



US Army Corps  
of Engineers ®  
Tulsa District

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## **ENVIRONMENTAL ASSESSMENT**

### **FORT GIBSON DAM AND RESERVOIR MASTER PLAN SUPPLEMENT CHEROKEE, WAGONER, AND MAYES COUNTIES, OKLAHOMA**

**U.S. Army Corps of Engineers  
Southwestern Division  
Tulsa District**

**March 2023**

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# **1.0 INTRODUCTION**

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The U.S. Army Corps of Engineers, Tulsa District (USACE) prepared this Environmental Assessment (EA) to evaluate and disclose the potential impacts to the natural and human environment from modifying the authorized and implemented Fort Gibson Dam and Reservoir Master Plan (MP or Plan). The Plan was prepared in 2015, completed in January 2016, and reviewed in October 2021 (USACE 2021).

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) (42 U.S. Code [USC] 4321 et seq.) and its implementing regulations published by the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR], 1500 to 1508), and the U.S. Department of Army's NEPA regulation (33 CFR 230).

## **1.1 PROJECT HISTORY**

Fort Gibson Dam and Reservoir (referred to as Fort Gibson Lake) was authorized by the Flood Control Act approved on August 18, 1941 (Public Law No. 228, 77th Congress, 1st Session). The departmental authority for the administration of land and water areas related to Fort Gibson Lake is contained in Section 4 of the Flood Control Act approved December 22, 1944 (58 Stat. 889), and by Section 4 of the Flood Control Act of 1946 (60 Stat. 642), as further amended by Section 209 of the Flood Control Act of 1954 which was approved September 3, 1954. Fort Gibson Lake was incorporated in the Arkansas River multipurpose plan by the River and Harbor Act of July 24, 1946; Project document HD 107, 76th Congress, 1st Session; and the Water Resources Development Act of 1986 (Public Law 99-662). The authority relative to the preparation of the MP is contained in ER 1130-2-550. Fort Gibson Lake is a unit of the Arkansas River multipurpose plan for flood risk management and hydroelectric power. The Project is operated for optimum flood risk management benefits on the Grand (Neosho) River from the dam site to the confluence with the Arkansas River.

The purpose of the Master Plan is to propose public use development and conservation land use recommendations necessary to develop and conserve existing project lands to realize the optimal potential of the Project. This MP incorporates conservation, enhancement, development, operation, management, and public interest use of all project lands, waters, forests, and other resources throughout the life of the Project and includes plans showing the most desirable and feasible locations and land use types to meet these goals. Emphasis has been placed on a balanced approach to public access, camping, shoreline use, water-based recreation, and conservation. Adequate facilities and land-based requirements are proposed to ensure all desired recreational opportunities are achieved and assure compliance with applicable environmental regulations, laws, and policies. This Plan also proposes proper utilization of natural resources and recreational facilities contingent on available funding, while at the same time preserving the biological, scenic, scientific, and wildlife resources, plus protecting and enhancing the primary project purposes and benefits. The MP is presented with recreational enhancement funded by the Government limited to existing public use areas rather than the acquisition and development of new ones.

## 1.2 PROJECT AREA

Fort Gibson Lake Dam is located on the Grand (Neosho) River (mile 7.7) in Cherokee and Wagoner counties, Oklahoma. The project dam site is approximately five miles north of Fort Gibson, Oklahoma, and about 12 miles northeast of Muskogee, Oklahoma. The reservoir extends upstream northeast through Wagoner, Cherokee, and Mayes counties; the lake forms the lower 26 miles of the boundary line between the western slope of the Ozark uplift and the Cherokee Plains, composing the flat divide between the Verdigris and Grand (Neosho) rivers. Construction began in 1942, was suspended during World War II, and resumed in May 1946, and completed with the closure of the embankment in June 1949. The Project became fully operational when the last of the four generators started producing commercial power in September 1953. The dam includes two concrete, gravity, and non-overflow sections. One section is 285 feet long, extending from the spillway to the earth embankment at the right abutment. The other section is 460 feet long, extending from the intake structure to the earth embankment at the left abutment. The dam also includes two earth embankment sections, one of which extends about 374 feet from the natural ground at the right abutment to the right bank, concrete, and non-overflow section. The other embankment is 63 feet long, extending from the left abutment to the left bank, concrete, non-overflow section. The powerhouse intake structure is located adjacent to the spillway on the left and is 318 feet long. The total length of the structures, including the spillway, is 2,990 feet, and the maximum height above the streambed is 110 feet. Oklahoma State Highway 251A extends across the top of the structures. There are eight rolled earth-filled dikes that the Corps maintains on the west side of the reservoir, which have a total length of 21,678 feet.

At the top of the power pool (elevation 554.0 feet msl), the lake has approximately 225 miles of shoreline, of which 142 miles are classified as protected and 57 miles are designated for public recreation in the lake's Shoreline Management Plan (SMP). The remaining lakeshore includes 23 miles allocated for limited development and 3 miles classified as prohibited access. The area's topography contains undulating to rolling valley land, wooded ravines, and hilly slopes; on the west, the land surface is flat to undulating, with streams entrenched in broad flood plains.

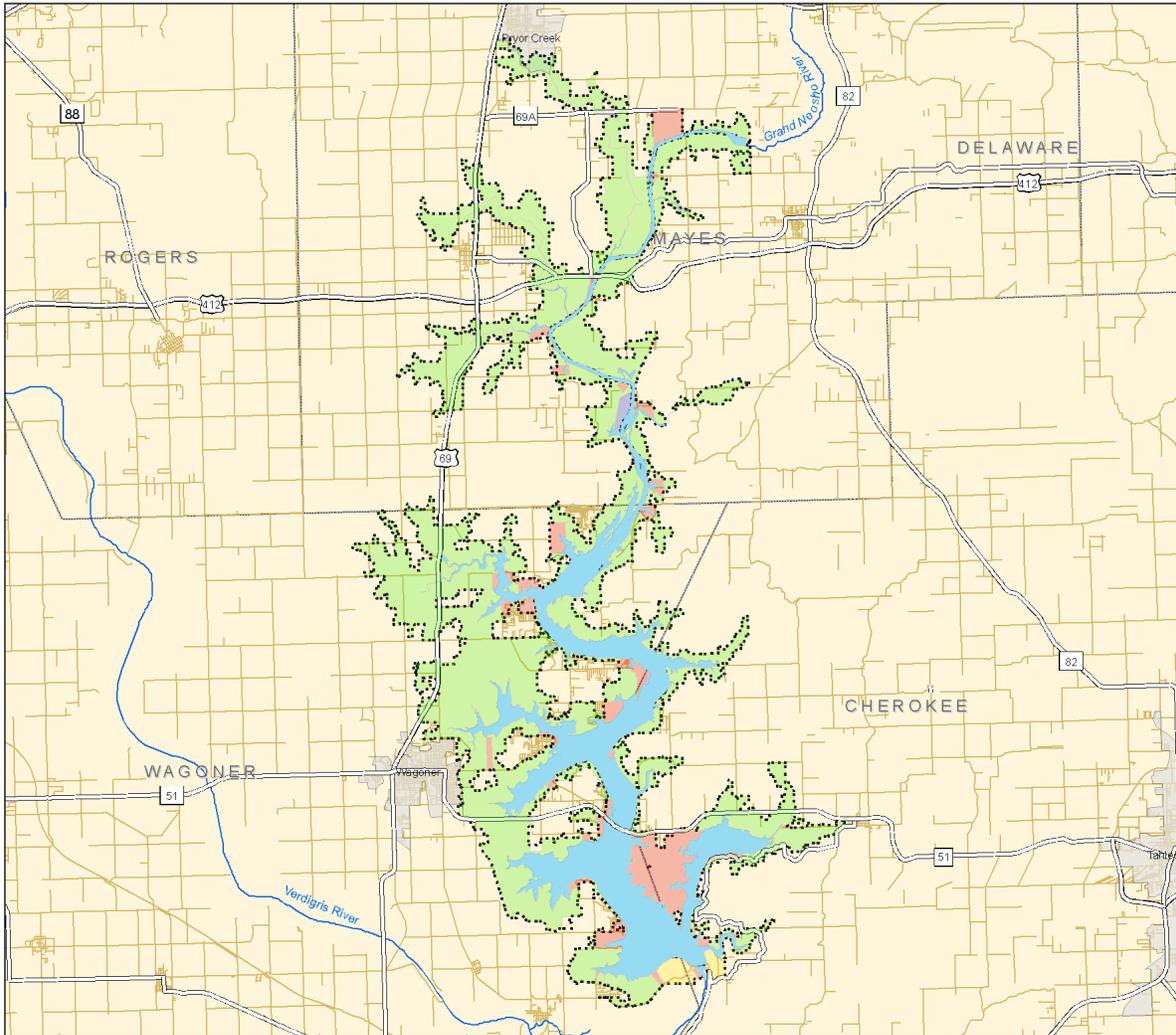


Figure 1. Fort Gibson Dam and Reservoir Fee Boundary

### 1.3 PURPOSE AND NEED

The SMP and the MP partly direct management of the Fort Gibson Dam and Reservoir. These documents are independent but must not contradict each other; the SMP establishes policy and sets guidelines by which the USACE manages specific private uses of public lands and waters along the shoreline, and the MP identifies public use development and conservation land use recommendations of project lands.

A 2021 review of the updated River SMP determined that two locations within the SMP were not in agreement with the MP. A supplement to the MP is necessary to update the two locations so that the plans are in agreement. One location is 2.8 acres in size, and the other is 5.7 acres in size, for a total of 8.5 acres.

## **1.4 ENVIRONMENTAL ASSESSMENT (EA) SCOPE**

The scope of this EA is to identify and evaluate the environmental effects that could result from implementing the proposed supplement to the MP and the No Action alternative.

## **2.0 ALTERNATIVES**

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This chapter compares the No Action Alternative and the proposed supplement to the MP.

