

MEMORANDUM FOR Commander, Tulsa District

SUBJECT: Toronto Lake Revised Master Plan (September 2017)

1. Enclosed subject Master Plan is submitted for review and approval in accordance with ER 1130-2-550, Change 7 and EP 1130-2-550, Change 5.
2. Point-of-contact in Operations Division is Mr. Steve Nolen, 918.669.7660.



EARL GROVES  
Chief, Operations Division

Encl

Approved: <sup>CAH</sup> X \_\_\_\_\_ Disapproved: \_\_\_\_\_



Christopher A. Hussin  
Colonel, U.S. Army  
District Commander

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# TORONTO LAKE

## MASTER PLAN



# VERDIGRIS RIVER

## ARKANSAS RIVER BASIN

### WOODSON AND GREENWOOD COUNTIES, KANSAS

September 2017



US Army Corps  
of Engineers®  
Tulsa District



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## **EXECUTIVE SUMMARY**

### **Toronto Lake Master Plan**

U.S. Army Corps of Engineers

Prepared by Tulsa District and the Regional Planning and Environmental Center  
September 2017

#### **PURPOSE**

The revision of the *Toronto Lake Master Plan* (Plan or Master Plan) is a framework built collaboratively to guide appropriate stewardship of U.S. Army Corps of Engineers (USACE) administered resources at Toronto Lake over the next 25 years. The 1979 Toronto Lake Master Plan was an update of the original 1959 Master Plan, and has served well past its intended 25-year planning horizon. In addition to the inherent mission of environmental stewardship, the lake and dam's primary purposes are flood risk management, water quality, fish and wildlife conservation, and water supply. The 1979 Master Plan classifies a total of 6,073 acres of USACE land and 2,550 acres of surface water at conservation pool within the fee boundary. Due to land changes from erosion and sedimentation as well as better measurement technology, this number has increased. Currently, Toronto Lake encompasses 6,333 acres of land and 2,308 acres of surface water, protecting the Verdigris River Basin through flood mitigation, providing water for local municipalities and irrigation, as well as conserving habitat for fish and wildlife conservation and public recreation. This Plan and supporting documentation provides an inventory, analysis, goals, objectives and recommendations for USACE lands and waters at Toronto Lake, Kansas.

#### **PUBLIC INPUT**

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

Approximately 45 individuals, not including USACE personnel, attended the public scoping meetings held at the onset of the process on 15 and 17 November 2016 for both the Toronto Lake Master Plan Revision and its sister lake, the Fall River Lake Master Plan Revision, whose master plan revisions are being developed simultaneously. USACE received a total of eight comments during the initial 30-day comment period, with Utility Track Vehicle/All-Terrain Vehicle Trails and Erosion/Dredging/Silting/Lake Level being the most significant issues. None of the comments received were directly related to changes to land classifications for the master plan, however, all the public comments received were noted and will be addressed as future funds and development are considered.

The final draft Master Plan, Shoreline Management Plan and Environmental Assessment with the accompanying Finding of No Significant Impact (FONSI) was made available for public and agency review online beginning 08 August 2017 and remained open for public and agency review through 08 September 2017. Two

comments were received during this time; one “no comment” from the general public and one “no comment” from the State Historical Preservation Office (SHPO).

## RECOMMENDATIONS

The following land classifications changes (detailed in Chapter 8, Table 8.1) resulted from the inventory, analysis, and synthesis of data, documents, and public and agency input. In general, 352 total acres were reclassified, with fee and conservation pool acreage changes due in part to siltation and improvements in measurement technology using Geographical Information System (GIS) technology. This software allows for more finely tuned measurements and thus acreages may vary slightly from official land acquisition records. A more detailed summary of comments and USACE responses can be found in Chapter 8.

