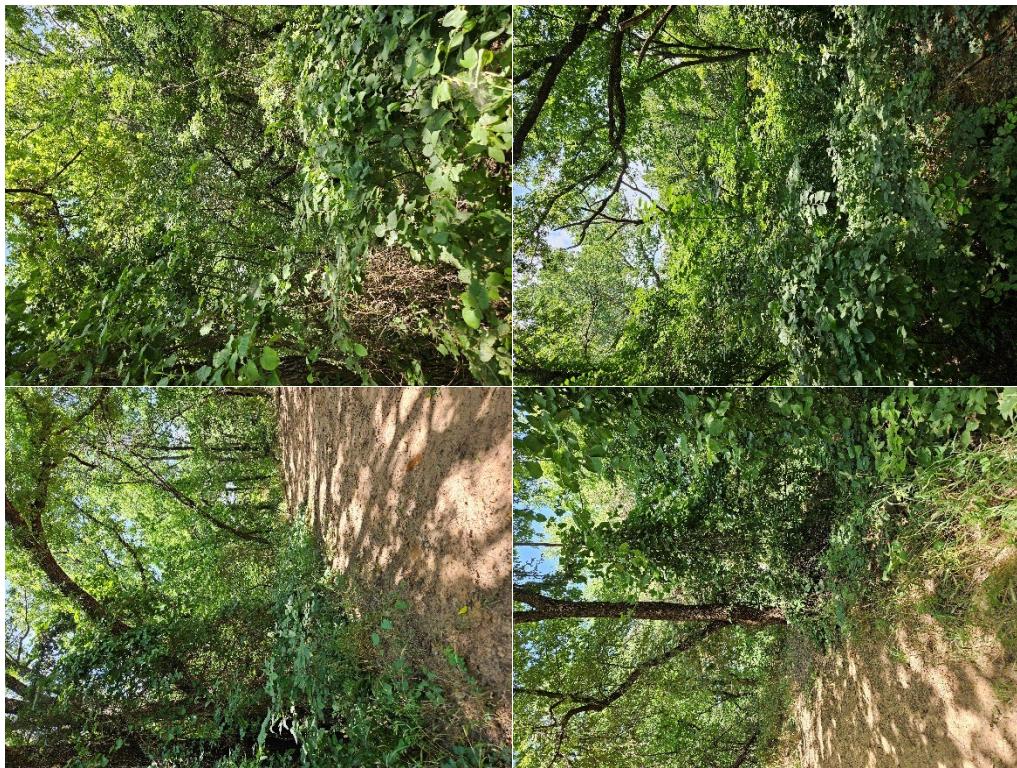
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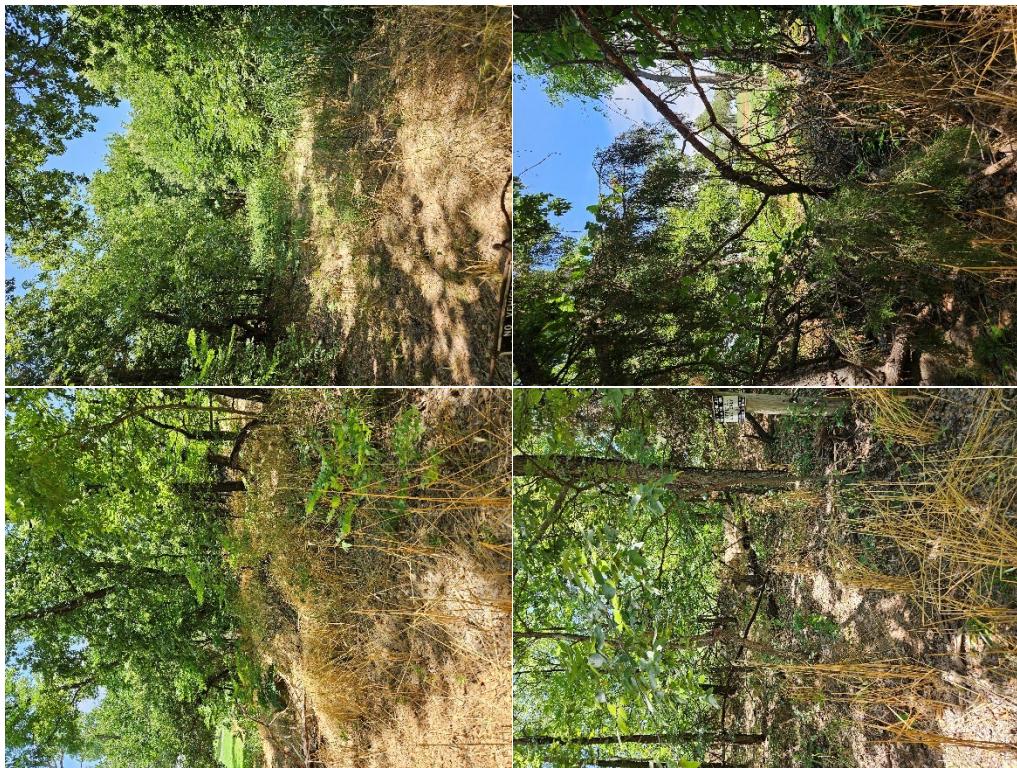