### **2.1 NO ACTION**

The future without-project condition (FWOP), also known as the "No Action" Alternative, is the most likely condition to occur without the proposed action or action plans. For this EA, under the No Action Alternative, no supplement to the Master Plan would be prepared. This would cause conflicting management documents for the Project. In order to comply with ER 1130-2-406, the MP and SMP should be complementary. Under the No Action Alternative, the SMP would not relent as it is expected to be subservient to the MP; As such, the No Action Alternative is not feasible.

### **2.2 PROPOSED PLAN**

A review of the Fort Gibson Lake MP completed by an Operations-led interdisciplinary team resulted in a recommendation to change 2.8 acres from Low-Density Recreation to Wildlife Management and 5.7 acres from Wildlife Management to Project Operations. These changes would update the MP land uses and reconcile the MP and SMP documents.

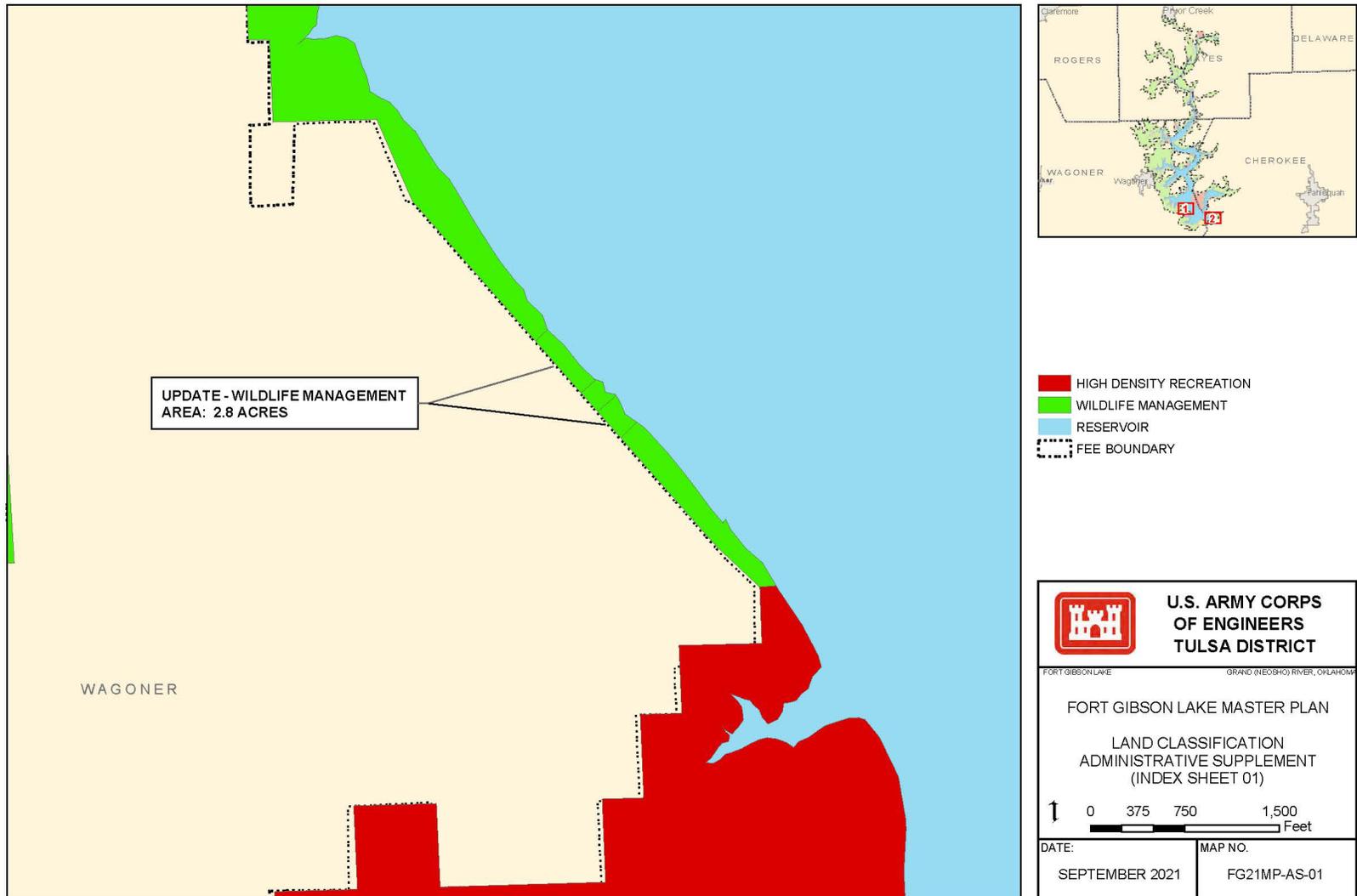


Figure 2. Proposed Plan Low-Density Recreation to Wildlife Management (2.8 acres)

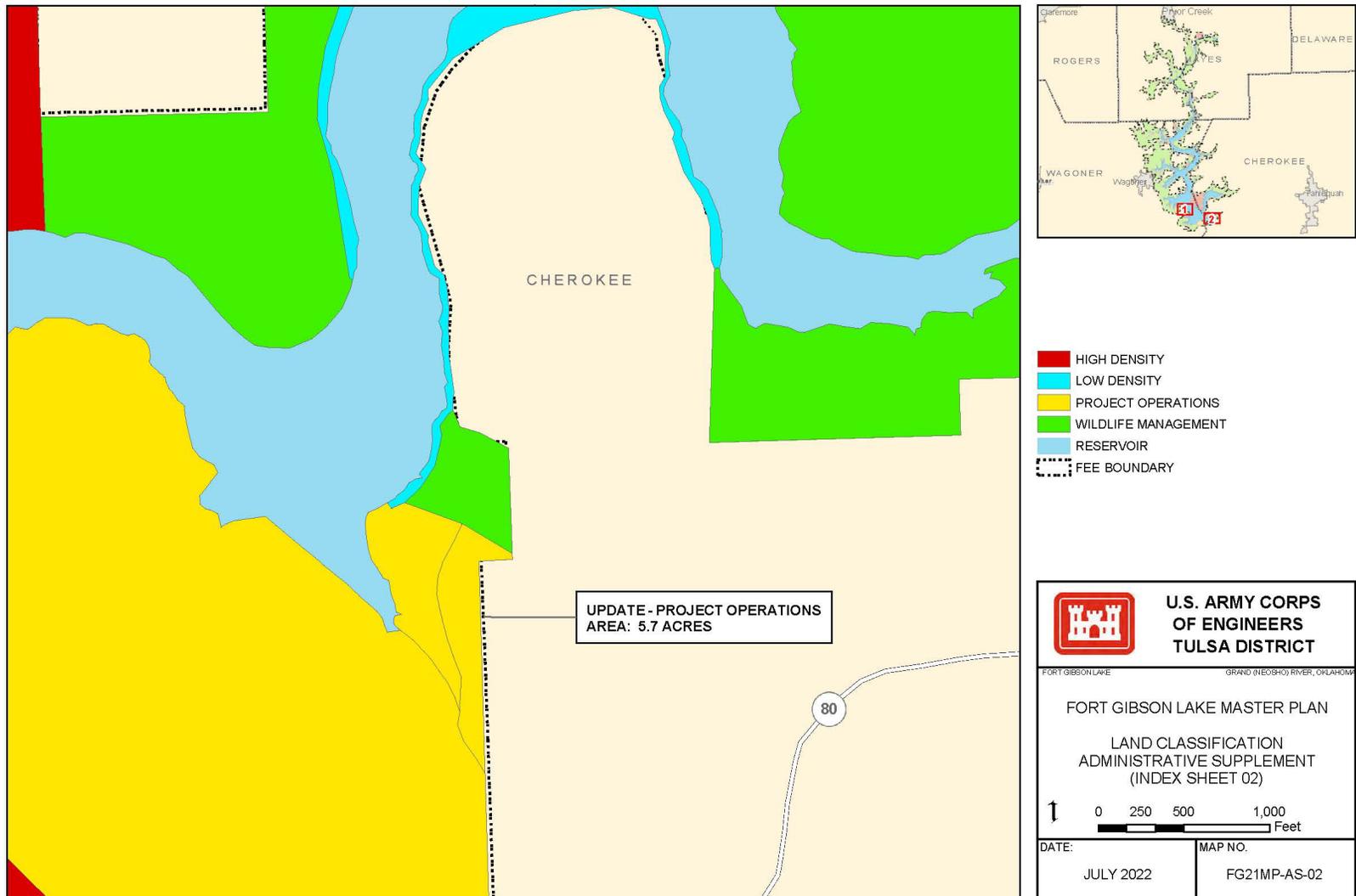


Figure 3. Proposed Plan Wildlife Management to Project Operations (5.7 acres)

### **3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

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This Section of the EA describes the natural and human environments at the Project and the potential impacts of the No Action Alternative and Proposed Plan, outlined in Section 2 of this document. Only those issues that have the potential to be affected by these alternatives are described, per CEQ guidance (40 CFR § 1501.9). Some topics are limited in scope due to the lack of direct effect from the Proposed Action on the resource or because that particular resource is not located within the project area.

Impacts (consequence or effect) can be either beneficial or adverse and can be either directly related to the action or indirectly caused by the action. Direct effects are caused by the action and occur at the same time and place (40 CFR § 1508.1(g)). Indirect effects are caused by the action and are later or further removed in the distance but are still reasonably foreseeable (40 CFR § 1508.1(g)). As discussed in this Section, the alternatives may create temporary (less than one year), short-term (up to 3 years), long-term (3 to 10 years following the SMP revision), or permanent effects.

