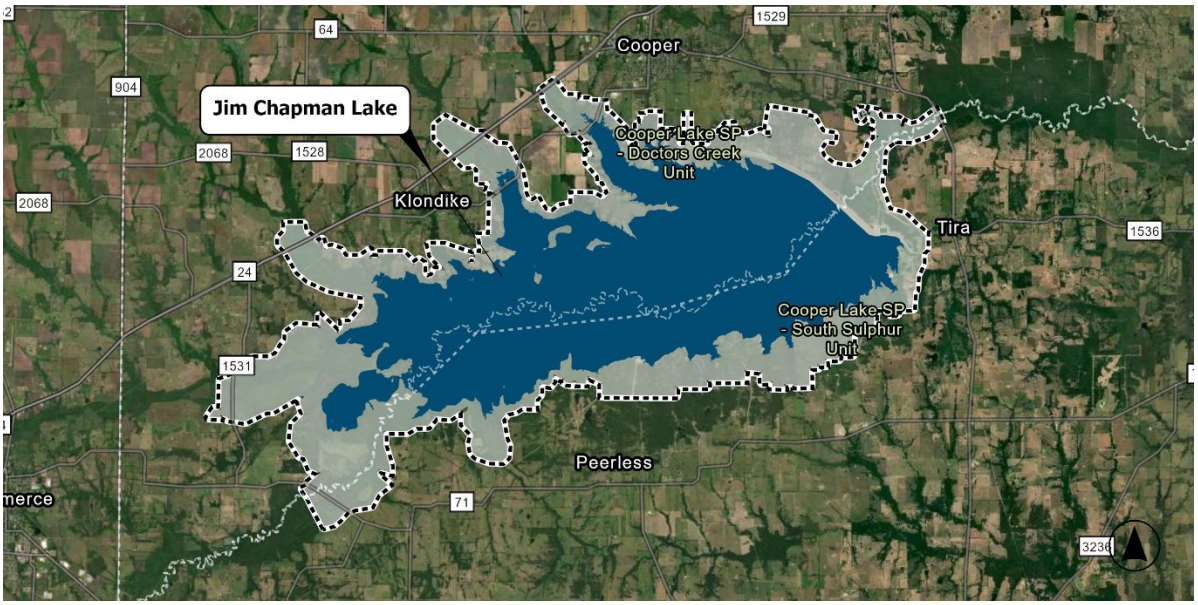
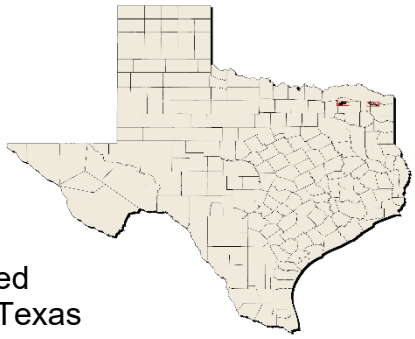


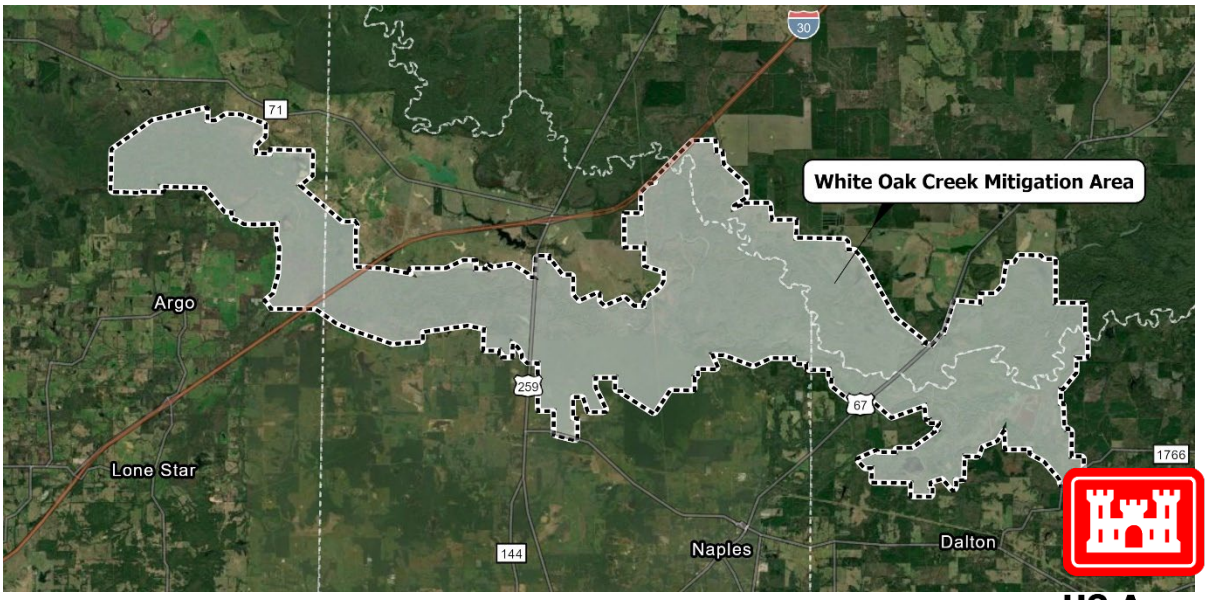
Draft Jim Chapman (Cooper) Lake and White Oak Creek Mitigation Area Master Plan

February 2023



Sulphur River Basin, Texas

Cooper Lake Subwatershed
Hopkins and Delta Counties, Texas
Bowie, Cass, Morris, and Titus Counties, Texas



US Army Corps of Engineers®

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EXECUTIVE SUMMARY

Jim Chapman (Cooper) Lake and White Oak Creek Mitigation Area Master Plan
U.S. Army Corps of Engineers
Prepared by the Southwestern Division
Regional Planning and Environmental Center (RPEC)
February 2023

ES.1 PURPOSE

The Jim Chapman Lake and White Oak Creek Mitigation Area Master Plan (hereafter Plan or Master Plan) is a complete revision of the 1987 *Jim Chapman Lake Master Plan* and the 1990 *White Oak Creek Mitigation Area Supplement* of 1990. The revision is a framework built collaboratively to guide appropriate stewardship of the U.S. Army Corps of Engineers (USACE) administered resources at Jim Chapman Lake and White Oak Creek Mitigation area over the next 25 years. The 1987 and 1990 Master Plans have served well past their intended 25-year planning horizon and do not reflect the current population around the lake and evolving regional recreation needs.

Jim Chapman Lake as it is now known as was authorized in 1955 as a multipurpose project. Originally called Cooper Lake, the name was changed to Jim Chapman by an Act of Congress in 1998 in honor of local congressman from nearby Sulphur Springs. White Oak Creek Mitigation Area was purchased primarily to mitigate for the loss of bottomland hardwood and wildlife habitat that was flooded from the creation of Jim Chapman Lake. Located on the Sulphur River, Jim Chapman Lake and White Oak Creek Mitigation Area are an integral component of the larger Sulphur River Basin. The congressionally authorized purposes for Jim Chapman Lake are flood control, water supply, environmental stewardship, and recreation, with wildlife mitigation authorized within the White Oak Creek Mitigation Area. In addition to these primary purposes, the USACE has an inherent mission for environmental stewardship of project lands as reflected in ER-1130-2-540 change 2 dated July 2005, while working closely with stakeholders and partners to provide regionally important outdoor recreation opportunities.

Utilizing input from the public, stakeholders, and subject matter experts, the Master Plan and supporting documentation provide an inventory and analysis, goals, objectives, and recommendations for USACE lands and waters at Jim Chapman Lake and White Oak Creek Mitigation Area, Texas. The Master Plan is primarily a land use and outdoor recreation strategic plan and thus does not address the specific authorized purposes of flood risk management or water supply. Although water management is addressed in the USACE Water Control Manual for Jim Chapman Lake, 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.

The 1987 Master Plan included a total of 32,068 acres of total lands acquired in fee including 19,280 acres of surface water and 12,788 land acres at the normal or conservation pool elevation of 440.0 feet National Geodetic Vertical Datum of 1929 (NGVD29) and 12,788 acres of land above the conservation pool with a shoreline of approximately 125 miles. The acres figure was derived using land measurement technology dating from the 1950s and has been used since 1987 to describe the size of the pool at the normal elevation. 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 1987 Master Plan. Using GIS measurements, Jim Chapman Lake has a water surface of 17,958 acres at conservation pool of 440.0 feet NGVD29 and approximately 14,081 acres of federal land lie above the conservation pool with a shoreline of approximately 78 miles at the top of the conservation pool. The White Oak Creek Mitigation Areas contains an addition 25,983 acres, bringing the total land acres as calculated to 40,064 and total fee owned property to 58,022.

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 21 March 2022 a public information meeting was held at the Hopkins County Regional Civic Center to inform the public of the intent to revise the Master Plan. The public input period remained open for 30 days from 21 March 2022 to 22 April 2022. At the public information meeting a presentation was given that included the following topics:

- What is in a Master Plan
- What is not in the Master Plan
- Purpose for Revising a Master Plan
- Overview of the National Environmental Policy Act (NEPA) process
- Master Planning Process
- Instructions for submitting comments

For Jim Chapman Lake and White Oak Creek Mitigation Area, the USACE did not receive any comments during the scoping comment period.

ES.3 RECOMMENDATIONS

The following land and water classification changes (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 Jim Chapman Lake and White Oak Creek Mitigation Area was reclassified either by a change in nomenclature required by regulation or changes needed to identify actual and projected use. Changes to the

acreage differentiates areas set aside for intensive recreation and acreage for Environmentally Sensitive Areas and Multiple Resource Management.

Table ES.1 Change from 1987 Land and Water Surface Classifications to Proposed 2023 Land and Water Surface Classification

Prior Land Classifications (1987)*	Acres	Proposed Land Classifications (2023)	Acres	2023-1987 Difference
Project Operations	371	Project Operations (PO)	512	141
Recreation – Intensive Use	2,195	High Density Recreation (HDR)	1,957	(238)
-	-	Environmentally Sensitive Areas (ESA)	7,213	7,213
Recreation – Low Density	892	Multiple Resource Management – Low Density Recreation (LDR)	1,283	391
Wildlife Management	10,620	Multiple Resource Management – Wildlife Management (WM)	3,116	(7,504)
Mitigation (1990 White Oak Creek Mitigation Area MP)	25,983	Mitigation	25,983	0
Prior Water Surface Classifications (1987)	**Acres**	**Proposed Water Surface Classifications (2023)**	**Acres**	**2023-1987 Difference**
Permanent Pool	17,958	Open Recreation	17,901	-57
-	-	Designated No-Wake	27	27
-	-	Restricted	30	30
TOTAL LAND	**40,061**	-	**40,064**	3
TOTAL WATER SURFACE	**17,958**	-	**17,958**	0
TOTAL FEE	**58,019**	-	**58,022**	3

*1987 totals as calculated are presented in this table. Total Acreage differences from the 1987 Master Plan and the 1987 calculated total are due to improvements in measurement technology. 1987 recorded acres are Project Operations: 348; Recreation – Intensive Use 2,100; Recreation – Low Density 860; Wildlife Management 9,480; 1990 White Oak Creek Mitigation Area 25,500. Differences in the totals from 1987 to 2022 totals are due to improvements in measurement technology, deposition/siltation, and erosion. Totals also differ due to rounding while adding parcels.

The surface water acreages of the conservation pool and USACE terrestrial lands 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 1987 Master Plan. The water surface and shoreline at conservation pool were measured using LiDAR technology, providing more precise measurements of the water surface. Some changes 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 Jim Chapman Lake and White Oak Creek Mitigation Area. Chapter 2 consists of an inventory and analysis of Jim Chapman Lake and White Oak Creek Mitigation Area and associated land resources. Chapters 3 and 4 lay out management goals, resource objectives, and land classifications. Chapter 5 is the resource management plan that identifies how project lands will be managed for each 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 the lake and mitigation areas. Chapter 7 identifies the public involvement efforts and stakeholder input process for the development of the Master Plan, and Chapter 8 gives a summary of the changes in land classification from the previous Master Plans to the proposed Draft. Finally, the appendices include information and supporting documents for this Master Plan revision, including Land and Water Surface Classifications and Park Plate Maps (Appendix A).

An Environmental Assessment was developed with the Master Plan, which analyzed alternative management scenarios for Jim Chapman Lake and White Oak Creek Mitigation Area, in accordance with federal regulations including the National Environmental Policy Act of 1969, as amended (NEPA); regulations of the Council on Environmental Quality; and USACE regulations, including Engineer Regulation 200-2-2: 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 1987 and 1990 Master Plans, 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 at the time the action takes place.

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CHAPTER 1 – INTRODUCTION

1.1 GENERAL OVERVIEW OF JIM CHAPMAN LAKE

This Draft Master Plan is comprised of two separate areas: Jim Chapman Lake and the White Oak Creek Mitigation Area. The two areas combined are comprised of approximately 58,022 fee simple lands (terrestrial and water surface). Of this, 14,081 acres of land and 17,958 acres of water are at Jim Chapman Lake, and 25,983 acres of land at the White Oak Creek Mitigation Area.

Jim Chapman Lake is located at river mile (RM) 3.9 on the Sulphur River within the Sulphur River Basin. The damsite is in Delta and Hopkins Counties, four miles south of the town of Cooper and eight miles west of Commerce, Texas (Figure 1.1). The construction of Jim Chapman Lake began in 1986, and final storage began in 1991.

Jim Chapman Lake is an integral part of the USACE regional plan for flood control and water conservation in the Sulphur River Basin. The total river basin is 3,558 square miles, while the drainage area upstream of Jim Chapman Lake Dam is 476 square miles. 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 leases for park and recreation purposes and through consultation with Tribal Nations with local interest.

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 Jim Chapman Lake and White Oak Creek Mitigation Area as reflected in ER-1130-2-540 change 2 dated July 2005. 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 Jim Chapman Lake. The Jim Chapman Lake Master Plan was written as Design Memorandum No. 10 in 1987 and has served 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.

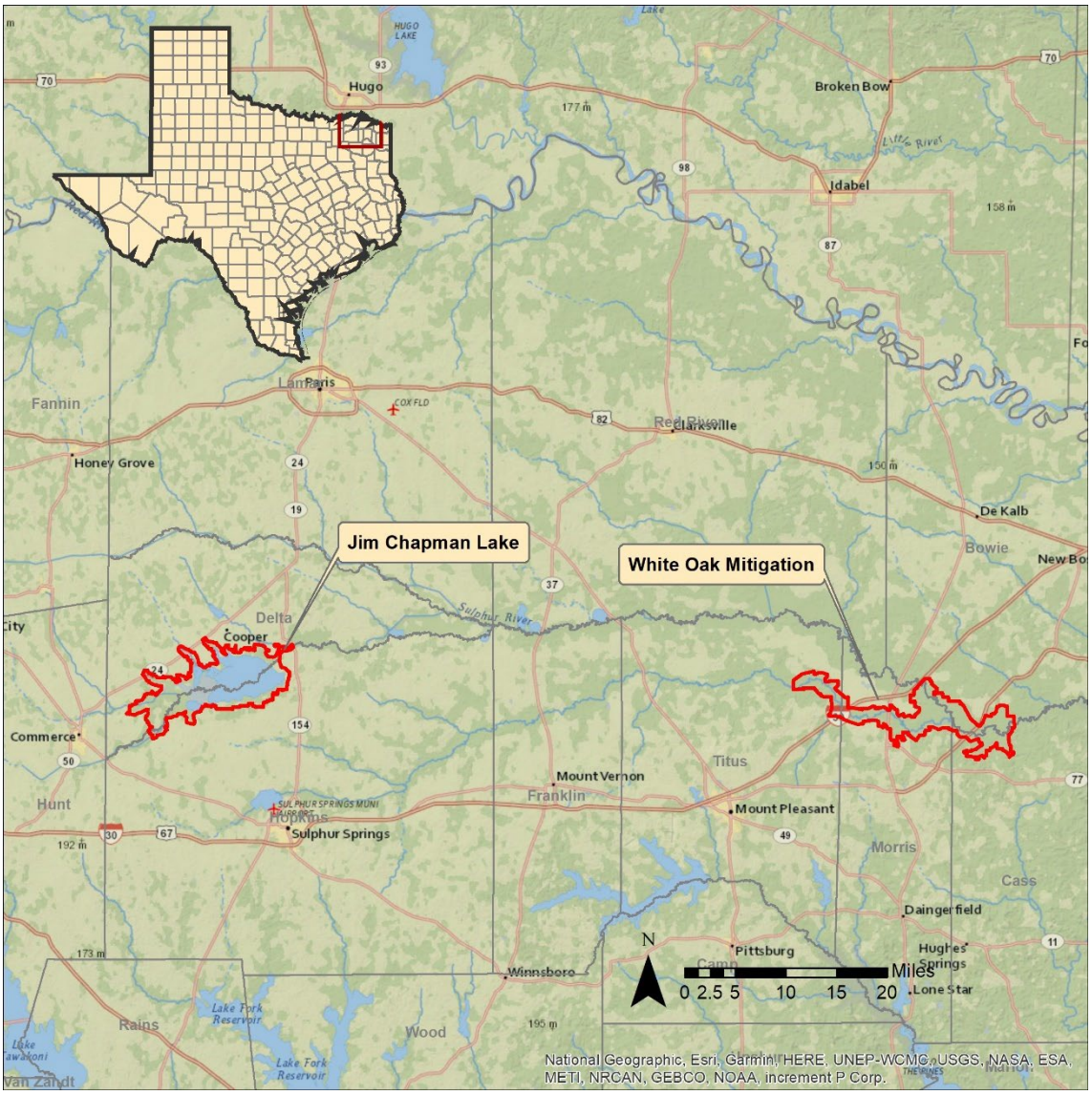

Figure 1.1 Vicinity Map of Jim Chapman Lake and White Oak Creek Mitigation Area

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 fish and wildlife and recreation missions, and is part of the White Oak Creek Mitigation Area. 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 reduces stormwater runoff and soil erosion, mitigates air

pollution, and moderates the temperature. 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.*

The USACE mission for the Responses to Climate Change Program is:

> *To develop, implement, and assess adjustments or changes in operations and decision environments to enhance resilience or reduce vulnerability of USACE projects, systems, and programs to observed or expected changes in climate.*

1.2 GENERAL OVERVIEW OF WHITE OAK CREEK MITIGATION AREA

The White Oak Creek Mitigation Area, located in Bowie, Cass, Morris, and Titus counties, Texas, was created to mitigate for the creation of Cooper Lake (now Jim Chapman Lake), which resulted in the significant loss of bottomland hardwood habitat. The White Oak Creek Mitigation Area Master Plan was written as a supplement to the original Jim Chapman Lake Master Plan in 1990. Section 6.2 *Wildlife Habitat Mitigation and the White Oak Creek Mitigation Area* gives more detail on the creation of the White Oak Creek Mitigation Area.

1.3 PROJECT AUTHORIZATION

Jim Chapman Lake was authorized for construction by the Flood Control Act of 1955 (Public Law No. 218, 84th Congress, 1st Session). Although originally it was named Cooper Reservoir. The name change to Jim Chapman Lake was by order of President Clinton in honor of the local congressman, from nearby Sulfur Springs in 1998. The White Oak Creek Mitigation Area was Authorized by Congress in Public Law 99-662, the Water Resources Development Act of 1986 after the *Report on Acquisition of Wildlife Mitigation Lands* was sent to the Board of Engineers for Rivers and Harbors in September of 1981. This report recommendations were endorsed by the Board of Engineers for Rivers and Harbors and The Report of the Chief of Engineers to the Secretary of the Army.

1.4 PROJECT PURPOSE

Jim Chapman Lake and White Oak Creek Mitigation Area together are a multipurpose water resource and mitigation land project constructed and operated by the USACE. Jim Chapman Lake was designed to provide flood protection on the Sulphur River when operated in conjunction with the larger Sulphur River Basin System, and the White Oak Creek Mitigation Area was designed to mitigate the loss of bottomland hardwood by the construction of the lake. The Lake and Mitigation Area have the following primary purposes authorized by the laws listed above:

Jim Chapman Lake:

- Flood control
- Water supply
- Fish and wildlife management
- Recreation

White Oak Creek Mitigation Area

- Mitigation

In addition to these primary purposes, 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.

1.5 MASTER PLAN PURPOSE AND SCOPE

In accordance with Engineering Regulation (ER) 1130-2-550 Change 07, dated 30 January 2013 and Engineering Pamphlet (EP) 1130-2-550 Change 05, dated 30 January 2013, 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 *Jim Chapman Lake and White Oak Creek Mitigation Area 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 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 Jim Chapman Lake and White Oak Creek Mitigation Area 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 Jim Chapman Lake and White Oak Creek Mitigation Area'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 Jim Chapman 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 or real property outgrants. Additionally, the Plan does not address the flood risk management, water supply, or fish and wildlife purposes of Jim Chapman Lake with respect to management of the water level in the lake.

The previous Plans were 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, increased urbanization, 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 Jim Chapman Lake, White Oak Creek Mitigation Area, and the region in general. In response to these escalating pressures and trends, a full revision of the 1987 Master Plan and the 1990 Supplement is required as set forth in this Master Plan. The Master Plan revision will update land classifications and include new resource management goals and objectives.

1.6 BRIEF WATERSHED AND PROJECT DESCRIPTION

Jim Chapman Lake is located on the Sulphur River in the Sulphur River Basin. The oblong basin averages 25 miles in width. The basin encompasses 3,558 square miles. From the eastern state line of Texas, the Sulphur River flows into Arkansas and joins with the Red River, a tributary of the Mississippi River. The Sulphur River Basin has the largest average watershed yield of any major river basin in Texas.

Approximately 24% of the basin is forested., Wright Patman Lake, downstream of both Jim Chapman Lake and the White Oak Creek Mitigation Area, is also located within this basin and operated by the USACE.

Jim Chapman Dam (Photo 1.1) consists of a rolled earthfill embankment, one uncontrolled ogee weir outlet and supporting facilities with a crest elevation of 446.2 NGVD29. The embankment is about 28,070 feet long with a maximum height of 79.5 feet above the streambed. The top of the dam, elevation 464.5, is 30 feet wide. Official Real Estate information for the Lake and Mitigation areas can be found in Section 2.12.

Photo 1.1 Cooper Dam at Jim Chapman Lake (USACE Photo)

1.7 DESCRIPTION OF RESERVOIR

Jim Chapman Lake covers approximately 18,019 surface acres of water when at the top of conservation pool (440.0 NGVD29). The deepest part of the lake is located directly upstream of the dam and is approximately 55 feet deep, while depths gradually decrease further west and southwest of the dam. The top of the flood control pool is elevation 446.2 feet NGVD29. At the conservation pool, the lake was designed to accommodate 260,332 acre-feet for water supply.

1.8 PROJECT ACCESS

Jim Chapman Lake is easily accessed by several primary, secondary, and tertiary roads. Texas State Highway (TX)-19 runs north to south along the eastern edge of the lake parallel to the dam. TX-19 intersects TX-19 north of the lake heading West through the town of Cooper where it intersects with TX-24 which runs across the northern and western parts of the lake.

1.9 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. The *Supplement No. 1 to the Master Plan, Cooper Lake, Sulphur River, Texas*, dated January 1990, presents a program for development and management of the Jim Chapman Lake area as well as the White Oak Creek Mitigation Area for recreation, mitigation, and other land and water uses. The following are DMs for Jim Chapman Lake:

- DM No. 1 - Hydrology and Hydraulics Analysis, January 1958
- DM No. 1 - A Revised Hydrology and Hydraulics Analysis Suppl. No. 1 – Revised Hydrology and Hydraulics Analysis, January 1995
- DM No. 2A-1 - GDM-Levees and Channels Upstream for Cooper Reservoir, May 1958
- DM No. 2A-2 - GDM - Channels and Levees Downstream from Cooper Reservoir, October 1958
- DM No. 2B GDM - Cooper Dam and Reservoir, December 1961
- DM No. 2B GDM - Revised - Cooper Dam and Reservoir, June 1967
- DM No. 2B Suppl. No. 1 - Plan Selection Report, May 1977
- DM No. 2B Suppl. No. 1 - Rev. Plan Selection Report, August 1977
- DM No. 2B Suppl. No. 2 - Plan Selection Report, April 1981
- DM No. 3 Detail Design - Cooper Dam and Spillway, Consisting of Vol. 1 – Main Text, Vol. 2 - Plates and Vol. 3 - Appendices, December 1977
- DM No. 3 - Addendum 1 Vol. 1, Addendum 1 Vol. 2, Addendum 1 Vol. 3, August 1979
- DM No. 3 - Embankment Spillway and Outlet Works (Revised), April 1986
- DM No. 3 Suppl. No. 1 - Hopkins County Levee, March 1987
- DM No. 4 - Alternative Service Spillway Site Cost Study, January 1970
- DM No. 6A Real Estate - Dam Site, April 1959
- DM No. 6B Real Estate - Reservoir Lands, December 1985
- DM No. 6C - Relocation Tucker Cemetery (Revised), January 1989
- DM No. 6D - Relocation of Friendship and Liberty Grove Cemeteries, January 1988
- DM No. 7 - Reservoir Clearing, November 1969

- DM No. 7 - Reservoir Clearing (Revised), January 1989
- DM No. 8 Revised - Supplement No. 1 Sources of Construction Material, March 1978
- DM No. 8 Revised - Supplement No. 2 Construction Materials, December 1985
- DM No. 9 - Preliminary Master Plan, May 1968
- DM No. 10 - Master Plan, November 1987
- DM No. 10 - Supplement No. 1, White Oak Creek Mitigation Area Master Plan January 1990
- DM No. 11 - Relocation of Utilities, September 1970
- DM No. 11 - Suppl. No. A Reloc. Gas Line (South Access Road), June 1978
- DM No. 11 - Suppl. No. 2 – Reloc. Electric and Gas Lines, June 1987
- DM No. 12 - Relocation of Delta and Hopkins County Roads, March 1986
- DM No. 14 - Relocation of FM 1528, June 1987
- DM No. 15 - Site Geology, May 1978
- DM No. 17 - Recreation Facilities
- DM No. 18 - Project Building
- DM No. 20 Relocation - West Delta Water Supply Corporation, March 1987
- DM No. 21 - Disposition of State Highway 24, Farm to Market 71, Farm to Market 1531, and Farm to Market 1880, October 1987
- DM No. 22 Real Estate - Acquisition of Wildlife Mitigation Lands, November 1988
- DM No. 23 - Reservoir Filling Plan/Flood Emergency Plan

1.10 PUBLIC LAWS

The following Public Laws (PL) are a sample of the applicable laws to Jim Chapman Lake and White Oak Creek Mitigation Area. A complete list of pertinent PLs can be found in Appendix D, and additional information on Federal Statutes applicable to the project can be found in the Environmental Assessment for the Jim Chapman Lake and White Oak Creek Mitigation Area Master Plan revision in Appendix B of this Plan.

- Flood Control Act of 1944, PL 78-534. Section 4 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 Department of the Interior and now within the Department 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 Jim

Chapman 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 1955 PL 218, Chapter 501, 84th Congress, 1st Session). This act authorizes the construction, of the Cooper Reservoir and Channel and Levee Improvement "…substantially in accordance with the construction plans recommended in the report of the Chief of Engineers in House Document Numbered 488, 83rd Congress, 2nd Session.
- 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.
- 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.
- 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.
- Water Resource Development Act of 1986, PL 99-662. This act endorsed the Corps Recommend Plan for mitigation, which included the recommendation that the existing Cooper Lake and Channels Project be modified to include fee acquisition of approximately 25,500 acres of land presently encumbered by a flowage easement for the Wright Patman Lake projects, and that these lands be developed and managed for wildlife mitigation purposes.

1.11 PERTINENT PROJECT INFORMATION

Table 1.1 provides pertinent information regarding key reservoir elevations and storage capacity a Jim Chapman Lake. The information is obtained from the Pertinent Data maintained by USACE.

Table 1.1 Jim Chapman Lake Pertinent Data

Feature	Elevation (feet NGVD29)	Area (acres)	Accumulative Capacity* (acre-feet)	Runoff (Inches)
Top of Dam	464.5	33,600	943,893	-
PMF Design Water Surface (2018 Study)	463.5	33,000	910,593	33.16
Maximum Design Water Surface (1985 Study)	459.5	30,600	783,393	31.41
Top of Flood Control Pool (2007 Survey)	446.2	22,735	429,335	17.38
Top of Conservation Pool (2007 Survey)	440.0	17,958	298,930	12.24
Sediment Storage (2007 Survey)	415.5	5,002	38,598	1.46
Streambed (2007 Survey)	386	-	-	-

*Included 37,000 acre-feet of storage for estimated 100-year sediment deposition below elevation 415.5 feet.
Source: Pertinent Data – Cooper Dam and Jim Chapman Lake – USACE 2022

CHAPTER 2 – PROJECT SETTING AND FACTORS INFLUENCING MANAGEMENT AND DEVELOPMENT

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. Jim Chapman Lake lies in the Level III Texas Blackland Prairie region. The White Oak Creek Mitigation Area crosses both the Leve III East Central Texas Plains and the South Central Plains Regions. It is situated on the Sulphur River in Cass and Bowie Counties, runs south of the Sulphur River and I-30 in Morris County where the largest portion of the area lies, then reaches within a small portion in Titus County north of Argo between I-30 and SH-71. The Texas Ecoregions are illustrated in Figure 2.1 and the three specific ecoregions are described below.

2.1.1 Texas Blackland Prairie Ecoregion

The Texas Blackland Prairies ecoregion, where Jim Chapman Lake is located, is characterized by rolling to nearly level plains spotted with oak woodlands and savannas. Important prairie plants in this region include at a minimum the following:

- American asters (*Symphyotrichum spp.*)
- big bluestem (*Andropogon gerardi*)
- little bluestem (*Schizachyrium scoparium*)
- Maximilian sunflower (*Helianthus maximiliani*)
- tall dropseed (*Sporobolus compositus*)
- wild indigos (*Basptisia spp.)*
- yellow Indiangrass (*Sorghastrum nutans*)

Stream bottoms, an important element of the region, are often wooded and include the following:

- American sycamore (Platanus occidentalis)
- black willow (salix nigra)
- bur oak (*Quercus macrocarpa*)
- honey locust (Gleditsia triacanthos)
- pecan/hickories (*Carya spp*.)
- water oak (Q. nigra)
- willow oak (Q. phellos)

Much of the Blackland Prairie has been converted to cropland, non-native pasture, and expanding urban uses, making the preservation of prairie critical. Less than one percent of the original vegetation remains in the Texas Blackland Prairies, scattered in several small parcels across the region (Griffith et al. 2007, p63)

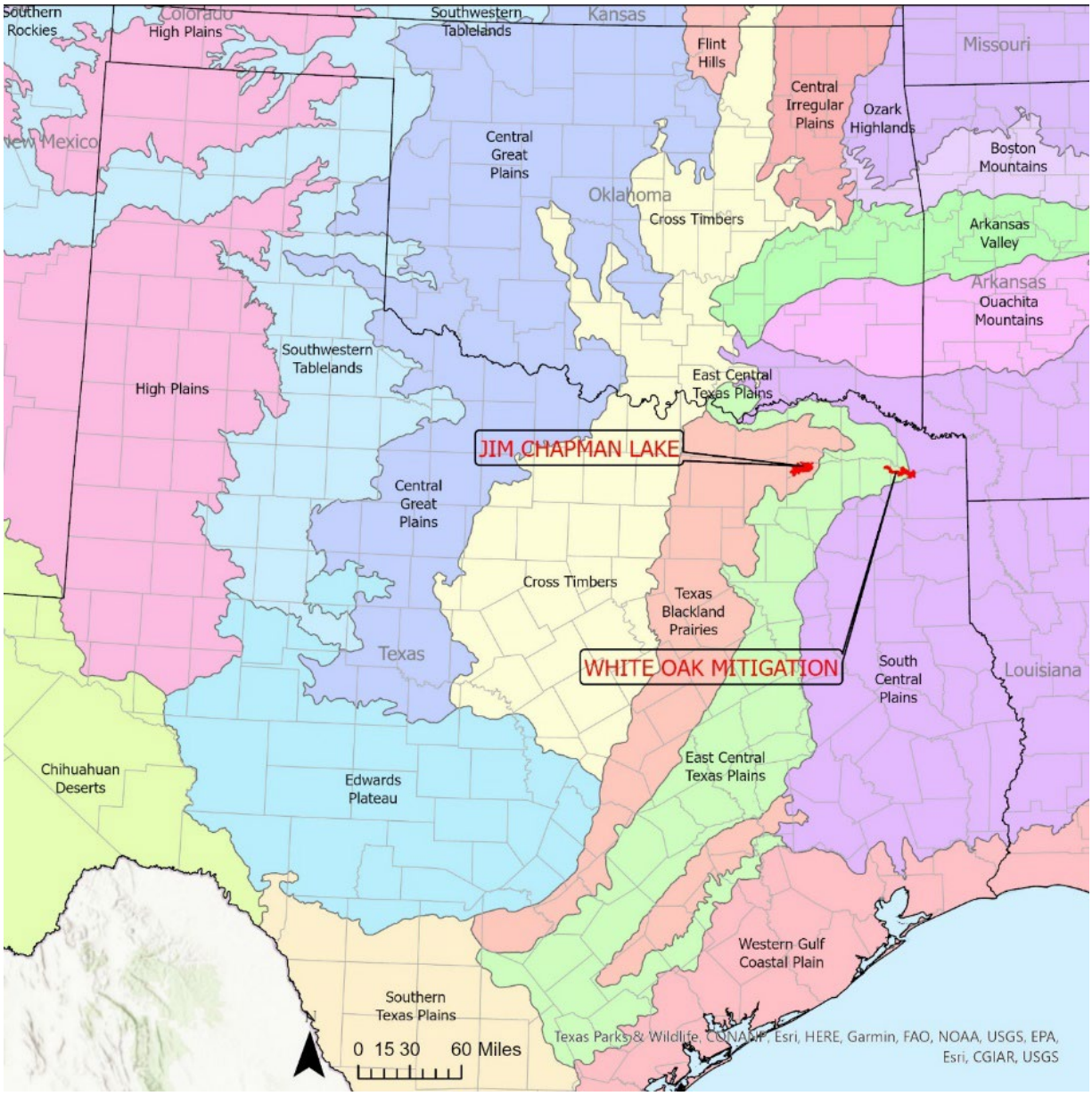

Figure 2.1 Jim Chapman Lake and White Oak Creek Mitigation Area Ecoregions

Source: EPA (2022)

2.1.2 East Central Texas Plains Ecoregion

Portions of the White Oak Creek Mitigation Area is within the East Central Texas Plains Ecoregion along the Sulphur River and is characterized by meandering rivers and rich, diverse bottomland forests. The areas of the East Central Texas Plains in which the Mitigation area lies consists of more level and gently rolling topography with annual precipitation between 40-48 inches. This region of Texas, also known as the piney woods, contains oak-pine and shortleaf pine forests, longleaf pine savannah in southern portions, and bottomland hardwoods that form the native forest overstory in this ecoregion. This area is habitat to a wide variety of wildlife and fish resources in the periodically flooded river edges and oxbow lakes; unique swamps, bogs, fens, springs, and seeps, as well as lush, open meadows where rare plants and plant communities abound.