**Table ES-1.1**

Prior Land Classifications (1979)	Acres	New Land Classifications	Acres	Net Difference
Project Operations	44	Project Operations	46	2
Recreation – Intensive Use	1,086	High Density Recreation	1,216	130
		Environmentally Sensitive Areas	-	-
Recreation – Low Density	335	Multiple Resource Management – Low Density Recreation	-	-335
Wildlife Management	4,515	Multiple Resource Management – Wildlife Management	5,070	555
		Multiple Resource Management – Vegetation Management	-	-
		Future/Inactive Recreation Areas	-	-

\* **Note:** Acreage figures were measured using GIS technology and may vary slightly from official land acquisition records.

## PLAN ORGANIZATION

Chapter 1 of the Master Plan presents an overall introduction of Toronto Lake. Chapter 2 consists of an inventory and analysis of project resources. Chapters 3 and 4 lay out management goals, resource objectives, and land allocation and classification. Chapter 5 is the resource plan that identifies how project lands will be managed through a resource use plan for each land use classification. This includes current and projected park facility needs, an analysis of existing and anticipated resource use, and anticipated influences on overall project operation and management. Chapter 6 details topics that

are unique to Toronto Lake. Chapter 7 identifies the coordination efforts and stakeholder input gathered for the development of the Master Plan, and Chapter 8 gives a summary of the changes in land classification from the previous master plan to the present one. Finally, the appendices include information and supporting documents for this Master Plan revision, including Land Classification and Park Plate Maps (Appendix A).

An EA analyzing alternative management scenarios for Toronto Lake has been prepared in accordance with 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. It should be noted that the 1976 Lakeshore Management Plan (new nomenclature is Shoreline Management Plan) for Toronto Lake is being revised simultaneously with the Master Plan to ensure compatibility between the two plans. The EA analyzes and addresses impacts to both revision processes.

The EA evaluated two alternatives as follows: 1) No Action Alternative, 2) Proposed Action. Three additional alternatives were considered but eliminated as follows: 3) Revise Master Plan to Only Reflect Changes in Land Classification Names with No Change in Operation and Use, 4) Revise Master Plan and Lakeshore Management Plan to Meet Authorized Project Purposes and to Maximize Recreation, and 5) Revise Master Plan and Lakeshore Management Plan to Meet Authorized Project Purposes and to Maximize Natural Resource Management. The EA analyzed the potential impact of the No Action and Proposed Action would have on the natural, cultural, and human environments. Because the Master Plan is conceptual, 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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# TORONTO MASTER PLAN

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# CHAPTER 1 - INTRODUCTION

## 1.1 GENERAL OVERVIEW

Toronto Lake, formally Toronto Dam and Reservoir, is a multipurpose water resources project constructed and operated by the U.S. Army Corps of Engineers (USACE), Tulsa District. The lake and associated federal lands are located in Woodson and Greenwood Counties, Kansas (KS). Toronto Lake Dam is situated on the Verdigris River just south of the town of Toronto. The dam and associated infrastructure, as well as all lands acquired for the Toronto Lake project, are federally owned and administered by the USACE.

This Master Plan serves 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, making provisions for outdoor recreation facilities and opportunities on federal land associated with Toronto Lake. The Plan does not address the flood risk management or water supply purposes of Toronto Lake (see the USACE Water Control Manual for Toronto Lake for a description of these project purposes). The original master plan for Toronto Lake was approved in March 1958, revised in February 1959 and was last updated in 1979, which is well past the intended planning horizon.

## 1.2 PROJECT AUTHORIZATION

Toronto Lake, formally Toronto Dam and Reservoir, was authorized for the control and prevention of flood damages in the Verdigris River Valley and the regulated release of water for supplemental water supply and pollution abatement. Congressional authority for constructing the project is contained in the Flood Control Act of 28 June 1938, as modified on 18 August 1941 (Public Law 77-228; Project Document HD 440, 76<sup>th</sup> Congress, 1<sup>st</sup> Session). Toronto Lake has been developed for public use and other land and water uses in accordance with departmental authority contained in Section 4 of the Flood Control Act of 1946, as further amended by Section 209 of the Flood Control Act of 1954. Water supply authorization is also included in Public Law 85-500, Section 301(b).