Whether an impact is significant depends on the context in which the effect occurs and the intensity of the impact. The context refers to the setting where the effect occurs and may include society as a whole, the affected region, the affected interests, and the locality. Impacts on each resource can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. For this analysis, the intensity of impacts would be classified as negligible, minor, moderate, or significant. The intensity thresholds are defined as follows:

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

### 3.1 RESOURCES CONSIDERED FOR ANALYSIS

Nineteen resources, identified in Table 1 below, were considered for impact analysis and potential impacts from the No Action Alternative and the Proposed Plan. Further discussion on specific resources which cannot summarize in a table is provided in the following sections.

*Table 1. Resources Considered in the Environmental Assessment*

<b>Resource</b>	<b>Potential Impacts on the Resource Areas from the No Action Alternative</b>	<b>Potential Impacts on Resource Areas from the Proposed Plan</b>	<b>Considered Further</b>
Topography, Geology, and Soils	No impacts to topography, geology, and soils as no ground disturbance would occur with the No Action Alternative.	No ground disturbances are proposed, so classification revisions would not impact topography, geology, and soils.	No
Land use	No impacts to land use resources would occur under the No Action Alternative.	Impacts are further disclosed in Section 3.2.	Yes
Recreational Resources	No impacts to recreational resources would occur under the No Action Alternative.	Classification from Low Density Recreation to Wildlife Management would reduce acreage available for recreation by 2.8 acres. Classification from Wildlife Management to Project Operations would have no impact on recreation. Impacts are further disclosed in Section 3.2.	Yes
Cultural Resources	Resource not present -- Existing surveys cover the additional 8.5 acres. They indicate no cultural resources listed, are eligible for listing or are currently unavailable for listing on the National Register of Historic Places.	Resource not present -- Existing surveys cover the additional 8.5 acres. They indicate no cultural resources listed, are eligible for listing or are currently unavailable for listing on the National Register of Historic Places.	No
Threatened and Endangered Species	No impacts to threatened and endangered species would occur. Further discussed in Section 3.3.	No impacts to threatened and endangered species would occur. Further discussed in Section 3.3.	Yes
Invasive Species	The No Action Alternative would not have an impact to or from invasive species, as there would be no increase in the number of vessels that could introduce invasive aquatic species. It would also not increase activities or ground disturbance adjacent to the lake that could introduce terrestrial invasive species.	The supplement would not have an impact to or from invasive species, as there would be no increase in the number of vessels that could introduce invasive aquatic species. It would also not increase activities or ground disturbance adjacent to the lake that could introduce terrestrial invasive species.	No
Water Quality	No impacts to water quality as no ground disturbance would occur with the No Action Alternative.	Classification revisions would not impact water quality as no ground disturbance is proposed.	No

<b>Resource</b>	<b>Potential Impacts on the Resource Areas from the No Action Alternative</b>	<b>Potential Impacts on Resource Areas from the Proposed Plan</b>	<b>Considered Further</b>
Wild and Scenic Rivers and other water standards	Wildlife and Scenic Rivers are not present. High-Quality Waters as designated by the State of Oklahoma are located within the vicinity of the project. Further discussed in Section 3.4.	Wildlife and Scenic Rivers are not present. High-Quality Waters as designated by the State of Oklahoma are located within the vicinity of the project. Further discussed in Section 3.4.	Yes
Vegetation	No impacts to vegetation as no ground disturbance would occur with the No Action Alternative.	Classification revisions would not impact vegetation as no ground disturbance is proposed.	No
Wetland Resources	Resource not present.	Resource not present.	No
Wildlife	No impacts to wildlife resources would occur under the No Action Alternative.	Classification from Low Density Recreation to Wildlife Management would increase acreage available for wildlife by 2.8 acres. Classification from Wildlife Management to Project Operations would reduce acreage available for wildlife by 5.7 acres for a net loss of 2.9 acres.	No
Migratory Birds	No impacts to migratory birds as no vegetation disturbance would occur with the No Action Alternative.	Classification revisions would not impact migratory birds as no vegetation disturbance is proposed.	No
Aesthetics	No impacts to aesthetics as no ground disturbance or vegetation clearing would occur with the No Action Alternative.	Classification revisions would not impact aesthetics as no ground disturbance, or vegetation clearing is proposed.	No
Air Quality	No impacts on air quality as no emissions-producing activities are proposed.	No impacts on air quality as no emissions-producing activities are proposed.	No
Prime and Unique Farmlands	Resource not present.	Resource not present.	No
Noise	No impacts to noise as no noise-producing activities are proposed.	No impacts to noise as no noise-producing activities are proposed.	No
Environmental Justice (E.J.)	Impacts are further disclosed in Section 3.5.	Impacts are further disclosed in Section 3.5.	Yes
Socioeconomics	No impacts to socioeconomics as no impacts to the operations of adjacent properties, such as the campground, golf courses, rental properties, etc., would occur.	No impacts to socioeconomics as no impacts to the operations of adjacent properties, such as the campground, golf courses, rental properties, etc., would occur.	No

## **3.2 RECREATIONAL RESOURCES**

Most visitors to Fort Gibson Lake come from within a 100-mile radius of the lake area. Fort Gibson Lake visitors are a diverse group ranging from campers who utilize the campgrounds around the lake, full-time and part-time residents that border the lake, hunters who use the Wildlife Management Areas around the lake, day users who picnic in the city, state, and federally operated parks, marina customers and many other user groups. The peak visitation months on Fort Gibson Lake are April through September, when 89% of the visits occur. June is the highest visitation month and accounts for 17 to 19% of the annual total. Approximately 50% of visits to recreation areas occur in USACE-managed recreation areas.

### **3.2.1 Affected Environment**

The classification from Low Density Recreation to Wildlife Management reflects the current land use of the area. A total loss of 2.8 acres from the reclassification of Low Density Recreation to Wildlife Management would result from the proposed plan.

Under the No Action Alternative, no loss of recreation acreage would occur.

## **3.3 THREATENED AND ENDANGERED SPECIES**

Wildlife species may be classified as threatened or endangered under the Endangered Species Act (ESA) of 1973 (16 USC § 1531 et seq.). The U.S. Fish and Wildlife Service (USFWS) oversees the protection of non-marine species. The ESA ensures that federal agencies and departments use their authorities to protect and conserve endangered and threatened species. Section 7 of ESA requires that federal agencies prevent or modify any projects authorized, funded, or carried out by the agencies that are "likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat of such species."

### **3.3.1 Affected Environment**

Nine species listed as endangered, threatened, proposed, or candidate were identified as potentially occurring in the project area as indicated in the USFWS Official Species List dated February 10, 2023. There is no designated critical habitat in the project area.

Table 2 identifies the nine species, the habitat needs, and the likelihood of occurrence in or near the project area. Northern long-eared bat, tricolored bat, American burying beetle, and monarch butterfly were identified as potentially occurring, with known habitat also present in the project area.

Table 2. ESA-listed Species Identified as Potentially Occurring in the Project Area

Species	Agency	Status	Habitat Needs	Likelihood of Occurrence
<b>Birds</b>				
Piping Plover <i>Charadrius melodus</i>	USFWS	T	Migration habitat selection is opportunistic, but a preference is given towards mud or sand/mud substrates along rivers, and lakes, including man-made reservoirs.	Unlikely – No suitable habitat
Red Knot <i>Calidris canutus rufa</i>	USFWS	T	Migrating and wintering knots use sandy beaches, salt marshes, lagoons, mudflats of estuaries and bays, and mangrove swamps that contain an abundance of invertebrate prey.	Unlikely – No suitable habitat
<b>Mammals</b>				
Gray Bat <i>Myotis grisescens</i>	USFWS	E	Require limestone cave systems. Species are found in caves in the oak-hickory forests of the Ozark highlands. Caves near water are frequently selected.	Unlikely – No suitable habitat
Northern Long-eared Bat <i>Myotis septentrionalis</i>	USFWS	T	Utilize limestone cave systems. Summer roosting habitat includes a variety of tree species.	Possible
Ozark Big-eared Bat <i>Corynorhinus townsendii ingens</i>	USFWS	E	Require limestone and sandstone talus caves. Species are found in the oak-hickory forests of the Ozark highlands.	Unlikely – No suitable habitat
Tricolored Bat <i>Perimyotis subflavus</i>	USFWS	PE	Utilize caves and mines during winter (some winter usage of culverts in southern U.S. where caves are sparse). During the spring, summer and fall, tricolored bats are found in forested habitats where they roost in trees, primarily among leaves.	Possible
<b>Reptiles</b>				
Alligator Snapping Turtle <i>Macrochelys temminckii</i>	USFWS	PT	Found in deeper water of large rivers and their major tributaries, small streams, lakes, reservoirs, and oxbows. Individuals often select sites with structure over open water.	Unlikely – No suitable habitat

Species	Agency	Status	Habitat Needs	Likelihood of Occurrence
<b>Insects</b>				
American Burying Beetle <i>Nicrophorus americanus</i>	USFWS	T	Habitat preference is given to open, oak-hickory forests with native grass cover.	Possible
Monarch Butterfly <i>Danaus plexippus</i>	USFWS	C	Mainly found in prairies, meadows, grasslands, and along roadsides across most of North America, where milkweed, their host plant, is prominent. Habitat adjacent lake could be utilized during migration.	Possible

### 3.3.2 Environmental Consequences – No Action and Proposed Plan

The No Action and Proposed Plan would affect ESA-listed species similarly. Neither action would cause a ground disturbance, vegetation changes, or activities within the two locations. Without impacts on the habitat, no effects on the species can occur. Habitat at the two locations are densely forested areas adjacent to Fort Gibson Lake; the habitat potentially supports four species, northern long-eared bat, tricolored bat, American burying beetle, and monarch butterfly, further reducing potential impacts on the other five species. Table 3 shows the effects determinations for each species.