The forest or woodland is composed mostly of the following:

- ashs (*Fraxinus spp*.)
- blackjack oak (*Quercus marilandica*)
- bur oak (*Q. macrocrpa*)
- eastern cottonwood (*Populus deltoides*)
- eastern redcedar (*Juniperus virginiana var*.)
- elms (*Ulmus spp.*)
- pecan/hickories (*Carya spp*.)
- post oak (*Q. stellata*)
- Shumard red oak (*Q. shardii*)
- sugar hackberry (*Celtis laevigata*)

Prairie openings contain little bluestem or other grasses and forbs. The land cover currently has improved pasture, some post oak woods and forests with coniferous trees especially on the sub-ecoregion transition boundary. Loblolly pine (*Pinus taeda*) has been planted in several areas. Typical wildlife species include the following:

- eastern fox squirrel (*Sciurus niger*)
- eastern gray squirrel (*S. carolinensis*)
- eastern wild turkey (*Meleagris gallopavo*)
- northern bobwhite (*Colinus virginianus*)
- white-tailed deer (*Odocoileus virginianus*)

Along the Sulphur River a mosaic of forest and prairie historically occurred in this and adjacent regions. Burning was important in maintaining grassy openings, and woody invasions have taken place in the absence of fire. The tallgrass prairie historically included little bluestem, yellow Indiangrass, and tall dropseed. Current land cover is mostly pasture with some cropland.

2.1.3 South Central Plains Ecoregion

A portion of the mitigation area lies in an area of the South Central Plains Ecoregion with rolling uplands that are gently to moderately sloping and cover a large area in east Texas, southern Arkansas, and northern Louisiana, with sandy and loamy soils that are generally well drained. The vegetation of the South Central Plains Level III Ecoregion is sometimes described as the western edge of the southern coniferous forest belt of the continental United States. Soils are mostly well-drained with sandy and loamy surface texture. Native vegetation includes the following species:

- American beautyberry (*Callicarpa americana*)
- greenbriar (*Smilax* spp.)
- hawthorns (*Crataegus* spp.)
- hickories (*Carya* spp.)
- loblolly pine (*Pinus taeda*)
- shortleaf pine (*P. echinata*)
- woodoats (*Chasmanthium* spp.)
- *Panicums* such as switchgrass
- pinehill bluestem (*Schizachyrium scoparium)*
- post oak (*Q. stellata*)
- shortleaf pine (*Pinus echinate*)
- southern red oak (*Quercus falcata*)
- American sweetgum (*Liquidambar styraciflua)*
- sumac (*Rhus* spp.)
- white oak (*Q. alba*)
- yellow Indiangrass (*Sorghastrum nutans*)

Many areas are replanted with loblolly pine for timber projection or are improved pasture. Lumber and pulpwood production, livestock grazing, and poultry production are typical land uses. Oil and gas production is also widespread.

The other portion of the mitigation area in this ecoregion is in the floodplain and comprises the western margin of the southern bottomland hardwood communities that extend along the Gulf and Atlantic coastal plains from Texas to Virginia. Soils are generally somewhat poorly drained to very poorly drained, clayey and loamy. The alluvial floodplains and low terraces have distinct vegetation change into bottomland oaks and sweetgum forest and typically include the following:

- American sycamore (*Platanus americana*)
- blackgum (*Nyssa sylvatica*)
- eastern cottonwood (*Populus deltoides*)
- elm (*Ulmus* spp.)
- grapes (*Vitis* spp.)
- greenbriers (*Smilax* spp.)
- hollies (*Ilex* spp.)

- loblolly pine (*Pinus taeda*)
- poison ivy (*Toxicodendron radicans*)
- red maple (*Acer rubrum*)
- southern red oak (*Quercus falcata*)
- swamp chestnut oak (*Q. michauxii*)
- sweetgum (*Liquidambar styraciflua*)
- water oak (*Q. nigra*)
- willow oak (*Q. phellos*)
- sweetgum (*Liquidambar styraciflua*)
- water oak (*Q. nigra*)
- willow oak (*Q. phellos*)

2.2 CLIMATE

Northeastern Texas, where Jim Chapman Lake and White Oak Creek Mitigation Area are located, is characterized as warm, moist, humid, and subtropical. The area has hot, humid, long summers, with occasional temperatures of 100 °F, and short, moderate winters. However, sharp extremes are occasionally recorded as short duration freezes can occur throughout the winter. The prevailing air masses are north and western during late fall, winter, and early spring, and prevailing gulf air masses the rest of the year.

Temperatures in July, August, and September are usually relatively high, so areas exposed to southern breezes are cooler than those without the exposure, so that the parks along the northern shoreline tend to be cooler in the summer. The average annual temperature is 71°F with monthly averages ranging from a maximum of 83°F in July and a minimum of 44°F in January. Historic extreme temperatures range from 118°F to -13°F.

The average annual rainfall is about 45 inches, with historic extremes varying from 28 to 61 inches. Maximum rainfall usually occurs in March to May and October to December, while the minimum occurs in August and September. Severe frontal-type storms are rare, but intense summer thunderstorms occur frequently, depositing rain over broad areas. The average monthly temperature and precipitation data is presented in Figure 2.2 which includes the average minimum, maximum, and normal daily average as well as the average total precipitation for each month.

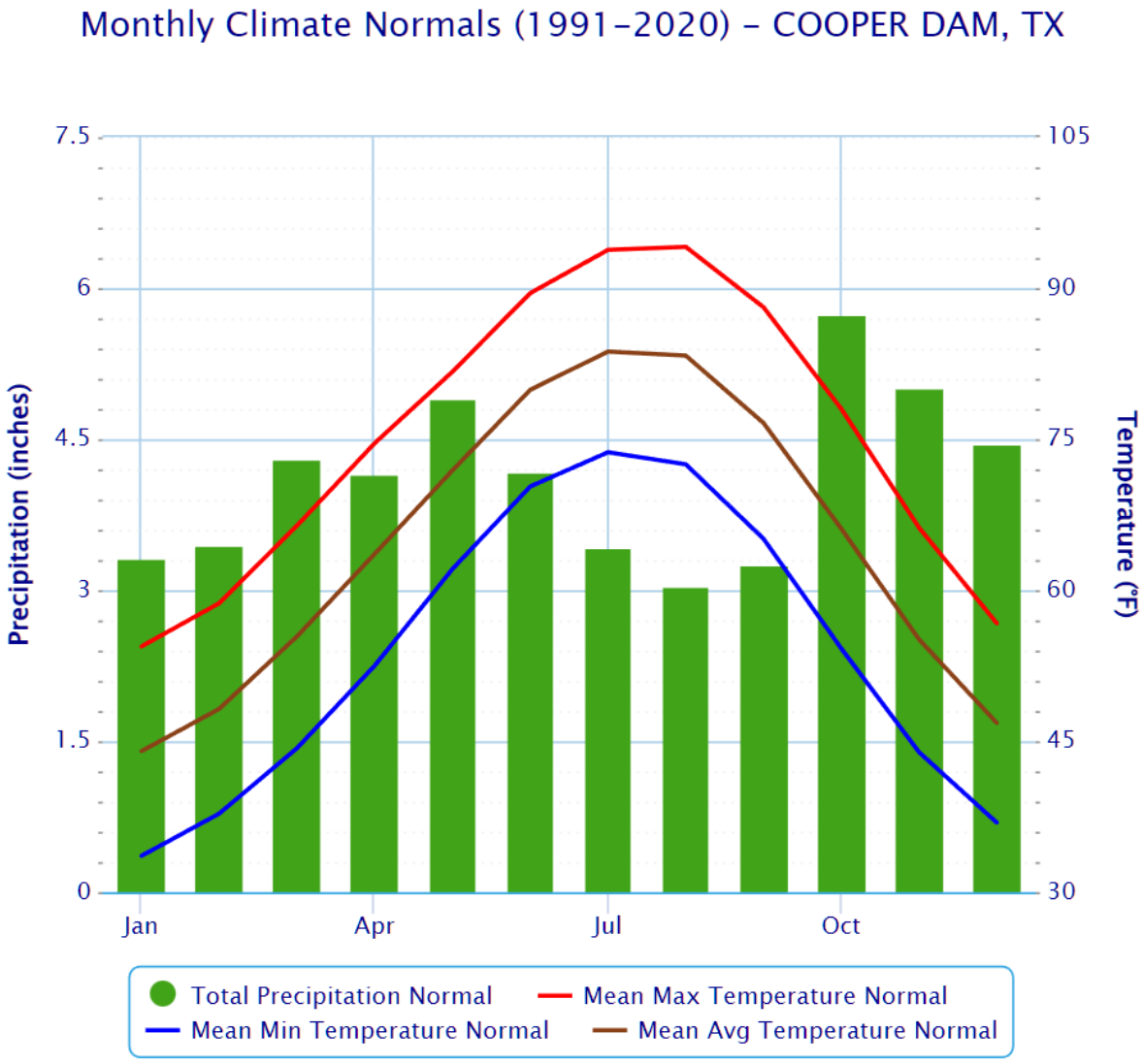

Figure 2.2 Average Monthly Climate Cooper Dam, Texas, 1991 – 2020

Source: NOAA, 2022.

2.3 CLIMATE CHANGE AND GREENHOUSE GASSES (GHG)

The U.S. Global Change Research Program (USGCRP) looks at potential impacts of climate change globally, nationally, regionally, and by resource (e.g., water resources, ecosystems, human health). Jim Chapman Lake and the White Oak Mitigation Area area lies within the Southern Great Plains region of analysis. The Southern Great Plains region has already seen evidence of climate change in the form of rising temperatures that are leading to increased demand for water and energy and impacts on agricultural practices. Over the last few decades, the Southern Great Plains has seen fewer cold days in winter and more hot days in summer, as well as changes to precipitation patterns. The decrease in the cold days has resulted in an overall increase

of the frost-free season. Within this region, there has been an increase in average temperatures 1° – 2° Fahrenheit (°F) since 1901 (Kloesel et al., 2018). The changing precipitation patterns in the region has led to more frequent extreme droughts, storms, and flood events. If the current rate of greenhouse gas (GHG) emissions continues, the potential impacts will be much greater by 2100. The USACE mission for the Responses to Climate Change Program is "to develop, implement, and assess adjustments or changes in operations and decision environments to enhance resilience or reduce vulnerability of USACE projects, systems, and programs to observed or expected changes in climate." The effects of climate change and mitigation efforts are evolving, and Jim Chapman Lake and White Oak Creek Mitigation Area and all federally owned property will be managed to comply with laws and executive orders to respond to the growing threat of climate change.

2.4 AIR QUALITY

The U.S. Environmental Protection Agency (EPA) established nationwide air quality standards to protect public health and welfare in 1971. The State of Texas 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), Nitrous Oxides (NO_x), particulate matter (PM_{10} and $PM_{2.5}$), 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 areas. Jim Chapman Lake and the White Oak Creek Mitigation Area are in attainment for air quality (TCEQ 2022B).

2.5 TOPOGRAPHY, GEOLOGY, AND SOILS

2.5.1 Geology

The Jim Chapman Lake and White Oak Creek Mitigation Area is located within the northwestern portion of the West Gulf Coastal Plain section of the Coastal Plain physiographic province. The coastal plain of Texas is characterized by a broad, rolling landform extending from the foot of the Ouachita Mountains on the north to the Gulf of Mexico on the south. It has developed upon a sequence of sedimentary rock units which dip generally southward resulting in successively younger formations cropping out gulfward. Geological age of these rock units ranges from the Lower Cretaceous Period to the Quaternary Period.

2.5.2 Topography

The topography of the Black Prairies, East Central Texas Plains and South Central Plains where Jim Chapman Lake and the White Oak Creek Mitigation Area sits consists of gently rolling to nearly level terrain and is well dissected for rapid surface

drainage, with an elevation that ranges from 328 feet to 650 feet NGVD29 (USGS 2022). The terrain at Jim Chapman Lake tends to be much steeper on the south side of the lake than that of the north side.

2.5.3 Soils

The Jim Chapman Dam site is situated within the Elgin Prairie, a subdivision which has been developed on the outcrop of the uppermost Cretaceous and Tertiary Period beds. This belt, approximately 17 miles wide, is classed as marginal prairie between the clayey Black Prairie to the north and the sandy, wooded East Texas Timber Belt to the south. It is characterized by slightly sandy soils, sparse tree development, and a slight increase in relief from the Black Prairie.

Table 2.1 Acres of Surface Soil Types within Jim Chapman Lake Area Project Lands and White Oak Creek Mitigation Area

Soil Type	Number of Acres	Description
Class I	0	*Class I* soils have slight limitations that restrict their use
Class II	2,453	*Class II* soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.
Class III	5,249	*Class III* soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.
Class IV	2,188	*Class IV* soils have very severe limitations that restrict the choice of plants or require very careful management, or both.
Class V	21,137	*Class V* soils have little or no hazard of erosion but have other limitations, impractical to remove, that limit their use mainly to pasture, range, forestland, or wildlife food and cover.
Class VI	4,379	*Class VI* soils have severe limitations that make them generally unsuited to cultivation and that limit their use mainly to pasture, range, forestland, or wildlife food and cover.
Class VII	0	*Class VII* soils have very severe limitations that make them unsuited to cultivation and that restrict their use mainly to grazing, forestland, or wildlife.
Class VIII	0	*Class VIII* soils and miscellaneous areas have limitations that preclude their use for commercial plant production and limit their use to recreation, wildlife, or water supply or for aesthetic purposes.

Source: Soil Classes (USACE NRM 2019). Note: Because some areas were not included in NRM soil classification, the total differs from total fee area.

A soil survey by the Natural Resource Conservation Service (NRCS) shows there are six out of the eight possible general classifications (Classes I through Class VIII) occurring in the reservoir area. The erosion hazards and limitations for use increase as

the class number increases. Class I has few limitations, whereas Class VIII has many. The main soil series within Jim Chapman Lake and White Oak Creek Mitigation Area Project Lands is the Class V, which have little or no hazard of erosion but have other limitations, impractical to remove, that limit their use mainly to pasture, range, forestland, or wildlife food and cover. This soil makes up 21,137 acres of soils found within the project lands, as shown in Table 2.1.

For the White Oak Creek Mitigation Area, the geologic strata forming Cass, Morris, and Titus counties, as well as the southern portion of Bowie County were deposited during the Eocene, Pleistocene, and Holocene periods. Extensive areas of recent alluvium are found within the flood plains of White Oak Creek, the Sulphur River, and their tributaries, as well as several small areas of Pleistocene fluviatile terrace deposits locate south of the Sulphur River in northeaster Cass County, south of White Oak Creek in northwestern Morris County, and north of the Sulphur River in Bowie County. (Hunt, Cliff. 1998). Based on the present use of some flood plain land for crop production, the type of soils in the flood plain (Trinity and Kaufman clays), production estimates for those soils, and the capability class (class II), almost all of the protected Sulphur River bottomlands could be considered prime farmlands.

The main soil series within Jim Chapman Lake fee lands is the Kaufman clay, 0 to 1 percent slopes, frequently flooded. This soil makes up 14.2% of soils found within Jim Chapman fee lands, consisting of a very deep, moderately well drained, very slowly permeable soils that formed in clayey alluvium derived from mudstone.

The USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (2022) reports 60 soil types occurring within Jim Chapman Lake (identified as Cooper Lake) fee lands. Table 2.2 shows the acreage and farmland status associated with each soil and surface type in the detention area, and Figure 2.3 shows the location of these soils.

Table 2.2 Acres of Surface Soil Types within Jim Chapman (Cooper) Lake Project Lands

Soil Type	Number of Acres	Percent Total	Farmland Status
Annona loam, 1 to 4 percent slopes	1,132.4	8.4%	Farmland of statewide importance
Bazette clay loam, 3 to 5 percent slopes	823.5	6.1%	All areas are prime farmland
Bazette clay loam, 5 to 12 percent slopes	969.0	7.2%	Not prime farmland
Benklin silt loam, 0 to 1 percent slopes	345.1	2.6%	All areas are prime farmland
Crockett loam, 1 to 3 percent slopes	136.2	1.0%	Farmland of statewide importance
Crockett loam, 1 to 3 percent slopes	1,020.1	7.6%	Farmland of statewide importance
Crockett loam, 2 to 5 percent slopes, eroded	138.5	1.0%	Not prime farmland
Deport clay, 1 to 3 percent slopes	22.5	0.2%	All areas are prime farmland
Derly silt loam, 0 to 1 percent slopes, occasionally ponded	13.5	0.1%	Not prime farmland
Ellis clay, 5 to 12 percent slopes	648.1	4.8%	Not prime farmland
Ferris clay, 5 to 12 percent slopes, eroded	36.6	0.3%	Not prime farmland
Ferris clay, 5 to 12 percent slopes, eroded	0.4	0.0%	Not prime farmland
Freestone-Hicota complex, 0 to 3 percent slopes	286.9	2.1%	All areas are prime farmland
Guyton silt loam, 0 to 1 percent slopes, frequently flooded	46.8	0.3%	Not prime farmland
Heiden clay, 2 to 5 percent slopes	30.2	0.2%	All areas are prime farmland
Heiden clay, 3 to 5 percent slopes, eroded	9.0	0.1%	Not prime farmland
Heiden-Ferris complex, 3 to 5 percent slopes	17.9	0.1%	All areas are prime farmland
Hopco silty clay loam, frequently flooded	36.0	0.3%	Not prime farmland
Houston Black clay, 1 to 3 percent slopes	38.4	0.3%	All areas are prime farmland

Soil Type	Number of Acres	Percent Total	Farmland Status
Kaufman clay, 0 to 1 percent slopes, frequently flooded	1,146.7	8.5%	Not prime farmland
Kaufman clay, 0 to 1 percent slopes, frequently flooded	1,919.1	14.2%	Not prime farmland
Kaufman clay, 0 to 1 percent slopes, occasionally flooded	1,107.3	8.2%	All areas are prime farmland
Lassiter silt loam, 0 to 1 percent slopes, frequently flooded	165.4	1.2%	Not prime farmland
Leson clay, 1 to 3 percent slopes	31.1	0.2%	All areas are prime farmland
Leson clay, 1 to 3 percent slopes	12.4	0.1%	All areas are prime farmland
Leson clay, 3 to 5 percent slopes	107.8	0.8%	All areas are prime farmland
Nahatche soils, frequently flooded	579.4	4.3%	Not prime farmland
Normangee clay loam, 2 to 5 percent slopes, eroded	439.1	3.3%	Not prime farmland
Tinn clay, 0 to 1 percent slopes, occasionally flooded	75.0	0.6%	Not prime farmland
Trinity clay, 0 to 1 percent slopes, frequently flooded	585.7	4.3%	Not prime farmland
Wilson clay loam, 0 to 2 percent slopes	65.9	0.5%	Farmland of statewide importance
Wilson silt loam, 0 to 2 percent slopes	1,174.7	8.7%	Farmland of statewide importance
Woodtell loam, 2 to 5 percent slopes	111.4	0.8%	Not prime farmland
Woodtell loam, 5 to 12 percent slopes	72.7	0.5%	Not prime farmland
Woodtell loam, 5 to 12 percent slopes	133.6	1.0%	Not prime farmland

Source: (NRCS, 2022)

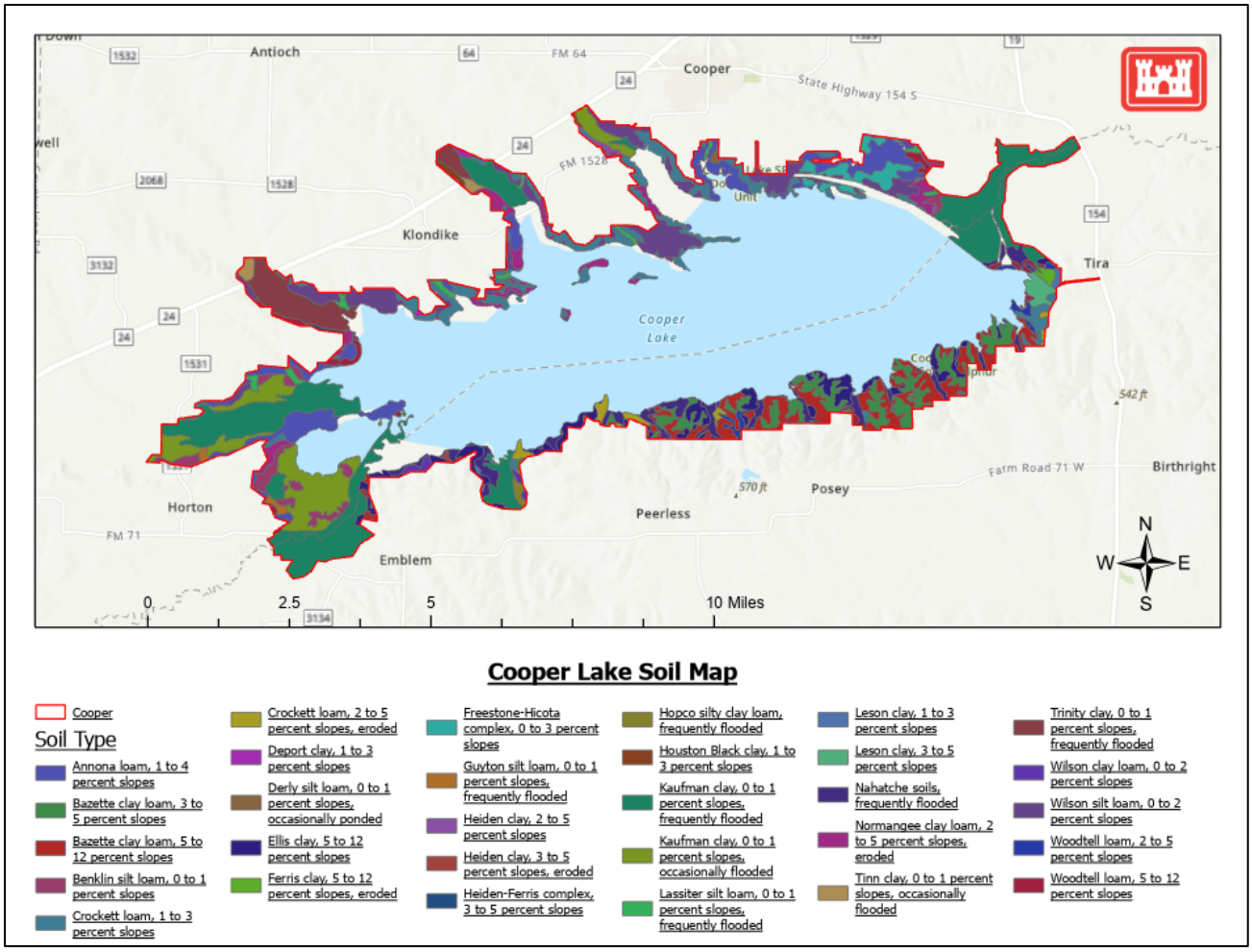

Figure 2.3 NRCS Soil Map of Jim Chapman (Cooper) Lake

The main soil series within White Oak Creek Mitigation Area fee lands is the Gladewater clay, 0 to 1 percent slopes, frequently flooded. This soil makes up 22.5% of soils found within White Oak Creek Mitigation Area fee lands, which are very deep soils that formed in clayey alluvium derived from mudstone.

The USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (2022) reports 60 soil types occurring within White Oak Creek Mitigation Area project lands. Table 2.3 shows the acreage and farmland status associated with each soil & surface type in the detention area and Figure 2.4 shows the location of these soils.

Table 2.3 Acres of Surface Soil Types within White Oak Creek Mitigation Area Lands

Soil Type	Number of Acres	Percent Total	Farmland Status
Adaton-Muskogee complex	90.1	0.4%	Not prime farmland
Annona loam, 1 to 3 percent slopes	825.1	3.3%	Farmland of statewide importance
Ashford clay	252.7	1.0%	Not prime farmland
Ashford clay, 0 to 1 percent slopes	20.7	0.1%	Not prime farmland
Bernaldo fine sandy loam, 0 to 3 percent slopes	20.1	0.1%	All areas are prime farmland
Bernaldo fine sandy loam, 1 to 3 percent slopes	51.8	0.2%	All areas are prime farmland
Bowie fine sandy loam, 1 to 5 percent slopes	9.0	0.0%	All areas are prime farmland
Bryarly clay loam, 1 to 5 percent slopes	69.6	0.3%	Not prime farmland
Cuthbert fine sandy loam, 5 to 15 percent slopes	304.5	1.2%	Not prime farmland
Cuthbert gravelly fine sandy loam, 5 to 15 percent slopes	23.6	0.1%	Not prime farmland
Derly, frequently ponded-Raino complex, 0 to 1 percent slopes	20.5	0.1%	Not prime farmland
Eastwood very fine sandy loam, 1 to 5 percent slopes	10.0	0.0%	Farmland of statewide importance
Eastwood very fine sandy loam, 5 to 15 percent slopes	309.7	1.2%	Not prime farmland
Ellis clay, 5 to 12 percent slopes, severely eroded	36.0	0.1%	Not prime farmland
Estes clay loam, frequently flooded	3,021.8	12.0%	Not prime farmland
Freestone fine sandy loam, 1 to 3 percent slopes	174.8	0.7%	All areas are prime farmland
Gallime-Guyton complex, 0 to 2 percent slopes	16.3	0.1%	Prime farmland if drained
Gladewater clay, 0 to 1 percent slopes, frequently flooded	2,143.7	8.5%	Not prime farmland
Gladewater clay, 0 to 1 percent slopes, frequently flooded	2,406.7	9.5%	Not prime farmland

Soil Type	Number of Acres	Percent Total	Farmland Status
Gladewater clay, 0 to 1 percent slopes, frequently flooded	5,675.7	22.5%	Not prime farmland
Iulus fine sandy loam, 0 to 1 percent slopes, frequently flooded	4.7	0.0%	Not prime farmland
Iulus fine sandy loam, 0 to 1 percent slopes, frequently flooded	118.2	0.5%	Not prime farmland
Kaufman clay, 0 to 1 percent slopes, frequently flooded	112.7	0.4%	Not prime farmland
Kirvin gravelly fine sandy loam, 1 to 5 percent slopes	15.7	0.1%	Not prime farmland
Kirvin very fine sandy loam, 1 to 5 percent slopes	17.8	0.1%	Not prime farmland
Kirvin very fine sandy loam, 3 to 8 percent slopes	25.0	0.1%	Not prime farmland
Kullit very fine sandy loam, 0 to 2 percent slopes	166.8	0.7%	All areas are prime farmland
Latex fine sandy loam, 1 to 3 percent slopes	50.3	0.2%	All areas are prime farmland
Mattex loam, 0 to 1 percent slopes, frequently flooded	520.5	2.1%	Not prime farmland
Nahatche loam, 0 to 1 percent slopes, frequently flooded	673.6	2.7%	Not prime farmland
Sailes fine sandy loam, 1 to 5 percent slopes	5.1	0.0%	All areas are prime farmland
Sawyer silt loam, 0 to 3 percent slopes	82.4	0.3%	All areas are prime farmland
Talco-Raino complex, 0 to 1 percent slopes	40.0	0.2%	Not prime farmland
Tenaha loamy fine sand, 5 to 15 percent slopes	6.4	0.0%	Not prime farmland
Texark clay, frequently flooded	1,954.8	7.7%	Not prime farmland
Texark clay, frequently flooded	2,973.3	11.8%	Not prime farmland
Thenas fine sandy loam, frequently flooded	11.2	0.0%	Not prime farmland
Wolfpen loamy fine sand, 2 to 5 percent slopes	7.8	0.0%	Not prime farmland
Woodtell fine sandy loam, 2 to 5 percent slopes	249.0	1.0%	Not prime farmland
Woodtell fine sandy loam, 5 to 20 percent slopes	1,789.3	7.1%	Not prime farmland

Soil Type	Number of Acres	Percent Total	Farmland Status
Woodtell very fine sandy loam, 5 to 12 percent slopes	385.2	1.5%	Not prime farmland
Woodtell-Raino complex, 1 to 3 percent slopes	456.4	1.8%	Not prime farmland
Wrightsville-Raino complex, 0 to 1 percent slopes	124.1	0.5%	Not prime farmland

Source: (NRCS, 2022)

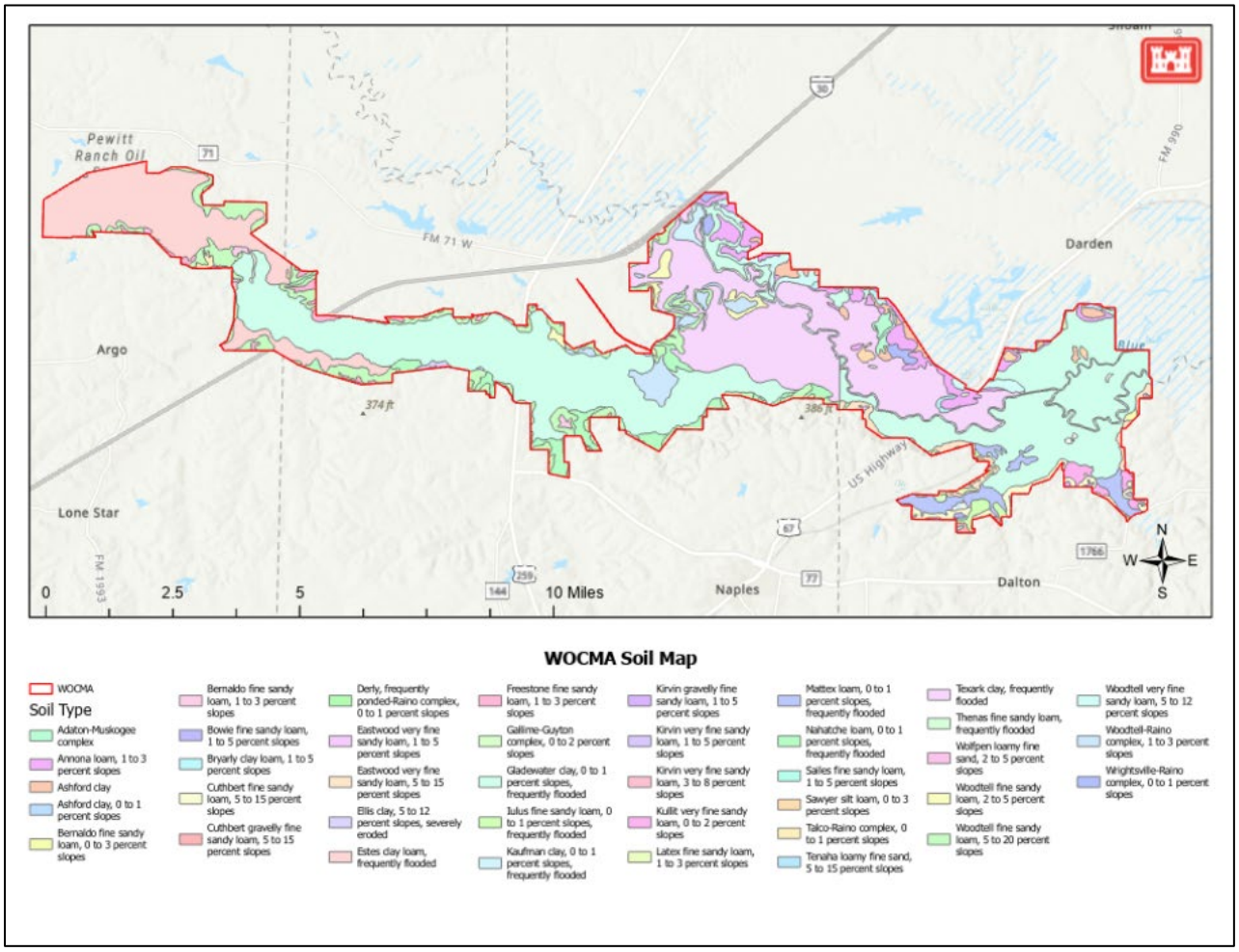

Figure 2.4 NRCS Soil Map of White Oak Creek Mitigation Area

2.5.4 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. However, the lands represented by these soil types have not been used for farming since the lands were acquired prior to the initiation of construction of Jim Chapman Lake and White Oak Creek Mitigation Area in 1991.

2.6 WATER RESOURCES

2.6.1 Surface Water

The Sulphur River if formed at the confluence of the North and South Sulphur River forks at the eastern end of Delta County, Texas. The river flows generally eastward through several Texas counties for approximately 75 miles. The river turns southeastward through Miller County in southwestern Arkansas for about 15 miles before it joins the southbound Red River east of Doddridge, just a few miles north of the Louisiana border. The Sulphur River basin encompasses 3,588 square miles.