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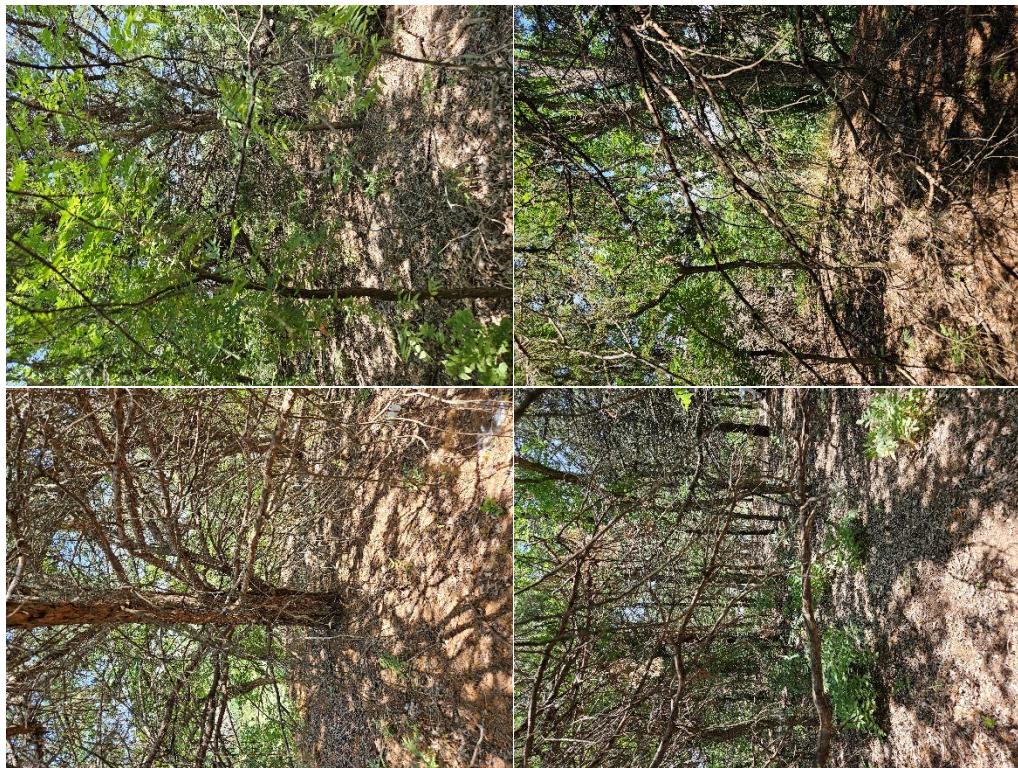
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