Table 3. Effects Determination for ESA-listed Species

Species	Agency	Status	Effect Determination
<b>Birds</b>			
Piping Plover <i>Charadrius melodus</i>	USFWS	T	No effect
Rufa Red Knot <i>Calidris canutus rufa</i>	USFWS	T	No effect
<b>Mammals</b>			
Gray Bat <i>Myotis grisescens</i>	USFWS	E	No effect
Northern Long-eared Bat <i>Myotis septentrionalis</i>	USFWS	T	No effect
Ozark Big-eared Bat <i>Corynorhinus (=Plecotus) townsendii ingens</i>	USFWS	E	No effect
Tricolored Bat <i>Perimyotis subflavus</i>	USFWS	PE	No effect
<b>Reptiles</b>			
Alligator Snapping Turtle <i>Macrochelys temminckii</i>	USFWS	PT	No effect
<b>Insects</b>			
American Burying Beetle <i>Nicrophorus americanus</i>	USFWS	T	No effect
Monarch Butterfly <i>Danaus plexippus</i>	USFWS	C	No effect

### **3.4 WILD AND SCENIC RIVERS AND OTHER WATER STANDARDS**

Pursuant to the Wild and Scenic River Act (Public Law 90-542), Wild River Areas are defined as those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. Scenic river areas are defined as those rivers or sections of rivers free of impoundments, with shorelines or watersheds still primitive and shorelines largely undeveloped but accessible in places by roads. There are no designated wild and scenic rivers in the State of Oklahoma, nor are any streams in the Fort Gibson watershed designated as 'scenic rivers' pursuant to the Oklahoma Scenic Rivers Act (82 O.S. § 1451-1470 as amended).

Specific segments of tributary streams to the reservoir are designated as 'high-quality waters' by the State of Oklahoma, indicating existing water quality exceeds levels necessary to support the propagation of fish, shellfish, wildlife, and recreation in and on the water. Portions of streams with this designation in the watershed include Fourteen Mile Creek, Spring Creek, Little Spring Creek, and Snake Creek.

#### **3.4.1 Environmental Consequences – No Action and Proposed Plan**

The No Action Alternative and Proposed Plan would not affect wild and scenic rivers or high-quality waters identified by the State of Oklahoma.

### **3.5 ENVIRONMENTAL JUSTICE**

Environmental justice (E.J.) is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

As provided in the April 1998 U.S. Environmental Protection Agency (EPA) guidance, a minority population is defined as a group of people and a community experiencing common conditions of exposure or impact that consists of persons classified by the U.S. Census Bureau as Black, Asian, American Indian or Alaska Native, Hispanic, or other non-white persons, including those persons of two or more races. An aggregate of minority populations over 50% for the entire affected environment indicates increased scrutiny in the environmental justice analysis may be appropriate (e.g., to assess majority-minority populations) (EPA 2016a). The low-income population is defined as a group of people and a community that, as a whole, lives below the national poverty level.

#### **3.5.1 Affected Environment**

The project area is within the Census Block groups: 400219777002, 400219777004, 400970404001, 400970405011, 401450301013, 401450301022, 401450302011, 401450302012, 401450302021, and 401450302022 (U.S. Census Bureau 2022a through 2022j). The Block groups have a population of 16,753 people and an area of 365.41 mi<sup>2</sup> (338.77 mi<sup>2</sup> land and 26.64 mi<sup>2</sup> water). Of the 16,753 people, 11,278 people (67%) are reporting as white, 3,461 people (21%) are reporting as American Indian, 349 people (2%) are reporting as Black, 180 people (1%) are reporting as Other Race, and 1,485 people (9%) are reporting two or more races. A total of 427 individuals (3%) are reporting as Hispanic. A total of 9,997 individuals (60%) are between the ages of 18 and 64, while 1,068 (6%) individuals are between

the ages of 0 and 4, 4,087 individuals (24%) are between 0 and 17, and 2,669 individuals (16%) are 65 or older. The census block would not be considered a minority population because minorities do not represent more than 50 percent of the community.

The EPA EJSCREEN tool (v2.0) was used to identify E.J. populations in or near the project area. The EPA issued guidance in 2016 that when using EJSCREEN, any geographic regions at or above the 80th percentile nationally for any E.J. indexes should be considered for further review and outreach (EPA 2016b).

The only socioeconomic indicator above the 80th percentile is Over Age 64, 81st percentile of the U.S., 87th percentile of the state, and 85th percentile of the region (Figure 4).

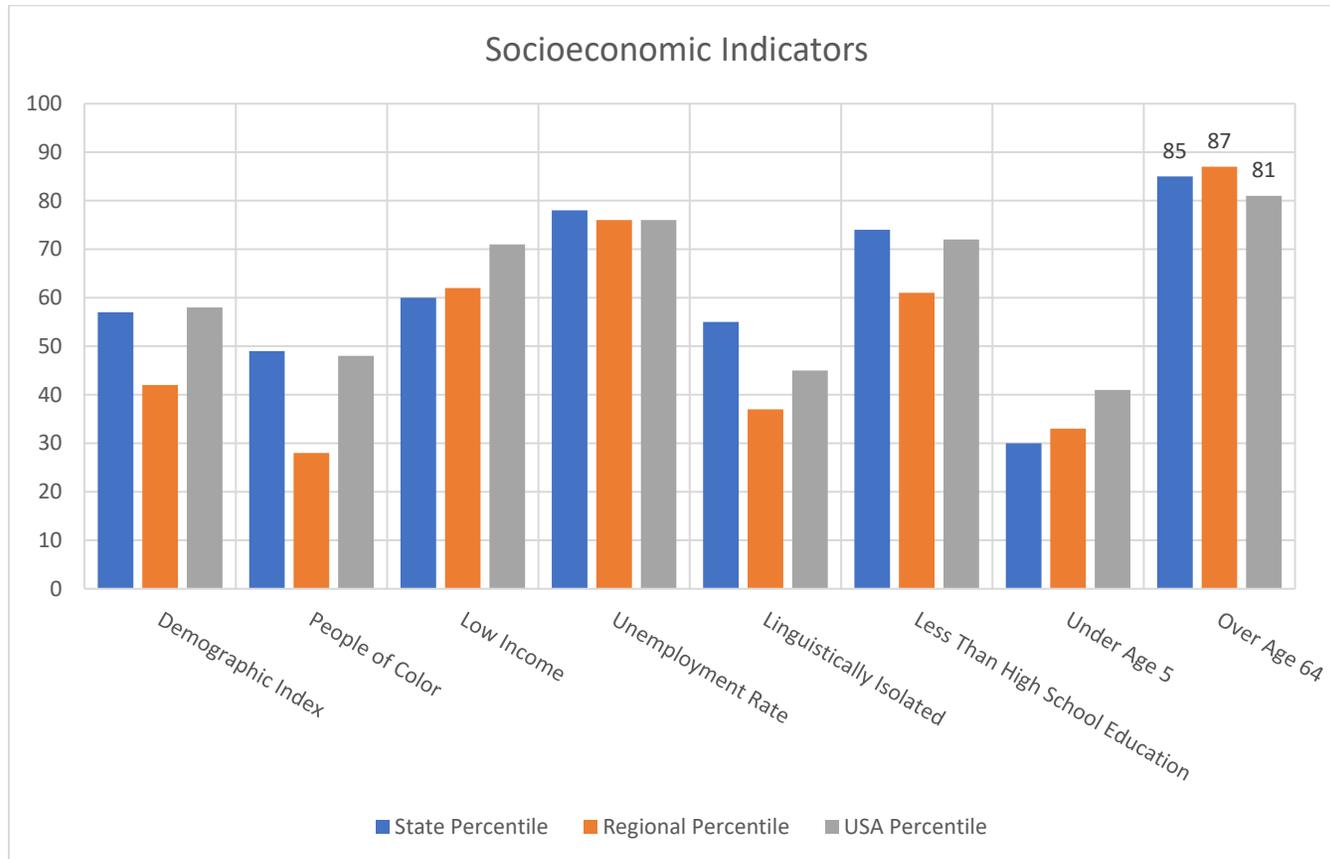


Figure 4. Socioeconomic Indicators for the Census Blocks of the Project Area Compared to All People’s Block Groups in the State, Region, and United States.

The only pollution and source indicator above the 80<sup>th</sup> percentile is 2017 Air Toxics Cancer Risk, 85<sup>th</sup> percentile of the U.S., 84<sup>th</sup> percentile of the state, and 84<sup>th</sup> percentile of the region (Figure 5).