Jim Chapman Lake is a water resource for many water providers in North Texas. The North Texas Municipal Water District (NTMWD), the Upper Trinity Regional Water District, and the cities of Irving, Sulphur Springs, and Cooper utilize the reservoir for municipal water supply. NTMWD is a regional provider of water, wastewater, and solid waste disposal services for its member cities and customers, serving over 2 million residents across a 10-county area. As a wholesale provider of treated drinking water, NTMWD draws water supply from multiple sources, including Jim Chapman Lake. The NTMWD has been granted rights by USACE to divert up to 57,214 acre-feet of water per year from Jim Chapman Lake.

NTMWD diverts these volumes through a pump station and an 84-inch pipeline that are jointly owned and operated with the City of Irving. The pump station, located on the southern shore of the lake, pumps water through the shared pipeline to infrastructure individually owned by the City of Irving and NTMWD, which conveys each entity’s water to its individual points of use. NTMWD ultimately transports water diverted from Jim Chapman Lake to Lavon Lake for temporary storage before it is treated and distributed by NTMWD to its member cities and customers.

NTMWD has contracted with the USACE for water storage space in Jim Chapman Lake and works closely with the USACE in support of its contract. This includes NTMWD providing annual financial support of operations and maintenance for USACE reservoir facilities and funding for capitalized repair, replacement and rehabilitation projects as needed.

2.6.2 Wetlands

Waters of the United States are defined within the Clean Water Act (CWA), and jurisdiction is addressed by the USACE and EPA. 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). 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.

Typically, the National Wetlands Inventory (NWI) established by US Fish and Wildlife Service (USFWS) is used to identify wetland types in a project area. However, the available dataset for the Jim Chapman Lake and White Oak Creek Mitigation Area project area was mapped prior to impoundment and does not reflect the current conditions. Therefore, NWI was not used to identify and calculate wetland acreage within the fee boundary of the project. Instead, the Ecological Mapping System (EMS) developed by the Texas Parks and Wildlife (TPWD) was used. Tables 2.4 and 2.5 summarizes the data from the EMS for wetlands at Jim Chapman Lake and White Oak Creek Mitigation Area, respectively. Figures 2.5 and 2.6 displays the ecological habitat types at Jim Chapman Lake and WOCMA based on EMS including wetland habitat types.

Table 2.4 Wetlands at Jim Chapman Lake by Type

Wetland Types	Total Acres
Bottomland Baldcypress Swamp	0.54
Bottomland Evergreen Successional Shrubland	147.49
Bottomland Herbaceous Wetland	2,968.87
Bottomland Seasonally Flooded Hardwood Forest	401
Bottomland Temporarily Flooded Hardwood Forest	600
Bottomland Temporarily Flooded Mixed Pine - Hardwood Forest	32
Bottomland Wet Prairie	1,010
Marsh	3
Open Water	13,095
Small Stream and Riparian Baldcypress Swamp	46
Small Stream and Riparian Evergreen Successional Shrubland	128
Small Stream and Riparian Herbaceous Wetland	22
Small Stream and Riparian Seasonally Flooded Hardwood	2,179
Small Stream and Riparian Temporarily Flooded Hardwood	2,683

Wetland Types	Total Acres
Small Stream and Riparian Temporarily Flooded Mixed Forest	9
Small Stream and Riparian Wet Prairie	699
Swamp	3
Total Acres	**24,028**

Table 2.5 Wetlands at White Oak Creek Mitigation Area by Type

Wetland Types	Total Acres
Marsh	8
Open Water	1,094
Pineywoods: Bottomland Baldcypress Swamp	3,631
Pineywoods: Bottomland Deciduous Successional Shrubland	116
Pineywoods: Bottomland Herbaceous Wetland	841
Pineywoods: Bottomland Seasonally Flooded Hardwood Forest	25,279
Pineywoods: Bottomland Temporarily Flooded Hardwood Forest	6,160
Pineywoods: Bottomland Wet Prairie	33
Pineywoods: Herbaceous Seepage Bog	19
Pineywoods: Small Stream and Riparian Baldcypress Swamp	36
Pineywoods: Small Stream and Riparian Deciduous	12
Pineywoods: Small Stream and Riparian Herbaceous Wetland	107
Pineywoods: Small Stream and Riparian Seasonally Flooded	234
Pineywoods: Small Stream and Riparian Temporarily Flooded	3,387
Pineywoods: Small Stream and Riparian Temporarily Flooded	45
Pineywoods: Small Stream and Riparian Wet Prairie	71
Swamp	43
Total Acres	**41,119**

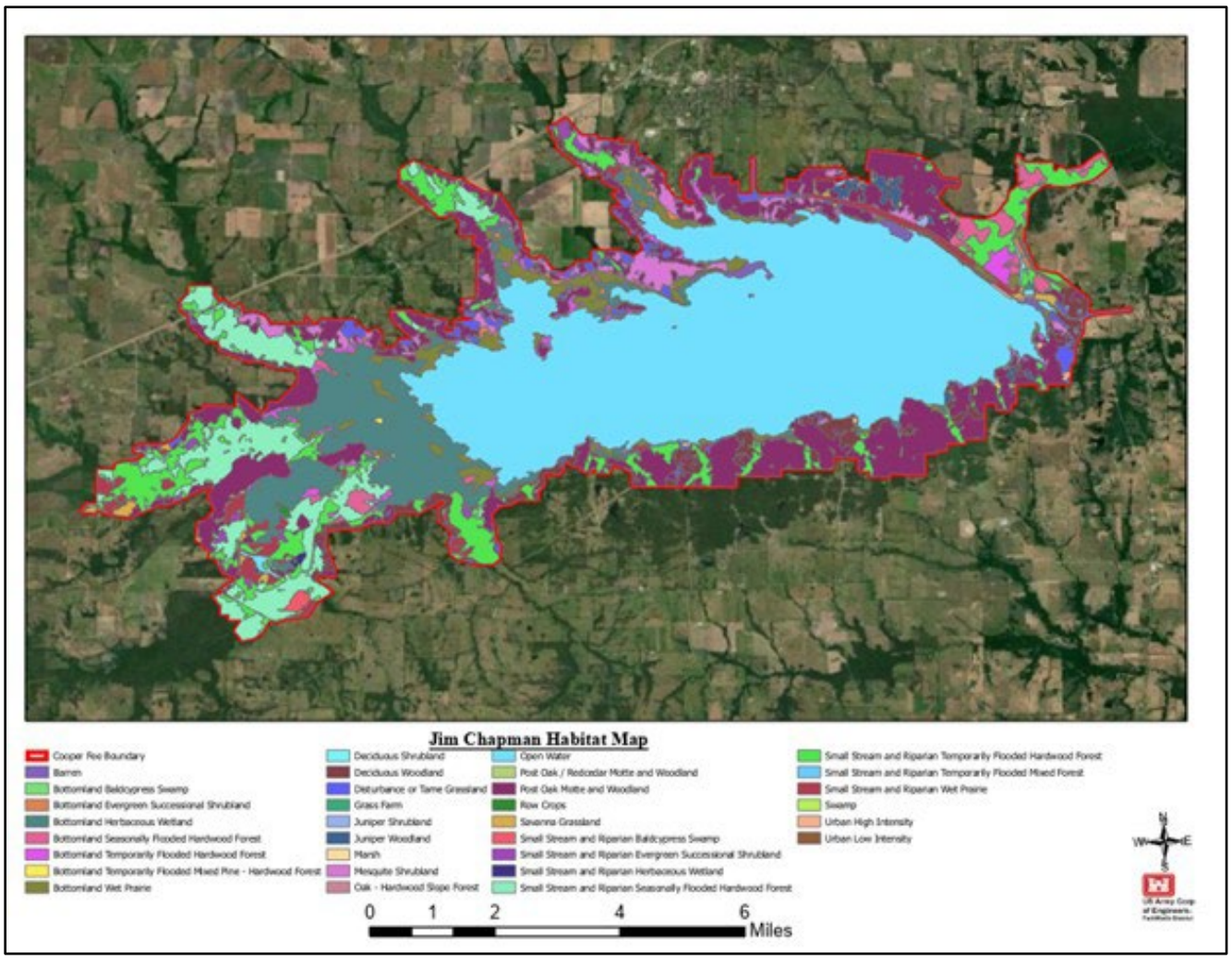

Figure 2.5 Ecological Habitat Types at Jim Chapman Lake

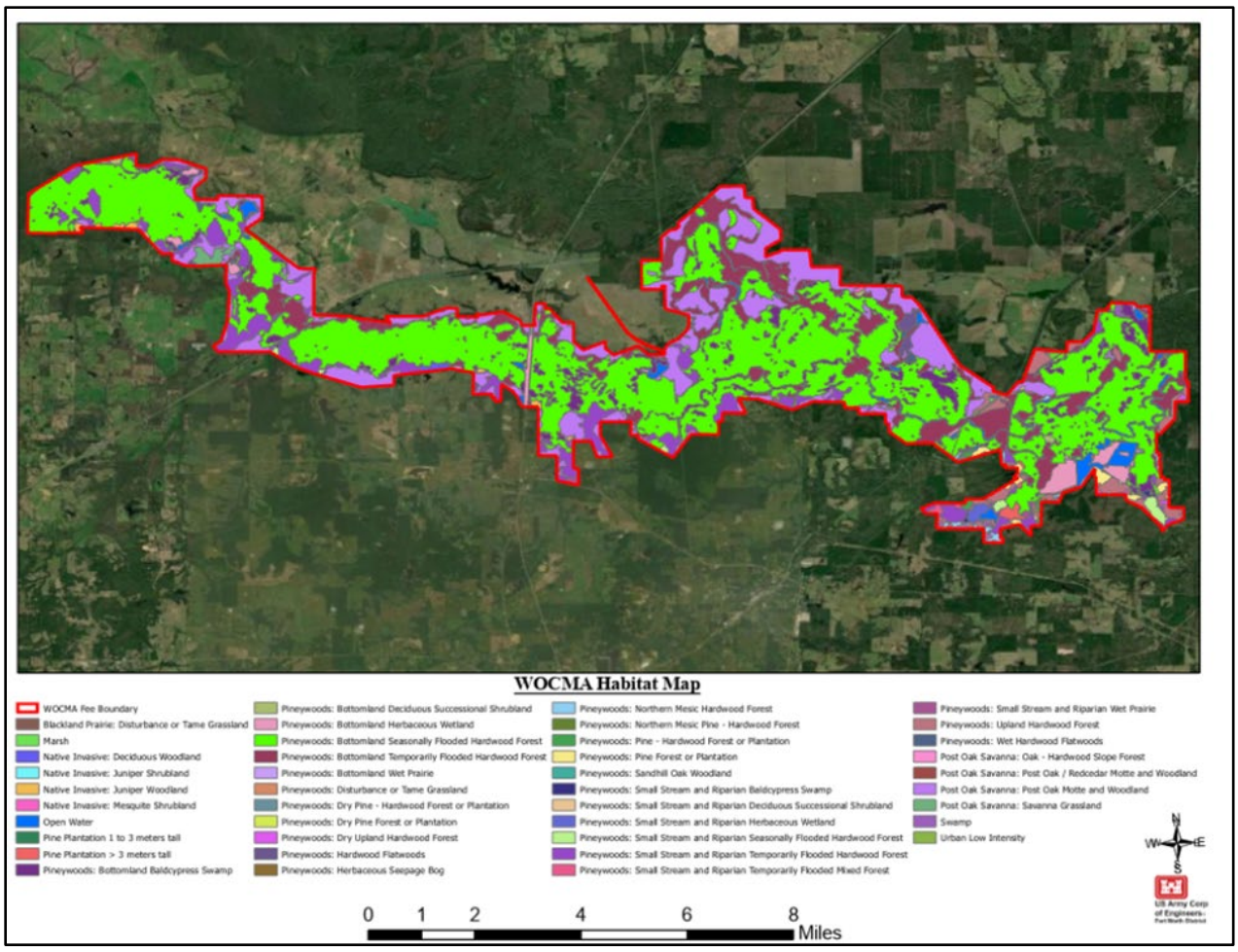

Figure 2.6 Ecological Habitat Types at White Oak Creek Mitigation Area

2.6.3 Groundwater

Deep below Jim Chapman Lake lies the Trinity and Carrizo-Wilcox major bedrock aquifers and the Nacatoch minor aquifer. Stretching from the Louisiana border to the Mexico border, the Carrizo-Wilcox Aquifer has an area of outcrop that is 11,186 square miles and 25,409 square miles of area in subsurface. The aquifer is primarily composed of sand locally interbedded with gravel, silt, clay, and lignite. Although the Carrizo-Wilcox Aquifer reaches 3,000 feet in thickness, the freshwater saturated thickness of the sands averages 670 feet.

The Trinity major aquifer has an area of outcrop 10,652 square miles and 21,308 square miles of subsurface area. This major aquifer extends across much of the central and northeastern portions of Texas and is composed of several smaller aquifers contained within the Trinity Group. The combined freshwater saturated thickness of these aquifers averages about 600 feet in North Texas.

The Nacatoch minor bedrock aquifer occurs in a narrow band across northeast Texas and has an area of outcrop 889 square miles and 936 square miles of subsurface

area. Groundwater in this aquifer is usually under artesian conditions except in shallow wells where the Nacatoch Formation crops out and water table conditions exist, and is typically alkaline, high in sodium bicarbonate, and soft.

2.6.4 Hydrology

The Sulphur River Basin area encompasses 3,767 square miles, 3,580 of which are in Texas. The 550-mile-long Sulphur River, a tributary to the Red River, is fully containing in Texas and has an average flow of 932,700 acres-feet per year. The Basin has the largest average watershed yield of any major river basin in Texas because of the region's high precipitation and low evaporation rates.

Surface waters are categorized to hydrologic units. Hydrologic units are classified by the United States Geologic Survey (USGS) using a Hydrologic Units Code system, also referred to as HUC's. The units are classified from largest HUC with a two-digit region (e.g., the Arkansas-White-Red Region), encompassing the largest area, to a twelve-digit sub-watershed HUC. Jim Chapman Lake and White Oak Creek Mitigation Areas are classified to sub-watersheds as follows and as illustrated in Figure 2.7.

Jim Chapman/Cooper Lake:

11 (HUC 2: Region): Arkansas-White-Red Region
- 1114 (HUC 4: Sub-Region): Red-Sulphur Sub-Region
  - 111403 (HUC 6: Basin): Big Cypress-Sulphur Basin
    - 11140301 (HUC 8: Sub-Basin): Sulphur Headwaters
      - 1114030101 (HUC 10: Watershed): Middle Sulphur River-South Sulphur River
        - 111403010106 (HUC 12: Sub-Watershed): City of Commerce-South Sulphur River
      - 1114030102 (HUC 10: Watershed): Middle Sulphur River-South Sulphur River
        - 111403010204 (HUC 12: Sub-Watershed): Barnett Creek-Middle Sulphur River
        - 111403010205 (HUC 12: Sub-Watershed): West Fork Jernigan Creek
        - 111403010206 (HUC 12: Sub-Watershed): Johns Creek-South Sulphur River
        - 111403010207 (HUC 12: Sub-Watershed): Doctors Creek-South Sulphur River
        - 111403010208 (HUC 12: Sub-Watershed): Cooper Lake
      - 1114030104 (HUC 10: Watershed):
        - 111403010401 (HUC 12: Sub-Watershed): Big Creek-South Sulphur River
        - 111403010402 (HUC 12: Sub-Watershed): Brushy Creek-South Sulphur River

White Oak Creek Mitigation Area:

11 (HUC 2: Region): Arkansas-White-Red Region
- 1114 (HUC 4: Sub-Region): Red-Sulphur Sub-Region
  - 111403 (HUC 6: Basin): Big Cypress-Sulphur Basin
    - 11140302 (HUC 8: Sub-Basin): Lower Sulphur
      - 1114030203 (HUC 10: Watershed): Shawnee Prairie-Sulphur River
        - 111403020303 (HUC 12: Sub-Watershed): Boothe Creek-Sulphur River
      - 1114030204 (HUC 10: Watershed): Blythe Creek-Sulfur River
        - 111403020402 (HUC 12: Sub-Watershed): Caney Creek-Tuck Branch
        - 111403020404 (HUC 12: Sub-Watershed): Calvert Creek-Sulphur River

1114030205 (HUC 10: Watershed): Lower White Oak Creek
111403030206 (HUC 12: Sub-Watershed): Lacy Creek-White Oak Creek
111403030207 (HUC 12: Sub-Watershed): Horse Creek-White Oak Creek
111403030208 (HUC 12: Sub-Watershed): Village Creek-White Oak Creek

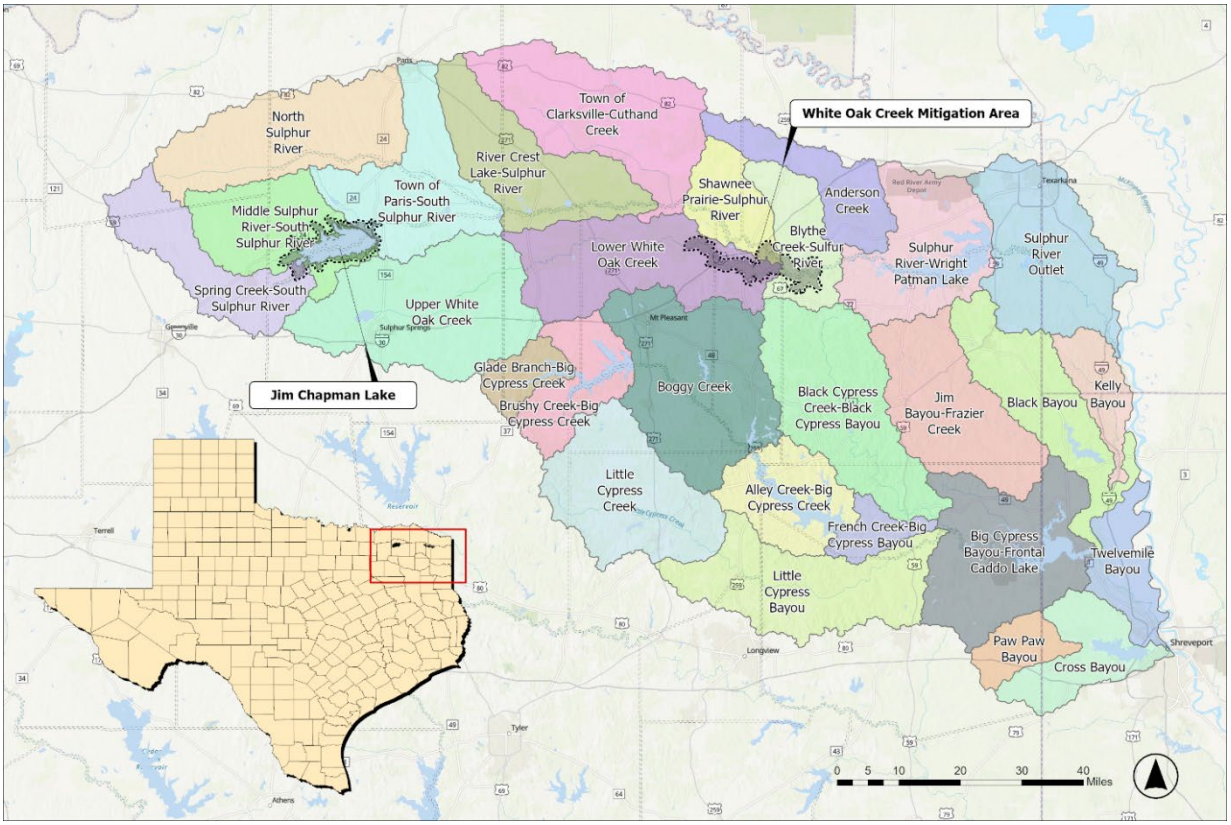

Figure 2.7 Sulphur and Red River Watershed Sub-Basins for Jim Chapman and White Oak Creek Mitigation Area

As noted, this area of Texas receives high precipitation. Most major storms in the Jim Chapman Lake and White Oak Creek Mitigation Area drainage basins have occurred in April through June and September through November. Thunderstorms and the remnants of hurricanes are the type of storms that produce most high runoff events in the basin. Time of year and degree of soil saturation are major factors that determine the runoff from a given storm. Thus, some lower rainfall storm events can produce more runoff than higher rainfall storm events.

2.6.5 Water Quality

Texas Commission on Environmental Quality (TCEQ) sets and implements standards for surface water quality to improve and maintain the quality of water in the state, based on various beneficial use categories for the water body. The Texas Integrated Report of Surface Water Quality, which is a requirement of the Federal Clean Water Act Sections 305(b) and 303(d), evaluates the quality of surface waters in Texas and identifies those that do not meet uses and criteria defined in the Texas Surface

Water Quality Standards (TSWQS). The Texas Integrated Report describes the status of Texas' natural waters based on historical data and assigns waterways to various categories depending on the extent to which they attain the TSWQS.

Existing water quality within Jim Chapman Lake is affected by rainfall and associated stormwater flows originating from residential, commercial, and industrial point and nonpoint sources from properties upstream of the dam and reservoir. These stormwater flows have increased over time as a result of increased development, increasing the risk for pollution from runoff. Sedimentation from within the watershed tends to increase turbidity and decrease dissolved oxygen levels, as will lower rainfall especially during summer months. Both turbidity and low oxygen levels can negatively affect aquatic life due to reduced photosynthesis at lower depths and decreased oxygen, greatly affecting animal life.

The 2022 Texas Integrated Report - Texas 303(d) List (TCEQ, 2022A) identifies the western portion of the Jim Chapman Lake fee boundary within Middle Sulphur River (segment 0307A_01) as exceeding TSWQS for bacteria in the water (Recreation Use). TCEQ also identified White Oak Creek within the White Oak Creek Mitigation Area as exceeding TSWQS for bacteria (Recreation Use) and depressed dissolved oxygen levels in the water. As of September 2022, the Texas Department of State Health Services Seafood and Aquatic Life Group, whose purpose is to address and prevent/reduce any disease-causing agent from occurring that can be transferred from aquatic life to humans within the State of Texas, has not issued any fish consumption advisories for Jim Chapman Lake.

2.7 HEALTH AND SAFETY

Compatible uses incorporated in project operation management plans include conservation and fish and wildlife habitat management components. The USACE, with some assistance from the TPWD, 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. Jim Chapman Lake also has solid waste management plans in place for camping and day use areas that are maintained by TPWD, who hold the lease. There are no hazardous or solid waste advisories for Jim Chapman Lake or White Oak Creek Mitigation Area.

2.8 ECOREGION AND NATURAL RESOURCE ANALYSIS

2.8.1 Vegetative Resources

Operational civil works projects administered by the USACE are required, with few exceptions, to prepare an inventory of natural resources. The basic inventory required is referred to within USACE regulations (ER and EP 1130-2-540) as a Level One Inventory. This inventory includes the following:

- USACE regulations and policy require a basic inventory vegetation in accordance with the National Vegetation Classification System through the sub-class level
- Assessment of the potential presence of special status species including but not limited to Federal and state listed endangered and threatened species, migratory species, and birds of conservation concern listed by the USFWS
- Land (soils) capability classes in accordance with NRCS soil surveys
- Wetlands, which are previously discussed in Section 2.6.2.

The Level One Inventory is recorded in the USACE Civil works Business Intelligence Hu [(CWBI-Ops0, formally the Natural Resource Management System (NRM)] and is useful in providing a general characterization of the vegetation on all operational projects.

Daily management of USACE lands requires more detailed knowledge of the vegetation down to the Association level within the National Vegetation Classification System, and for most management prescriptions, down to the individual species level of dominant vegetation. While this information is not available for the White Oak Mitigation Area, Table 2.6 represents the vegetative inventory at Jim Chapman Lake, which shows the sub-class's sustainable, transitioning, and degraded acres for each class.

As can be seen, the deciduous closed tree canopy is by far the largest categorization at Jim Chapman Lake and White Oak Creek Mitigation Area, inventoried at 36,225 acres and the majority of it sustainable. The data also reflects the stressed nature some of the vegetative classes. The hydromorphic rooted vegetation inventories at 38% of the 3,996 acres degraded, the deciduous shrubs are 62% of the acres degraded, and both the evergreen closed canopy forest and the mixed evergreen-deciduous closed canopy forest 100% degraded.

Table 2.6 Vegetation Classification and Condition 2019 Inventory

Class	Sub-Class	Total Sub-Class Acreage	Sustainable Areas	Transitioning Acres	Degraded Acres	Total Conditioned Acres
Non-Vegetated	Non-Vegetated	13,055	13,055	0	0	13,055
Herbaceous Vegetation	Hydromorphic rooted vegetation	3,996	996	1,500	1,500	3,996
Herbaceous Vegetation	Annual graminoid or forb vegetation	427	30	135	262	427
Herbaceous Vegetation	Perennial graminoid vegetation (grasslands)	1,165	265	550	350	1,165
Shrubland (Scrub)	Deciduous shrubland (scrub)	1,595	300	300	995	1,595
Closed Tree Canopy	Deciduous closed tree canopy	36,225	12,062	20,250	3,913	36,225
Closed Tree Canopy	Evergreen Forest	408	0	0	408	408
Closed Tree Canopy	Mixed evergreen-deciduous closed tree canopy	154	0	0	154	154

Note: Classification information is derived from the National Vegetation Classification System

In addition to the data from the Level One Inventories, the TPWD's Wildlife Habitat Appraisal Procedure (WHAP) was conducted to assist in the preparation of the proposed Master Plan. The assessment was conducted May 09-14, 2022, at Jim Chapman Lake and White Oak Creek Mitigation Area by an interagency team consisting of TPWD and USACE biologists, foresters, and park rangers. A total of 97 data collection sites were selected using aerial photography and knowledge of the Jim Chapman Lake staff, choosing points both at random across multiple habitat types and based on areas known to have unique qualities, habitats, or species. The purpose of the survey was to quickly assess wildlife habitat quality within the USACE Jim Chapman Lake and White Oak Creek Mitigation Area Lake fee-owned property.

The four major habitat types that were selected and assessed were riparian/bottomland hardwood forests (BHF), upland forests, grasslands, and marsh. 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. 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. The data gathered from this survey helped to quantifiably describe the general habitat characteristics and identify unique/high quality areas found within USACE Jim Chapman Lake and White Oak Creek Mitigation Area Fee Boundary. This data helped with revising the land classifications based on what areas needed the most protection.

For the WHAP assessment the two most abundant habitat types surveyed were riparian/BHF (49 points) and marsh (33 points), while only 4 upland forest and 10 grassland points were surveyed, and one point was inaccessible and thus not surveyed. Of the four habitat types sampled, the average total scores were 0.71 for riparian/BHF, 0.73 for upland forest, 0.76 for grassland, and 0.82 for marsh. Overall, marsh and grassland habitats exhibited the highest average total score (0.82 and 0.76). The complete WHAP report is contained in Appendix C.

Vegetation resources at Jim Chapman Lake and White Oak Creek Mitigation Area provide a wide range of habitat, crossing three separate ecoregions in East Texas: Texas Blackland Prairie, Post Oak Savana, and Pineywoods.

The Texas Blackland Prairies Ecoregion, where Jim Chapman Lake is located, contains a diverse though diminishing range of prairie species including:

- American asters (*Symphyotrichum* spp.)
- beebalms/Bergamot (*Mondarda* spp.)
- big bluestem (*Andropogon gerardii*)
- coneflowers (*Echinacea* spp.)
- dropseed (*Sporobolus* ssp.)
- eastern gamagrass (*Tripsacum dactyloides*)
- false foxgloves (*Agalinis* spp.)
- gayfeather (*Liatris* spp.)
- goldenrods (*Solidago* spp.)
- little bluestem (*Schizachyrium scoparium*)
- milkweeds (*Asclepias* spp.)
- prairie bluet (*Stenaria nigricans*)
- prairie clovers (*Dalea* spp.)
- primroses, gauras, and beeblossoms (*Oenothera* spp.)
- sages (*Salvia* spp.)
- skullcaps (*Scutellaria* spp.)
- sideoats grama (*Bouteloua curtipendula*)
- sunflowers (*Helianthus* spp.)
- switchgrass (*Panicum virgatum*)
- yellow Indiangrass (*Sorghastrum nutans*)
- Texas Prairie Parsley (*Polytaenia texana*)
- tridens grasses (*Tridens* spp.)
- wild indigos (*Baptisia* spp.)

Bottomland hardwood forests are more prevalent in the White Oak Creek Mitigation Area, but do occur at the Jim Chapman Lake Area and include the following:

- American beautyberry (*Callicarpa americana*)
- American elm (*Ulmus americana*)
- American sweetgum (*Liquidambar styraciflua*)
- American sycamore (*Platanus occidentalis*)
- blackhaw/viburnum (*Viburnum* spp.)
- black cherry (*Prunus serotina*)
- boxelder (*Acer negundo*)
- bur oak (*Quercus macrocarpa*)
- Carolina cherry laurel (*Prunus caroliniana*)
- cedar elm (*Ulmus crassifolia*)
- cherrybark Oak (*Q. pagoda*)
- coral honeysuckle (*Lonicera sempervirens*)
- coralberry (*Symphoricarpos orbiculatus*)
- eastern cottonwood (*Populus deltoides*)
- easter red cedar (*Juniperus virginiana*)
- eastern redbud (*Cercis canadensis*)
- green ash (*Fraxinus pennsylvanica*)
- greenbriar (*Smilax* spp.)
- hawthorns (*Crataegus* spp.)
- honey locust (*Gleditsia triacanthos*)
- wood oats (*Chasmanthium spp.*)
- pecan/hickories (*Carya* spp.)
- purple passionflower (*Passiflora incarnata*)
- red buckeye (*Aesculus pavia*)
- red mulberry (*Morus rubra*)
- rosette/switch/panicum grasses (*Dichanthelium* spp.)
- sedges (*Carex* spp.)
- Shumard oak (*Q. shumardii*)
- Southern Red Oak (*Q. falcata*)
- sugar hackberry (*Celtis laevigata*)
- water oak (*Q. nigra*)
- willow oak (*Q. phellos*)
- winged elm (*Ulmus alata*)

Some slopes and upland forests support post oak (*Q. stellata*), blackjack oak (*Q.* marilandica), honey mesquite (*Prosopis glandulosa*) and several cedars and junipers (*Juniperus* spp.) that have become more prevalent due to the absence of regular fires.

These regions, like so many other ecological regions in Texas, have undergone significant changes in the past 150 years. Although habitat for wildlife is present throughout the ecological regions, 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.

The White Oak Creek Mitigation Area, crossing the Post Oak Savana and Pineywoods ecoregions, have similar vegetative resources as those listed for Jim Chapman. Additions to the vegetation are listed within the East Central Texas Plains (Section 2.1.2) and South Central Plains (Section 1.2.3) in Section 2.1 of this Plan.

2.8.2 Fish and Wildlife Resources

Jim Chapman Lake and the White Oak Creek Mitigation Area provides habitat for an abundance of fish and wildlife species. Though non-sport and smaller fish species are the most abundant fish in Jim Chapman Lake, the predominant game fish species in the lake include the following:

- black crappie (*Pomoxis nigromaculatus*)
- blue catfish (*Ictalurus furcatus*)
- bluegill and sunfish (*Lepomis* spp.)
- channel catfish (*Ictalurus punctatus*)
- hybrid striped bass (Morone chrysops x Morone saxatilis)
- largemouth bass (*Micropterus salmoides*)
- white crappie (*Pomoxis annularis*)
- white bass (Morone chrysops)

The diverse habitat in the project area supports an abundance of wildlife. Many of the undeveloped open spaces provide habitat for wildlife, which include the following mammals:

- beaver (*Castor canadensis*)
- black bear (*Ursus americanus*)
- bobcat (*Lynx rufus*)
- coyote (*Canis latrans*)
- eastern cottontail rabbit (*Sylvilagus floridanus)*
- fox squirrel (*Sciurus niger*)
- grey squirrel (*Sciurus carolinensis*)
- nine-banded armadillo (*Dasypus novemcinctus*)
- raccoon (*Procyon lotor*)
- striped skunk (*Mephitis mephitis*)
- southern flying squirrel (*glaucomys Volans*)
- Virginia opossum (*Didelphis virginiana*)
- White-tailed deer (*Odocoileus virginianus*)
- wild boar (*Sus scrofa*)

Photo 2.1 White Tailed Deer (USACE photo)

The area also provides habitat for a diverse range of birds, including an important stopover habitat for migratory birds. Along with song and perching birds, hawks and other birds of prey, wading birds, and shorebirds, some of the birds found in the area are as follows:

- American crow (*Corvus brachyrhynchos*)
- bald eagle (*Haliaeetus leucocephalus*)
- eastern bluebird (*Sialia sialis*)
- eastern wild turkey (*Meleagris gallopavo*),
- great blue heron (*Ardea herodias*),
- great egret (*Ardea alba*)
- northern Cardinal (*Cardinalis cardinalis*)
- turkey vulture (*Cathartes aura*),

The area is home to numerous species of reptiles and amphibians, which are part of a healthy ecosystem. This includes the alligator snapping turtle (Macrocheys timminckii), which is proposed to be a listed species.

Photo 2.2 Rattlesnake (Courtesy of Howard Crenshaw, TPWD)

2.8.3 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 a species officially recognized by USFWS as being 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 formally submitted to Congress for official listing as threatened or endangered. 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. A candidate species is any species whose status is currently under review to determine whether it warrants listing under the Endangered Species Act.