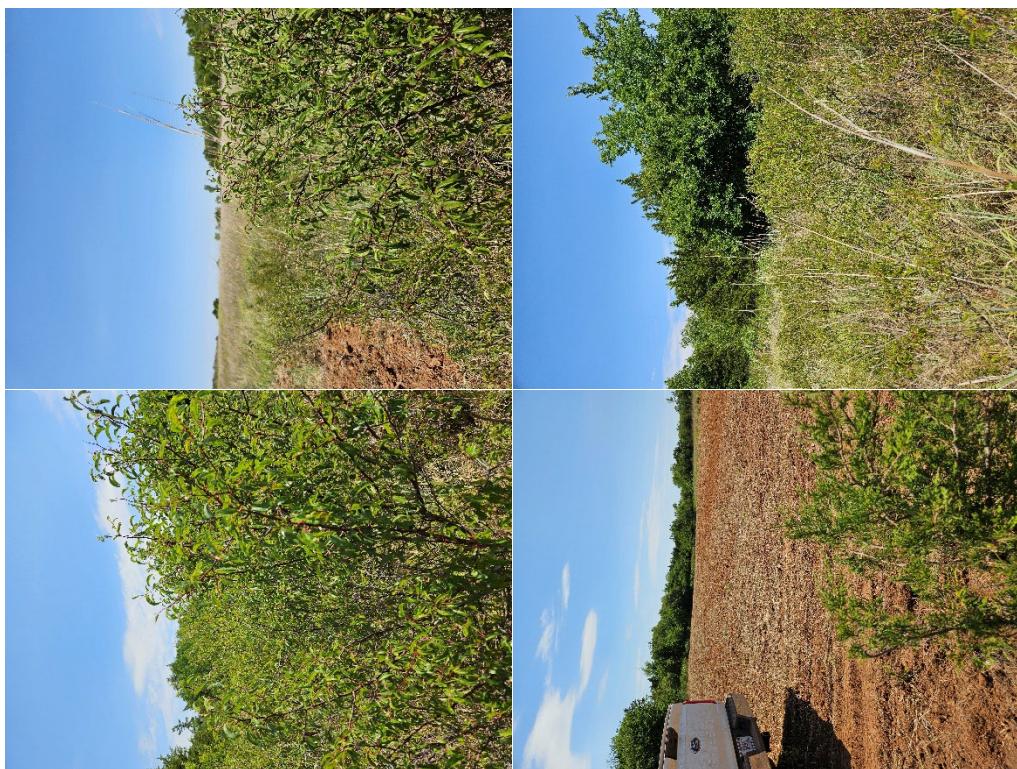
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58, N E S W