## 1.3 PROJECT PURPOSE

Toronto Lake is a multipurpose water resource project constructed and operated by USACE. The project is included in a four-lake system with Elk City, Fall River, and the authorized but never constructed Neodesha Lake for flood control and low-flow regulation for pollution abatement and supplemental water supply on the Verdigris River in Kansas. Toronto Lake has the following primary purposes:

- Flood risk management
- Water supply
- Water quality
- Fish and wildlife
- Recreation

Environmental stewardship, though not listed as a primary project purpose, is a major responsibility and inherent mission in the administration of federally owned lands. Other laws, including but not limited to Public Law 91-190, National Environmental Policy Act of 1969 (NEPA) and Public Law 86-717, Forest Cover Act, place emphasis on the environmental stewardship of Federal lands and USACE-administered Federal lands, respectively.

#### **1.4 PURPOSE AND SCOPE OF MASTER PLAN**

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. This revision of the Toronto Lake Master Plan is intended to bring the master plan up to date to reflect current ecological, socio-demographic, and outdoor recreation trends that are affecting the lake, as well as those anticipated to occur within the planning period of 2017 to 2042 (i.e., 25 years).

The Toronto Lake 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 Toronto Lake project. It is a vital tool for responsible stewardship and sustainability of the project's natural and cultural resources. It makes provision for outdoor recreation facilities and opportunities on federal land associated with Toronto Lake 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 Toronto Lake resources and facilities, and that goals and objectives are accomplished at an appropriate scale.

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

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

It is important to note what the Master Plan does not address. As noted in Section 1.1, the Plan does not address the flood risk management or water supply purposes of Toronto Lake. Details of design; management and administration; and implementation are not addressed here, but are addressed in the Toronto Lake Operational Management Plan (OMP). In addition, the Master Plan does not address the specifics of regional water quality, shoreline management, or water level management. The operation and

maintenance of primary project operations facilities, including but not limited to the dam, spillway, and gate-controlled outlet, are not included in this Plan.