- Endangered means that the USFWS and NMFS have determined that the species has a high chance of becoming extinct from the wild in the foreseeable future. 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 that USFWS and NMFS have determined that there is a low but probable chance of it becoming extinct from the wild in the foreseeable future. Under this protection measure, a species cannot be taken, essential habitat altered and destroyed, nor transported without a permit.
- Candidate means that the USFWS and NMFS are currently reviewing the species protection status on whether to list it as threatened or endangered.
- Protected means that there are other Federal laws and regulations protecting the species than the Endangered Species Act and Migratory Bird Treaty 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. Under this law “it is illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts*, nests, or eggs of such a bird except under the terms of a valid Federal permit” (USFWS, 2020A).

The USFWS's Information for Planning and Consultation (IPaC) database (2022K) lists the threatened and endangered species, and critical abitat that may occur within the Jim Chapman Lake and White Oak Creek Mitigation Area Federal Fee Boundary and other special aquatic sites (see USFWS Species List and the IPAC Report in Appendix C). Based on the IPaC report, there are 4 federally listed species that could be found within the area (USFWS 2022K). A list of these species is presented in Table 2.7. There no Critical Habitat designated within or near Jim Chapman Lake or the White Oak Creek Mitigation Area. Appendix C of this plan contains additional information and lists Species of Greatest Conservation Need (SGCN) for the Lake and Mitigation area.

Table 2.7 Federal and State Listed Threatened & Endangered Species with Potential to Occur at Jim Chapman Lake and White Oak Creek Mitigation Area

Common Name	Scientific Name	Federal Status	State Status
Alligator Snapping Turtle	*Macrochelys temminckii*	Proposed Threatened	Threatened
Monarch Butterfly	*Danaus plexippus*	Candidate	-
Piping Plover	*Charadrius melodus*	Endangered	Threatened
Red Knot	*Calidris canutus rufa*	Threatened	Threatened
Tricolored Bat	*Perimyotis subflavus*	Proposed Endangered	-

The USFWS lists the monarch butterfly (*Danaus plexippus*) as a candidate species wherever it is found (USFWS, 2021). The monarch butterfly is orange with black stripes and white dots on its wings that span up to 5cm (NatureServe, 2021). Its breeding habitat consists primarily of milkweed species (Asclepias sp.), which its larvae feed exclusively on. During its North American migration, the monarch butterfly can be found anywhere flowers are blooming. The Jim Chapman Lake and White Oak Creek Mitigation Area fee boundary contains an abundance of blooming flowers, including milkweed, which is critical to egg laying. The combination of habitat and numerous recent sittings confirms that this species is common to the area during their migration season.

The USFWS lists the tricolored bat (Perimyotis subflavus) as proposed endangered (USFWS, 2022B), with Jim Chapman Lake and White Oak Creek Mitigation Area fee boundary as locations where the species may occur. Tricolored bats seasonally migrate between winter hibernacula and summer nursery sites. Roosting may take place in tree cavities, caves, mines, rock crevices, piles of dead leaves, under dead & live leaves, and buildings. Tricolored bats forage along the edge of forests and across waterways near roosting and hibernating sites. They emerge at dusk and feed on various insect species from over water and tops of trees (NatureServe, 2022). The

species occurrence is expected to be rare within the project areas because due to lack of recent sightings.

In addition to the named species, several migratory birds have the potential to occur in the lake and mitigation area. These birds are of particular concern either because they occur on the USFW Birds of Conservation Concern (BCC) list or warrant special attention in the project area. Table 2.8 list these birds in either the Jim Chapman Lake area or the White Oak Creek Mitigation Area, with more detailed information included in Appendix C.

Table 2.8 Migratory Threatened & Endangered Species with Potential to Occur at Jim Chapman Lake (JCL) and White Oak Creek Mitigation Area (WOCMA)

Common Name	Scientific Name	JCL	WOCMA
American Golden-Plover	*Pluvialis dominica*	X	X
American Kestrel	*Falco sparverius paulus*	X	X
Bald Eagle	*Haliaeetus leucocephalus*	X	X
Brown-headed Nuthatch	*Sitta pusilla*	-	X
Chimney Swift	*Chaetura pelagica*	X	X
Eastern Whip-Poor-Will	*Antrostomus vociferus*	-	X
Kentucky Warbler	*Geothlypis formosa*	-	X
Lesser Yellowlegs	*Tringa flavipes*	X	X
Little Blue Heron	*Egretta caerulea*	X	X
Prothonotary Warbler	*Prothonotaria citrea*	X	X
Red-headed Woodpecker	*Melanerpes erythrocephalus*	X	X

The Texas Natural Diversity Database (TXNDD) (2022), administered by TPWD, manages information on occurrence of rare species, native plant communities, and animal aggregations in Texas and is used to help guide project planning efforts. From the information provided, no unique communities or species were identified within Jim Chapman Lake or White Oak Creek Mitigation Area federal fee boundaries.

2.8.4 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 2.9 lists many of the invasive and noxious native species found at Jim Chapman Lake and White Oak Creek Mitigation Area. Other species are currently being researched for their invasive characteristics.

Table 2.9 Invasive and Noxious Native Species Found at Jim Chapman Lake (JCL) and White Oak Creek Mitigation Area (WOCMA)

Common Name	Scientific Name	Prevalence	Prevalence
Mammal	-	**JCL**	**WOCMA**
Wild Boar	*Sus scrofa*	Moderate	Moderate
Birds	-	**JCL**	**WOCMA**
Eurasian Collared Dove	*Stretopelia decaocto*	Minor	Minor
European Starling	*Sturnus vulgaris*	Minor	Minor
Insects	-	**JCL**	**WOCMA**
Red Imported Fire Ant	*Solenopsis invicta*	Moderate	Minor
Aquatic Plants	-	**JCL**	**WOCMA**
Alligator Weed	*Alternanthera philoxeroides*	Moderate	N/A
Hydrilla	*Hydrilla verticillata*	Minor	N/A
Terrestrial Plants	-	**JCL**	**WOCMA**
Bahia Grass	*Paspalum notatum*	Moderate	Minor
Bermudagrass	*Cyondon dactylon*	Moderate	Minor
Callery Pear	*Pyrus calleryana*	Minor	Minor
Chinaberry Tree	*Melia azedarach*	Minor	Minor
Chinese Bushclover	*Lespedeza cuneata*	Moderate	Minor
Chinese Tallow Tree	*Triadica sebifera*	Minor	Minor
Dallisgrass	*Paspalum dilatatum*	Minor	Minor
Eastern Red Cedar (N)	*Juniperus virginiana*	Minor	Minor
Giant Cane	*Arundinaria gigantea*	Moderate	Minor
Giant Reed	*Arundo donax*	Minor	Minor
Greater Periwinkle	*Vinca major*	Minor	N/A
Heavenly Bamboo	*Nandina domestica*	Minor	N/A
Japanese Honeysuckle	*Lonecera japonica*	Moderate	Minor
Johnson Grass	*Sorghum halepense*	Moderate	Minor
King Ranch Bluestem	*Bothriochloa ischaemum*	Moderate	Minor

Common Name	Scientific Name	Prevalence	Prevalence
Kudzu	*Pueraria montana*	N/A	Minor
Multiflora Rose	*Rosa multiflora*	Minor	Minor
Nandina	*Nandina domestica*	Minor	Minor
Privet	*Ligustrum ssp.*	Moderate	Minor
Vasey grass	*Paspalum urvillei*	Moderate	Minor

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. This remoteness protects the lake from the inadvertent release and spread of common landscape plants that could become aggressive colonizers from nearby residential developments.

While currently not present in Jim Chapman Lake, invasive mollusks including zebra mussels (*Dreissena polymorpha*) are an ongoing threat to native aquatic species and infrastructure due to their ability to infest and expand rapidly, and the close proximity to other infested lakes increases the risk at Jim Chapman Lake. Asian Carp are not present within Jim Chapman Lake, however European carp have been sighted. Asian clams are also abundance in the lake, as in most North American waterways.

Additionally, the emerald ash borer (EAB) are a potential threat. The EAB is native to Asia and bores beneath the bark of ash trees. Native ash species do not have any resistance to EAB infestations, and an infestation typically leads to the rapid decline and death of North American ash trees. Although no EABs have been spotted at Jim Chapman Lake or White Oak Creek Mitigation Area, their population in the Dallas Fort Worth (DFW) metropolitan area to the west is growing rapidly, and some have been spotted to the east near Texarkana and Jefferson, TX. USACE and TPWD biologists and foresters are monitoring for signs of infestation and are investigating measures to combat the EAB if found on USACE property.

2.8.5 Aesthetic Resources

Jim Chapman Lake includes many acres of scenic shorelines, lake views, and wildlife viewing areas that are high quality aesthetic resources. 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). Because Jim Chapman Lake is located a short drive away from the Dallas-Fort Worth metropolitan area, people come from those urban and suburban communities to enjoy the scenic and naturalistic views offered at the lake. 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 is not allowed and 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 Jim Chapman Lake Office.

2.9 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 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.

2.9.1 Cultural History Sequence

Prehistoric (Pre-contact) Period

Archeological evidence suggests Native Americans were resident in Northeast Texas as early as the Paleo-Indian Period, dating to at least 13,000 years Before Present (B.P.). This period is estimated to have lasted until roughly 8,000 years before present (B.P.). Broadly, these earliest inhabitants were nomadic hunters and gatherers. Unfortunately, their highly mobile lifestyle left a relatively sparse archeological record. Much of the evidence for their presence comes from the projectile points they left behind. These finely crafted points are typically made from high-quality stone from regions outside Northeast Texas, supporting the belief that these Paleo-Indians traveled extensively across the landscape. Often, these projectile points and other Paleo-Indian artifacts are discovered on the surface or mixed with artifacts from later inhabitants. No direct evidence for these early inhabitants has been conclusively found within the fee boundary of Jim Chapman Lake other than these infrequently discovered surface-collected projectile points. However, at White Oak Creek Mitigation Area, archeologists have recorded sites conclusively dating to at least the middle and end of this timespan. Additionally, Paleo-Indian Period sites are known to exist in areas adjacent to Jim Chapman Lake, notably on the North Sulphur River, where archeologists performed extensive cultural resource surveys and testing in advance of the construction of the Lower Bois d'Arc Creek Reservoir.

Over time, the Paleo-Indian Period gave way to the Archaic Period. This vast expanse of prehistory began around 8,000 years B.P. and lasted to about 2,500 years B.P. in East Texas. It was not an even transition and sites exhibiting Late Archaic characteristics are known from Jim Chapman Lake to date as recently as 2,200 years B.P. As the climate regime shifted away from the cooler climate of the Paleo-Indian Period to one warmer and drier than today, Archaic Period peoples gradually became more sedentary. Populations increased and archeological sites can be found on a wide variety of landforms. The environment of East Texas provided them with a multitude of plant and animal resources. It did not, however, provide them with high-quality materials for stone tool making, when compared to those found in the Paleo-Indian Period. Non-local materials continued to be traded in, while more local materials were also utilized. Regardless, Archaic Period inhabitants expanded their toolkit and made other adaptations to the local environment that allowed for population growth over time. At White Oak Creek Mitigation Area, archeologists have recorded sites dating across this entire period. On the more sparsely occupied Blackland Prairie of Jim Chapman Lake, the oldest conclusively dated archeological site dates to the middle of this period, as far back as 6,500 years B.P.

The Woodland Period is a time of transition. It generally is recognized to have begun as early as 2,500 years B.P. in the area including White Oak Creek Mitigation Area. Archeological sites on Jim Chapman Lake do not present these characteristics until closer to 2,200 years B.P. The period is generally seen to last until around 800 A.D in both areas. The predominate named culture associated with this period at Jim Chapman Lake and White Oak Creek Mitigation Area is known as Fourche Maline and

stretches over Northeast Texas, Eastern Oklahoma, Western Arkansas, and Northwest Louisiana. During this time, ceramics are first seen in the area. Undecorated ceramics predominate. However, decorated types influenced by the Woodland Period cultures of the Lower Mississippi River valley to the east have been recovered from the area. Arrow points found on many of these sites indicate the adoption of the bow and arrow during this period. While it is generally believed that these Woodland Period cultures were still hunting and foraging, squash and native plant cultivation appears to have begun in earnest during this period. These peoples did settle several sites in the South Sulphur basin around present Jim Chapman Lake and White Oak Creek Mitigation Area. Some of these sites were quite large, covering several acres. During this time, the beginnings of mound building, complex village sites, and intentional burial practices become evident in Northeast Texas.

The Caddo Period began around 800 A.D. in East Texas and lasted until historic times. It is divided into the Formative, Early, Middle, Late, and Historic Caddo Periods. Between White Oak Creek Mitigation Area and Jim Chapman Lake, several Caddo Period archeological sites have been recorded. By the beginning of the Middle Caddo Period in 1200 A.D., the Caddo were successful agriculturalists that came to rely a great deal on cultivation of corn. Permanent settlements with many mounds, elaborate burials, and structures such as grass houses were common. The Caddo produced a wide variety of ceremonial and utilitarian ceramic vessels that are distinctive and impressive. Vast trade networks were established in this period, with the Caddo trading for items such as salt, bison hides, marine shell, copper, and turquoise. The area around White Oak Creek Mitigation Area was intensively occupied by the Caddo. Jim Chapman Lake appears to have been a more peripheral area to the Caddo, as it is without many of the more complex, large-scale settlements seen further east. In fact, the occupants of the area of present Day Jim Chapman appear to have continued the more mobile, seasonal existence of their Woodland and Archaic Period ancestors well into the Caddo Period. By the Late Prehistoric (Pre-Contact) Period, Caddo occupation around Jim Chapman Lake appears to have been very sparse.

The Historic Caddo Period is defined in Texas as the period that began with sustained European contact during the 1680s and continuing through their removal from East Texas in 1859. The earlier Titus Phase ended with the entry into the area of early European explorers. Within 100 years or so of the 1542 de Soto/Moscoso Entrada's passage through the area, Many Caddo appear to have succumbed to the effects of European diseases and other cultural upheavals. The remnant populations are speculated to have joined the large Historic Period Kadohadacho and Hasinai Confederacies to the north and south of the area. Elsewhere in the region, the Caddo were able to use the competing interests of the French and Spanish colonizers of East Texas and Louisiana to their advantage, gaining guns, horses, and previously unavailable metal tools. Recognized by European settlers as a "friendly tribe," the Caddo were valued allies that aided their European neighbors in altercations against other, more hostile groups. However, the various interruptions of the traditional Caddo way of life caused by European exploration and settlement caused the Caddo population to dwindle drastically. The Caddo creation story says that their first village

was founded on Caddo Lake, located on the Texas-Louisiana border. In the late 1700s, the Caddo returned to vicinity of the lake east of present-day Jefferson.

In addition to the Caddo, migrant tribes passed through and briefly settled in the vicinity of White Oak Creek Mitigation Area and Jim Chapman Lake. Among these were Cherokees and Choctaws. The Cherokee were seen as an impediment to settlement by many Texas Anglo settlers, especially after the Texas War of Independence. In response to conflicts between the two groups, such as the Killough Massacre, the 1839 Cherokee War forcibly removed the Cherokee from the area. Later, the Caddo, along with many migrant tribes from further east, were forced from East Texas. They ultimately were relocated to Indian Territory in Oklahoma by 1859.

Historic Period

Jim Chapman Lake

Jim Chapman Lake is situated in Delta and Hopkins counties. The first Anglo settlement in the current Hopkins County (Sulphur Bluff) dates to approximately 1837, during the Republic of Texas Period. The county was created from portions of Nacogdoches and Lamar counties in 1846. Originally established at Tarrant, the county seat was moved to Sulphur Springs in 1870. Although it did not initially partake in the cotton agriculture of many parts of East Texas, the county was home to large acreages of corn and wheat. Cattle and sheep ranching also took hold. Large scale African American enslavement did not exist in the Antebellum Period in the area. However, as the tide turned against the Confederacy during the Civil War, slaveholders moved west, seeking to maintain their way of life as long as possible. This led to growth of both the population of Anglo and African Americans by the war's end.

In the latter portions of the 19th century, a new era of transportation reached the area. First, stagecoach and then railroads crossed the county. Sulphur Springs was connected to Jefferson, Sherman, and eventually Fort Worth via the new railroads. During this period, cotton finally began to overtake many other agricultural crops, though much diversification of agriculture existed. Tenant farming also predominated during this time. These trends continued through the early 20th century until the Great Depression.

At the same time, Sulphur Springs saw sustained growth. After its first government was established in the mid-1840s, the town saw its first banks, churches, and manufacturing in the late Antebellum Period. After the war, Federal Troops remained in the area until 1868, protecting the area's Freedman's Bureau. The previously mentioned advances in transportation greatly benefitted Sulphur Springs. More banks, manufacturing, and a large new courthouse were constructed by the end of the century. Additionally, the city's namesake Sulphur Springs were a draw for medicinal bathers. However, as the city continued to grow, the waters faded in importance.

In 1870, Delta County was carved from Hopkins County, comprising its former boundaries north of the South Sulphur River. Its county seat, Cooper, was founded the same year. While smaller than its southerly neighbor, Cooper was serviced by the advancing railroads, as well, and served as a center of commerce for the new county. Agricultural trends mirrored those in Hopkins County. The population of Cooper and Delta County stabilized by the time of the Great Depression, only varying by a few hundred citizens over the course of the 20th century.

In Hopkins and Delta Counties, the Great Depression was a time of upheaval. Tenant farmers who had farmed much of the land for little more than a meager subsistence abandoned the area. At the same time, another agricultural practice began to take on a new importance. Dairy farming increased greatly during the 1930s and 40s in Hopkins County. By the 1950s through the 1990s, it was the largest dairy producer in the state of Texas.

During the 1950s, Cooper (now Jim Chapman) Lake was first authorized by the U.S. Congress after lobbying by local landowners. It was helped along in Congress by local Representative Wright Patman. Though authorization occurred in 1955, disagreements over location, water rights and allocations, as well as capacity delayed the construction. Land acquisition began in the 1960s. However, further setbacks created by new laws such as the National Environmental Policy Act delayed construction until the 1980s. Dam construction began in 1987 and was completed by 1991. The lake has served as a source of recreation and tourism since completion.

Sulphur Springs and Hopkins County were also to benefit from several new transportation projects over the course of the second half of the 20th century, chief among these being Interstate 30. This allowed access to the markets of Dallas-Fort Worth for several industries that made the county home at this time. While the rural population of both Delta and Hopkins Counties decreased over the course of the 20th Century, Sulphur Springs saw sustained growth into the present day due to the aforementioned advances.

White Oak Creek Mitigation Area

White Oak Creek Mitigation area is comprised of portions of present-day Bowie, Cass, Morris, and Titus Counties. The entire area was carved out of the early Red River County over the course of the 19th century. By the latter half of Spanish and Mexican ownership of the area, Anglo-American settlers had pushed into the region. By the 1830's, cotton agriculture and its reliance on African American enslavement was introduced to the area, particularly then-Bowie County, where the African American population was half or more of the total population by the time of the American Civil War. Prior to Texas Independence, one of the most important settlement routes into East Texas traversed current Bowie and Cass Counties. Trammel's Trace had begun as a trail utilized by the ancient Caddo population. On the Sulphur River, just east of the current White Oak Creek Mitigation Area and on the similarly USACE-owned Wright Patman Lake, Epperson's Ferry served to allow safe travel across the river. Another important route in the early 19th century was Dayton's Road, which served as an

overland route north of the area that straddled the divide between the Sulphur and Red Rivers.

The area was first divided from its parent Red River County in 1840 with the creation of Bowie County. Bowie was then further divided and resulted in the creation of Cass and Titus counties in 1846. Finally, Morris County was formed from Titus County in 1875.

The end of the Civil War saw some of the same trends seen in Delta and Hopkins counties take place in the area around White Oak Creek Mitigation Area. Larger plantation-like properties were divided into sharecropper or tenant farmer plots. In the 1880s, railroads greatly increased settlement in the area. During this time, the two largest communities adjacent to the mitigation area were founded (Omaha and Naples) on the St Louis and Southwestern Railway. Over the latter half of the 19th century, the two towns were to see the growth of schools, churches, banks, newspapers, agriculture, and related industries such as cotton ginning and seed distribution.

At the turn of the 20th century, large scale lumbering came to the area. The mitigation area is situated on the western edge of the Piney Woods region of East Texas and is also home to impressive hardwood bottomland. Both were logged extensively during this period and turned to needed lumber and other products at local mills.

Both Naples and Omaha remained relatively small cities, neither being the county seat of Morris County. The larger of the two, Naples, saw a population at the beginning of the 20th century that crested 1,000 residents, only to decline to the 800s by 1920. Its population did not significantly increase until the post-World War II period, to 1,346 residents. Naples population increased slowly but steadily into the 1980s, when it peaked at 1,908 residents. The lure of industry and other pressures of rural life have since seen a decline of about 700 citizens. Nearby Omaha had a consistently smaller population over the course of the 20th century. Like Naples, it grew slowly over that time. Its largest decrease in population also mirrored its neighbor, losing 13.2% in the 1980s. However, it regained that population and more over the course of the next decade. While it has still seen a reduced census count as of 2020, Omaha is now only slightly less populous than its neighbor, Naples.

In the later 20th century, the USACE purchase 25,000 acres of habitat to replace those being affected by construction of Cooper (now Jim Chapman) Lake. This area was subsequently leased by the Texas Parks and Wildlife Department (TPWD) and managed as a wildlife management area. The acquisition history of the White Oak Creek Mitigation Area is covered in more detail in Section 6.2.

2.9.2 Cultural Resources at Jim Chapman Lake

Jim Chapman Lake was the site of extensive archeological investigations over the course of the second half of the 20th century. The National Park Service-funded River Basin Surveys sponsored investigations beginning in 1951. Later, the Dallas

Archaeological Society conducted several investigations over the course of the 1950s. With renewed progress on turning the area into a federally owned reservoir in the 1960s, investigations saw renewed vigor, conducted by Southern Methodist University (SMU). SMU continued investigations in the 1990s. During the 1980s, Prewitt and Associates and Geo-Marine Inc, private cultural resource management companies, were also brought in to aid the completion of required investigations. In recent years, TPWD archeologists have conducted small-scale investigations as needed on portions of the lake property included in their lease area.

At White Oak Creek Mitigation Area, archeological investigations began in 1990 with work conducted by Geo-Marine, Inc. Their program of archeological inventory and testing continued through the late 1990s. Since the 2000s, remaining work in the mitigation area has been conducted in advance of timber sales conducted by the USACE.

To date, 364 archeological sites have been recorded at Jim Chapman Lake. These sites were all, with one exception, assessed for their eligibility for inclusion on the National Register of Historic Places (NRHP). Fifty-five sites were deemed eligible for the NRHP, but none have been formally listed. One site has yet to be assessed for eligibility.

At White Oak Creek Mitigation Area, 141 archeological sites have been recorded. Of these, five have been deemed eligible for the NRHP. Forty-four have been ruled ineligible. Ninety-two still await further investigations before a proper determination can be made.

2.9.3 Long-term Objectives for Cultural Resources

Historic Properties management plans were created for both properties in the 1990s in accordance with EP 1130-2-540 in 2005 and will be updated soon. Such plans establish standard operating procedures pertaining to both the USACE and external activities that might impact cultural resources. Completion of a full inventory and National Register of Historic Places eligibility evaluation of cultural resources at White Oak Creek Mitigation Area is a long-term objective that is needed for compliance with Section 110 of the NHPA. Ultimately, all currently known sites, as well as those found in future inventories should be evaluated to determine their eligibility for the NRHP. Sites of currently unknown NRHP eligibility and those found in the future to be eligible for the NRHP must be protected from impacts caused by the USACE or those having easements on fee lands. All future cultural resource activities will be coordinated with the State Historic Preservation Officer at the Texas Historical Commission and with the federally recognized Caddo Nation of Oklahoma, who recognize the area as part of their historic homeland, in order to ensure compliance with the National Historic Preservation Act, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act.

2.10 CURRENT SOCIAL AND ECONOMIC CONDITIONS

2.10.1 Zone of Interest

The zone of interest for Jim Chapman Lake and White Oak Creek Mitigation Area consists of three counties in Arkansas, two parishes in Louisiana, one County in Oklahoma, and 27 counties in Texas, listed in Table 2.10. These counties were selected due to visitor surveys and campground registrations, showing that most visitors come from more distant counties than just the adjacent counties to project.

Table 2.10 Counties and Parishes in the Zone of Interest

Lafayette County, AR	Denton County, TX	Morris County, TX
Little River County, AR	Fannin County, TX	Rains County, TX
Miller County, AR	Franklin County, TX	Red River County, TX
Bossier Parish, LA	Grayson County, TX	Rockwall County, TX
Caddo Parish, LA	Gregg County, TX	Smith County, TX
Bowie County, TX	Harrison County, TX	Tarrant County, TX
Camp County, TX	Hopkins County, TX	Titus County, TX
Cass County, TX	Hunt County, TX	Upshur County, TX
Collin County, TX	Kaufman County, TX	Van Zandt County, TX
Dallas County, TX	Lamar County, TX	Wood County, TX
Delta County, TX	Marion County, TX	-

2.10.2 Population

The population for the states of Arkansas, Louisiana, Oklahoma, Texas, the constituent counties, and the zone of interest is shown in Table 2.11. The current population estimate for the zone of interest is approximately 8.4 million people, 56 percent of which resides in Dallas and Tarrant Counties in Texas. Approximately 78 percent are in Dallas, Tarrant, Collin, and Denton Counties in Texas. This represents about 29 percent of the total state population of Texas of 29 million people. Between 2000 and 2020, the zone of interest's population increased by 37 percent, and is projected to increase from 2020 to 2050 at an annualized growth rate of 1.7 percent, to 14 million people. By comparison, Texas is projected to increase at an annualized growth rate of 1.7 percent over the same period.

Table 2.11 Population Estimates, 2000 and 2020 and 2050 Projections

Geographic Area	2000 Population Estimate	2020 Population Estimate	2050 Population Projection
Arkansas	2,673,400	3,011,873	3,832,115
Louisiana	4,468,976	4,664,616	4,813,420
Texas	20,851,820	28,635,442	47,342,105
Lafayette County, AR	8,559	6,728	4,394
Little River County, AR	13,628	12,345	11,419
Miller County, AR	40,443	43,515	50,161
Bossier Parish, LA	98,310	126,952	141,350
Caddo Parish, LA	252,161	243,243	231,790
Bowie County, TX	89,306	93,622	84,633
Camp County, TX	11,549	12,938	14,843
Cass County, TX	30,438	30,002	25,504
Collin County, TX	491,675	1,006,038	2,456,914
Dallas County, TX	2,218,899	2,622,634	3,869,605
Delta County, TX	5,327	5,277	5,026
Denton County, TX	432,976	861,690	2,332,629
Fannin County, TX	31,242	35,046	33,041
Franklin County, TX	9,458	10,767	11,570
Grayson County, TX	110,595	133,527	152,114
Gregg County, TX	111,379	123,633	123,972
Harrison County, TX	62,110	66,547	69,522
Hopkins County, TX	31,960	36,708	36,805
Hunt County, TX	76,596	96,202	120,121
Kaufman County, TX	71,313	129,792	219,342
Lamar County, TX	48,499	49,705	44,203
Marion County, TX	10,941	9,987	8,176
Morris County, TX	13,048	12,357	9,910

Rains County, TX	9,139	12,001	10,857
Red River County, TX	14,314	12,115	10,484
Rockwall County, TX	43,080	101,175	211,966
Smith County, TX	174,706	230,184	289,751
Tarrant County, TX	1,446,219	2,077,153	3,196,603
Titus County, TX	28,118	32,709	30,281
Upshur County, TX	35,291	41,386	48,571
Van Zandt County, TX	48,140	55,970	59,113
Wood County, TX	36,752	45,054	52,001
Zone of Interest	**6,145,143**	**8,418,689**	**14,027,375**

Sources: 2000 Population, 2010 Decennial Census, US Census Bureau;
2020 Population, American Community Survey 5 Year Estimate, US. Census Bureau
Projections: Texas: Texas State Demographic Center
https://demographics.texas.gov/data/tpepp/projections/: Arkansas: Arkansas Economic Development Institute https://arstatedatacenter.youraedi.com/population-projections-county/: Louisiana: ResearchGate https://www.researchgate.net/publication/251781196_Population_Projections_of_Louisiana_Parishes_Through_2030: Oklahoma: Oklahoma Department of Commerce https://www.okcommerce.gov/wp-content/uploads/Population-Projections-Report-2012.pdf

The population distribution by gender is shown in Table 2.12. In the zone of interest, the distribution is approximately 49 percent male and 51 percent female. This distribution is similar to the constituent counties as well as the state of Texas, which is approximately 50 percent male and 50 percent female.

Table 2.12 Population Estimate by Gender, 2020

Geographic Area	Total Population	Male	Female
Arkansas	3,011,873	1,478,511	1,533,362
Louisiana	4,664,616	2,276,932	2,387,684
Texas	28,635,442	14,221,720	14,413,722
Lafayette County, AR	6,728	3,374	3,354
Little River, AR	12,345	5,886	6,459
Miller County, AR	43,515	21,389	22,126
Bossier Parish, LA	126,952	62,615	64,337
Caddo Parish, LA	243,243	115,183	128,060

Geographic Area	Total Population	Male	Female
Bowie County, TX	93,622	47,251	46,371
Camp County, TX	12,938	6,273	6,665
Cass County, TX	30,002	14,284	15,718
Collin County, TX	1,006,038	495,548	510,490
Dallas County, TX	2,622,634	1,293,295	1,329,339
Delta County, TX	5,277	2,368	2,909
Denton County, TX	861,690	423,844	437,846
Fannin County, TX	35,046	18,572	16,474
Franklin County, TX	10,767	5,448	5,319
Grayson County, TX	133,527	65,137	68,390
Gregg County, TX	123,633	60,092	63,541
Harrison County, TX	66,547	32,253	34,294
Hopkins County, TX	36,708	18,025	18,683
Hunt County, TX	96,202	47,185	49,017
Kaufman County, TX	129,792	63,869	65,923
Lamar County, TX	49,705	23,773	25,932
Marion County, TX	9,987	4,828	5,159
Morris County, TX	12,357	5,980	6,377
Rains County, TX	12,001	6,088	5,913
Red River County, TX	12,115	5,730	6,385
Rockwall County, TX	101,175	49,891	51,284
Smith County, TX	230,184	111,102	119,082
Tarrant County, TX	2,077,153	1,015,480	1,061,673
Titus County, TX	32,709	16,113	16,596
Upshur County, TX	41,386	20,363	21,023
Van Zandt County, TX	55,970	27,237	28,733
Wood County, TX	45,054	22,326	22,728
Zone of Interest	**8,418,689**	**4,131,309**	**4,287,380**

The population by age group is displayed in Figures 2.8, 2.9, and 2.10. Approximately 42 percent of the 2020 population is between 25 and 54. Thirty-five percent of the population was under 25 years of age, and 24 percent was 55 years or older. The population distribution by age is consistent across the zone of interest.