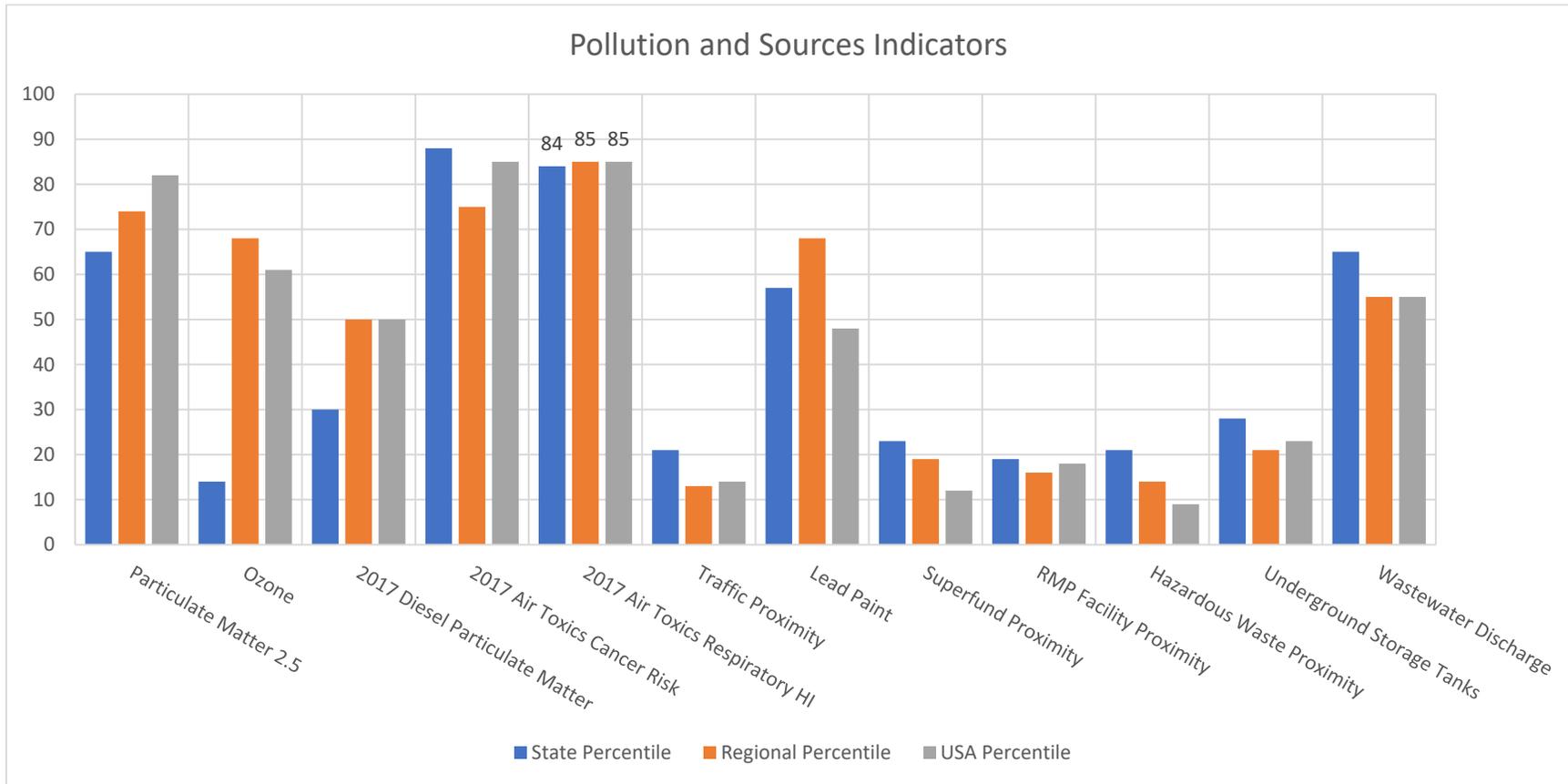


Figure 5. Pollution and Sources Indicators for the Census Blocks of the Project Area Compared to All People’s Block Groups in the State, Region, and United States.

### **3.5.2 Environmental Consequences – No Action and Proposed Plan**

The No Action and Proposed Plan would have the same effects on E.J. indices. As the action would not cause ground disturbance, vegetation changes, or activities (traffic) within the two locations, no impacts are expected. No impact on the socioeconomics, job opportunities (unemployment rate), or cohesion of low-income communities in or near the census blocks and project area is anticipated.

When considering the other E.J. Indices specifically related to chemical and other adverse factors, no increases of particulate matter, ozone, or other air toxins have been identified nor proposed. No development that could increase exposure to lead paint or hazardous waste is planned.

No impacts on the E.J. community near the project area are anticipated under the No Action Alternative nor the Proposed Plan.

## **4.0 CUMULATIVE IMPACTS**

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The most severe environmental degradation may not result from the direct effects of any particular action but from the combination of the impact of multiple independent activities over time. As defined in 40 CFR § 1508.1(g), a cumulative effect is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other efforts.

By Memorandum dated June 24, 2005, from the Chairman of the CEQ to the Heads of Federal Agencies, entitled "Guidance on the Consideration of Past Actions in Cumulative Effects Analysis," CEQ made clear its interpretation that "...generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions..." and that the "...CEQ regulations do not require agencies to catalog or exhaustively list and analyze all individual past actions." This cumulative impacts analysis summarizes expected environmental impacts from the combined results of past, current, and reasonably foreseeable future activities affecting any part of the human or natural environments impacted by the Proposed Action.

### **4.1 CURRENT AND REASONABLY FORESEEABLE PROJECTS**

Fort Gibson Lake is approximately 55 miles from the large metropolitan area of Tulsa, Oklahoma. As the city expands and populations increase, there will be projects in the vicinity of the Lake zone of interest. Expected projects include small projects such as road improvements, resurfacing, widening, utility easements, right of ways, and bridge repair or bridge construction.

Reasonably foreseeable future development is difficult to predict in the Fort Gibson Lake area. Given the lake's proximity to the Tulsa metropolitan area, future growth is anticipated due to increased recreational needs. No significant future projects have been identified.

### **4.2 ANALYSIS OF CUMULATIVE IMPACTS**

The Proposed Plan will not cause changes in land use or potential land use at the two locations where classifications are proposed to change. The locations have already been managed as such, and no changes to the management are expected. The changes do not provide an opportunity for additional impacts or land use changes to the 8.5 acres adjacent to the lake. As the increased recreational use of the Project develops, it may require changes to the management of the Project. The changes proposed in this environmental assessment do not preclude future revisions nor do they encourage future revisions. No cumulative impacts are expected from the No Action Alternative. No cumulative effects are expected from the Proposed Plan.

## **5.0 ENVIRONMENTAL COMPLIANCE**

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The following sections identify applicable environmental laws and regulations that are considered in the planning of this Project and the status of compliance with each.

### **5.1 NATIONAL ENVIRONMENTAL POLICY ACT**

This EA has been prepared to satisfy the requirements of all applicable environmental laws and regulations and in accordance with the CEQ's implementing regulations for NEPA, 40 CFR Parts 1500 – 1508, and the USACE ER 200-2-2, *Environmental Quality: Procedures for Implementing NEPA*. The revision of the 2016 MP is consistent with the USACE's Environmental Operating Principles.

### **5.2 ENDANGERED SPECIES ACT**

Current lists of threatened or endangered species were compiled for the revision of the 2016 MP and updated for the 2023 supplement and for this EA. USACE has determined there would be no effect on any federally listed species or critical habitat resulting from the modification of the 2016 MP proposed in this EA.

### **5.3 MIGRATORY BIRD HABITAT PROTECTION**

Sections 3a and 3e of EO 13186 direct federal agencies to evaluate the impacts of their actions on migratory birds, with emphasis on species of concern, and inform the USFWS of potential adverse effects on migratory birds. The 2023 MP supplement will not negatively impact migratory birds or their habitat.

### **5.4 MIGRATORY BIRD TREAT ACT**

The Migratory Bird Treaty Act of 1918 extends federal protection to migratory bird species. The nonregulated "take" of migratory birds is prohibited under this act, like the prohibition of "take" of threatened and endangered species under the Endangered Species Act. The 2023 MP supplement will not adversely impact migratory birds or their habitat.

### **5.5 CLEAN WATER ACT**

The Proposed Action complies with all state and federal CWA regulations and requirements and is regularly monitored by the USACE and OWRB for water quality. A state water quality certification pursuant to Section 401 of the CWA is not required for the 2023 MP supplement. There will be no change in the existing management of the reservoir that would impact water quality.

### **5.6 CLEAN AIR ACT**

The EPA established nationwide air quality standards to protect public health and welfare. The existing reservoir operation and management comply with the Clean Air Act and will not change with the 2023 MP supplement.

## **5.7 FARMLAND PROTECTION POLICY ACT**

The FPPA's purpose is to minimize how federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. Prime Farmland is not present in the 8.5 acres considered for this EA. The 2023 MP update would not impact Prime Farmland present on Fort Gibson Lake.

## **5.8 EXECUTIVE ORDER 11990 – PROTECTION OF WETLANDS**

EO 11990 requires federal agencies to minimize wetlands' destruction, loss, or degradation and preserve and enhance wetlands' natural and beneficial values in executing national projects. The proposed 2023 MP supplement complies with EO 11990.

## **5.9 EXECUTIVE ORDER 11988 – FLOODPLAIN MANAGEMENT**

This E.O. directs federal agencies to evaluate the potential impacts of proposed actions in floodplains. The operation and management of the Project comply with EO 11988.

## **5.10 EXECUTIVE ORDER 12898 – ENVIRONMENTAL JUSTICE**

This E.O. directs Federal agencies to determine whether their programs, policies, and activities would have a disproportionately high or adverse effect on minority or low-income population groups within the Project Area to identify potential E.J. issues. The proposed Project would not impact minority or low-income population groups within the project area.

## **6.0 PUBLIC INVOLVEMENT**

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In accordance with 40 CFR §§ 1506.6, the USACE initiated public involvement and agency scoping activities to solicit input on the 2023 MP revision process and identify reallocation proposals and significant related issues to the Proposed Action. The USACE issued a public notice identifying the intent to prepare an Environmental Assessment on October 7, 2022. The comment period ended on October 24, 2022, with no comments received. The USACE will be issuing a public notice identifying the availability of the Draft Environmental Assessment and Draft Finding of No Significant Impact in March 2023. The Tulsa District placed advertisements on the USACE webpage for all public notices.