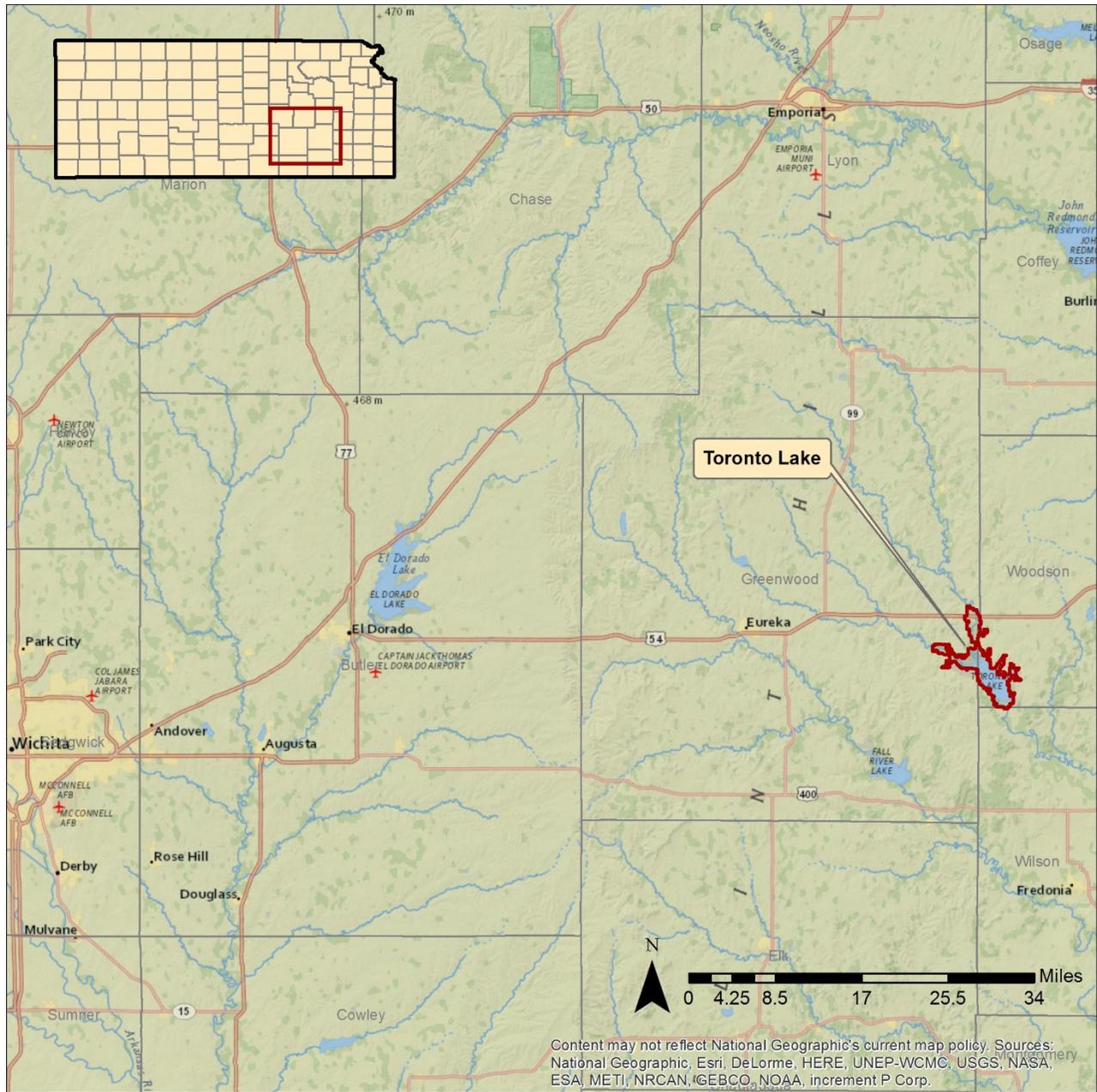
The 1979 update to the Master Plan was sufficient for prior land use planning and management. Changes in outdoor recreation trends, regional land use, population, current legislative requirements, and USACE management policy have occurred over the past decades. Additionally, increasing fragmentation of wildlife habitat, national policies related to land management, climate change, and growing demand for recreational access and protection of natural resources are all factors affecting Toronto Lake and the region in general. In response to these continually evolving trends, USACE determined that a full revision of the 1979 Plan is required as set forth in this Plan.

## **1.5 BRIEF WATERSHED AND PROJECT DESCRIPTION**

Toronto Lake is located in the Arkansas River watershed on the Verdigris River, a tributary of the Arkansas River, at river mile 271.5, about four miles southeast of the town of Toronto in Woodson County, Kansas. A small portion of the lake lies within Greenwood, County to the west.

Construction of the dam was started in November 1954 and the project was placed in full operation for flood control in March 1960. The dam consists of a rolled impervious and random earth-filled embankment with rock and grass-protected slopes and a controlled, concrete spillway. The dam is 4,712 feet long. The maximum height of the embankment above the streambed is 90 feet.

In addition to flood control storage, the conservation storage totals 10,660 acre-feet of which 10,260 acre-feet is in permanent storage, and the remaining 400 acre-feet is used for release water during dry periods for supplemental water supply.



**Figure 1.1 Toronto Lake Vicinity Map**

The spillway is a gate-controlled, concrete, gravity, ogee weir having a gross width of 376 feet (ft.) and a net overflow width of 320 ft. Spillway discharges are controlled by eight 40- by 25-ft tainter gates. The structure is located near the right abutment of the dam. Spillway discharge at maximum pool (elevation 940.6 National Geodetic Vertical Datum (NGVD)) is 253,000 cubic feet per second (cfs). Bank-filled capacity below the dam is 6,500 cfs.