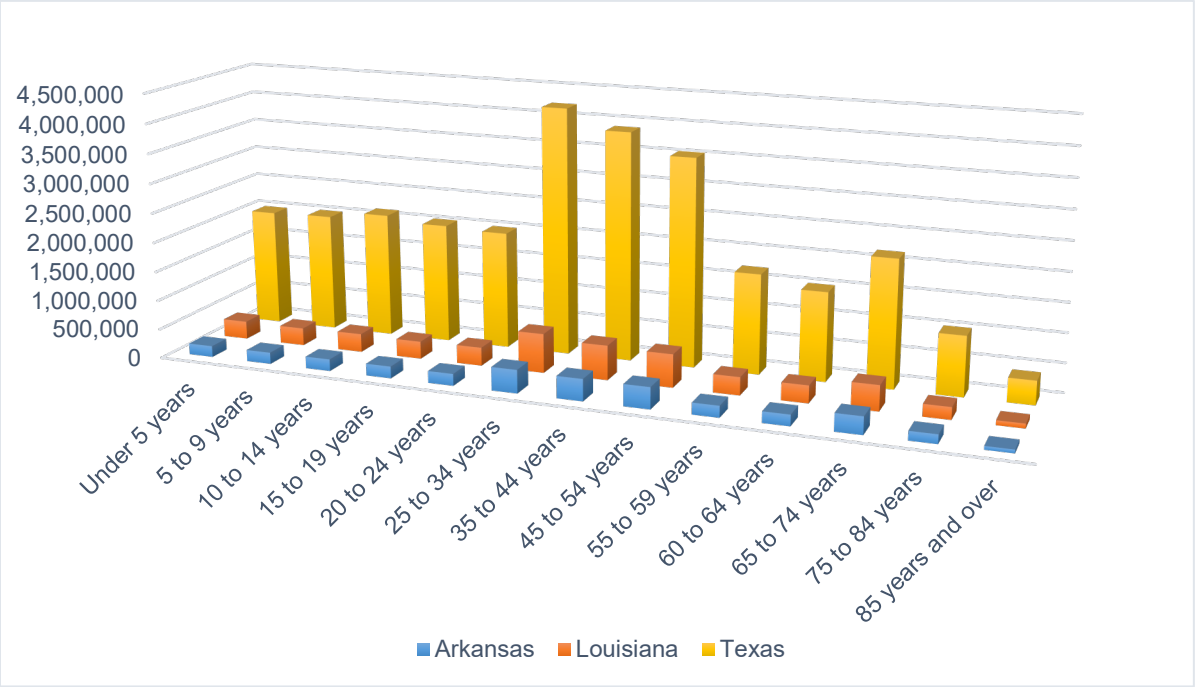

Figure 2.8 State Population by Age Group within the Zone of Interest

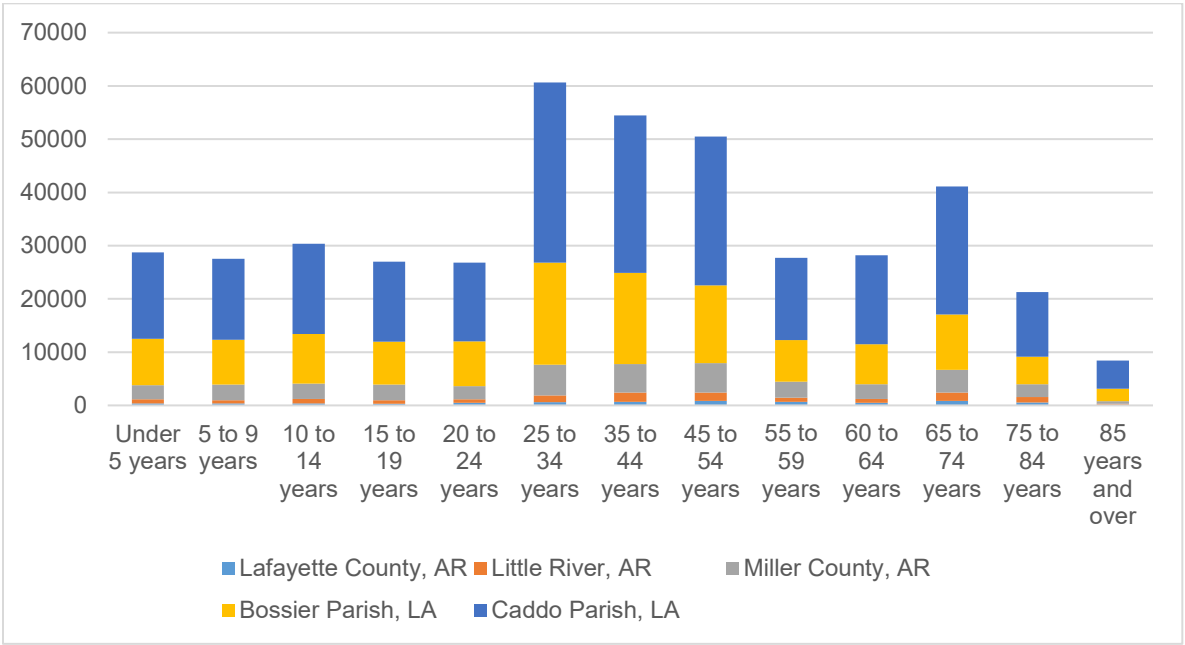

Figure 2.9 Population by Age Group within the Zone of Interest for Counties in Arkansas, Louisiana, and Oklahoma

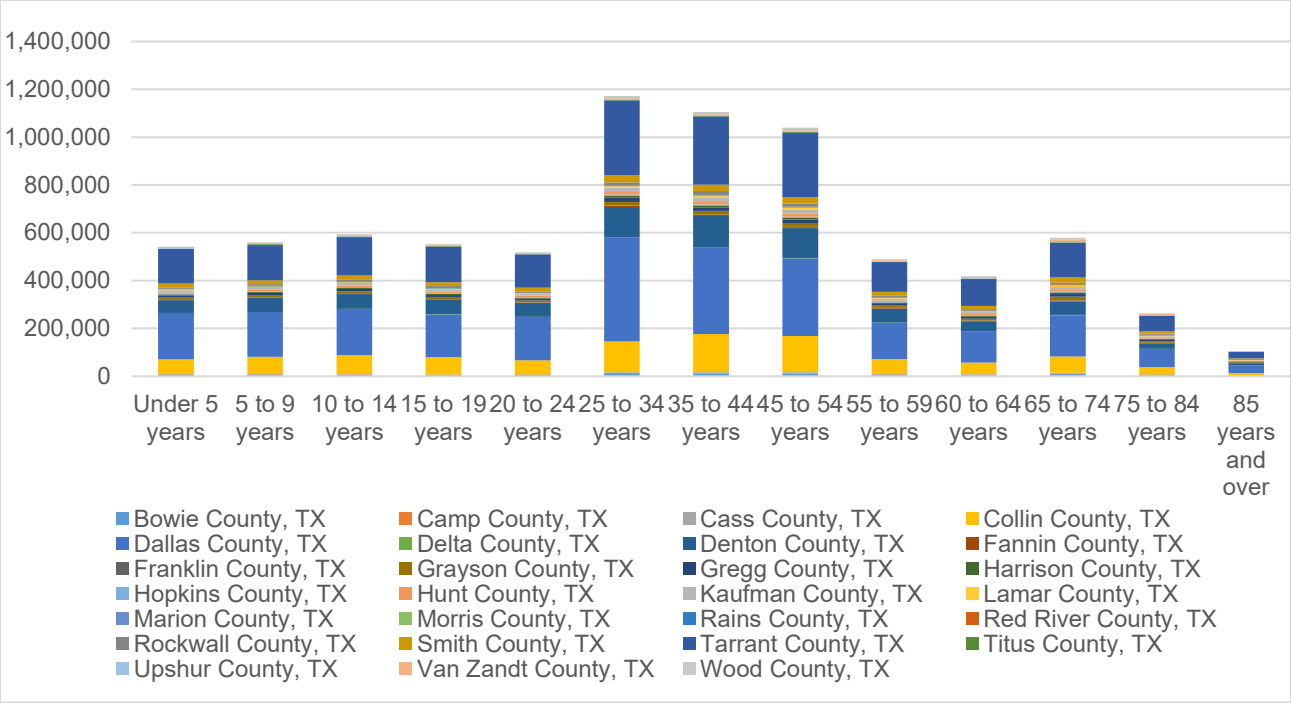

Figure 2.10 Population by Age Group within the Zone of Interest for Counties within Texas (Source: American Community Survey 5 Year Estimate, US. Census Bureau)

The population by race and Hispanic origin by county is shown in Figure 2.11. The population of the zone of interest is predominantly White, with approximately 47 percent of the population. About 26 percent of the population is Hispanic or Latino, and 17 percent are Black. Asians make up about 7 percent and almost 3 percent identify as two or more races. The remaining categories each make up less than 1 percent of the total population. The State of Texas, by comparison, is 41 percent White; 39 percent Hispanic or Latino, 12 percent Black, 5 percent Asian, 2 percent two or more races, and the remaining races each less than 1 percent.

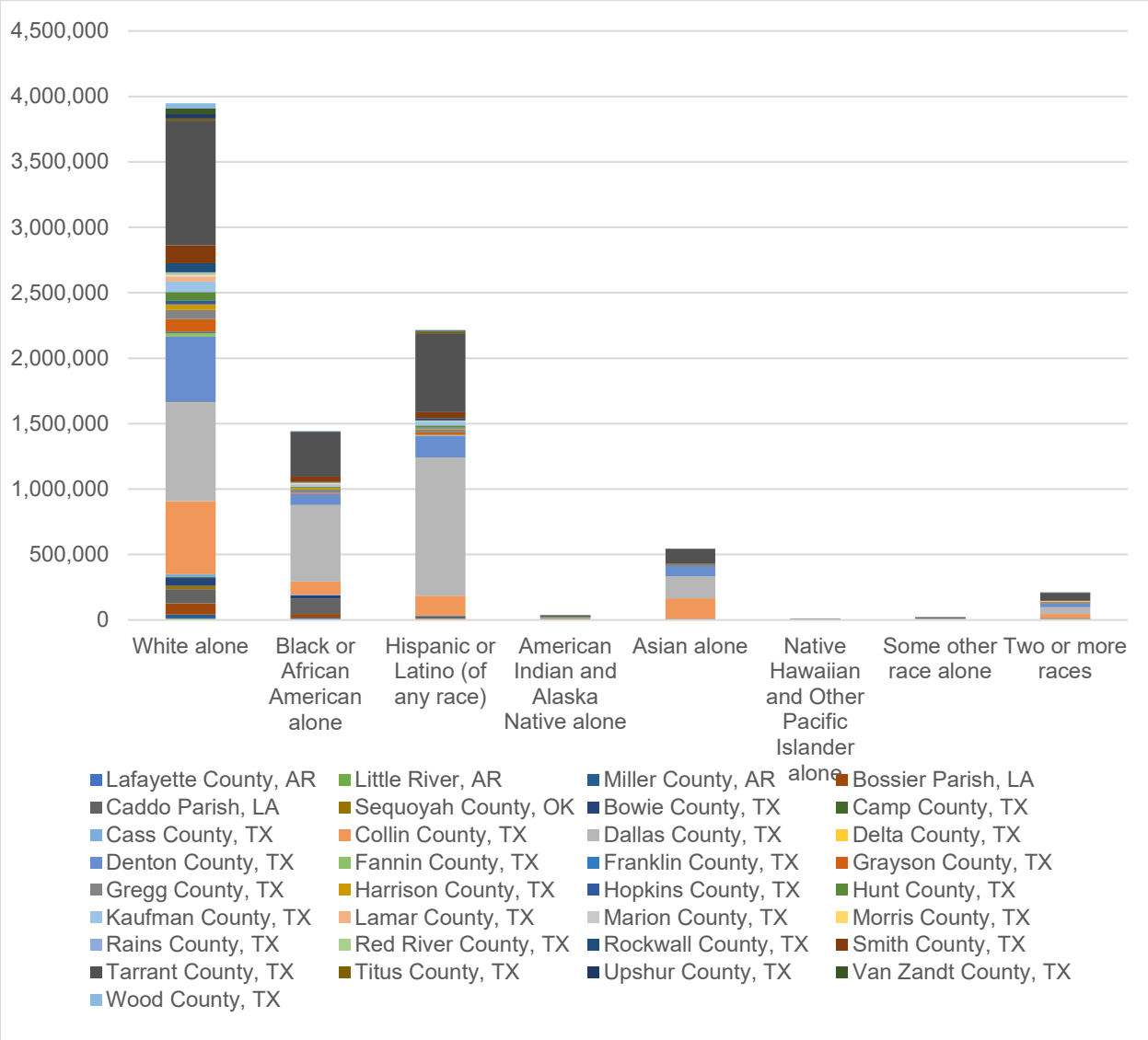

Figure 2.11 Race and Hispanic Origin Population by County Within the ZOI

2.10.3 Education and Employment

As seen in Table 2.13, approximately 86 percent of the population 25 years and older in the zone of interest have attained a high school diploma or greater education, demonstrating a well-educated population. Approximately 42 percent of the population has earned an Associate's degree or higher. About 22 percent have earned a Bachelor's degree. The distribution for the state is almost identical, with less than 84 percent achieving a high school diploma or higher, 38 percent with an Associate's or higher, and 20 percent with a Bachelor's degree.

Table 2.13 Population Estimate by Highest Level of Educational Attainment, Population 25 Years of Age and Older, 2020

Geographic 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's degree	Bachelor's degree	Graduate or professional degree
Arkansas	2,026,722	95,403	164,957	686,812	445,268	151,587	308,648	174,047
Louisiana	3,139,520	147,491	296,685	1,044,356	665,481	204,960	499,998	280,549
Texas	18,449,851	1,444,382	1,440,352	4,559,034	3,974,299	1,369,606	3,671,085	1,991,093
Lafayette County, AR	4,857	372	649	2,064	811	279	528	154
Little River, AR	8,756	152	744	3,804	2,180	625	875	376
Miller County, AR	29,613	1,288	2,956	10,251	7,879	1,915	3,322	2,002
Bossier Parish, LA	84,126	2,524	5,832	23,476	23,252	7,652	13,727	7,663
Caddo Parish, LA	165,002	6,005	15,738	51,806	39,101	11,977	23,751	16,624
Bowie County, TX	63,575	2,193	4,486	21,530	16,565	4,886	9,049	4,866
Camp County, TX	8,446	633	404	2,820	2,160	581	1,217	631
Cass County, TX	20,960	813	1,931	8,944	3,991	1,443	2,667	1,171
Collin County, TX	662,273	21,475	18,898	95,870	123,523	49,991	223,727	128,789
Dallas County, TX	1,686,671	179,455	152,010	380,373	327,854	99,082	344,893	203,004
Delta County, TX	3,605	138	316	1,221	844	307	504	275
Denton County, TX	569,381	18,900	22,290	100,267	124,893	42,502	175,253	85,276
Fannin County, TX	24,604	1,228	2,324	8,867	6,331	1,441	2,999	1,414
Franklin County, TX	7,419	286	414	1,852	2,047	573	1,668	579
Grayson County, TX	90,127	3,348	5,985	27,015	25,344	9,881	12,687	5,867
Gregg County, TX	80,195	4,641	7,710	22,429	21,599	6,844	11,908	5,064
Harrison County, TX	44,280	1,975	4,047	14,059	12,032	3,168	6,183	2,816
Hopkins County, TX	24,671	1,556	2,178	8,468	5,446	1,769	3,708	1,546

Geographic 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's degree	Bachelor's degree	Graduate or professional degree
Hunt County, TX	63,553	3,158	6,016	21,980	14,964	4,479	8,547	4,409
Kaufman County, TX	82,983	4,976	6,795	27,442	19,865	7,160	11,771	4,974
Lamar County, TX	34,180	1,491	3,269	11,443	8,582	2,989	4,375	2,031
Marion County, TX	7,423	221	810	2,953	1,652	549	980	258
Morris County, TX	8,541	377	387	3,685	2,259	627	870	336
Rains County, TX	8,968	694	827	3,380	1,991	704	959	413
Red River County, TX	8,978	353	638	3,545	2,355	680	1,023	384
Rockwall County, TX	65,792	2,150	2,443	11,553	15,317	6,137	17,738	10,454
Smith County, TX	151,253	8,133	11,400	35,547	40,403	14,877	27,612	13,281
Tarrant County, TX	1,336,510	84,585	95,869	319,800	295,235	105,192	289,302	146,527
Titus County, TX	19,986	2,340	2,023	7,086	3,540	1,648	2,429	920
Upshur County, TX	28,133	1,263	2,462	9,828	6,889	2,560	3,552	1,579
Van Zandt County, TX	38,832	2,079	3,629	12,815	10,760	3,423	4,562	1,564
Wood County, TX	32,769	1,916	2,788	10,831	8,584	2,367	3,992	2,291
Zone of Interest	**5,494,851**	**362,356**	**391,679**	**1,278,298**	**1,183,662**	**401,032**	**1,219,127**	**658,697**

Source: American Community Survey 5 Year Estimate, US. Census Bureau

There were approximately 4.2 million persons, 16 years of age and older, employed in the zone of interest in 2020. The largest share of the employment occurs in the educational, health care and social services sector, with 20 percent of total employment. Approximately 13 percent of the population is employed in the *professional, scientific, and management, administrative and waste management* sector. The *retail trade* sector accounts for 11 percent. and 9 percent each in *manufacturing and finance, insurance and real estate*, and *arts, entertainment and food services* sectors. About 8 percent are employed in the *construction* sector, and 7 percent *transportation and warehousing* sector. The remaining sectors account for 5 percent or less of total employment. The zone of interest generally mirrors the State of Texas' distribution of employment by sector with slightly higher percentages in the *agriculture, forestry, fishing/hunting and mining* sector, and slightly higher for the i*nformation and finance* and *insurance* sectors for the zone of interest Figure 2.12, 2.13, and 2.14 shows the employment by sector for each of the geographic areas.

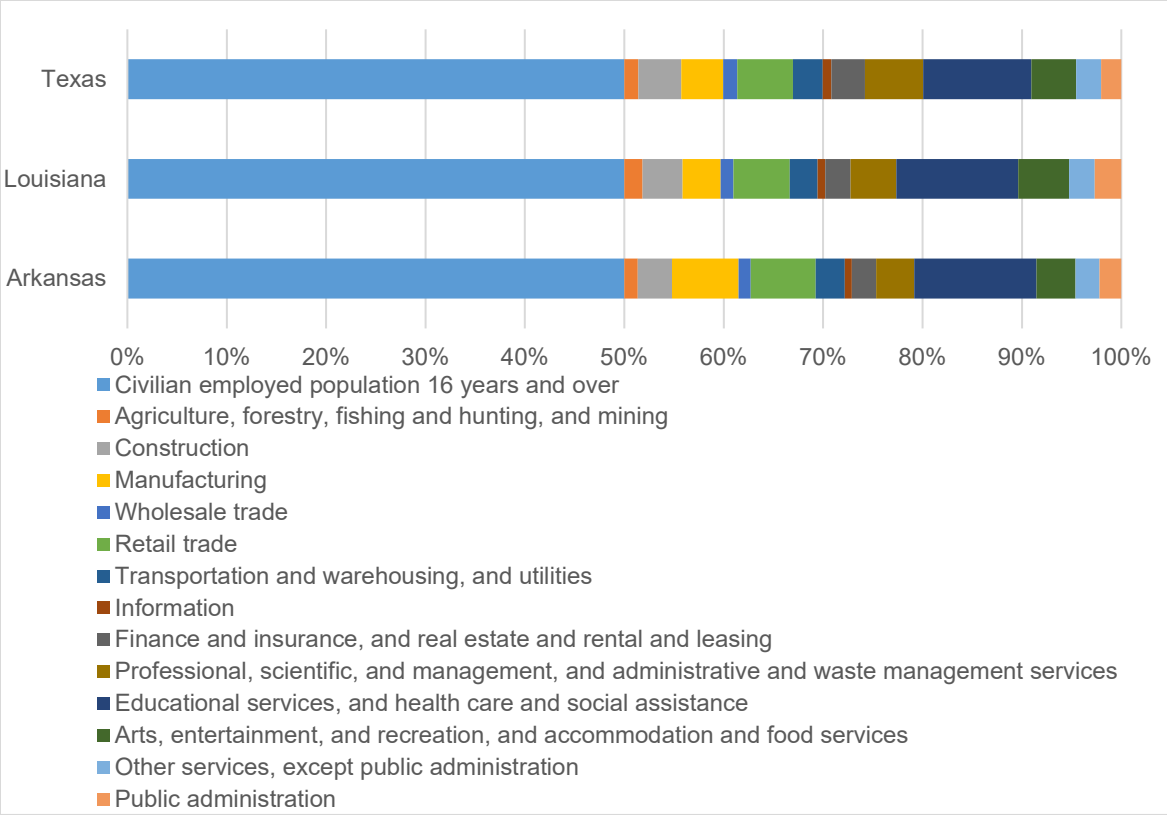

Figure 2.12 Employment by Sector for the Area of Interest by State, 2020

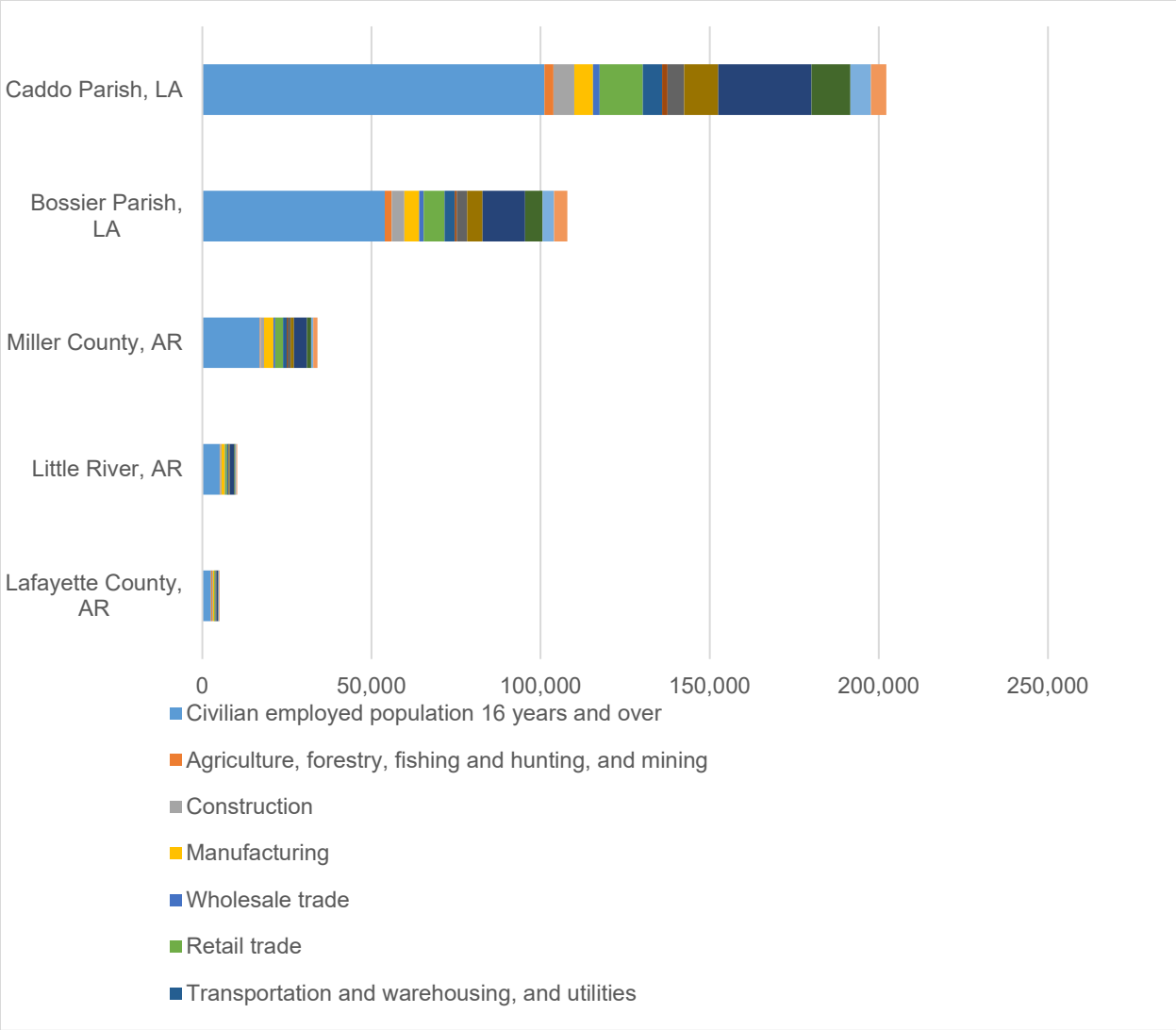

Figure 2.13 Employment by Sector for the Counties in Oklahoma, Louisiana, and Arkansas with the Area of Interest, 2020

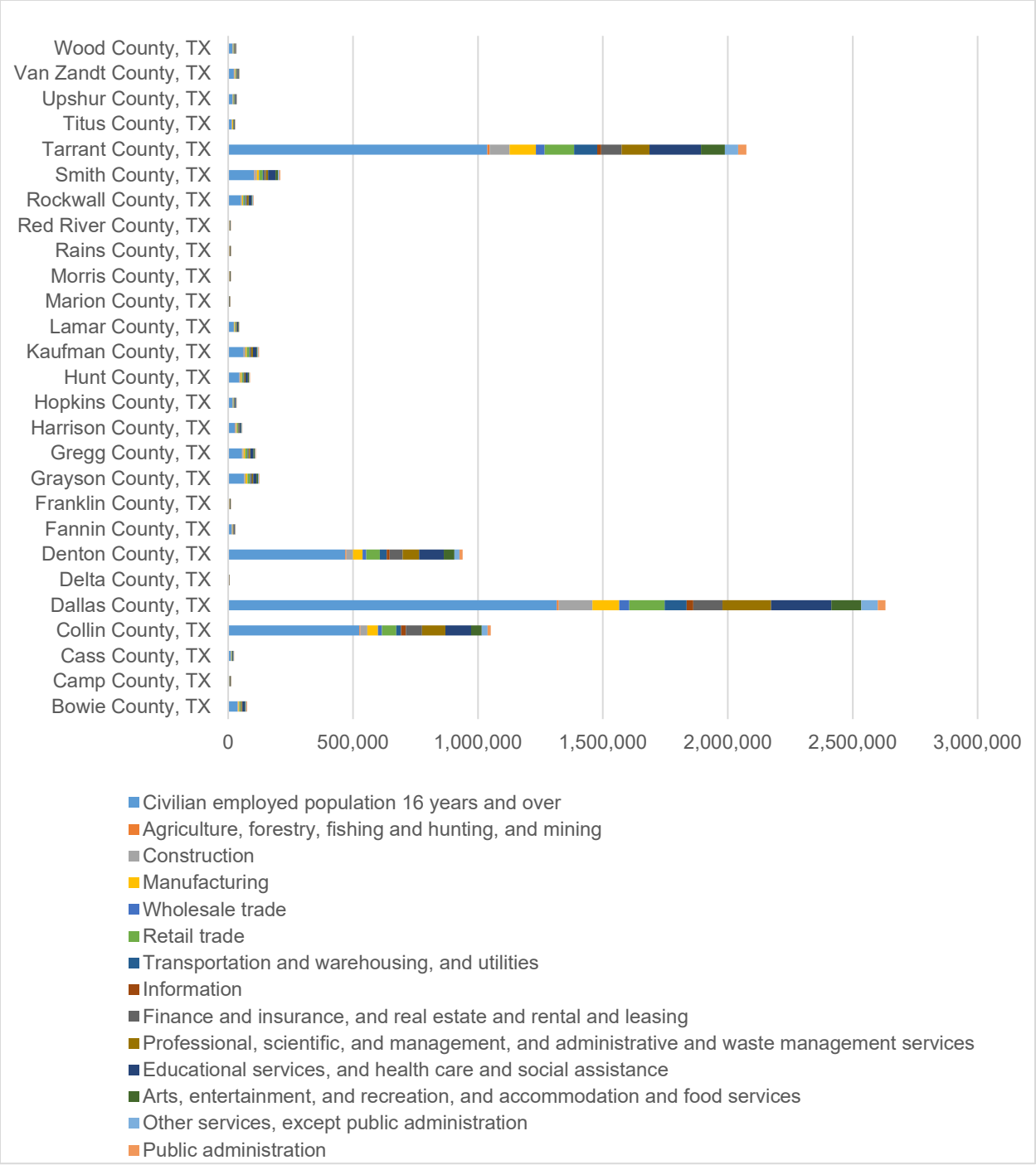

Figure 2.14 Employment by Sector for the Texas Counties in the Area of Interest, 2020
(Source: American Community Survey 5 Year Estimate, US. Census Bureau)

There are approximately 4,364,850 persons in the civilian labor force in the zone of interest, with 4,154,863 of those employed in 2020, as shown in Table 2.14. Approximately 4.8 percent of the civilian labor force is unemployed. For the state of Texas, the unemployment rate is 5.2 percent, suggesting a slightly more robust economy within the zone of interest.

Table 2.14 Civilian Labor Force, Number Employed, Unemployed and Unemployment Rate, 2020

Geographic Area	Civilian Labor Force	Number Employed	Number Unemployed	Unemployment Rate
Arkansas	1,381,452	1,309,748	71,704	5.2%
Louisiana	2,166,003	2,023,915	142,088	6.6%
Texas	14,214,242	13,461,358	752,884	5.3%
Lafayette County, AR	2,753	2,568	185	6.7%
Little River, AR	5,576	5,136	440	7.9%
Miller County, AR	18,530	17,026	1,504	8.1%
Bossier Parish, LA	57,037	53,972	3,065	5.4%
Caddo Parish, LA	108,584	101,111	7,473	6.9%
Bowie County, TX	39,812	37,897	1,915	4.8%
Camp County, TX	5,595	5,234	361	6.5%
Cass County, TX	12,375	11,367	1,008	8.1%
Collin County, TX	547,594	525,711	21,883	4.0%
Dallas County, TX	1,384,986	1,315,440	69,546	5.0%
Delta County, TX	2,304	2,199	105	4.6%
Denton County, TX	488,046	469,202	18,844	3.9%
Fannin County, TX	15,186	14,479	707	4.7%
Franklin County, TX	5,279	4,939	340	6.4%
Grayson County, TX	65,376	62,518	2,858	4.4%
Gregg County, TX	57,865	55,502	2,363	4.1%
Harrison County, TX	30,142	28,314	1,828	6.1%
Hopkins County, TX	17,628	16,859	769	4.4%
Hunt County, TX	45,785	43,559	2,226	4.9%
Kaufman County, TX	65,390	61,908	3,482	5.3%
Lamar County, TX	23,080	22,190	890	3.9%
Marion County, TX	3,960	3,528	432	10.9%
Morris County, TX	5,418	5,017	401	7.4%
Rains County, TX	5,318	5,108	210	3.9%
Red River County, TX	5,151	4,886	265	5.1%
Rockwall County, TX	53,150	51,166	1,984	3.7%
Smith County, TX	110,214	104,190	6,024	5.5%
Tarrant County, TX	1,091,244	1,037,059	54,185	5.0%
Titus County, TX	15,106	14,342	764	5.1%
Upshur County, TX	18,214	17,130	1,084	6.0%
Van Zandt County, TX	23,539	22,595	944	4.0%
Wood County, TX	17,594	16,688	906	5.1%
Zone of Interest	**4,364,850**	**4,154,863**	**209,987**	**4.8%**

2.10.4 Households, Income and Poverty

There were approximately 3 million households in the zone of interest in 2020, representing about 9 percent of the total households in the state. About 56 percent of the households were in Dallas and Tarrant Counties in Texas. The average household size is approximately 2.8 in the zone of interest and 2.5 for the state of Texas. The average household size in the constituent counties rated from 2.18 in Marion County, Texas to 3.27 in Kaufman County, Texas. This information is presented in Table 2.15.

Table 2.15 Number of Households and Average Household Size, 2020

Geographic Area	Total Households	Average Household Size
Arkansas	1,170,544	2.50
Louisiana	1,751,956	2.59
Oklahoma	1,493,569	2.57
Texas	9,906,070	2.83
Lafayette County, AR	2,898	2.28
Little River, AR	5,292	2.30
Miller County, AR	16,237	2.59
Bossier Parish, LA	49,600	2.50
Caddo Parish, LA	96,043	2.48
Sequoyah County, OK	15,437	2.67
Bowie County, TX	34,283	2.56
Camp County, TX	4,460	2.89
Cass County, TX	11,962	2.48
Collin County, TX	353,491	2.83
Dallas County, TX	945,996	2.74
Delta County, TX	2,066	2.52
Denton County, TX	300,585	2.83
Fannin County, TX	12,391	2.58
Franklin County, TX	3,960	2.70
Grayson County, TX	49,327	2.66
Gregg County, TX	46,174	2.58
Harrison County, TX	23,841	2.73
Hopkins County, TX	13,514	2.68
Hunt County, TX	33,596	2.78
Kaufman County, TX	39,237	3.27
Lamar County, TX	19,995	2.45
Marion County, TX	4,535	2.18
Morris County, TX	5,170	2.36
Rains County, TX	4,321	2.76

Geographic Area	Total Households	Average Household Size
Red River County, TX	5,143	2.32
Rockwall County, TX	34,457	2.92
Smith County, TX	77,809	2.88
Tarrant County, TX	722,446	2.84
Titus County, TX	11,064	2.94
Upshur County, TX	14,392	2.84
Van Zandt County, TX	20,494	2.70
Wood County, TX	16,716	2.60
Zone of Interest	**2,996,932**	**2.81**

Source: American Community Survey 5 Year Estimate, US. Census Bureau

The 2020 median household and per capita income for the geographic areas is presented in Table 2.16. The median household income for the zone of interest is not available, but for the constituent counties it ranges from approximately $34 thousand to $106 thousand, therefore the zone of interest median household income would fall within that range. This would show that the median household income for the zone of interest would be greater than the $63 thousand for the state of Texas overall. Per capita income tells the similar story that the zone of interest has higher incomes than the state overall. For the zone of interest, the per capita income is approximately $35 thousand, compared to the state with $32 thousand.

Table 2.16 Median Household Income and Per Capita Income, 2020

Geographic Area	Median Household Income (dollars)	Per Capita Income (dollars)
Arkansas	49,475	27,724
Louisiana	50,800	29,522
Texas	63,826	32,177
Lafayette County, AR	33,763	22,204
Little River, AR	48,966	27,057
Miller County, AR	45,391	23,828
Bossier Parish, LA	55,448	42,337
Caddo Parish, LA	42,003	27,967
Bowie County, TX	51,796	27,572
Camp County, TX	49,539	24,038
Cass County, TX	47,539	27,161
Collin County, TX	100,541	46,240
Dallas County, TX	61,870	33,604

Geographic Area	Median Household Income (dollars)	Per Capita Income (dollars)
Delta County, TX	49,868	28,197
Denton County, TX	90,354	42,498
Fannin County, TX	57,898	28,882
Franklin County, TX	59,632	31,988
Grayson County, TX	58,296	29,157
Gregg County, TX	52,027	27,809
Harrison County, TX	54,234	26,621
Hopkins County, TX	54,600	26,915
Hunt County, TX	57,467	27,338
Kaufman County, TX	72,179	29,147
Lamar County, TX	48,036	24,826
Marion County, TX	39,093	25,798
Morris County, TX	43,995	22,868
Rains County, TX	52,612	28,919
Red River County, TX	37,135	23,895
Rockwall County, TX	105,956	45,461
Smith County, TX	59,450	28,858
Tarrant County, TX	70,306	34,045
Titus County, TX	53,406	22,077
Upshur County, TX	54,330	26,648
Van Zandt County, TX	57,203	30,111
Wood County, TX	56,749	30,587
Zone of Interest	**NA**	**35,258**

Table 2.17 shows the percent of families and people in the geographic areas below the poverty level. The percent of families ranged from 3 percent to 19 percent in the zone of interest, compared to 11 percent for the state of Texas. The percent of persons below the poverty level is approximately 12 percent, with constituent counties ranging from 4 percent to 25 percent.