## 7.0 REFERENCES

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- Environmental Protection Agency (EPA). 2016a. Environmental Justice (E.J.) Interagency Working Group (IWG) Promising Practices for E.J. Methodologies in NEPA Reviews. EPA Pub. No: 300-B-16-001. Available at: [https://www.epa.gov/sites/default/files/2016-08/documents/nepa\\_promising\\_practices\\_document\\_2016.pdf](https://www.epa.gov/sites/default/files/2016-08/documents/nepa_promising_practices_document_2016.pdf).
- EPA. 2016b. Technical Guidance for Assessing Environmental Justice in Regulatory Analysis. Available at: [https://www.epa.gov/sites/production/files/2016-06/documents/ejtg\\_5\\_6\\_16\\_v5.1.pdf](https://www.epa.gov/sites/production/files/2016-06/documents/ejtg_5_6_16_v5.1.pdf).
- U.S. Census Bureau. 2022a. 2015-2019 American Community Survey. Data accessed from the EPA EJSCREEN ACS Summary Report for Block group 400219777002. Available at: <https://ejscreen.epa.gov/mapper/>.
- U.S. Census Bureau. 2022b. 2015-2019 American Community Survey. Data accessed from the EPA EJSCREEN ACS Summary Report for Blockgroup 400219777004. Available at: <https://ejscreen.epa.gov/mapper/>.
- U.S. Census Bureau. 2022c. 2015-2019 American Community Survey. Data accessed from the EPA EJSCREEN ACS Summary Report for Blockgroup 400970404001. Available at: <https://ejscreen.epa.gov/mapper/>.
- U.S. Census Bureau. 2022d. 2015-2019 American Community Survey. Data accessed from the EPA EJSCREEN ACS Summary Report for Block group 400970405011. Available at: <https://ejscreen.epa.gov/mapper/>.
- U.S. Census Bureau. 2022e. 2015-2019 American Community Survey. Data accessed from the EPA EJSCREEN ACS Summary Report for Blockgroup 401450301013. Available at: <https://ejscreen.epa.gov/mapper/>.
- U.S. Census Bureau. 2022f. 2015-2019 American Community Survey. Data accessed from the EPA EJSCREEN ACS Summary Report for Block Group 401450301022. Available at: <https://ejscreen.epa.gov/mapper/>.
- U.S. Census Bureau. 2022g. 2015-2019 American Community Survey. Data accessed from the EPA EJSCREEN ACS Summary Report for Block group 401450302011. Available at: <https://ejscreen.epa.gov/mapper/>.
- U.S. Census Bureau. 2022h. 2015-2019 American Community Survey. Data accessed from the EPA EJSCREEN ACS Summary Report for Blockgroup 401450302012. Available at: <https://ejscreen.epa.gov/mapper/>.
- U.S. Census Bureau. 2022i. 2015-2019 American Community Survey. Data accessed from the EPA EJSCREEN ACS Summary Report for Block group 401450302021. Available at: <https://ejscreen.epa.gov/mapper/>.

U.S. Census Bureau. 2022j. 2015-2019 American Community Survey. Data accessed from the EPA EJSCREEN ACS Summary Report for Block group 401450302022. Available at: <https://ejscreen.epa.gov/mapper/>.

U.S. Army Corps of Engineers. 2016. Fort Gibson 2016 Master Plan.

U.S. Army Corps of Engineers. 2021. Fort Gibson Lake 2021 Shoreline Management Plan.

U.S. Fish and Wildlife Service (USFWS). 2022. IPaC for Information and Planning Conservation, USFWS Trust Resources. Available at: <https://ecos.fws.gov/ipac/>.

## **Appendix A – Public Involvement**



**DEPARTMENT OF THE ARMY**  
U.S. ARMY CORPS OF ENGINEERS TULSA DISTRICT  
2488 EAST 81<sup>ST</sup> STREET  
TULSA, OKLAHOMA 74137-4290

October 7, 2022

**PUBLIC NOTICE**

**15-DAY COMMENT PERIOD TO PREPARE AN ENVIRONMENTAL ASSESSMENT  
SUPPLEMENT TO THE 2015 MASTER PLAN  
FORT GIBSON LAKE, GRAND – NEOSHO RIVER BASIN  
WAGONER, CHEROKEE, AND MAYES COUNTIES, OKLAHOMA**

The U.S. Army Corps of Engineers, Tulsa District (USACE), is preparing an Environmental Assessment (EA) to document the beneficial and adverse effects of developing a supplement to the January 2016 Fort Gibson Lake Master Plan. The supplement is prepared to change land classifications at two locations totaling 8.5 acres (see attached maps).

In 2021, the USACE updated and revised the Fort Gibson Lake Shoreline Management Plan through a public participation process that included an initial scoping meeting on February 25, 2020, in Wagoner, Oklahoma, and received written comments. The 2021 Fort Gibson Shoreline Management Plan draft was released for public comment on May 20, 2021, with the comment period ending on June 21, 2021. The Fort Gibson Shoreline Management Plan was finalized in July 2021.

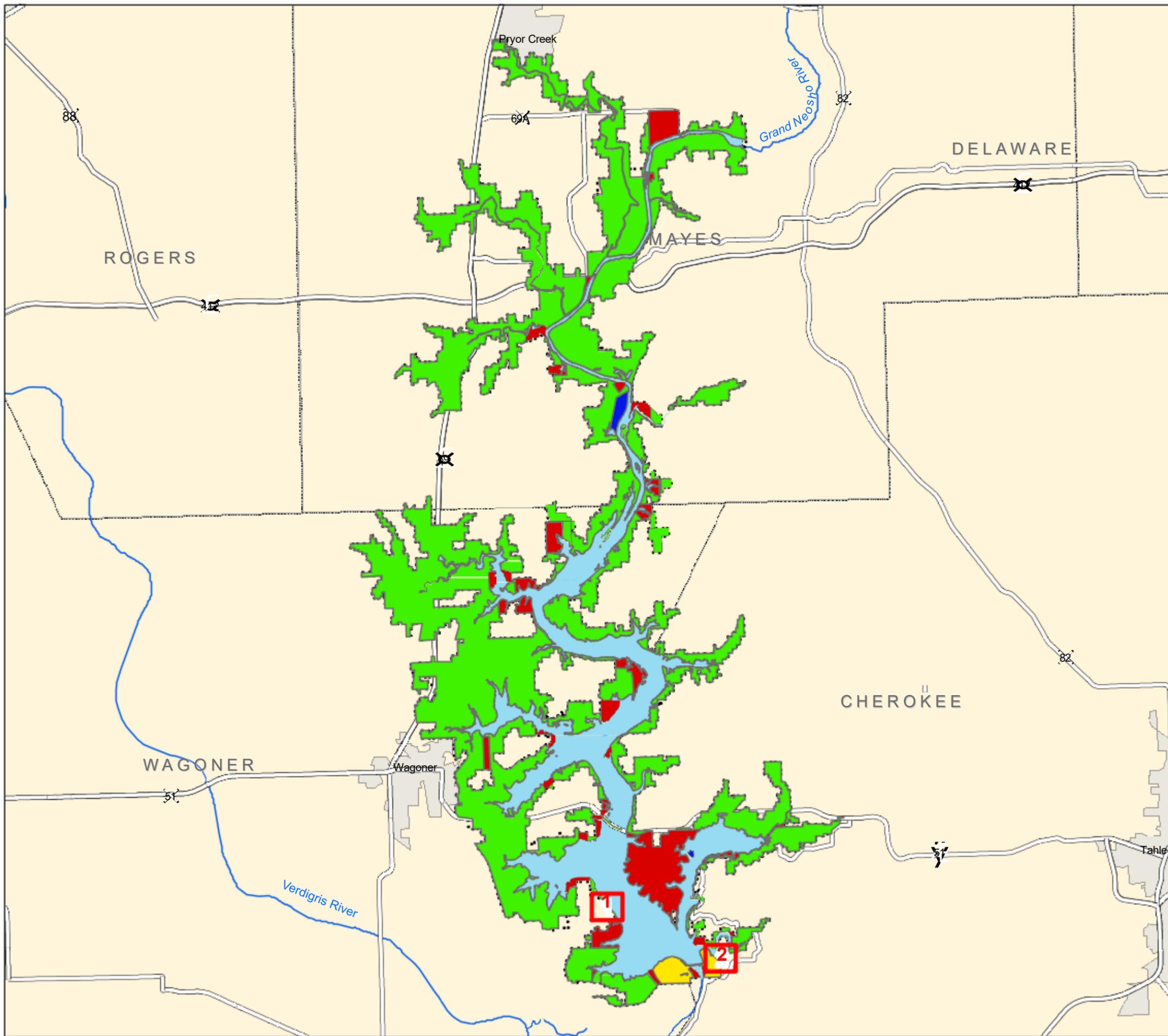
During the review and implementation of the Shoreline Management Plan, it was identified that two land classifications needed to be changed from the existing Master Plan to ensure agreement between the Shoreline Management Plan and the Master Plan. The first location is proposed to change from a land classification of Low-Density Recreation to Wildlife Management (2.8 acres). The second location is proposed to change from a land classification of Wildlife Management to Project Operations (5.7 acres). The changes will resolve the conflict between the two Plans.

Information on Fort Gibson Lake, the 2016 Master Plan, and the 2021 Shoreline Management Plan, is available at: <https://www.swt.usace.army.mil/Locations/Tulsa-District-Lakes/Oklahoma/Fort-Gibson-Lake/>. Section 4.2 of the Master Plan contains descriptions of the Land Classifications being considered.

USACE is soliciting the public's feedback on any social, economic, and environmental concerns with the proposed supplement to the Master Plan. Comments may be emailed to [ceswt-od-nr@usace.army.mil](mailto:ceswt-od-nr@usace.army.mil) or postmarked and mailed by October 24, 2022 to Mr. Jeff Knack, Natural Resources and Recreation Branch, Operations Division, 2488 E 81st Street, Tulsa, Oklahoma 74137.

A handwritten signature in cursive script that reads "Jeffrey F. Pinsky".