**Photo 1-1 Toronto Dam and Spillway** (USACE Photo)

The outlet works consist of seven 5-by-6 ft., 6 inch rectangular sluices that pass through the base of the spillway along the centerline of each pier. Hydraulically operated slide gates control the sluices. A 24-inch pipe controlled by a 24-inch butterfly valve for normal operation and a manually operated gate for emergency operation passes through the weir for low flow releases. Capacity of the outlet works varies from 6,400 cfs at the top of the conservation pool to 9,900 cfs at the top of the flood control pool. Authority was granted at the time of construction to establish a normal conservation pool at elevation 901.5 NGVD with a maximum flood control pool level of 931.0 NGVD. Normal conservation pool is subject to fluctuations in accordance with a seasonal pool plan for fish and wildlife management.

## **1.6 DESCRIPTION OF RESERVOIR**

Toronto Lake has approximately 2,308 water surface acres, as calculated from GIS, with 55 miles of shoreline at conservation pool elevation 901.5 NGVD. The lake is located in the Osage Plains region of the Central Lowland province in Greenwood and Woodson Counties, Kansas. It is operated for the control of floods on the Verdigris River from the dam to the mouth Fall River; and in conjunction with Fall River Lake to the mouth of Elk River; and in conjunction with Elk City Lake to the upper limits of Oologah Lake. Toronto Lake has a total drainage area of 730 square miles.

## 1.7 PROJECT ACCESS

Toronto Lake is accessible by a network of State and Federal highways. Major roads include United States (US) Highways 54 and 75. US Highway 54 is located 6.5 miles north of the dam and extends east and west. US Highway 75 extends north and south, and is located approximately 12 miles east of the dam and goes through Yates Center, Kansas. State Highway 96 runs east and west, is located about 8.5 miles south of the lake and State Highway 105 (Decatur Road) runs north and south and skirts the lake to the east. There are currently no major roadway additions or improvements proposed for the foreseeable future.

## 1.8 PRIOR DESIGN MEMORANDA AND PLANNING REPORTS

Design Memorandums (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. A partial listing of DMs and planning reports relevant to the Master Plan is provided as follows:

- Definite Project Report, 11 January 1940
- DM 11 - Preliminary Master Plan for Reservoir Development and Management, 14 June 1957
- DM 11-2 - Master Plan Update, 20 Mar 1958, revised 20 Feb 1959
- Supplement No 1, June 1965
- DM 12 - Access Roads and Recreational Facilities, 19 July 1957

## 1.9 PERTINENT PROJECT INFORMATION

Pertinent information regarding operational pool elevations and existing reservoir storage capacity at Toronto Lake is provided in Table 1.1.

**Table 1.1 Toronto Lake Pertinent Data**

Feature	Elevation (feet, NGVD)	Lake area (acres)	Storage	
			(Acre-feet)	Equivalent Runoff <sup>(1)</sup> Inches
Top of Dam	946.0	-	-	-
Maximum Pool <sup>(2)</sup>	940.6	14,000	316,900	8.14
Top of Flood Control Pool	931.0	11,740	200,800	5.16
Flood Control Storage	901.5-931.0	-	179,830	4.62
Spillway Crest	906.0	3,640	34,600	0.89
Top of Conservation Pool	901.5	2,660	21,000	0.54
Conservation Storage	896.0-901.5	-	10,660 <sup>(3)</sup>	0.28
Top of Minimum Pool	896.0	1,635	9,166	0.24

<sup>(1)</sup> From a 730-square mile drainage area above the dam.  
<sup>(2)</sup> Based on 62% of Probable Maximum Flood  
<sup>(3)</sup> Includes 400 acre-feet for water supply (0.1 mgd yield) and 10,260 acre-feet for water quality control (3.2 mgd yield).

Source: USACE Tulsa District Pertinent Data Book - 1977 sediment survey

Current acreages for the various land classifications at Toronto Lake are shown in Table 1.2. These land classifications are standard throughout USACE and are set forth in EP 1130-2-550 dated January 2013. Acreages have been revised and updated from the previous Master Plan to reflect current and projected land use and resource management objectives. These acreages were calculated using Geographic Information Systems (GIS).