59, N E S W



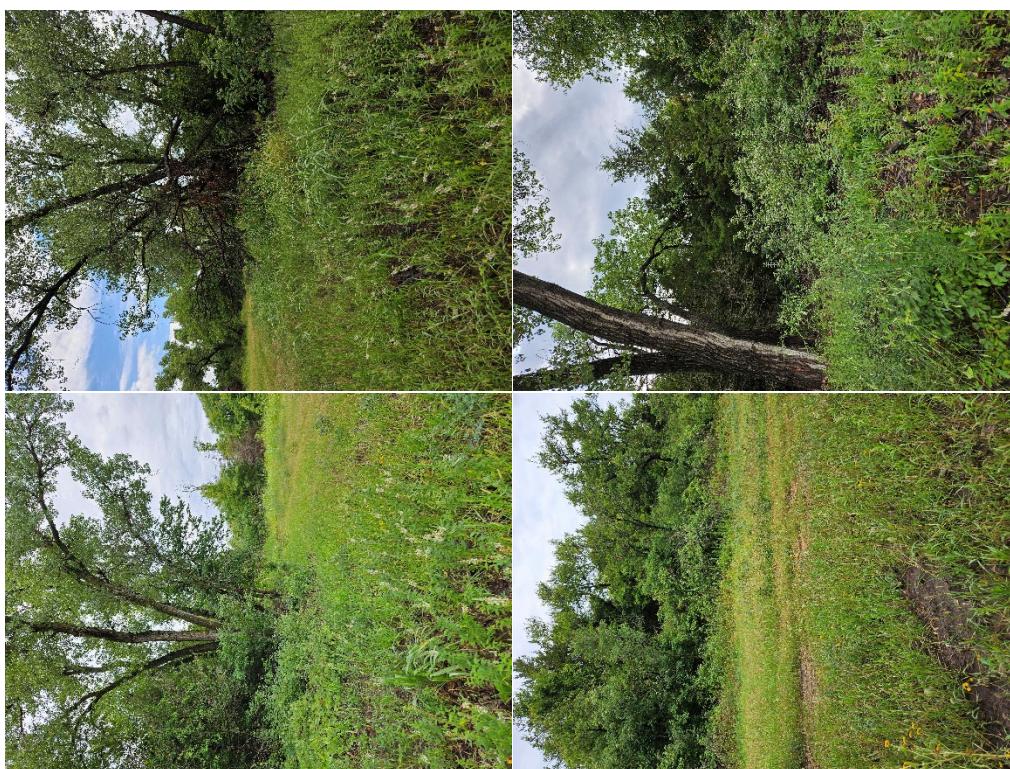
60, N E S W



61, N E S W



62, N E S W



63, N E S W



64, N E S W



65, N E S W



APPENDIX D - PERTINENT LAWS

- Antiquities Act of 1906, Public Law 59-209, 34 Stat. 225, 54 U.S.C. Sections 320301-320303: The first Federal law established to protect what are now known as "cultural resources" on public lands. It provides a permit procedure for investigating "antiquities" and consists of two parts: An act for the Preservation of American Antiquities, and Uniform Rules and Regulations.
- Historic Sites Act of 1935, Public Law 74-292, 49 Stat. 666, 16 U.S.C. Sections 461-467: Declares it to be a national policy to preserve for (in contrast to protecting from) the public historic (including prehistoric) sites, buildings, and objects of national significance. This act provides both authorization and a directive for the Secretary of the Interior, through the National Park Service, to assume a position of national leadership in the area of protecting, recovering, and interpreting national archeological historic resources. It also establishes an "Advisory Board on National Parks; Historic Sites, Buildings, and Monuments, a committee of eleven experts appointed by the Secretary to recommend policies to the Department of the Interior".
- Flood Control Act of 1938, Public Law 75-761: This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.
- Bald and Golden Eagle Protection Act, as amended, 16 U.S.C. Sections 668-668d: This Act prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or any manner, any bald eagle [or any golden eagle], alive or dead, or any part, nest, or egg thereof. The Act defines "take" as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.
- Flood Control Act of 1944, Public Law 78-534: Section 4 of the act as last amended in 1962 by Section 207 of Public Law 87-874 authorizes USACE to construct, maintain, and operate public parks and recreational facilities in reservoir areas and to grant leases and licenses for lands, including facilities, preferably to Federal, State or local governmental agencies.
- River and Harbor Act of 1946, Public Law 79-525: This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.
- Flood Control Act of 1946, PL 79-526: This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes including construction of Canton Lake. This law amends PL 78-534 to include authority to grant leases to non-profit organizations at recreational facilities in reservoir areas at reduced or nominal fees.
- Flood Control Act of 1954, Public Law 83-780: This act authorizes the construction, maintenance, and operation of public parks and recreational facilities in reservoir areas under the control of the Department of the Army and authorizes the Secretary

of the Army to grant leases of lands in reservoir areas deemed to be in the public interest.