Jeffrey F. Pinsky  
Chief, Environmental Branch  
Regional Planning and Environmental Center



- ENVIRONMENTALLY SENSITIVE
- HIGH DENSITY RECREATION
- LOW DENSITY RECREATION
- PROJECT OPERATIONS
- WILDLIFE MANAGEMENT
- RESERVOIR
- FEE BOUNDARY



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

FORT GIBSON LAKE GRAND (NEOSHO) RIVER, OKLAHOMA

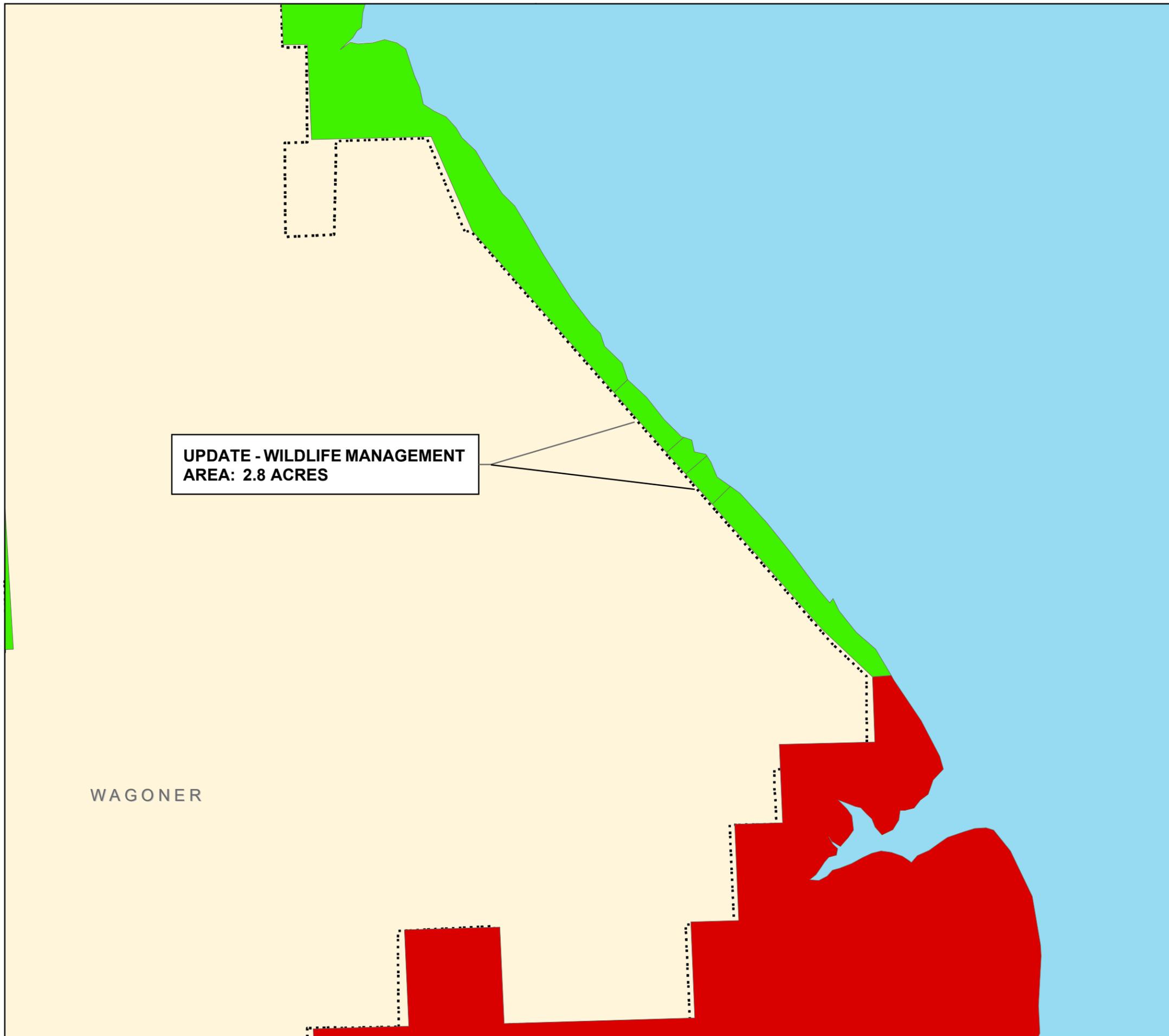
**FORT GIBSON LAKE MASTER PLAN**

**LAND CLASSIFICATION  
ADMINISTRATIVE SUPPLEMENT  
(INDEX SHEET 00)**



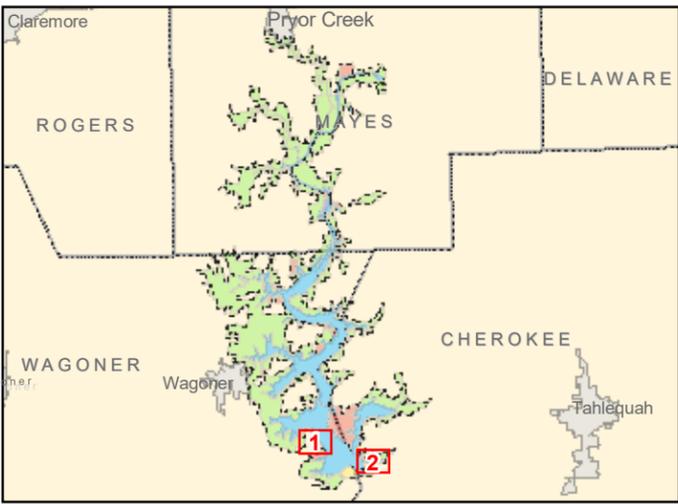
DATE:  
JULY 2022

MAP NO.  
FG22MP-AS-00



**UPDATE - WILDLIFE MANAGEMENT  
AREA: 2.8 ACRES**

WAGONER



- HIGH DENSITY RECREATION
- WILDLIFE MANAGEMENT
- RESERVOIR
- FEE BOUNDARY



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

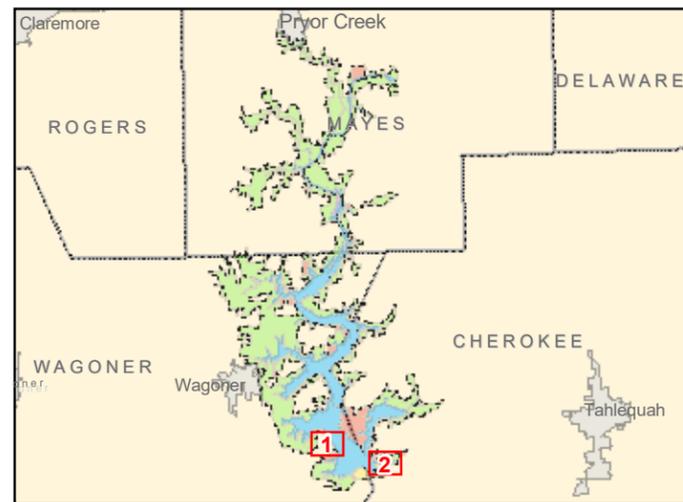
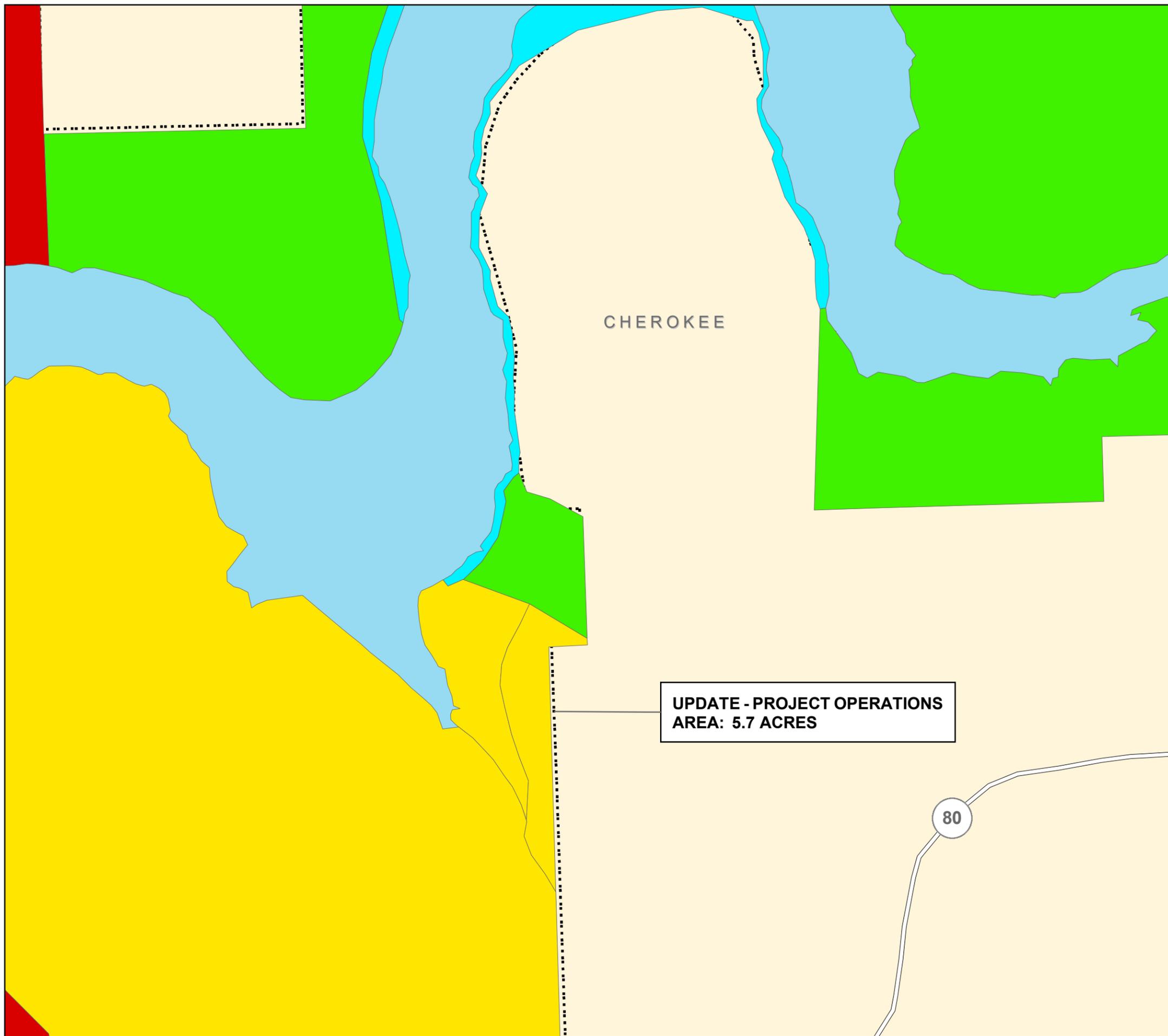
FORT GIBSON LAKE GRAND (NEOSHO) RIVER, OKLAHOMA