**Table 1.2 Acreage by Land Classification**

<b>Classification</b>	<b>Acres</b>
Project Operations	46
High Density Recreation	1,216
Environmental Sensitive Areas	-
Multiple Resource Managed Lands:	
Low Density Recreation	-
Wildlife Management	5,070
Vegetative Management	-
Future/Inactive Recreation Areas	-
Water Surface:	
Restricted	9
Designated No-wake	864
Fish and Wildlife Sanctuary	-
Open Recreation	1,435
<b>Total Land and Water Surface Acreages</b>	<b>8,640</b>
Note: Acreages are approximate and are based on GIS data. Totals vary depending on changes in lake levels, sedimentation, and shoreline erosion.	

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## CHAPTER 2 - PROJECT SETTING AND FACTORS INFLUENCING MANAGEMENT AND DEVELOPMENT

### 2.1 PHYSIOGRAPHIC REGION

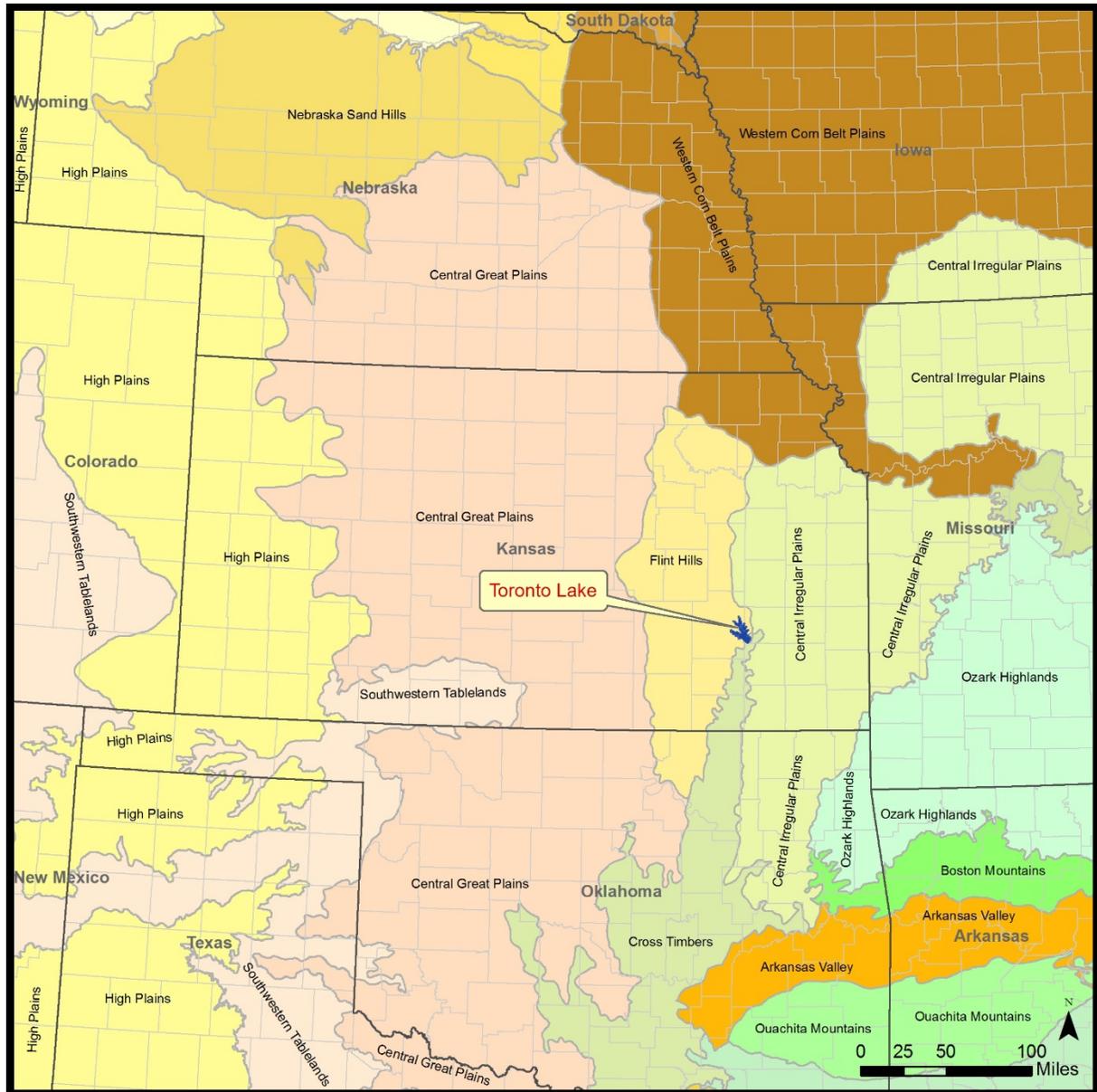
#### 2.1.1 Ecological Setting

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. Toronto Lake lies between the northern end of the Cross Timbers ecoregion (Level IV) to the south and east, and the Flint Hills ecoregion (Level IV) on the lake's north and west edge. The eastern edge of the lake lies in the Osage Cuestas (Level IV) of the Central Irregular Plains (Level III).

The Cross Timbers area extends through eastern Oklahoma into northern Texas. In Kansas, this region is known as the Chautauqua Hills and has a diversity of habitat that includes upland woodlands on sandstone outcrops dominated by post oak and blackjack oak, surrounded by terraces of prairie and gently rolling terrain gradually sloping to the water's edge.

The Flint Hills area is characterized by tall grasslands and is the smallest grassland ecoregion in North America. It covers the Flint Hills of Kansas and the Osage Plains of northeastern Oklahoma. It can be distinguished from other grasslands to the north by its low diversity of flora and fauna, and its thin soil layer spread over distinct beds of limestone. Abundant residual flint is eroding out of the bedrock in the rocky uplands.