Table 2.17 Percent of Families and People Below the Poverty Level, 2020

Geographic Area	Percent of Families	Percent of People
Arkansas	11.80%	16.10%
Louisiana	14.20%	18.60%
Texas	10.90%	14.20%
Lafayette County, AR	19.20%	24.70%
Little River County, AR	9.60%	14.20%
Miller County, AR	14.40%	17.70%
Bossier Parish, LA	12.40%	16.90%
Caddo Parish, LA	18.10%	22.90%
Bowie County, TX	13.40%	16.80%
Camp County, TX	14.30%	20.10%
Cass County, TX	12.50%	17.50%
Collin County, TX	4.50%	6.30%
Dallas County, TX	11.40%	14.60%
Delta County, TX	9.30%	16.20%
Denton County, TX	4.50%	7.40%
Fannin County, TX	7.30%	12.50%
Franklin County, TX	4.20%	8.20%
Grayson County, TX	8.60%	12.00%
Gregg County, TX	13.40%	17.60%
Harrison County, TX	11.90%	16.80%
Hopkins County, TX	9.50%	11.80%
Hunt County, TX	10.30%	14.30%
Kaufman County, TX	8.50%	10.70%
Lamar County, TX	13.50%	18.40%
Marion County, TX	11.70%	18.50%
Morris County, TX	13.10%	17.80%
Rains County, TX	5.30%	12.00%
Red River County, TX	18.00%	20.20%
Rockwall County, TX	3.00%	3.80%
Smith County, TX	9.90%	14.00%
Tarrant County, TX	8.40%	11.40%
Titus County, TX	12.40%	15.80%
Upshur County, TX	10.60%	14.90%
Van Zandt County, TX	8.80%	12.70%
Wood County, TX	9.70%	12.90%
Zone of Interest	**NA**	**12.25%**

2.11 RECREATION FACILITIES, ACTIVITIES, NEEDS, AND TRENDS

Jim Chapman Lake and Sulphur River Basin offers a variety of recreational opportunities. The area provides a relaxing setting for camping, hunting, fishing, boating, hiking or horseback riding. Table 2.18 provides a listing of areas as well as a general summary of the primary recreation facilities provided.

Table 2.18 Summary of Primary Recreation Facilities at Jim Chapman Lake

FACILITIES	Managing Entity	Designated Campsites	Boat Launching Ramps	Restrooms	Courtesy Dock	Showers	Courts	Fishing Facilities	Designated Picnic Area	Dump Stations	Swimming Area	Trails	Playground
LOCATION	-	-	-	-	-	-	-	-	-	-	-	-	-
Cooper State Park: South Sulphur Unit	**T**	**EC S Q**	**X**	**X**	**X**	**X**	**VB**	**CP**	**AG**	**X**	**X**	**BQ H I**	**X**
Pecan Ridge Cabin Area	T	C	-	X	-	X	-	-	-	-	-	-	-
Eagle Point Screened Shelter Area	T	CS	-	X	-	X	-	-	-	-	-	-	-
Bright Star Camping Area	T	E	-	X	-	X	-	P	-	X	-	-	-
Oak Grove Camping Area	T	Tent	-	X	-	-	-	-	-	-	-	-	-
Deer Haven Camping Area	T	E	-	X	-	X	-	P	-	X	-	-	-
Buggy Whip Equestrian Camping Area	T	Q	-	*	-	*	-	-	-	-	-	HQ	-
Sunset Cove Day Use Area	T	-	-	X	-	-	-	C	A	-	-	-	-
Heron Harbor Day Use Area	T			X		*	VB	P	A		X	BH	X
Gull's Bluff Boat Ramp	T	-	X	-	X	-	-	-	-	-	-	-	-
Honey Creek Day Use Area	T	-	X	X	X	-	-	CP	A	-	-	BH	

FACILITIES	Managing Entity	Designated Campsites	Boat Launching Ramps	Restrooms	Courtesy Dock	Showers	Courts	Fishing Facilities	Designated Picnic Area	Dump Stations	Swimming Area	Trails	Playground
John's Creek Boat Ramp	T	-	X	-	X	-	-	-	-	-	-	-	-
Buggy Whip Equestrian Trail	T	-	-	-	-	-	-	-	-	-	-	HQ	-
Coyote Run	T	-	-	-	-	-	-	-	-	-	-	HC	-
Honey Creek Interpretive Trail	T	-	-	-	-	-	-	-	-	-	-	I	-
Little Bluestem Loop	T	-	-	-	-	-	-	-	-	-	-	HQ	-
Lonesome Dove Loop	T	-	-	-	-	-	-	-	-	-	-	HQ	-
Rabbit Run	T	-	-	-	-	-	-	-	-	-	-	HQ	-
Pioneer Pass	T	-	-	-	-	-	-	-	-	-	-	HQ	-
Cooper State Park: Doctors Creek Unit	**T**	**EC SG**	**X**	**X**	**X**	**X**	**V**	**CP**	**AG**	**X**	**X**	**BH**	*****
Liberty Grove Camping Area	T	X	-	X	-	X	-	-	-	-	-	-	*
Granny's Neck Screened Shelter Area	T	EC S	-	X	-	X	-	-	A	-	-	-	-
Pelican Point Day Use Area	T	-	-	X	-	*	V	-	AG	-	*	-	-
Bluebonnet Day Use Area	T	-	-	-	-	-	-	P	A	-	-	-	-
Lone Pine Boat Ramp	T	-	X	-	X	-	-	-	-	-	-	-	-
Cedar Creek North Loop	T	-	-	-	-	-	-	-	-	-	-	I	-
Cedar Creek South Loop	T	-	-	-	-	-	-	-	-	-	-	I	-
Cedar Creek East Loop	T	-	-	-	-	-	-	-	-	-	-	I	-
Cedar Creek West Loop	T	-	-	-	-	-	-	-	-	-	-	I	-
Tira Boat Ramp	**T**	**-**	**X**	**X**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

FACILITIES	Managing Entity	Designated Campsites	Boat Launching Ramps	Restrooms	Courtesy Dock	Showers	Courts	Fishing Facilities	Designated Picnic Area	Dump Stations	Swimming Area	Trails	Playground
John's Creek Boat Ramp	**T**	**-**	**X**	**X**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Stilling Basin	**U**	**-**	**-**	**X**	**-**	**-**	**-**	**B**	**A**	**-**	**-**	**-**	**-**

Key to Table:

X Exists at lake

Managing Entity
T TPWD
U USACE

Camping
E Electric Campsites
C Cabins
S Screened Shelters
G Group Camping
Q Equestrian Campsites

Fishing
B Bank
C Fish Cleaning Stations
P Fishing Piers

Picnic
A Picnic Area
G Group Picnic

Trails
B Bike Trails
Q Equestrian Trails
H Hiking Trails
I Interpretive Hiking Trails

2.11.1 Fishing and Hunting

Jim Chapman Lake and White Oak Creek Mitigation Area provides over 9,500 acres of land surrounding the lake and 4700 acres of flooded timber for public hunting land for a multitude of wildlife species. In addition to this, the White Oak Creek Mitigation Area offers 25,777 acres of bottomland hardwood forest. Jim Chapman Lake also offers thousands of acres of water for fishing, including large areas of timber and brush. Both hunting and fishing are described in more detail in Chapter 5 under Multiple Resource Management Lands - Wildlife Management Areas.

The predominant game fish are largemouth, hybrid striped, and white bass; blue, channel, and flathead catfish; and black and white crappie. Other species include bluegill and bowfin. Jim Chapman Lake is known for great hybrid striped bass and white bass fishing. Special regulations govern the harvest of largemouth bass at Jim Chapman Lake. Currently, there is a minimum length limit of 14 inches and a daily bag limit of five largemouth bass. TPWD publishes a state-wide annual guide to summarize hunting and fishing regulations.

The main river channel is a popular area for spring fishing. Numerous small islands and fencerows provide structure for largemouth bass. The only shore development is at the state park units, where there are four boat ramps but no marinas.

There are two lighted fishing piers in the state park units, Doctors Creek and South Sulphur. Doctors Creek is ADA accessible. John's Creek Ramp provides a boat ramp and parking along the north shore of Jim Chapman Lake. Many areas around Jim Chapman Lake provide access to trails and sections of the 31 miles of shoreline available for fishing from the bank.

Jim Chapman Lake is relatively small, and there are only one or two fishing charter services operating on it at any given time.

Public hunting is permitted for white-tailed deer, feral hogs, dove, quail, woodcock, gallinules, rails, snipe, waterfowl, rabbits, hares, and squirrels on the Cooper Wildlife Management Area (WMA) on the eastern border of Jim Chapman Lake. Some animals require a tag to be won by lottery through the TPWD Texas Drawn Hunts system. The Cooper WMA, located in Delta and Hopkins Counties, covers approximately 9,500 acres of land surrounding the Jim Chapman Lake and 4,700 acres of flooded timber. The Cooper Wetland System is a premier waterfowl production area in northeast Texas. Likewise, public hunting is permitted for white-tailed deer, feral hog, mourning dove, waterfowl, early teal, duck, woodcock, rail, gallinule, snipe, squirrel, rabbits, hares, and furbearers on the White Oak Creek Mitigation Area.

2.11.2 Camping and Picnicking

Jim Chapman Lake has quiet campgrounds spaced for privacy. Campsites range from primitive nonelectric sites to paved camping pads with water and electricity for fully equipped recreational vehicles. The large parks and miles of paved roads are ideal for cycling or jogging. Campground areas include general hookups, restrooms, showering facilities, swim beach, and fishing docks. The lake also has facilities for group camping and picnic shelters equipped with tables, electricity, and large outdoor cooking grills.

The South Sulphur and Doctors Creek State Park units also have cabins available at the campgrounds. The parks have beaches, shelters, wildlife observation areas, and picnic areas. There are no vacation home rentals on Jim Chapman Lake.

Doctors Creek is ADA accessible. It has parking for 93 vehicles. South Sulphur has parking for 123 vehicles at Gull's Bluff and parking for 63 at Honey Creek. There are hiking, biking, and equestrian trails in the parks. The TPWD maintains the two state park units, and the Cooper Wildlife Management Area.

These parks units charge fees for specific amenities and RV sites. The Buggy Whip Equestrian camping area at the South Sulphur unit has 15 sites with back-in concrete pads for RVs with water and electric hookups, picnic tables, fire rings, and 20-foot tether cables.

2.11.3 Water Sports

The lake offers plenty of recreational opportunities for boater and non-boater alike. Water lovers can enjoy skiing, tubing, kayaking, swimming, or simply relaxing on

or around Jim Chapman Lake. At convenient sites around the lake, five boat launching ramps are located, and two designated swim beaches have been developed.

Boating on the lake is in accordance with State of Texas boating laws and USACE regulations. Just like traffic laws, boating laws exist to help prevent accidents.

Photo 2.3 Kayaks at Jim Chapman Lake (USACE photo)

Five boat ramps on Jim Chapman Lake facilitate launching pleasure boats, pontoon boats, fishing boats, and kayaks or canoes. There are six-lane, four-lane, and two-lane boat ramps. The scenery around Jim Chapman Lake is low rolling hills, forests, and flatlands. The lake has several islands and miles of scenic shoreline. There are no boat rental services, gas docks, or marinas, and only one bait shop.

Most visitors come to Jim Chapman Lake from the north Texas area and the neighboring states of Louisiana, Arkansas, and Oklahoma, so the lake can get somewhat busy during peak recreation season. An abundance of open water provides ample opportunity for a wide variety of water sports. TPWD has State Park Stores at the entrances of Doctors Creek and South Sulphur Park units that offer limited items and souvenirs, so visitors are encouraged to stock up on supplies and fuel before coming to the lake. The city of Cooper, Texas, is about two miles from the northeastern shore of Jim Chapman Lake, and the city of Sulphur Springs is about 10 miles due south.

2.11.4 Multiuse and Equestrian Trails

There are several trails at Jim Chapman Lake in the Cooper Lake State Park available for use by visitors and are managed by TPWD. The trails located in the Doctors Creek Unit on the north side of Jim Chapman Lake are rated as easy, while those in the South Sulphur Creek Unit are rated from easy to difficult. Trail uses include hiking, cycling, and equestrian as noted on the maps (see Section 5.3.3). Table 2.19 list the trails and information on distance, time, and trail difficulty.

Table 2.19 Trails at Jim Chapman Lake

Trail	Distance in Miles	Time	Difficulty
Doctors Creek Unit	-	-	-
Cedar Creek North Loop	0.6	40 min.	Easy
Cedar Creek South Loop	0.5	30 min.	Easy
Cedar Creek East Loop	1.3	1.25 hrs.	Easy
Cedar Creek West Loop	.6	35 min.	Easy
South Sulphur Unit	-	-	-
Coyote Run Trail	2.3	3 hrs.	Moderate
Honey Creek Interpretive Trail	0.3	30 min.	Easy
Little Bluestem Loop	3.2	2 hrs.	Easy
Lonesome Dove Loop	4.8	3 hrs.	Moderate/ Challenging
Rabbit Run	1.0	1 hr.	Moderate
Pioneer Pass	1.5	1.5 hrs.	Moderate

Source: TPWD Trails Maps

2.11.5 Commercial Concession Leases

Concessionaires provide valuable services to the public at USACE lakes across the United States. The USACE makes efforts to attract concessionaires that are able to establish suitable, well-maintained businesses that will offer desirable water-related services to the general public. There are currently no Commercial Concession Leases on Jim Chapman Lake.

2.11.6 Recreation Analysis – Trends and Needs

The 2018 Texas Outdoor Recreation Plan (TORP) published by TPWD is a comprehensive recreational demand study that evaluates recreation trends and needs across Texas and in subdivided regions. Some of the information in the TORP was extracted from the National Survey on Recreation and the Environment (NSRE) and reports generated by the USFWS. Much of the data in the TORP was from a survey conducted in 2017 titled “Texas Residents’ Participation in and Attitudes Toward

Outdoor Recreation by Responsive Management (Survey) on behalf of TPWD. Jim Chapman Lake and White Oak Creek Mitigation Area provide many recreation opportunities that help to meet the recreation needs identified in the TORP. The 2012 TORP was also referenced to compare the results and see how recreational trends have been changing.

The TORP indicated the rates of participation for various outdoor activities in Texas, with Jim Chapman Lake and White Oak Creek Mitigation Area located in TORP Region 6. Across the entire state and in Region 6, walking for pleasure is the most popular outdoor activity, while the next most popular being picnicking, cookouts, and other gatherings. The top ten areas of participation for outdoor recreation are indicated in Figure 2.15. Jim Chapman Lake provides an array of opportunities for recreation including walking for pleasure, picnicking, cookouts, gatherings, sightseeing, wildlife viewing, photography, fishing, and swimming in the lake, providing most of the top 10 areas of participation for outdoor recreation activities in the state and region. White Oak Creek Mitigation Area provides opportunities for fishing, hunting, and wildlife viewing.

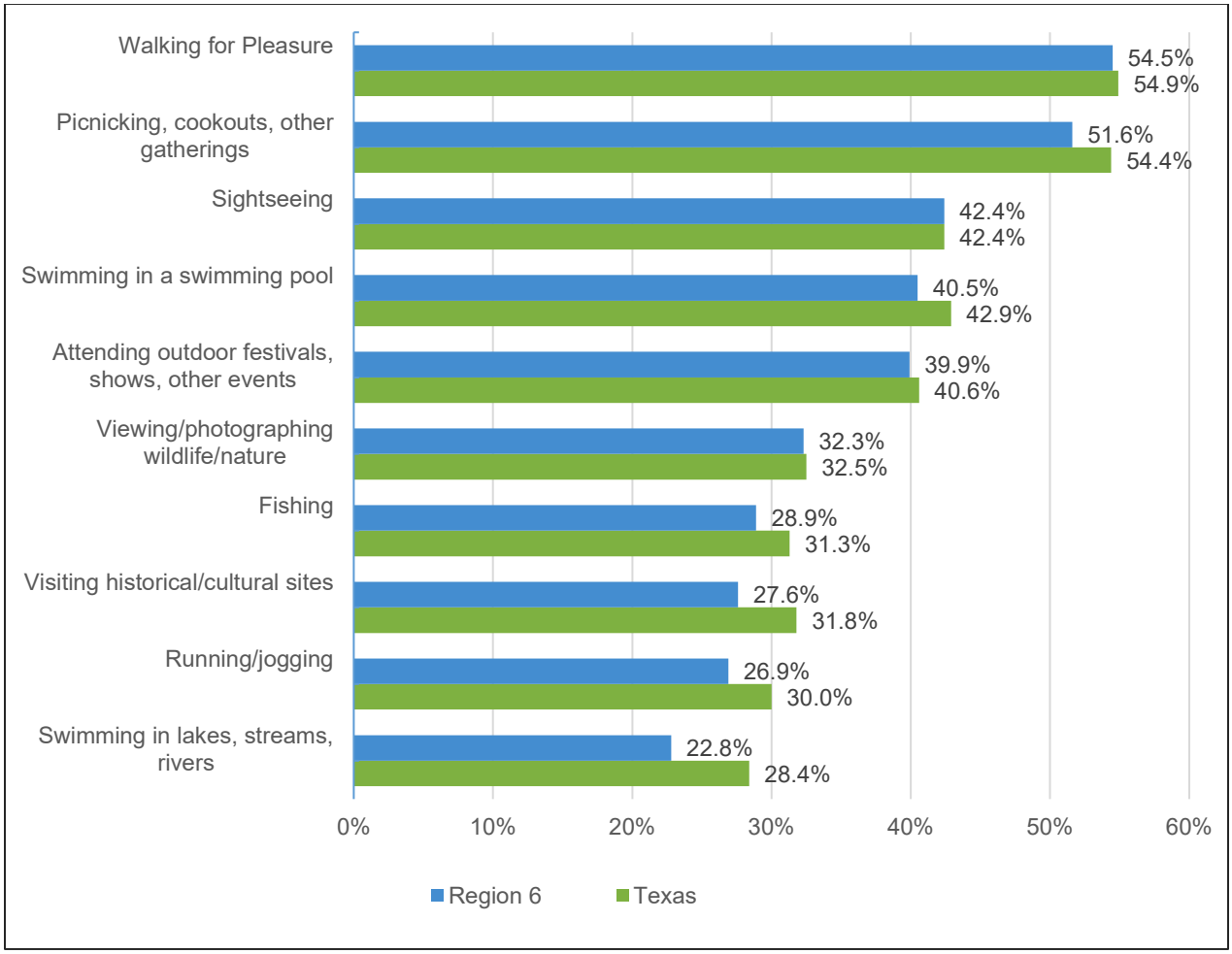

Figure 2.15 Top 10 Areas of Participation for Outdoor Recreation Activities (Source: TPWD TORP 2018)

Asked “which outdoor recreation opportunities does your community currently lack or would like to see more of in your community,” the top answer across the state and region was trails/places to hike/bike, and the next highest response was pools/swimming facilities (other than lakes). The top ten responses are indicated in Figure 2.16. Jim Chapman Lake provides an array of trails and paths for hiking, biking, and equestrian recreation, most are maintained by TPWD. The USACE provides and promotes natural resource-based recreation at lakes projects, and Jim Chapman Lake and White Oak Creek Mitigation Area provide many of the top ten that community members would like to see more of in the community.

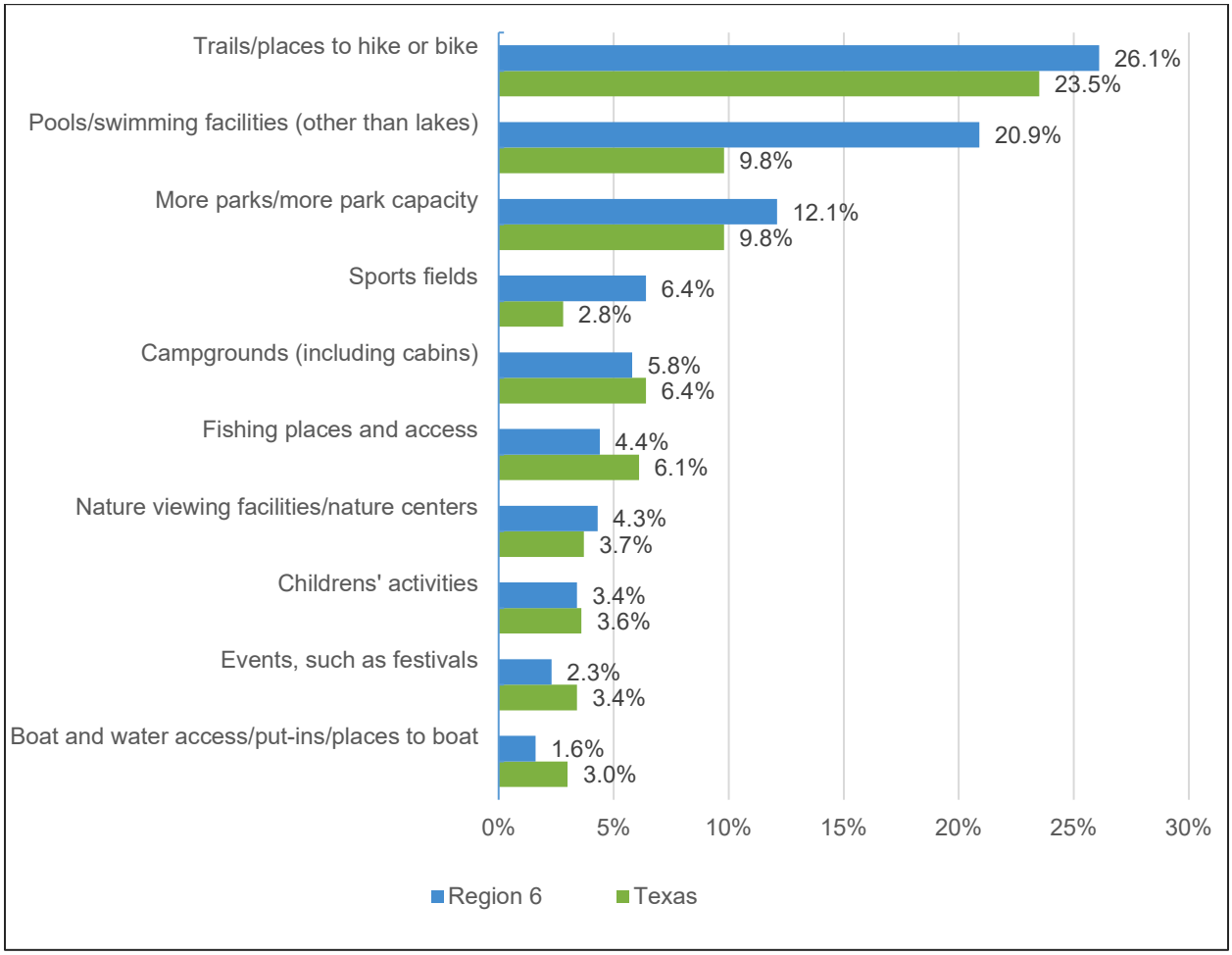

Figure 2.16 Preferred Outdoor Recreation Opportunities (Source: TPWD TORP 2018)

Additional findings from the Survey found that 34 percent of Texas residents and 27 percent of Region 6 residents have visited a state park during the past 12 months. Furthermore, 58 percent of Texas residents and 53 percent of Region 6 residents have visited a local park in the past 6 months (local park was defined as 30 minutes from respondents’ home and not a state or national park). Within Region 6, 50 percent of survey respondents have visited a local park at least 5 times in the last 12 months,

while 98 percent have visited a local park at least once in the past 12 months. Asked "which features or facilities do your local parks currently lack, or would you like to see more of at your local parks," the overwhelming response was more restroom facilities at 20.7 percent across Region 6 and 20.5 percent across Texas. The top ten responses to that survey question are indicated in Figure 2.17

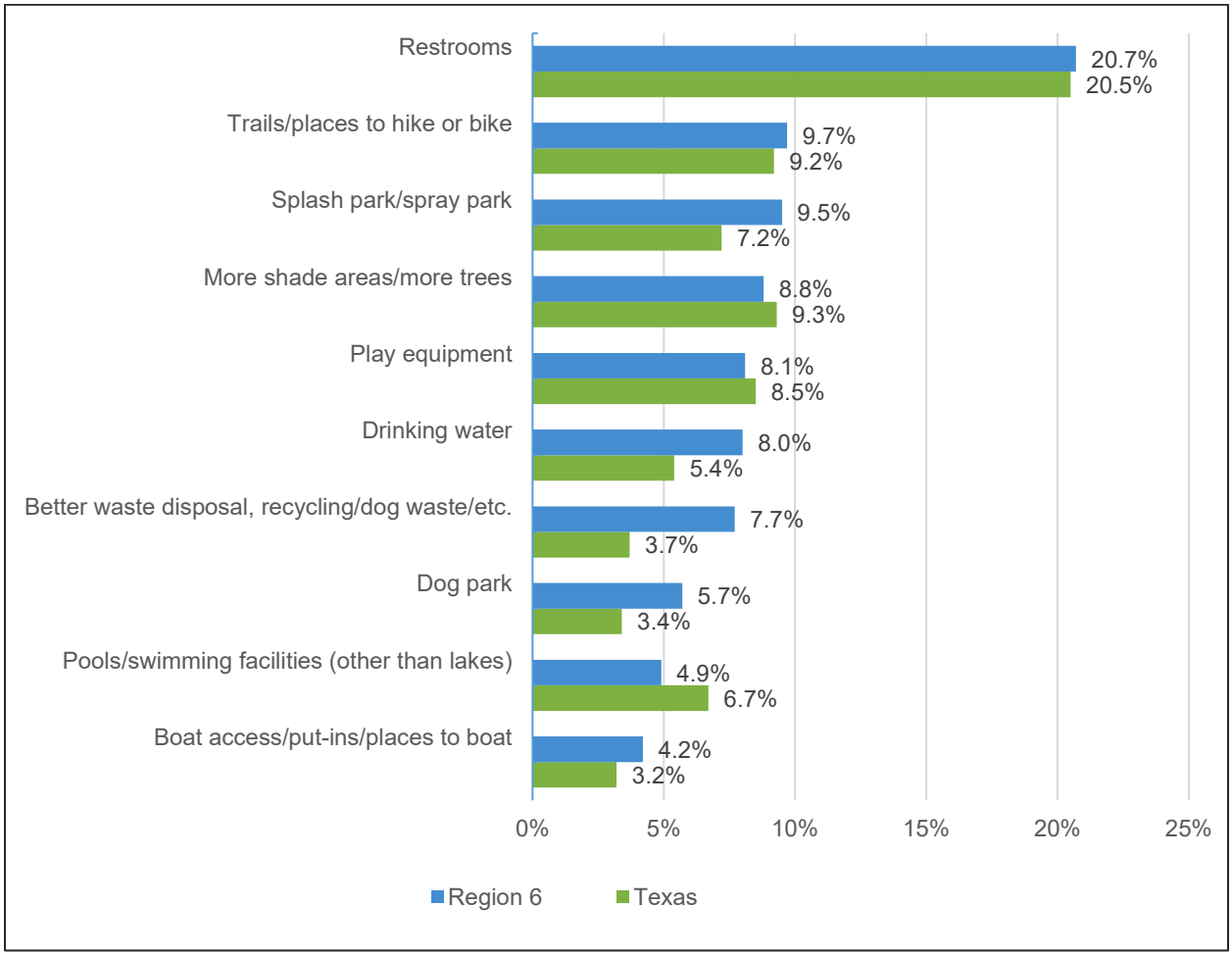

Figure 2.17 Preferred Local Park Features or Facilities (Source: TDWD TORP 2018)

In accordance with historical visitation rates and recent outdoor recreation trends documented in the 2012 and 2018 TORP, camping in developed and primitive settings has declined significantly since 2000. In contrast, the TORP documented an increase in demand for day trip activities including hiking/walking for pleasure; picnicking, cookouts, or other gatherings; sightseeing; swimming in pools; attending outdoor festivals, shows, or events; and viewing/photographing wildlife/nature. The recreation activity most people say their community lacks is hiking/biking trails, swimming pool facilities, more park capacity, and more sports fields; with the demand for swimming pool facilities and more sports fields being much higher in the Region 6 than the entire state. In response to trends documented in the TORP, USACE will endeavor to improve access to some

swim beaches and to develop trails in or adjacent to park areas as funding permits and work with TPWD to further enhance and improve recreation opportunities. The USACE partners with TPWD who manages Cooper Lake State Park at Jim Chapman Lake as well as the Wildlife Management Areas at both Jim Chapman Lake and White Oak Creek Mitigation Area, both providing opportunities to enjoy nature, but with managed trails just in Cooper Lake State Park. TPWD will continue to monitor demand within the state parks to make improvements or add future trails.

The TORP documented a dramatic increase in the demand for motor homes and travel trailers, but it did not make the top-ten areas of participation or top-ten lacking recreation opportunities. Public comments also showed interest in new motor home and travel trailer facilities, as well as upgrades and improvements for larger vehicles and improvements to hookups including electrical, water, and internet/Wi-Fi connectivity. TPWD operates campgrounds and day use areas at Cooper Lake State Park by maintaining and improving existing facilities but has not proposed long-range plans to add additional campsites or add new motor home or recreational vehicle facilities. In response to comments and the increased trend documented in the TORP, USACE and TPWD will continue to monitor demand for motor home and travel trailer facilities as well as other amenities. TPWD will continue to manage the existing motor home and camping facilities and will make upgrades based on changes in demand as funding permits while coordinating with the USACE.

2.12 REAL ESTATE

An official total of 32,264 acres of land were acquired in fee simple title for the Jim Chapman Lake project and 25,360 acres of land were acquired in fee simple title for the White Oak Creek Mitigation Area. In addition, 308 acres (to 459.5 feet NGVD29) of flowage easement were purchased at Jim Chapman Lake in accordance with USACE policy. The 16 acres at White Oak Creek Mitigation Area was originally flowage easement for Wright Patman Lake. Any land not purchased into fee for White Oak Creek Mitigation Area is still considered Wright Patman Lake flowage. As all the acres listed here are official real estate acres, they differ from the calculated acres used throughout this Master Plan.

2.12.1 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 Jim Chapman Lake include leases, licenses, easements, consents, permits, and others which include the following:

Jim Chapman Lake:

Leases: 3
- DACW63-1-16-0661 to TPWD for Cooper Lake State Park approx. 2,960 acres
- DACW63-1-18-0685 to Hopkins County for radio tower and associated structures approx. 4.003 acres

DACW63-1-94-0524 to TPWD for Cooper Wildlife Management Area approx. 14,160 acres

Easements: 7

Road, electric lines, waterlines, and fiber optic lines

Licenses: 1

Constructing a water intake structure

Consents: 14

Oil and gas wells and associated structures and a hay barn

White Oak Creek Mitigation Area:

Leases: 1

DACW63-1-94-0604 to TPWD for White Oak Creek Wildlife Management Area approx. 25,500 acres

Easements: 1

DACW63-2-96-0631 to Cass County for a road

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 Fort Worth District.

2.12.2 Guidelines for Property Adjacent to Public Land

It is the policy of the USACE to manage the natural, cultural, and developed resources of Jim Chapman Lake and White Oak Creek Mitigation Area 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 their own property. Therefore, the information contained in these guidelines is designed to acquaint the adjoining landowner and other interested persons with the types of property involved in the management of government land at Jim Chapman Lake and White Oak Creek Mitigation Area.

2.12.3 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 two terms “goal” and “objective” are often defined as synonymous, but in the context of this Master Plan 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 Jim Chapman Lake and White Oak Creek Mitigation Area 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:

- 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.

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 Fort Worth District, and Jim Chapman Lake and White Oak Creek Mitigation Area 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.

The objectives in this Master Plan are intended to provide project benefits, meet public needs, and foster environmental sustainability for Jim Chapman Lake and White Oak Creek Mitigation Area to the greatest extent possible. The following tables list the objectives for these project lands.

Table 3.1 Recreational Objectives and Associated Goals

Recreational Objectives	A	B	C	D	E
Support TPWD in their efforts to renovate existing facilities to provide a quality recreation experience for visitors while protecting natural resources for use by others. Examples include development of high impact zones at campsites, provision of universally accessible facilities, and improved electrical service at campsites.	*		*		
Continue partnership with TPWD for continued management of wildlife management areas.	*		*		
Provide opportunities for day use activities, especially picnicking. Support TPWD to provide enough campsites in popular areas.	*		*		
Monitor boating traffic and evaluate the need to conduct a comprehensive recreation boating use study to ensure visitor safety and enjoyment.	*		*		

Work with recreational partners to manage recreation facilities in accordance with public demand. Examples include universally accessible fishing docks, fish cleaning stations near boat ramps, playground equipment in day use and camping areas.	*		*		
Work with partners to expand existing trails and develop new ones.	*		*		*
Consider flood/conservation pool to address potential impact to recreational facilities (e.g., campsites, boat ramps, courtesy docks, etc.).	*	*	*	*	
Ensure consistency with USACE Natural Resource Management (NRM) Strategic Plan.					*
Monitor the TORP 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 Jim Chapman Lake and White Oak Creek Mitigation Area.			*		*

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

Table 3.2 Natural Resource Management Objectives and Associated Goals

Natural Resource Management Objectives	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. Give high priority to examining project lands for the presence of old growth forests characteristic of the Blackland Prairie (Jim Chapman Lake), and the East Central and South Central Plains (White Oak Creek Mitigation Area) ecoregions.	*	*		*	*
Work with Tribal Nations to provide access to any culturally significant plants 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 Blackland Prairie (Jim Chapman Lake), and the East Central and South Central Plains (White Oak Creek Mitigation Area) ecoregions.	*	*		*	*
Enhance benefits to wildlife through proper management of low-density recreation lands and supporting TPWD in their efforts to manage high density recreations lands.					*
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 and mitigation area.	*	*	*	*	

Implement prescribed fire, timber harvests, and removal of targeted species as a management tool to promote the vigor and health of forests, woodlands, and prairies.	*	*			*
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, and habitat for birds listed by USFWS as Birds of Conservation Concern.	*	*		*	*
As funding permits, complete an inventory of timber resources and prepare a Forest Management Plan.	*	*		*	*

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

Table 3.3 Visitor Information, Education, and Outreach Objectives and Associated Goals

Visitor Information, Education, and Outreach Objectives	A	B	C	D	E
Provide opportunities for communication with agencies, special interest groups, and the general public (i.e., comment cards, updates to local municipalities, web page). Utilize social media to inform visitors.	*			*	*
Provide educational, interpretive, and outreach programs at the lake office and around the lake and mitigation area. 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.	*	*	*	*	*
Work with Tribal Nations to engage the public and 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 and Associated Goals

General Management Objectives	A	B	C	D	E
Resurvey and 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.	*				*
Manage project lands and recreational programs to advance broad national climate change mitigation goals, including but not limited to climate change resilience and carbon sequestration, as set forth in Executive Order 13990 and related USACE policy.					*
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 and Associated Goals

Cultural Resources Management Objectives	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.		*		*	*
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. For this Master Plan, all lands within the Jim Chapman Lake fee boundary are allocated as Operations, and all lands within White Oak Creek Mitigation Area are allocated as Mitigation. Operations is defined as those lands that are required to operate the project for the primary authorized purposes of flood risk management, water supply, recreation, water quality, and fish and wildlife. Mitigation is defined as lands acquired or designated specifically for the congressionally authorized purpose of offsetting losses associated with development of the project. These are referred to as separable mitigation lands. Lands under this allocation can only be given a land classification of “Mitigation.” The remaining allocations of Recreation and Fish and Wildlife 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 Jim Chapman Lake and White Oak Creek Mitigation Area 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. Refer to Table 8-1 in Chapter 8 for a summary of land classification changes from the prior classifications to the current classifications. The previous land classifications were Project Operations, Recreation – Intensive Use, Recreation – Low Density, Wildlife Management, and Mitigation.