**FORT GIBSON LAKE MASTER PLAN  
LAND CLASSIFICATION  
ADMINISTRATIVE SUPPLEMENT  
(INDEX SHEET 01)**



DATE:  
SEPTEMBER 2021

MAP NO.  
FG21MP-AS-01



- HIGH DENSITY
- LOW DENSITY
- PROJECT OPERATIONS
- WILDLIFE MANAGEMENT
- RESERVOIR
- FEE BOUNDARY

UPDATE - PROJECT OPERATIONS  
AREA: 5.7 ACRES



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

FORT GIBSON LAKE GRAND (NEOSHO) RIVER, OKLAHOMA

**FORT GIBSON LAKE MASTER PLAN**  
**LAND CLASSIFICATION**  
**ADMINISTRATIVE SUPPLEMENT**  
**(INDEX SHEET 02)**



DATE: JULY 2022	MAP NO. FG21MP-AS-02
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## **Appendix B – USFWS Official Species List**



## United States Department of the Interior



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

In Reply Refer To:  
Project Code: 2022-0084989  
Project Name: Fort Gibson Lake MP Supplement

February 10, 2023

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

### To Whom It May Concern:

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

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

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

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

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

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

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

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

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

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

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Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
  - Migratory Birds
  - Wetlands
-

## **Official Species List**

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

This species list is provided by:

### **Oklahoma Ecological Services Field Office**

9014 East 21st Street

Tulsa, OK 74129-1428

(918) 581-7458

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## Project Summary

Project Code: 2022-0084989

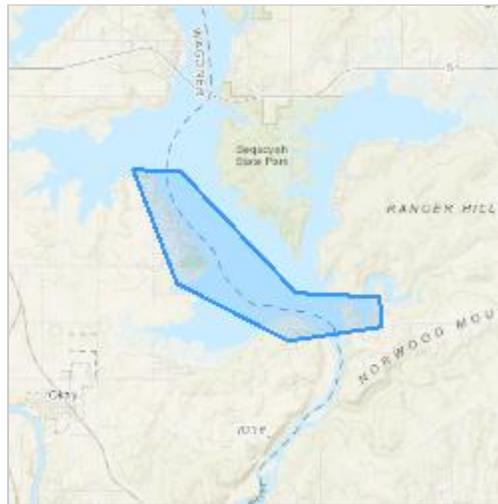
Project Name: Fort Gibson Lake MP Supplement

Project Type: Forest Management Plan

Project Description: Supplement to the 2015 Master Plan to update

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@35.88867105,-95.26797574729122,14z>



Counties: Cherokee and Wagoner counties, Oklahoma

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## Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

## Mammals

NAME	STATUS
Gray Bat <i>Myotis grisescens</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/6329">https://ecos.fws.gov/ecp/species/6329</a>	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened
Ozark Big-eared Bat <i>Corynorhinus (=Plecotus) townsendii ingens</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/7245">https://ecos.fws.gov/ecp/species/7245</a>	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10515">https://ecos.fws.gov/ecp/species/10515</a>	Proposed Endangered

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## Birds

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/6039">https://ecos.fws.gov/ecp/species/6039</a>	Threatened
Red Knot <i>Calidris canutus rufa</i> There is <b>proposed</b> critical habitat for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/1864">https://ecos.fws.gov/ecp/species/1864</a>	Threatened

## Reptiles

NAME	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4658">https://ecos.fws.gov/ecp/species/4658</a>	Proposed Threatened

## Insects

NAME	STATUS
American Burying Beetle <i>Nicrophorus americanus</i> Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/66">https://ecos.fws.gov/ecp/species/66</a>	Threatened
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## Critical habitats

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

# USFWS National Wildlife Refuge Lands And Fish Hatcheries

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

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

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## Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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

**The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\) list](#) or warrant special attention in your project location.** To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover <i>Pluvialis dominica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25

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NAME	BREEDING SEASON
<b>Kentucky Warbler <i>Oporornis formosus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
<b>Prothonotary Warbler <i>Protonotaria citrea</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
<b>Red-headed Woodpecker <i>Melanerpes erythrocephalus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
<b>Rusty Blackbird <i>Euphagus carolinus</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
<b>Wood Thrush <i>Hylocichla mustelina</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

## Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

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

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

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

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

- The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

**Breeding Season (■)**

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort (|)**

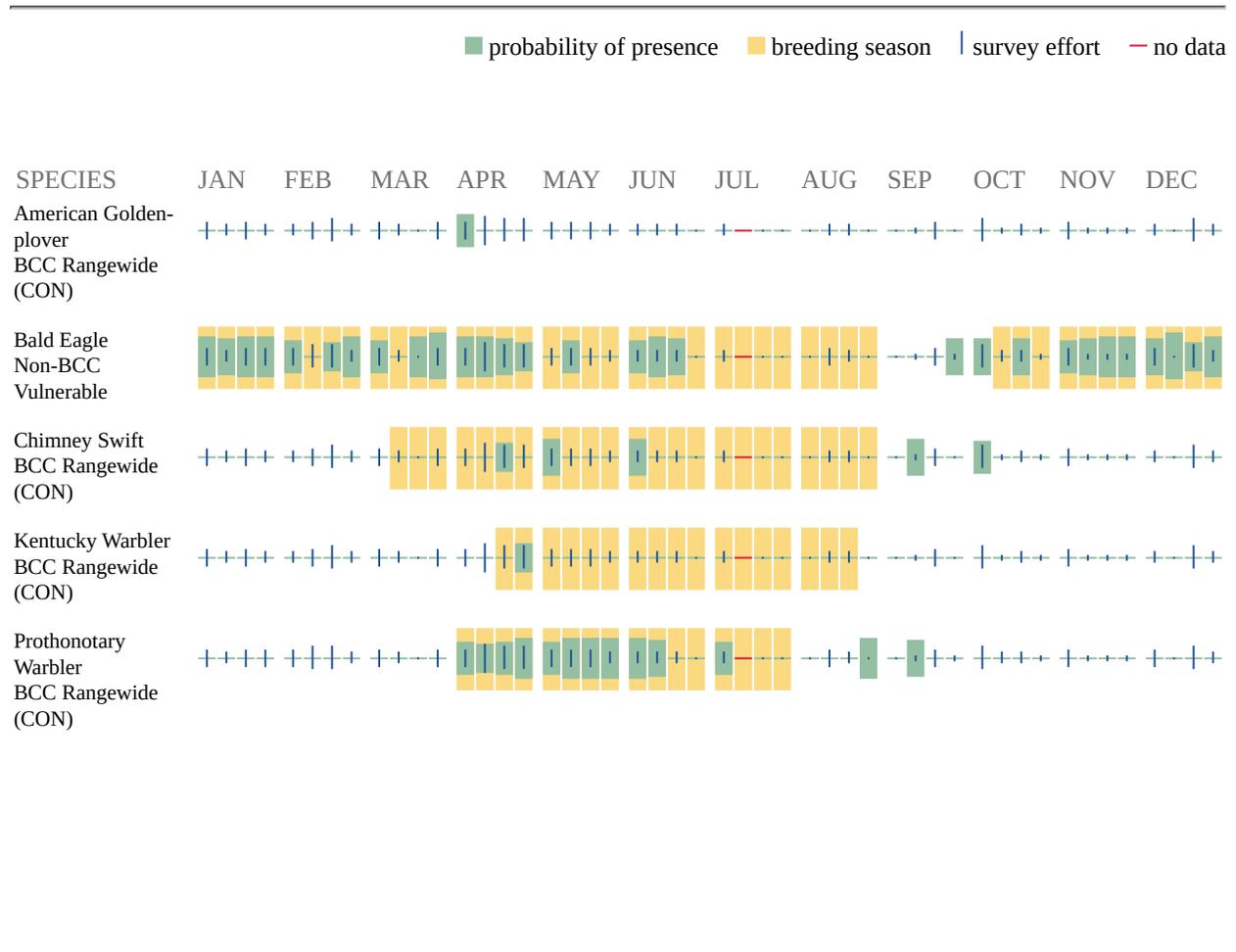
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

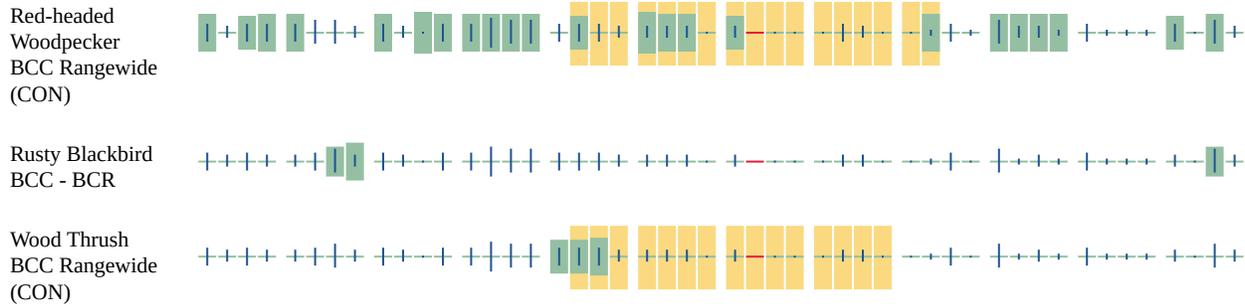
**No Data (-)**

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

**Survey Timeframe**

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

## Migratory Birds FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list

of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering or migrating in my area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical](#)

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[Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### **What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### **Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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## Wetlands

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

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

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

### LAKE

- [Lacustrine](#)

### RIVERINE

- [Riverine](#)

### FRESHWATER POND

- [Palustrine](#)
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## Appendix C – Draft FONSI