- Fish and Wildlife Coordination Act, Public Law 85-624: This act, as amended, sets down the general policy that fish and wildlife conservation shall receive equal consideration with other project purposes and be coordinated with other features of water resource development programs. Opportunities for improving fish and wildlife resources and adverse effects on these resources shall be examined along with other purposes which might be served by water resources development.
- Public Law 86-717: This act provides for the protection of forest and other vegetative cover for reservoir areas under this jurisdiction of the Secretary of the Army and the Chief of Engineers.
- River and Harbor Act of 1962, Public Law 87-874: This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.
- Land and Water Conservation Fund Act of 1965, Public Law 88-578: This act established a fund from which U.S. Congress can make appropriations for outdoor recreation. This law makes entrance and user fees at reservoirs possible by deleting the words "without charge" from Section 4 of the 1944 Flood Control Act, as amended.
- Public Law 88-29: Authorized the Secretary of the Interior to inventory and classify outdoor recreation needs and resources and to prepare a comprehensive outdoor recreation plan taking into consideration the plans of the various Federal agencies, State, and other political subdivisions. It also states that the federal agencies undertaking recreational activities shall consult with the Secretary of the Interior concerning these activities and shall carry out such responsibilities in general conformance with the nationwide plan.
- Federal Water Project Recreation Act, Public Law 89-72: This act requires that not less than one-half the separable costs of developing recreational facilities and all operation and maintenance costs at Federal reservoir projects shall be borne by a non-Federal public body. A HQUSACE/OMB implementation policy made these provisions applicable to projects completed prior to 1965.
- Water Resources Planning Act, Public Law 89-80: This act established the Water Resources Council and gives it the responsibility to encourage the development, conservation, and use of the Nation's water and related land resources on a coordinated and comprehensive basis.
- Solid Waste Disposal Act, as amended, Public Law 89-272, 42 U.S.C. Sections 6901 et seq.: This act authorized a research and development program with respect to solid-waste disposal. It proposes (1) to initiate and accelerate a national research and development program for new and improved methods of proper and economic solid-waste disposal, including studies directed toward the conservation of natural resources by reducing the amount of waste and unsalvageable materials and by recovery and utilization of potential resources in solid waste; and (2) to provide

technical and financial assistance to State and local governments and interstate agencies in the planning, development, and conduct of solid-waste disposal programs.

- National Historic Preservation Act of 1966, Public Law 89-665, 54 U.S.C. Sections 300101 et seq.: This act provides for: (1) an expanded National Register of significant sites and objects; (2) matching grants to states undertaking historic and archeological resource inventories; and (3) a program of grants-in aid to the National Trust for Historic Preservation; and (4) the establishment of an Advisory Council on Historic Preservation. Section 106 requires that the President's Advisory Council on Historic Preservation have an opportunity to comment on any undertaking which adversely affects properties listed, nominated, or considered important enough to be included on the National Register of Historic Places.
- Flood Control Act of 1968, Section 210, Public Law 90-483: Restricted collection of entrance fee at USACE lakes and reservoirs to users of highly developed facilities requiring continuous presence of personnel.
- National Environmental Policy Act of 1969 (NEPA), Public Law 91-190, 42 U.S.C. Sections 4321 et seq.: NEPA declared it a national policy to encourage productive and enjoyable harmony between man and his environment, and for other purposes. Specifically, it declared a “continuing policy of the Federal Government... to use all practicable means and measures...to foster and promote the general welfare, to create conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.” Section 102 authorized and directed that, to the fullest extent possible, the policies, regulations and public law of the United States shall be interpreted and administered in accordance with the policies of the Act. It is Section 102 that requires consideration of environmental impacts associated with Federal actions. Section 101 of NEPA requires the federal government to use all practicable means to create and maintain conditions under which man and nature can exist in productive harmony.

Specifically, Section 101 of NEPA declares:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations
- Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings
- Attain the widest range of beneficial uses of the environment without degradation risk to health or safety or other undesirable and unintended consequences
- Preserve important historic, cultural, and natural aspects of our national heritage and maintain wherever possible an environment which supports diversity and variety of individual choice
- Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources

- River and Harbor Act of 1970 and Flood Control Act of 1970, Public Law 91-611: Establishes the requirement for evaluating the economic, social, and environmental impacts of projects.
- Public Law 92-347: This act revises Public Law 88-578, the Land and Water Conservation Fund Act of 1965, to require Federal agencies to collect special recreation user fees for the use of specialized sites developed at Federal expense and to prohibit the USACE from collecting entrance fees to projects.
- Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500: The Federal Water Pollution Control Act of 1948 (PL 845, 80th U.S. Congress), as amended in 1961, 1966, 1970, 1972, 1977, and 1987, established the basic tenet of uniform State standards for water quality. Public Law 92-500 strongly affirms the Federal interest in this area. "The objective of this act is to restore and maintain the chemical, physical and biological integrity of the Nation's waters."
- Federal Environmental Pesticide Control Act of 1972, Public Law 92-516, 86 Stat. 973, 7 U.S.C. Sections 136 et seq.: This act completely revises the Federal Insecticide, Fungicide and Rodenticide Act. It provides for complete regulation of pesticides to include regulation, restrictions on use, actions within a single State, and strengthened enforcement.
- Public Law 93-81: This law amends Section 4 of the Land and Water Conservation Fund Act of 1965, as amended, to require each Federal agency to collect special recreation use fees for the use of sites, facilities, equipment, or services furnished at Federal expense.
- Endangered Species Act of 1973, Public Law 93-205, 16 U.S.C. Sections 1531 et seq.: This law repeals the Endangered Species Conservation Act of 1969. It also directs all Federal departments/agencies to carry out programs to conserve endangered and threatened species of fish, wildlife, and plants and to preserve the habitat of these species in consultation with the Secretary of the Interior. This Act establishes a procedure for coordination, assessment, and consultation.
- Water Resources Development Act of 1974, Public Law 93-251: Section 107 of this law establishes a broad Federal policy which makes it possible to participate with local governmental entities in the costs of sewage treatment plan installations.
- Archeological and Historic Preservation Act of 1974, Public Law 93-291: The Secretary of the Interior shall coordinate all Federal survey and recovery activities authorized under this expansion of the 1960 act. The Federal Construction agency may transfer up to one percent of project funds to the Secretary with such transferred funds considered non-reimbursable project costs. This amends the Reserve Salvage Act of 1960 (PL-86-523).
- Public Law 93-303: This law amends Section 4 of the Land and Water Conservation Fund Act of 1965, as amended, to establish less restricted criteria under which Federal agencies may charge fees for the use of campgrounds developed and operated at Federal areas under their control.

- Safe Drinking Water Act, Public Law 93-523: The act assures that water supply systems serving the public meet minimum national standards for protection of public health. The act (1) authorizes the Environmental Protection Agency to establish Federal standards for protection from all harmful contaminants, which standards would be applicable to all public water systems, and (2) establishes a joint Federal-State system for assuring compliance with these standards and for protecting underground sources of drinking water.
- Public Law 94-422: Expands the role of the Advisory Council on Historic Preservation. Section 201 amends Section 106 of the National Historical Preservation Act of 1966 to say that the Council can comment on activities which will have an adverse effect on sites either included in or eligible for inclusion in the National Register of Historic Places.
- Clean Water Act of 1977, as amended, Public Law 95-217: This Act amends the Federal Water Pollution Control Act Amendments of 1972 and extends the appropriations authorization. The Clean Water Act is a comprehensive Federal water pollution control program that has as its primary goal the reduction and control of the discharge of pollutants into the nation's navigable waters. The Clean Water Act of 1977 has been amended by the Water Quality Act of 1987, Public Law 100-4.
- American Indian Religious Freedom Act, Public Law 95-341: The Act protects the rights of Native Americans to exercise their traditional religions by ensuring access to sites, use and possession of sacred objections, and the freedom to worship through ceremonials and traditional rites.
- Endangered Species Act Amendments of 1978, Public Law 95-632: This law amends the Endangered Species Act of 1973. Section 7 directs agencies to conduct a biological assessment to identify threatened or endangered species that may be present in the area of any proposed project. This assessment is conducted as part of a Federal agency's compliance with the requirements of Section 102 of NEPA.
- Archeological Resources Protection Act of 1979, Public Law 96-95: This Act protects archeological resources and sites that are on public and tribal lands and that fosters increased cooperation and exchange of information between governmental authorities, the professional archeological community, and private individuals. It also establishes requirements for issuance of permits by the Federal land managers to excavate or remove any archeological resource located on public or Indian lands.
- Supplemental Appropriations Act, 1983, Public Law 98-63: This Act authorized the USACE Volunteer Program. The United States Army Chief of Engineers may accept the services of volunteers and provide for their incidental expenses to carry out any activity of the USACE, except policymaking or law or regulatory enforcement.
- Water Resources Development Act of 1986, Public Law 99-662: Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.
- North American Wetland Conservation Act of 1989, Public Law 101-233: This act directs the conservation of North American wetland ecosystems and requires

agencies to manage their lands for wetland/waterfowl purposes to the extent consistent with missions.