4.2.3 Current 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 six classifications and four subcategories of classification identified in USACE regulations, as well as four water designations 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 Jim Chapman 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 and the trends analysis provided in the TORP were used in decision making. Furthermore, the USACE consulted with Tribal Nations who have cultural and historical interests in the lands at Jim Chapman 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

This classification includes the lands managed for operation of the dam, stilling basin, project office, maintenance compound, 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 512 acres of Project Operations land specifically managed for this purpose.

4.2.5 High Density Recreation (HDR)

These are lands developed for intensive recreational activities for the visiting public 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 Jim Chapman Lake there are 1,957 acres classified as High Density Recreation land, which are leased to and managed by TPWD. Refer to Chapter 5 of this plan for a summary of the current High Density Recreation Areas at Jim Chapman Lake.

4.2.6 Environmentally Sensitive Areas (ESA)

These are areas where unique or sensitive scientific, ecological, cultural, and aesthetic features have been identified. Several areas are designated as ESAs at Jim Chapman 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. Some areas which were previously classified as Wildlife Management Area have been changed to Environmentally Sensitive Areas. 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 in Chapter 7, Public and Agency Outreach, of this Plan. There are 7,213 acres classified as ESA at Jim Chapman Lake.

4.2.7 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 is classified to reflect the dominant use of the land. Typically, Multiple Resource Management Lands support only passive, non-intrusive uses with very limited facilities or infrastructure. 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 4,399 acres of land under this classification at Jim Chapman Lake which includes the Low Density Recreation and Wildlife Management sub-classifications. 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.). Under prior land classifications, numerous areas with passive recreational use were classified wildlife management. The planning process resulted in most of these areas being reclassified as High Density Recreation, as they are part of the TPWD state park lease, and a small portion to Project Operation. There are 1,283 acres under this classification at Jim Chapman 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, most of which are located between the conservation pool and the flood pool of the lake. 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. Much of the previous classified lands under Wildlife Management was converted to ESA so there are 3,116 acres of land remaining as this classification at Jim Chapman 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 Jim Chapman Lake.

Future or Inactive Recreation

These are lands with site characteristics compatible with High Density Recreation development but have been undeveloped or planned for very long-range recreation needs. There are no acres classified as Future or Inactive Recreation at Jim Chapman Lake.

4.2.8 Mitigation

This classification is only used for lands with an allocation of Mitigation and that were acquired specifically for the purpose of offsetting losses associated with development of the project. This is not the same as allocated lands that are purchased for the purpose of mitigation, but lands that were purchased for mitigation must be classified as Mitigation. The White Oak Creek Mitigation Area was created to mitigate for the loss of bottomland hardwood when Jim Chapman Lake was created. These lands, consisting of 25,983 acres, is allocated and therefore classified as Mitigation. Many activities are permitted on Mitigation lands, including hunting and fishing, as are activities to manage the bottomland hardwood forest habitat.

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 Jim Chapman Lake Dam, around the water intake structures, just below the dam, upstream of the controlled spillway, and at designated swim beaches. There are 30 acres of restricted water surface at Jim Chapman 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 five boat ramps at Jim Chapman Lake where no-wake restrictions are in place for reasons of public safety and protection of property. There are 27 acres of designated no-wake water surface at Jim Chapman Lake. No-wake areas are typically denoted by buoys in appropriate areas.

Fish and Wildlife Sanctuary

The Fish and Wildlife Sanctuary 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. There are no acres of water surface designated as a Fish and Wildlife Sanctuary at Jim Chapman Lake.

Open Recreation

Open Recreation includes all water surface areas available for year-round or seasonal water-based recreational use. This classification encompasses most 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. Approximately 17,901 acres of water surface at Jim Chapman 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 Jim Chapman Lake the only easement lands are those 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. There are 307.7 acres of flowage easement lands around Jim Chapman Lake. As previously stated, the 16.18 acres of flowage easement lands in White Oak Creek Mitigation Area are actually flowage easement for Wright Patman Lake (see section 2.12).

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CHAPTER 5 – RESOURCE PLAN

5.1 RESOURCE PLAN OVERVIEW

This chapter describes the management plan for each land use and water surface classification in broad terms within the Master Plan. A more descriptive plan for managing these lands is contained within the annually updated USACE Operations Management Plan (OMP) for the lake project, which is not a public document. 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 affected by 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, calculated using GIS technology and available LiDAR data, are for planning purposes only and may not agree with lease documents, prior publications, or official land acquisition records.

Lands that exist at Jim Chapman Lake and White Oak Creek Mitigation Area are managed by classification. These classifications include Project Operations, High Density Recreation, Environmentally Sensitive Areas, Mitigation, and Multiple Resource Management Lands, which consist of Low Density Recreation and Wildlife Management. The water surface is divided into classifications of Restricted, No-Wake, and Open Recreation. The following are the resource plans and recommendations for future actions for each land use classification.

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 512 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 PO 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 PO, the operation, maintenance, and safety requirements of the dam and associated lands and infrastructure take priority over any recreational access.

Recommended future actions for these areas include facility upgrades to meet USACE sustainability objectives as funding and personnel allow. Opportunities to incorporate environmental stewardship objectives for land management such as invasive species control and wildlife management through use of food or pollinator plots will be implemented as appropriate.

5.3 HIGH DENSITY RECREATION

Jim Chapman Lake has 1,957 acres classified as High Density Recreation (HDR). These lands are developed for intensive recreational activities for the visiting public including day use and campgrounds. National USACE policy set forth in ER 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 marinas, 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.

Future development on HDR lands must continue to take into consideration protection of natural resources and scenic quality as specified in the management objectives set forth in Chapter 3 of this MP revision. HDR lands, developed and managed to support concentrated visitation as public parks and commercial concession leases, may support additional outdoor recreation development in the future subject to available space, funding, and public demand. The management plan for these lands includes providing recreation opportunities to the public which include camping, boating, hiking, and fishing. The following is a more detailed description of HDR areas at Jim Chapman Lake.

5.3.1 Recreation Areas and Facilities

Jim Chapman Lake offers a variety of recreational opportunities and includes facilities outgranted and managed by TPWD with the exception of the 31-acre stilling basin, which classified as Project Operations and provides an incidental day use area operated by the USACE.

The Texas Outdoor Recreational Plan (TORP) indicated that walking for pleasure is the most popular outdoor activity, followed by picnicking, cookouts, and other gatherings. Jim Chapman Lake provides an array of opportunities for walking for pleasure, picnicking, gatherings areas, sightseeing, wildlife viewing, photography, fishing, and swimming, providing most of the top 10 areas of participation for outdoor recreation activities in the state and region. In addition to this, the White Oak Creek Mitigation area offers significant hunting opportunities, managed by TPWD.

As all recreation facilities at Jim Chapman Lake are operated by TPWD, future plans for recreational opportunities and facilities are under the purview of the TPWD with cooperation from USACE. Future plans will take into consideration public needs and desires, environmental and project operation constraints, and funding and personnel resources and planning. The following section briefly describes recreational areas and opportunities at Jim Chapman Lake.

Cooper Lake State Park

Texas Parks and Wildlife Department (TPWD) operates two Cooper Lake State Park units, Doctors Creek and South Sulphur, and maintains the Cooper Wildlife Management Area. The South Sulphur River feeds Jim Chapman Lake, which is extremely rural and undeveloped. Dense forests dominate its southern border, while farmlands surround its northern border with trees on the shoreline. The parks offer campgrounds, shelters, cabins, swim beaches, picnic areas, boat ramps, play equipment, two lighted fishing piers, and opportunities for shoreline fishing. An entrance fee in charged to access park facilities.

South Sulphur Unit

The South Sulphur Unit at Cooper Lake State Park is approximately 2,310.5 acres of the 3,026 acres that make up Cooper Lake State Park. The South Sulphur Unit is comprised of 8 named areas and offers cabins, screened shelters, camping, equestrian camping, and day use areas.

South Sulphur Unit recreation area:

- Pecan Ridge Cabin Area
- Eagle Point Screened Shelter Area
- Bright Star Camping Area
- Oak Grove Camping Area
- Deer Haven Camping Area
- Buggy Whip Equestrian Camping Area
- Sunset Cove Day Use Area
- Heron Harbor Day Use Area
- Gull's Bluff Day Use Area
- Honey Creek Day Use Area

In total the park offers both land and water recreation opportunities, featuring 87 RV sites, 15 equestrian sites, 15 tent sites, 17 shelters, 4 cottages, and 14 cabins. For boaters, the park has a six-lane and a two-lane boat ramp. The park has one pavilion and a playground. Swimming is a popular activity during the summer and the park has one sandy beach swimming area. The South Sulphur Unit provides scenic vistas from the land and water, and visitors spot wildlife such as bald eagles, white pelicans, painted buntings, white-tailed deer, armadillos, bobcats, beavers, and more.

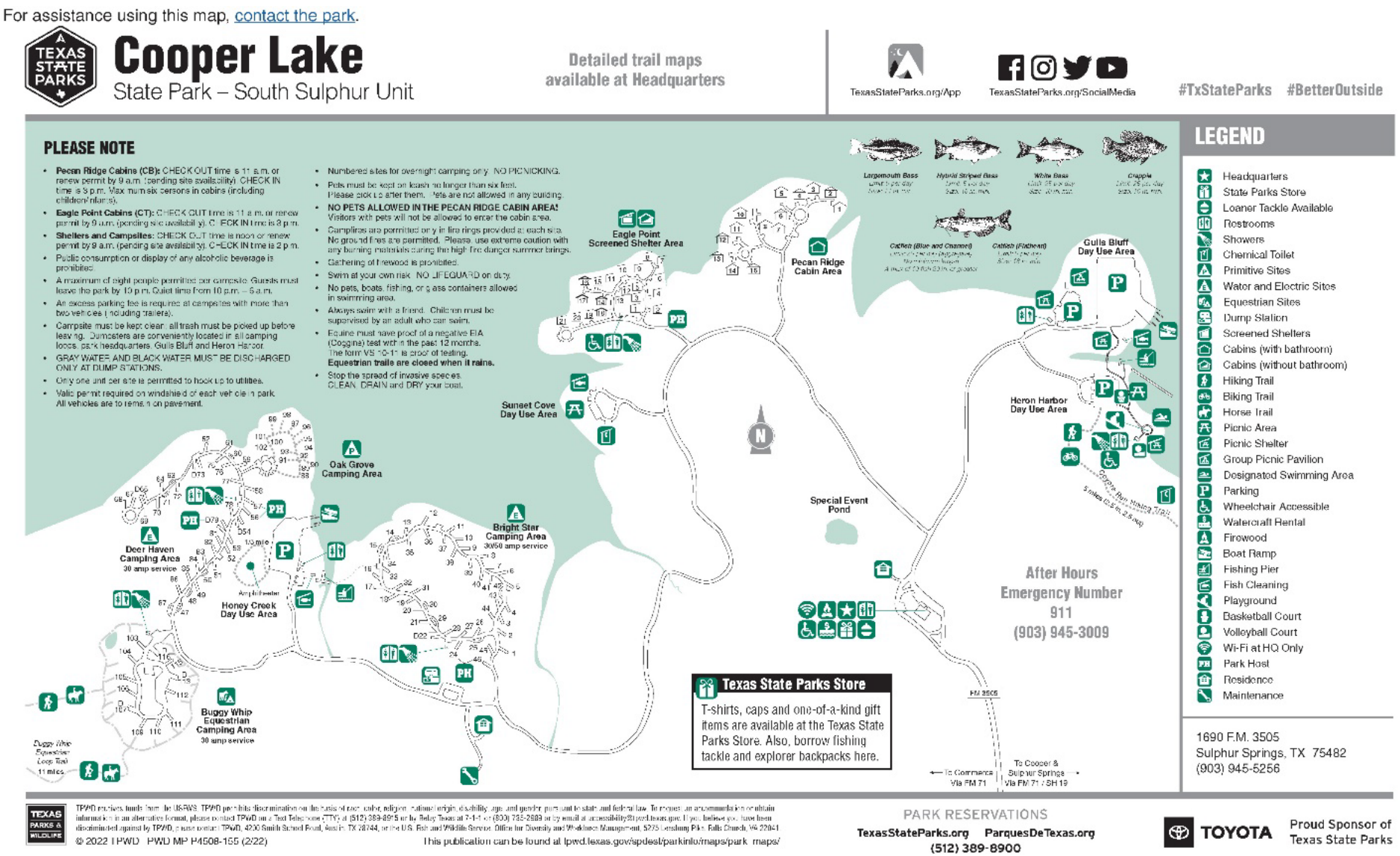

Figure 5.1 Cooper Lake State Park - South Sulphur Unit (Source: TPWD)

In the Pecan Ridge Cabin Area, TPWD offers 14 cabins for the public to enjoy. The cabins are located in close proximity to the shoreline making easy access to the water for fishing and other recreational activities. Each cabin features an A/C unit, heater, water spigot outside, electricity, microwave, refrigerator, stovetop, bathroom, toilet, shower, beds, living area, and dining area. Linens and towels are not provided.

Photo 5.1 Pecan Ridge Cabin Area (Source: USACE)

The Eagle Point Screened Shelter Area consists of 17 screened shelters and 4 cottages. The cottages feature water, electricity, microwave, A/C unit, heater, small refrigerator, and beds. The screened shelters feature water spigot outside, electricity, picnic table, fire ring with grill, and lantern post. A restroom with showers is located nearby at the Eagle Point Area.

Photo 5.2 Eagle Point Screened Shelters (Source: USACE)

Bright Star camping area contains 44 campsites with electric hookups, water, restrooms with showers, nearby fishing pier and dump station.

Photo 5.3 Typical Campsite in Bright Star Camping Area (Source: USACE)

The Oak Grove camping area is for tent camping only. All 15 site are walk-in sites located approximately 100 yards from parking. Each site has a picnic table, fire ring, lantern post, with water and restrooms nearby.

Photo 5.4 Typical Campsite in Oak Grove Camping Area (Source: TPWD)

Deer Haven camping area contains 34 campsites with electric hookups, water, restrooms with showers, nearby fishing pier and dump station.

Photo 5.5 Typical Campsite in Deer Haven Camping Area (Source: TPWD)

Equestrian riders and groups have a campground dedicated to their needs within the South Sulphur Unit at Buggy Whip equestrian camping area. The campground consists of 12 total sites with 3 sites being double campsites. The sites feature large concreate pads, tether cables, water, electricity, picnic tables, and fire rings. Seclusion from the rest of the park and quick access to the 11-mile Buggy Whip Equestrian Trail makes the area desirable.

Photo 5.6 Buggy Whip Equestrian Trail Access (Source: TPWD)

The Sunset Cove day use area offers the visitor access to picnic sites, a fish cleaning station, and chemical toilets. The large fishing pier that stretches across Sunset Cove is currently closed but scheduled to be upgraded and replaced.

The Honey Creek day use area features a two-lane boat ramp, fish cleaning station, restroom, nearby fishing pier and a nearby amphitheater.

The Gulls Bluff day use area features a group picnic pavilion, picnic sites, restroom, a six-lane boat ramp, and a fish cleaning station.

The Heron Harbor day use area in located just south of Gulls Bluff day use area. The day use area features access to the Coyote Run hiking trail as well as picnic sites, a playground, volleyball, basketball, designated swimming area, restrooms with showers, a fishing pier, and parking.

Photo 5.7 Designated Swim Area at Heron Harbor Day Use Area (Source: USACE)

Doctors Creek Unit

The Doctors Creek Unit at Cooper Lake State Park is approximately 715.5 acres of the 3,026 acres that make up Cooper Lake State Park, offering both land and water adventures. The Doctors Creek Unit is comprised of 4 named areas and offers screened shelters, camping, group camping, and day use areas.

Doctors Creek Unit recreation area:

- Liberty Grove Camping Area
- Granny's Neck Screened Shelter Area
- Pelican Point Day Use Area
- Bluebonnet Day Use Area

In total the park unit includes 42 campsites, 5 shelters, 2 cottages, 2 premium tent sites, and 1 group tent site. For boaters, the park has a three-lane boat ramp. The park has 1 pavilion and 2 playgrounds. Swimming is a popular activity during the summer and the park has one sandy beach swimming area. The park has one floating fishing pier.

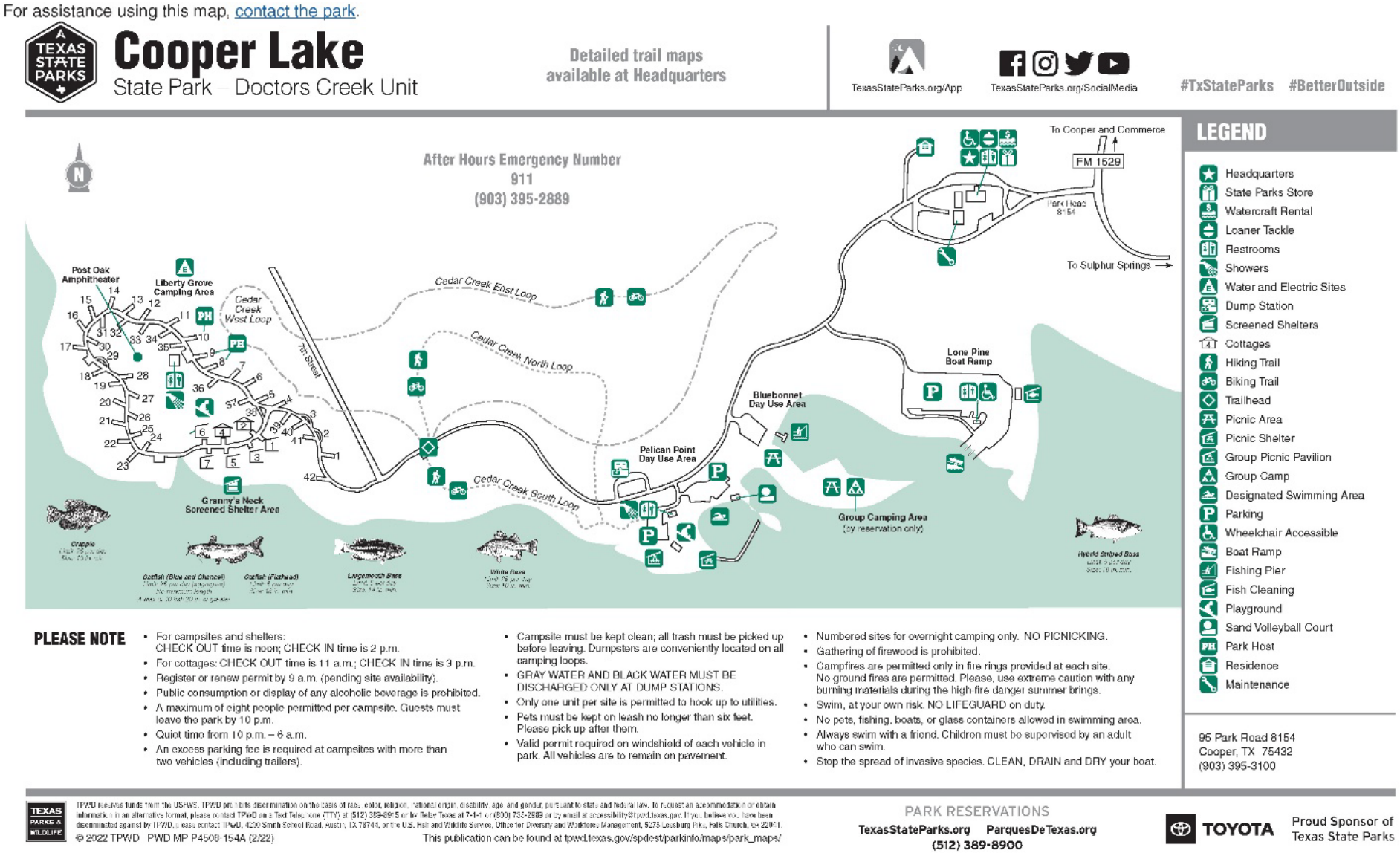

Figure 5.2 Cooper Lake State Park - Doctors Creek Unit (Source: TPWD)

Liberty Cove camping area is the only campground in the Doctors Creek Unit and it offers RV sites with electrical and water hookups. The area also features a restroom with showers, a playground, and the Post Oak amphitheater.

Photo 5.8 Liberty Cover Camping Area (Source: USACE)

Granny's Neck screened shelter area is contained along the loop road of Liberty Grove camping area. Both screened shelters and cottages are available to rent. The screened shelters are equipped with ceiling fans, picnic table, outdoor grill, fire ring, electrical hookup, outdoor water spigot, and lantern post. The cottages feature A/C and heat, microwave, refrigerator, indoor electrical outlet, picnic table, fire ring, grill, water spigot outside, and bunk beds. Restrooms with showers are nearby.

Photo 5.9 Granny's Neck shelter Area Cabin (Source: TPWD)

Pelican Point day use area features many activities including a designated swimming area, group picnic pavilion, picnic shelters, sand volleyball, playground, restrooms with showers, and parking.

Photo 5.10 Pelican Point day use area (Source: USACE)

Bluebonnet day use is a small recreation area with facilities limited to a picnic area, fishing pier, and primitive group camping area.

5.3.2 Boat Docks and Ramps

Gull's Bluff Boat Ramp

Located in the Cooper Lake State Park - South Sulphur Unit, Gull's Bluff boat ramp has six lanes of concrete construction, courtesy docks for loading and unloading boats, and an adjacent asphalt parking area which hold about 60 vehicles. Swimming is not permitted in the vicinity of the boat ramp.

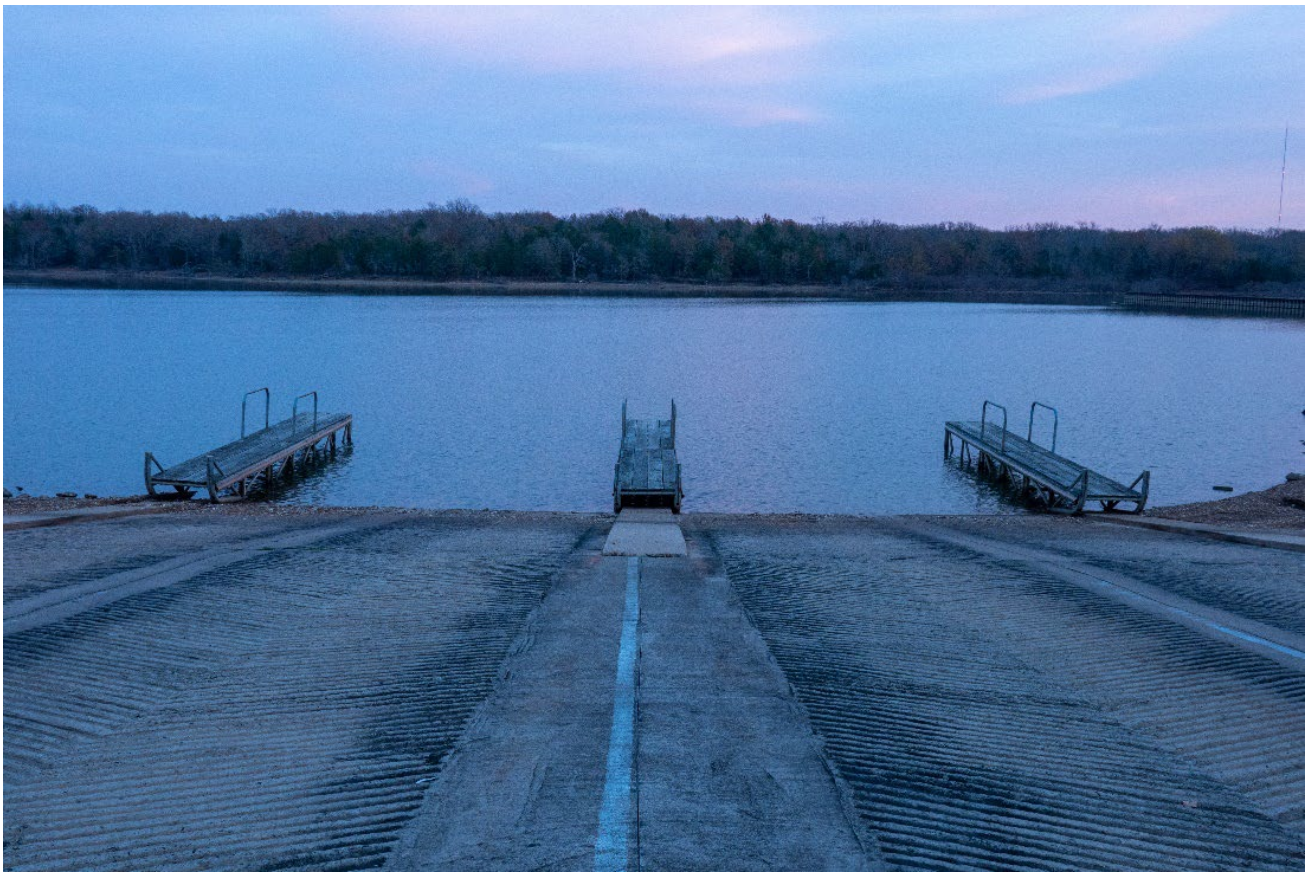

Photo 5.11 Boat Ramp at Gulls Bluff Day Use Area (Source: USACE)

Honey Creek Boat Ramp

The Honey Creek boat ramp is located between Deer Haven and Bright Star camping area. The area features a concrete two-lane boat ramp with parking to accommodate 63 vehicles, restrooms, fish cleaning station, hiking trail, and amphitheater.

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Photo 5.12 Honey Creek Day Use Area (Source: USACE)

John's Creek Boat Ramp

This concrete boat ramp located on 8 acres has two lanes, a courtesy dock for loading and unloading boats, and an adjacent asphalt parking area which holds approximately 40 vehicles and a composting toilet. Swimming is not permitted in the vicinity of the boat ramp. Launching is free.

Lone Pine Boat Ramp

This boat ramp, located in the Cooper Lake State Park – Doctors Creek Unit, has four lanes of concrete construction, courtesy docks for loading and unloading boats, and an adjacent asphalt parking area which hold about 60 vehicles. The area also has restrooms and a fish cleaning station. Swimming is not permitted in the vicinity of the boat ramp.

Photo 5.13 Lone Pine Boat Ramp Restroom and Parking Area (Source: USACE)

Tira Boat Ramp

The 9-acre Tira Boat Ramp offers a four-lane boat ramp near the Cooper Lake Dam. The area has a large parking lot with a composting toilet. Wildlife watchers may see bald eagles, white pelicans, painted buntings, white-tailed deer, armadillos, bobcats, beavers, and more.

5.3.3 Hiking, Cycling, and Equestrian Trails

The Cooper Lake State Park offers miles of hiking, biking, geocaching, and horseback riding trails, which wind through oak forests and marshy grasslands, offering scenic views, bird watching opportunities, and wildlife viewing.

Buggy Whip Equestrian Trail

The Buggy Whip Equestrian Trail is a 6.27-mile-long interconnected trail for hiking and equestrian use. It is part of a vast network of equestrian trails totaling 10.5 miles and crosses 600 acres at the South Sulphur Unit and connections to the Buggy Whip Equestrian camping area.

South Sulphur Unit has six trail options:

- Coyote Run Trail is a 4.6 mile round trip moderate trail for hiking and cycling. The trail runs through the hills and bottoms of South Sulphur River Watershed.
- Honey Creek Interpretive Trail begins at Honey Creek day-use area and is 0.3 miles long. The trail hosts a diversity of native trees and shrubs.
- Little Bluestem Loop is 3.2 miles long and winds through several patches of little bluestem, ending with a panoramic view of the lake. This hiking and equestrian trail connects to three other trails within the Buggy Whip Trail System.
- Lonesome Dove Loop trail is 4.8 miles long with many terrain and elevation changes making it a more challenging trail for visitors. Available for hiking and equestrian use, it is part of the Buggy Whip Trail System.
- Rabbit Run is a 1.0-mile hiking and equestrian trail that passes beneath post oak groves and through pocket prairies. It is part of the Buggy Whip Trail System.
- Pioneer Pass is a 1.5-mile-long hiking and equestrian trail that was once part of an old road system. This trail is part of the Buggy Whip Trail System.

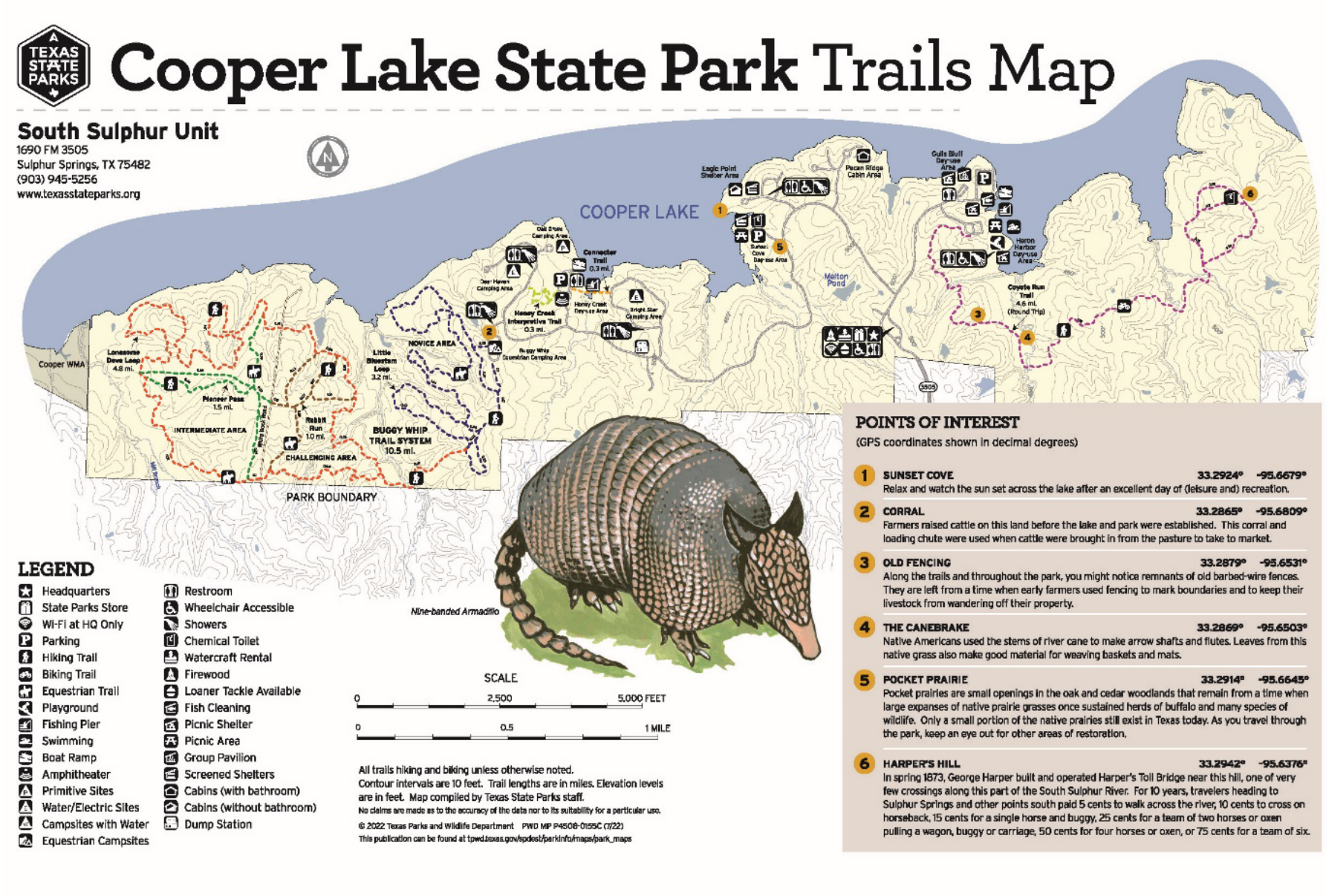

Figure 5.3 South Sulphur Unit Trails Map (Source: TPWD)

Doctors Creek Unit hiking trails consists of four trail options:

- Cedar Creek North Loop is a 0.6-mile-long interpretive trail that is known for the dead oak tree marker, which is teeming with life.
- Cedar Creek South Loop is a 0.5-mile-long interpretive trail that runs through the Leopard Frog Marsh.
- Cedar Creek East Loop is an interpretive trail 1.3 miles in length that runs along marshy grasslands and is good for wildlife viewing.
- Cedar Creek West loop is a 0.6-mile-long interpretive trail that crosses old farm roads and into a new-growth prairie and woodland.

Figure 5.4 Doctors Creek Unit Trails Map (Source: TPWD)

5.3.4 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 provide suitable, well-maintained businesses that will offer desirable water-related services to the general public. Presently, there are no commercial concession leases on Jim Chapman Lake.

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 25,983 acres at Jim Chapman Lake under this classification, which are the lands encompassed by the White Oak Creek Mitigation area. This mitigation area was purchased to offset the bottomland hardwoods lost when Jim Chapman lake was impounded. Currently hunting (managed by TPWD) is allowed on these lands. However, the land allocation and classification will remain Mitigation Area throughout the life of the project. USACE lands at Chapman 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. Best management practices will continue to be used to conserve, protect, and improve the existing habitat.

Photo 5.14 Woodland Bridge at White Oak Creek Mitigation Area (USACE photo)

5.5 ENVIRONMENTALLY SENSITIVE AREAS

Seven distinct areas totaling 7,213 acres are designated as Environmentally Sensitive Areas (ESA) at Jim Chapman Lake where scientific, ecological, cultural, or aesthetic features have been identified. Designation of these lands is not limited to 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 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. Limited or no development of public use facilities is allowed on these lands except for natural surface pedestrian trails and minimal visitor parking areas, 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.

The results of the May 2022 Wildlife Habitat Appraisal Procedure (WHAP) were used, in part, to assist in determining which areas should be classified as ESA. Other factors, including public and stakeholder comment, the presence of cultural resources, presence of species of conservation concern, and visual esthetics were also included in the selection of ESA areas. Most areas along the Sulphur River channel corridor are natural bottomland hardwoods. Due to the high-quality habitat provided, the ESA areas at Jim Chapman Lake and White Oak Creek Mitigation Area are home to abundant wildlife.

Each ESA area is managed by Texas Parks and Wildlife Department, in coordination with USACE staff, as a Wildlife Management Area and/or provides for passive use activities open to the public like fishing, hunting, hiking, and wildlife viewing. Passive low impact public use includes natural surface trails, fishing, hunting, and nature study and are appropriate for these areas. Future management of these areas include protection from development or disturbance from future land use actions such as utility or road easements. The individual ESA areas are numbered on the land classification maps in Appendix A. Table 5.1 provides a listing of the ESA areas, their acreage, and a brief description of each area. More information on the WHAP can be found in Appendix C of this Plan.

Table 5.1 ESA Listing

ESA#	Acres	Location and Description
ESA 1	1,610	Below Cooper Dam: This ESA occurring primarily below the project operation dam and outlet represents high value Post Oak Savannah and includes bottomland hardwoods along the Sulphur River channel corridor below Cooper Dam to State Highway 154. A large amount of grassland restoration has occurred in this area, including mulching of cedar trees and replanting of native Prairie species. Some areas of the bottomland hardwood forest have been harvested to remove green ash that tend to be invasive at this location due to the frequency of flooding caused by Cooper Dam. These areas are now replanted with native bottomland hardwood tree species
ESA 2	158	Project Office Area. This area consists of Blackland Prairie land as well as riparian corridors and bottomland hardwoods. It is bound on three sides by Project Operations area necessary to manage the flood control function of Jim Chapman Lake. Blackland prairie restoration has occurred in this area, including mulching of cedar trees and replanting of native Blackland Prairie species.
ESA 3	125	Tira ESA. This area is located south of Cooper Dam on both sides of the park road leading to the Tira boat ramp. The area consists of Blackland Prairie land and riparian corridors. Blackland prairie restoration has occurred in this area, including mulching of cedar trees and replanting of native Blackland Prairie species. Work has also been completed in this area to promote Monarch Butterflies.
ESA 4	4,308	Sulphur River: This area consists of lands along the river corridors for the Middle Sulphur River and South Sulphur River, as well as for Jernigan Creek. The area contains bottomland hardwood forests, numerous wetland areas, riparian corridors, upland grasslands and Post Oak Savannah.
ESA 5	137	Honey Creek: This area is located along the Honey Creek riparian corridor and its associated uplands. The area contains typical bottomland hardwood timber along the riparian corridor, wetland areas, and pockets of Blackland Prairie in the uplands.

ESA#	Acres	Location and Description
ESA 6	563	This area is located upstream of FM 1528 along the John's Creek riparian corridor and is split by State Highway 24. The area contains typical bottomland hardwood timber along the riparian corridor, wetland areas, and pockets of Blackland Prairie in the uplands.
ESA 7	312	Doctors Creek: This area is located upstream of FM 1528 along the Doctors Creek riparian corridor. The area contains typical bottomland hardwood timber along the riparian corridor, wetland areas, and pockets of Blackland Prairie in the uplands.

Future management of ESA areas will be designed to protect and improve the resources that qualify these areas for ESA classification. All these areas are suitable for development of natural surface pedestrian trails unless the areas are critically important as habitat for sensitive species. Hunting is also allowed in these areas, taking into consideration public safety and resource protection. Specific management measures may include but are not limited to the following:

- Cultural Resource Sites: Known sites will be protected from vandalism and/or erosion. Additional reconnaissance surveys will be conducted as needed to determine the extent of cultural resource sites. Tribal coordination will continue to insure proper management and/or protection of known sites.

- Sites supporting Species of Conservation Concern: The site characteristics that cause these areas to be favored by individual species will be protected and improved. Perch and/or nesting sites for the southern bald eagle are examples of site characteristics that need protection.

- Steep Slope Sites: These areas will be monitored to protect their scenic value, wildlife habitat value, and to reduce shoreline erosion.

Photo 5.15 ESA #3: Blackland Prairie in Winter (Source: USACE)

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 reduce appreciably 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. The ESA land classification can protect habitat for threatened and endangered species.

While the action of revising a Master Plan is not likely to jeopardize the continued existence of a federally listed species and is not likely to destroy or adversely modify their habitat, it is possible that management and operation of Jim Chapman Lake or White Oak Creek Mitigation Area could result in incidental take. Since incidental take may adversely affect a federally listed species, formal consultation between the USACE Fort Worth District and USFWS on actions within Fort Worth District, including those at Jim Chapman Lake and White Oak Creek Mitigation Area, was conducted in accordance with Section 7(a)(2) of the Endangered Species Act.

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 4,399 acres of MRML lands sub-classified as Low Density Recreation (LDR) and Wildlife Management (WM) at Jim Chapman Lake. The following paragraphs describe the sub-classification, the number of acres, how they are managed, and future plans for the classification.

5.6.1 Low Density Recreation

There are 1,283 acres of MRML – Low Density Recreation at Jim Chapman Lake. These lands have minimal development or infrastructure that support passive public use such as hiking, nature photography, and bank fishing. Since these lands are typically adjacent to private residential developments, hunting is only allowed in select areas that are a reasonable and safe distance from adjacent residential properties. These lands are typically open to the public, including adjacent landowners, for pedestrian traffic and are frequently used by adjacent landowners for access to the shoreline near their homes. Prevention of unauthorized use on this land, such as trespassing or encroachment on USACE fee lands, is an important management and stewardship objective for all USACE lands but is especially important for lands in close proximity to private development.

Future management of these lands calls for maintaining a healthy, ecologically adapted vegetative cover to reduce erosion and improve aesthetics. Maintenance of an identifiable property boundary is also a high priority in these areas.

5.6.2 Wildlife Management

There are 3,116 acres of MRML – Wildlife Management. 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 goals and objectives for these lands is to continue working with USFWS and TPWD partners to ensure their wildlife management practices, as well as USACE management practices, are ecologically sustainable and providing 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 (see Tables 2.4 and 2.5 in Chapter 2).

Future management may include such activities as placement of nesting structures, construction of water features or brush piles, prescribed burns, 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 the following:

- 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
- Report sightings of state-listed species and presence of rare vegetative communities to USFWS and TPWD

Use of available funds for wildlife management must be prioritized to meet legal mandates and regional priorities, and 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. 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 and parking lots are appropriate for most Wildlife Management Areas.

Cooper Wildlife Management Area

The Cooper Wildlife Management Area is managed for hunting and operated by TPWD. Open year round, public hunting is permitted for white-tailed deer (archery only), feral hog, dove, quail, waterfowl, woodcock, gallinule, rail, snipe, rabbit, hare, squirrel and frog. Waterfowl hunting by boat is allowed. Check with the TPWD or the lake manager for access points. Consult TPWD website for detailed description of rules, regulations, and areas of the lake open for hunting.

Fishing and Hunting Opportunities

Hunting and fishing at Jim Chapman Lake and White Oak Creek Mitigation Area are managed by TPWD and is not restructured to just the Wildlife Management Areas. Information concerning hunting and fishing are included in Chapters 2 and 6 of this Master Plan, but additional information can be found on the TPWD website as well as through the USACE Lake Office for Jim Chapman.

5.7 WATER SURFACE

At conservation pool level of 440.0 NGVD29 there are approximately 17,958 acres of water surface. The USACE and is the primary agency responsible for managing the recreational use of the water surface at Jim Chapman Lake. Enforcement of water surface rules and regulations is a shared responsibility between the USACE and TPWD. 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 areas. The total acreage of Restricted water surface is approximately 30 acres. The Restricted water surface at Jim Chapman Lake includes a designated strip of water surface along the east side of the Cooper Dam to the spillway, designated swimming beaches and water supply areas. These areas are normally marked with standard United States Coast Guard (USCG) regulatory buoys stating that boats are excluded from the area. In some instances, physical barriers may be in place on the water. Future management calls for one or more of the following management measures: placement of buoys; placement of signs near boat ramps and swimming beaches; 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 Jim Chapman Lake include approximately 27 acres, which are typically, but not always marked with standard USCG regulatory buoys. Future plans for No-wake Areas include placement of buoys, placement of signs near boat ramps, and describing the areas on maps available to the public. All boaters are expected to follow TPWD's operational rules for personal watercraft including operating personal watercraft at headway speed (no-wake) within 50 feet of another personal watercraft, motorboat, vessel, platform, person, object, or the shore.

5.7.3 Open Recreation

Open Recreation includes all water surface areas available for year-round or seasonal water-based recreational use. Approximately 17,901 acres of Jim Chapman 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 Texas. The USACE encourages all boaters and swimmers to always wear lifejackets and to learn to swim well. Future management plans include the continued campaign to ensure the safety of boaters and all other visitors in the water.

5.7.4 Recreational Seaplane Operations

Seaplane restrictions are part of Title 36 Code of Federal Regulations. At Jim Chapman Lake and other USACE lakes across the nation, areas where recreational seaplane operations are prohibited were established through public meetings and environmental assessments circa 1980. The seaplane policy for USACE Fort Worth District is found in the Notice to Seaplane Pilots (see Appendix E), which lays out the general restrictions as well as lake-specific restrictions for seaplane operation. Seaplane operations at Jim Chapman Lake are generally prohibited in several major coves and bays off the main body of the lake and within 500 feet of structures such as bridges and the dam. Once on the water, seaplanes are considered to be water vessels and fall under guidelines for watercraft.

CHAPTER 6 – SPECIAL TOPICS/ISSUES/CONSIDERATIONS

6.1 COMPETING INTERESTS ON THE NATURAL RESOURCES

Jim Chapman Lake is a multi-purpose project with numerous authorized purposes, which includes the White Oak Creek Mitigation Area, purchased primarily as mitigation as described in more detail in Sections 1.2 and 6.2. The authorized purposes accommodate the needs of federal, state, and municipal users who have contractual rights that must be honored. The benefits provided by virtue of authorized purposes are critical to the local and regional economies, environments, and social concerns and are of great interest to the public. In 2019, an estimated 403,612 people visited Jim Chapman Lake, spending an estimated $16,992,283 within 30 miles of the lake (USACE National Water Resources, 2019). This does not include additional visitation and spending generated from the mitigation area.

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 add additional stresses 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 user needs are while protecting natural and cultural resources is a challenge. The purpose of this Plan is to guide responsible stewardship and sustainability management of the project's resources for the benefit of present and future generations over the next 25 years.

6.2 WILDLIFE HABITAT MITIGATION AND THE WHITE OAK CREEK MITIGATION AREA

This section summarizes the White Oak Creek Mitigation Area at Jim Chapman (then Cooper) Lake (1990 Supplement No. 1). In May 1971, construction at Jim Chapman Lake was halted by a court injunction pending the filing of an Environmental Impact Statement (EIS) in compliance with NEPA. The New Orleans District prepared an EIS in 1977, and the U.S. District Court declared the EIS to be legally inadequate until deficiencies were corrected. One deficiency cited was the lack of an adequate fish and wildlife mitigation plan. A Supplemental EIS was prepared by the Fort Worth District in coordination with USFWS and filed with the EPA and court in 1981. In 1983, the court issued an Amended Memorandum Opinion and Permanent Injunction against construction of the lake. An appeal was initiated in 1983, and in 1984 the New Orleans Fifth Circuit Court of Appeals reversed the District Court's opinion and dissolved the injunction against the construction of the lake.

Mitigation was required for the loss of quality bottomland hardwood and riparian habitat due to the construction and deliberate impoundment of Jim Chapman Lake. USACE policy directs that, to the extent possible, mitigation measures be in-kind, i.e.,

they are to be of similar type and quality, and they should be developed contiguous to the project, or at least within the same basin. The USFWS recommended plan of improvement in the Supplemental EIS included the acquisition of approximately 34,000 acres of additional land for wildlife mitigation.

After review of available public lands, both federal and state, within a 150-mile radius of the project, it was determined that existing lands had neither available tracts of bottomland hardwoods sufficient in size, nor that existing lands were already being managed for wildlife purposes. Two areas then were considered for acquisition: the uplands and flood plain upstream of the project, along with lands along the Sulphur River downstream of the dam site; and the lands upstream of the existing Wright Patman Lake, along the Sulphur River and White Oak Creek flood plains, about 60 miles below Cooper Lake Dam. The latter area was selected because it met the following criteria: the lands are within the same river basin as the Jim Chapman Lake project; the acreage contains sufficient bottomland hardwoods; wildlife habitats in the area are in-kind; and the lands are within the perpetual flowage easements of Wright Patman Lake, which were already encumbered by the United States.

The USACE Plan for terrestrial mitigation recommended the acquisition of approximately 25,500 acres within the White Oak Creek area, with compensation credit to be given for the development and management of approximately 10,000 acres of perimeter lands at Jim Chapman Lake for wildlife mitigation purposes. This plan was subsequently approved, and the Master Plan allocated all Jim Chapman Lake perimeter lands not needed for project operations or recreation as a wildlife management area.

At White Oak Creek Mitigation Area, the land has been classified as Mitigation since it was purchased by the USACE specifically for the purpose of offsetting losses associated with development of the project, and EP-1130-2-550 directs that any land purchased specifically for mitigation must be classified as Mitigation.

The previous Master Plan classified all mitigation lands at Jim Chapman Lake as WM. This Master Plan Revision has changed some of the higher quality lands from WM to ESA, because ESA provides for greater protection and more consideration to sensitive resources. The areas classified as ESAs include riparian corridors, mature bottomland hardwood forest, and wetlands. The ESAs still function as mitigation, since the ESA classification ensures the land must be managed to ensure sensitive resources must not be adversely impacted. The areas remaining classified as WM at Jim Chapman Lake have lower quality habitat than the ESAs, but still function as mitigation by providing habitat for wildlife. See Chapter 4 for more details of each of the land classifications and Chapter 5 for the Resource Plan and guidelines for each of the land classifications at the project.

Lastly, the Supplemental EIS included a coordination plan for TPWD to accept operations and maintenance responsibilities at both Jim Chapman Lake and White Oak Creek Mitigation Area for those mitigation lands. TPWD will operate and maintain the lands at Jim Chapman Lake concurrently with the White Oak Creek Mitigation Area as a total package to accomplish the mitigation goals set forth in the USACE Recommended

Plan for mitigation in the Supplemental EIS for the initial construction of Jim Chapman Lake. As part of those goals, USACE has constructed moist soil management units at Jim Chapman Lake and White Oak Creek Mitigation to provide additional waterfowl habitat and conducts invasive species removal, controlled burns, vegetation thinning, and other management practices to improve the wildlife habitat across the project area. TPWD also makes the mitigation land available for public hunting. Please refer to Section 6.5 for more information about public hunting at Jim Chapman Lake or White Oak Creek Mitigation Area.

6.3 MOIST SOIL MANAGEMENT UNITS

USACE constructed artificial moist soil management units at Jim Chapman Lake and White Oak Creek Mitigation area as part of the mitigation for the construction of Jim Chapman Lake. TPWD currently operates and maintains these moist soil management units as part of their lease at both locations. These units provide prime habitat for various animals including resident and migratory waterfowl species.

The moist soil management unit at Jim Chapman Lake is located to the southwest of the lake and just north of the South Sulphur River. A public access point is accessible via Delta County Road 2082. The moist soil management unit consists of three wetland cells. All wetland cells are open cells. Wetland cell one consists of approximately 120 acres and wetland cells two and three consist of approximately 40 acres each. There is a potential for additional wetland cells to be added in the future.

The moist soil management unit at White Oak Creek Mitigation area is located east of US Highway 67 and south of the Sulphur River. A public access point is accessible via Cass County Road 2513. The moist soil management unit consists of an approximately 70-acre reservoir that supplies water to three wetland cells. Wetland cell one is a green tree reservoir consisting of approximately 225 acres. Wetland cells two and three are both open cells and consist of approximately 120 acres each.

6.4 UTILITY CORRIDORS

USACE policy encourages 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, the USACE determined that utility corridors would be designated at Jim Chapman Lake, but no utility corridors would be established at White Oak Creek Mitigation Area.

The following nine utility corridors, shown on the maps in Appendix A, have been designated across USACE lands at Jim Chapman Lake. Each corridor incorporates and/or runs parallel to an existing easement. Where the corridor is limited to or incorporates an existing easement, future use of these corridors would in most cases require prior approval from the entities that have legal rights to the easement. These existing corridors may be used for placement of additional utilities by the grantee holding the easement, but only for purposes that directly serve the grantee or are of

direct benefit to the Government. Expansion or widening of existing non-corridor easements will generally not be permitted. Any utility seeking an easement to cross USACE property within or outside of a designated corridor will still need to consider alternate routes around USACE property and demonstrate that a feasible alternative does not exist. Additionally, any expansion of existing or newly proposed utility corridors would need to undergo the required NEPA permitting process. Table 6.1 lists and describes the assigned utility corridors at Jim Chapman Lake.

Table 6.1 Utility Corridor Number and Description

Corridor	Description
UC 1	This corridor follows SH 24 where it crosses the Sulphur River ESA. The corridor has been classified as MRML–WM to differentiate it from the ESA. New utilities will be placed as close as possible to existing roads or utilities. The corridor is restricted to the SH 24 right-of-way, 150 feet from the center of SH 24, not to exceed a total of 300 feet in width. The length of this corridor is approximately 2,790 feet long and the width is 300 feet. TXDOT owns their road easement, however, the utility corridor extends on USACE land 150’ from the center of roadway.
UC 2	This corridor follows the existing overhead utility line where it crosses the Sulphur River ESA. The corridor has been classified as MRML–WM to differentiate it from the ESA. New utilities will be placed as close as possible to existing utilities. The corridor is restricted to the existing corridor not to exceed a total of 100 feet in width. The length of this corridor is approximately 4,080 feet long and the width is 100 feet.
UC 3	This corridor follows SH 24 where it crosses the John’s Creek ESA. The corridor has been classified as MRML–WM to differentiate it from the ESA. New utilities will be placed as close as possible to existing roads or utilities. The corridor is restricted to the SH 24 right-of-way, 150 feet from the center of SH 24, not to exceed a total of 300 feet in width. The length of this corridor is approximately 3,340 feet long and the width is 300 feet. TXDOT owns their road easement, however, the utility corridor extends on USACE land 150’ from the center of roadway.

UC 4	This corridor follows FM 1528 where it crosses John's Creek, with John's Creek ESA to the north, LDR to the southwest, and MRML–WM to the southeast. The corridor has been classified as MRML–WM to differentiate it from the ESA and LDR land classifications. New utilities will be placed as close as possible to existing roads or utilities. The corridor is restricted to the FM 1528 right-of-way, 50 feet from the center of FM 1528, not to exceed a total of 100 feet in width. The length of this corridor is approximately 3,600 feet and the width is 100 feet. TXDOT owns their road easement, however, the utility corridor extends on USACE land 50' from the center of roadway.
UC 5	This corridor follows SH 24 where it crosses the Doctors Creek ESA along the USACE fee boundary. The corridor has been classified as MRML–WM to differentiate it from the ESA. New utilities will be placed as close as possible to existing roads or utilities. The corridor is restricted to the SH 24 right-of-way. The length of this corridor is approximately 1,490 feet long and the width is 150 feet. TXDOT owns their road easement, however, the utility corridor extends on USACE land 150' from the center of roadway.
UC 6	This corridor follows FM 1528 where it crosses Doctors Creek, with Doctors Creek ESA to the north and WMA to the southeast. The corridor has been classified as MRML–WM to differentiate it from the ESA. New utilities will be placed as close as possible to existing roads or utilities. The corridor is restricted to the FM 1528 right-of-way, 50 feet from the center of FM 1528, not to exceed a total of 100 feet in width. The length of this corridor is approximately 2,850 feet and the width is 100 feet. TXDOT owns their road easement, however, the utility corridor extends on USACE land 50' from the center of roadway.
UC 7	This corridor follows the existing overhead utility line where it crosses below Cooper Dam ESA. The corridor has been classified as MRML–WM to differentiate it from the ESA. New utilities will be placed as close as possible to existing utilities. The corridor is restricted to the existing corridor not to exceed a total of 50 feet in width. The length of this corridor is approximately 1,950 feet long and the width is 50 feet. TXDOT owns their road easement, however, the utility corridor extends on USACE land 50' from the center of roadway.

UC 8	This corridor follows FM 1531 where it crosses the Sulphur River ESA across the Middle Sulphur River. The corridor has been classified as MRML–WM to differentiate it from the ESA. New utilities will be placed as close as possible to existing roads or utilities. The corridor is restricted to the FM 1531 right-of-way, 100 feet from the center of FM 1531, not to exceed a total of 200 feet in width. The length of this corridor is approximately 2,780 feet and the width is 200 feet. TXDOT owns their road easement, however, the utility corridor extends on USACE land 100' from the center of roadway.
UC 9	This corridor follows FM 71 where it crosses the Sulphur River ESA across the South Sulphur River. The corridor has been classified as MRML–WM to differentiate it from the ESA. New utilities will be placed as close as possible to existing roads or utilities. The corridor is restricted to the FM 71 right-of-way, 100 feet from the center of FM 71, not to exceed a total of 200 feet in width. The length of this corridor is approximately 2,780 feet and the width is 200 feet. This UC would accommodate possible future road widening or bridge replacement, part of the regional transportation plan. TXDOT owns their road easement, however, the utility corridor extends on USACE land 200' from the center of roadway.

6.5 PUBLIC HUNTING ACCESS

Hunting at USACE projects is in accordance with applicable Federal and State regulations. These 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. However, hunters must follow USACE and TPWD guidance and refer to the Outdoor Annual Hunting and Fishing Brochure outlining legal means of take and seasons. Vehicles must remain on established roads, and camping is allowed in designated areas only.

TPWD manages the Jim Chapman Lake and White Oak Creek Mitigation Area Public Hunting Lands (PHL) under license agreements with the USACE. The Jim Chapman Lake PHL (TPWD Cooper WMA) is approximately 19,280 acres located in Delta and Hopkins counties, adjacent to Jim Chapman Lake and Cooper Dam, as well as other areas on USACE fee lands. The White Oak Creek Mitigation Area PHL (TPWD White Oak Creek WMA) is located in Bowie, Cass, Morris, and Titus counties, Texas between Jim Chapman Lake and Wright Patman Lake. The White Oak Creek WMA covers approximately 25,983 acres of mostly bottomland hardwood forest at the confluence of the Sulphur River and White Oak Creek. Outdoor recreation includes

hunting, fishing, hiking, horseback riding, and wildlife viewing. Hunting maps, guidelines, and restrictions are available at the Jim Chapman Lake Office and website as well as the TPWD local office and website.

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 Jim Chapman Lake and White Oak Creek Mitigation Area. 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 Jim Chapman Lake and White Oak Creek Mitigation Area 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 Jim Chapmans Lake and White Oak Creek Mitigation Area Master Plan.

The USACE began the master plan revision process for Jim Chapman Lake and White Oak Creek Mitigation Area Master Plan in the fall of 2021. The objectives for the Master Plan revision are to (1) revise land classifications to reflect changes in USACE land management policies since the 1987 Jim Chapman Lake Master Plan and 1990 White Oak Creek Mitigation Area 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, Change 7, January 30, 2013 and EP 1130-2-550, Change 5, January 30, 2013.

7.2 INITIAL STAKEHOLDER AND PUBLIC MEETINGS

A public information meeting was held for the Jim Chapmans Lake and White Oak Creek Mitigation Area Master Plan revision at the Hopkins County Reginal Civic Center in Sulphur Springs, Texas on March 21, 2022. The purpose of this meeting was to provide attendees with information regarding the revision content, process, and general schedule on the proposed revision to the Jim Chapman Lake and White Oak Creek Mitigation Area Master Plan as well as to provide them the opportunity to provide comments on the proposed Master Plan. Due to the severe rain, thunderstorms, high winds, and tornadoes going on during the time of the meeting, while our partners from TPWD attended, no one from the public attended the open house meeting. However, following the public meeting a notice was sent to all known stakeholders informing them that all meeting materials, including the current master plan, a map of the current land use areas, the slide presentation, and comment forms were available online to the public. The presentation 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.

The public input period remained open for 30 days from 21 March 21,2022 to April 22, 2022. During the 30-day public comment period, the USACE did not receive any public, tribal, or agency comments.

Federal agencies are required 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 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. 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 Fort Worth District takes its responsibilities for consultation on a government-to-government basis very seriously and consulted with Native American Tribes on the Jim Chapman Lake and White Oak Creek Mitigation Area Master Plan. The Fort Worth District consulted with all known Native American Tribes with an historical presence and/or cultural interest in the area represented in the Master Plans. The consultation process **will include** contacting the tribes about the draft Master Plan, explaining the revision process and comment period, and inviting them to comment on the draft Master Plan. In terms of cultural resources, tribes are also able to ask that a cultural monitor from their tribe be present during any cultural resource survey. Though not part of the Master Plan Revision it may be part of a future Cultural Resources Management Plan Revision. Tribes are welcome to provide comments on ESAs, resource management goals and objectives, and other topics in the Master Plan. This exchange of knowledge from developing the Master Plan will allow USACE staff to better engage with Tribes on future projects and will likely lead to more efficient reviews and better outcomes meeting objectives for both parties.

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 included here.

CHAPTER 8 – SUMMARY OF RECOMMENDATIONS

8.1 SUMMARY OVERVIEW

The preparation of this Master Plan for Jim Chapman Lake and the White Oak Creek Mitigation Area followed 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 Jim Chapman Lake White Oak Creek Mitigation Area, as also reflected in ER-1130-2-540 change 2 dated July 2005. Factors considered in the Plan development were identified through public involvement and review of regional and statewide planning documents including the TORP, regional Mobility Plans, EPA Ecoregion Handbook and descriptions, and the USFWS IPAC website. This Master Plan will ensure the long-term sustainability of the outdoor recreation program and natural resources associated with Jim Chapman Lake and the White Oak Creek Mitigation Area.

8.2 LAND CLASSIFICATION PROPOSALS

A key component in preparing this Master Plan was examining prior land classifications and addressing the needed transition to new land classification standards that reflect current and anticipated land management practices for the foreseeable future. The land classification standards will also comply with all current USACE standards and regulations. Public comment was solicited to assist in making these land reclassification decisions. Consultation was 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 provides a summary of public comments received. After analyzing public comment, examining recreational trends, and accounting for regional natural resource management priorities, the USACE team members reclassified the Federal lands and water surface associated with Jim Chapman Lake and the White Oak Creek Mitigation Area as described in Table 8.1.

Table 8.1 Change from 1987 Land and Water Surface Classifications to Proposed 2023 Land and Water Surface Classification

Prior Land Classifications (1987) *	Acres	Proposed Land Classifications (2023)	Acres	2023-1987 Difference
Project Operations	371	Project Operations (PO)	512	141
Recreation – Intensive Use	2,195	High Density Recreation (HDR)	1,957	(238)
-	-	Environmentally Sensitive Areas (ESA)	7,213	7,213
Recreation – Low Density	892	Multiple Resource Management (MRML) – Low Density Recreation (LDR)	1,283	391
Wildlife Management	10,620	MRML – Wildlife Management (WM)	3,116	(7,504)
Mitigation (1990 White Oak Creek Mitigation Area MP)	25,983	Mitigation	25,983	0
Prior Water Surface Classifications (1987)	**Acres**	**Proposed Water Surface Classifications (2023)**	**Acres**	**2023-1987 Difference**
Permanent Pool	17,958	Open Recreation	17,901	-57
-	-	Designated No-Wake	27	27
-	-	Restricted	30	30
TOTAL LAND	**40,061**	**-**	**40,064**	3
TOTAL WATER SURFACE	**17,958**	**-**	**17,958**	0
TOTAL FEE	**58,019**	**-**	**58,022**	3

*1987 totals as calculated are presented in this table. Total Acreage differences from the 1987 Master Plan and the 1987 calculated total are due to improvements in measurement technology. 1987 recorded acres are Project Operations: 348; Recreation – Intensive Use 2,100; Recreation – Low Density 860; Wildlife Management 9,480; 1990 White Oak Creek Mitigation Area 25,500. Differences in the totals from 1987 to 2023 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 Jim Chapman Lake and the White Oak Creek Mitigation Area. 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 Recreation – Intensive Use is similar to the current HDR classification; the prior Recreation – Low Density are similar to the current MRML – LDR

classification; and the prior Wildlife Management classification is similar to the current MRML – WMA classification. The following table shows changes from the prior classification to current but combines the similar classifications for ease of showing changed acres.

Table 8.2 Changes and Description for Proposed Land Classifications

Proposed Land Classification	Description of Changes
Project Operations (PO)	Approximately 370 acres of land previously classified as Project Operations remains Project Operations. At the south side of the lake, just off County Road 4772 and within Cooper Lake State Park, approximately 4 acres have changed from Intensive Recreation to PO. This area includes the lease area for a transmission tower and equipment. At the west end of TPWD's Cooper State Park, South Sulphur Unit, and just off of White Rock Road, approximately 24 acres of land changed from Low Density Recreation to Project Operations. This area includes a water treatment facility, access road, and equipment storage. 114 acres of the previous Wildlife Management were converted to PO to allow for management of the diversion channel, such as dredging activities that have been brought up in the past and could be exercised in the future triggered by our FRM mission.
High Density Recreation (HDR)	At the west end of Cooper Lake State Park, South Sulphur Unit, approximately 364 acres have changed from Low Density Recreation to HDR. That area falls within TPWD's existing State Park Lease. Although the only recreational facilities currently in that area are natural surface trails, TPWD has options for additional facilities that would require intensive recreation land classification. A small area around John's Creek Boat Ramp and the entrance to Doctors Creek Unit of Cooper Lake State Park totaling 63 acres have been changed from Wildlife Management to HDR. These areas have historically been managed for intensive recreation, include permanent recreational facilities, and could include additional intensive recreation facilities in the future. Approximately 1,529 acres were changed from Intensive Recreation to HDR. This is mostly a change in terminology, and the areas are still managed for intensive recreation.

Proposed Land Classification	Description of Changes
Environmentally Sensitive Areas (ESA)	Approximately 7,213 acres of Wildlife Management with higher quality and sensitive habitats, including riparian areas and natural wetlands, have been changed to ESA. The areas have historically been managed to improve wildlife habitat, in partnership with TPWD, to help mitigate for the loss of wildlife habitat when the lake was created. The habitat will continue to be managed to provide quality wildlife habitat and may include future management to improve the habitat. Some areas are also known to include cultural or historic sites which are to be protected or preserved. See Section 5.5 for details on individual ESAs.
MRML – Low Density Recreation (LDR)	Approximately 647 acres of land changed from Intensive Recreation to MRML - LDR. This includes an area south of the project office and another area off 4766 into the Cooper Lake State Park. These areas have historically been managed for less intensive recreation, and ongoing management and projects will continue to include less intensive recreation. Three areas were changed from Wildlife Management to MRML - LDR totaling approximately 132 acres. A small area to the west of the entrance of Doctors Creek was changed, since it has historically been managed to improve wildlife habitat, and there are no plans to include any recreational facilities in that area. A larger area within the South Sulphur Unit of Cooper Lake State Park was changed to reflect historic and planned usage which includes trails and other less intensive recreation and lies within TPWD's Cooper State Park lease area. The last area is along the shoreline south of County Road 1528 with the access road to and just around John's Creek Boat Ramp and could include less intensive recreation including unpaved trails. Approximately 504 acres of land previously classified as Low Density Recreation changed to MRML - LDR. This is mostly a change in terminology, and the area is still managed for less intensive recreational activities.

Proposed Land Classification	Description of Changes
MRML – Wildlife Management (WM)	Approximately 19 acres of land has changed from Intensive Recreation to MRML - WM towards the northeast end of the lake near the corner of County Road 4782 and County Road 4777. This area historically included intensive recreation facilities, but most have been removed. The area will be managed to improve wildlife habitat and could include removal of old infrastructure, invasive species removal, controlled burns, vegetation planting, and other management practices. Approximately 3,097 acres were changed from Wildlife Management to MRML - WM. This is mostly a change in terminology, and the areas are still managed for wildlife. Included in this area are the constructed wetlands at the southwest end of the lake along the north of the South Sulphur River. These areas will continue to be managed specifically to improve the wetland habitat which could include invasive species removal, repairing damage to the wetland cells, construction of new features to improve the wetlands, etc. This area also includes Utility Corridors that pass through or adjacent to areas changed from Wildlife Management to the newly designated ESAs. This is to consolidate future utilities into corridors to reduce habitat fragmentation and improve management of both utilities and the adjacent ESAs.

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.

CHAPTER 9 – BIBLIOGRAPHY

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