- Americans with Disabilities Act of 1990 (ADA), PL101-336, as amended by the ADA Amendments Act of 2008 (PL110-325): This law prohibits discrimination based on disabilities in, among others, the area of public accommodations and requires reasonable accommodations for persons with disabilities.
- Native American Graves Protection and Repatriation Act, Public Law 101-601: This act requires Federal agencies to return Native American human remains and cultural items, including funerary objects and sacred objects, to their respective peoples.
- Water Resources Development Act (WRDA) of 1992 PL 102-580: This act authorizes the USACE to accept contributions of funds, materials and services from non-Federal public and private entities to be used for managing recreational sites and facilities and natural resources.
- Omnibus Reconciliation Act of 1993, Public Law 103-66: Day use fees - authorizes the USACE to collect fees for the use of developed recreational sites and facilities, including campsites, swimming beaches and boat ramps.
- WRDA 1996, PL 104-303: authorizes recreation and fish and wildlife mitigation as purposes of a project, to the extent that the additional purposes do not adversely affect flood control, power generation, or other authorized purposes of a project.
- Omnibus Parks and Public Lands Management Act of 1996, Public Law 104-333: This act created an advisory commission to review the current and anticipated demand for recreational opportunities at lakes or reservoirs managed by the Federal Government and to develop alternatives to enhance such opportunities for such use by the public.
- Neo-tropical Migratory Bird Conservation Act of 2000, Public Law 106-147: This act promotes the conservation of habitat for neo-tropical migratory birds.

APPENDIX E – ACRONYMS

ac-ft	Acre Feet
AQI	Air Quality Index
BMP	Best Management Practices
CAP	Climate Action Plan
CRMP	Cultural Resources Management Plan
CWA	Clean Water Act
DC	District Commander
DF	Deciduous Forest
DQC	District Quality Control
DQCB	District Quality Control Board
DM	Design Memorandum
EA	Environmental Assessment, NEPA Document
EMS	Ecological Mapping System
EOP	Environmental Operating Principles
EP	Engineering Pamphlet
EPA	United States Environmental Protection Agency
ER	Engineering Regulation
ESA	Environmentally Sensitive Area
°F	Degrees Fahrenheit
FONSI	Finding of No Significant Impact
FWCA	Fish and Wildlife Coordination act of 1958
GIS	Geographical Information Systems
HDR	High Density Recreation
HQ	USACE Headquarters (also HQUSACE)
IH	Interstate Highway
IPaC	Information for Planning and Consultation
KR	King Ranch (also King Ranch Bluestem)
LDR	Low Density Recreation
LEED	Leadership in Energy and Environmental Design
MP	Master Plan or Master Planning
MRML	Multiple Resource Management Lands
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act, 1970
NGVD/NGVD29	National Geodetic Vertical Datum (1929)
NHPA	National Historic Prevention Act
NRHP	National Register of Historic Places
NOA	Notice of Availability
NRCS	Natural Resource Conservation Service
NRHP	National Registry of Historic Places
NVCS	National Vegetation Classification System
NWI	National Wetland Inventory
ODWC	Oklahoma Department of Wildlife Conservation
O&M	Operations and Maintenance
OK	Oklahoma
OMB	Office of Management and Budget

OMBIL	Operations and Maintenance Business Information
OMP	Operations Management Plan for a specific lake Project
OPM	Operations Project Manager
PDT	Project Development Team
PL	Public Law
PM	Project Management or Project Manager
PMP	Project Management Plan
PO	Project Operations
RBLH	Riparian Bottomland Hardwoods
RBS	Recreational Boating Survey
RIFA	Red Imported Fire Ant
RPEC	Regional Planning and Environmental Center
RTEST	Rare, Threatened, and Endangered Species of Texas
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SGCN	Species of Greatest Conservation Need
SH	State Highway
SHPO	State Historical Preservation Office
SMPS	Shoreline Management Policy Statement
SIP	State Implementation Plan
SWA	State Wildlife Area
TPWD	Texas Parks and Wildlife Department
U.S.	United States (also US)
USACE	United States Army Corps of Engineers
USFWS	U. S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VM	Vegetative Management Area
WDA	Workforce Development Area
WHAP	Wildlife Habitat Appraisal Procedure
WM	Wildlife Management Area