The Osage Cuestas ecoregion is a transition zone characterized by gentle undulating plains and perennial streams. The soils are silty and clayey, supporting mostly tall grass prairie in the west where Toronto Lake lies, and oak hickory woodland in the east. The land provides a mosaic of woodland, cropland, and grassland.



**Figure 2.1 Ecoregions of Toronto Lake (Source: EPA)**

### 2.1.2 Climate

Toronto Lake has a warm, humid climate and thus enjoys long recreational seasons. The area is generally defined by hot, humid summers and generally mild to cool winters. High temperatures are experienced in July and August, with the average maximum highs of 87.5 and 89.3 and average minimum temperatures of 72.5 and 71.3, respectively. Lower temperatures come January, with the maximum average temperature of 44.2 and minimum average temperature of 16.6.

Average annual precipitation is 36.63 inches, predominantly from rainfall. The heaviest rains typically fall in May and June, with little precipitation in December,

January and February. The highest single day rainfall was 11.76 inches on June 30, 2007. The highest rainfall in a single month was 22.82 inches and occurred in June 2007.

**Table 2.1 Temperature and Precipitation**

<b>Temperature. Toronto Period of Record (1902 – 2017)</b>	
Mean annual	69°F
Maximum	121° F (1936)
Minimum	-21° F (1949)
<b>Precipitation</b>	
Mean Annual (Period of record 1902 – 2017)	36.63"
Maximum annual (record)	62.96" (2008)
Maximum annual (record)	17.98" (1956)
Percent during growing season (Apr through Oct)	76.9%
Range of Annual Snowfall	0 – 34.5

Source: National Weather Service <http://w2.weather.gov/climate/xmacis.php?wfo=ict>

**Table 2.2 Average Monthly and Annual Rainfall and Runoff**

Month	Average Rainfall (inches <sup>(1)</sup> )	Percent of Average Annual Rainfall*1	Average <sup>(2)</sup>		Percent of Average Annual Runoff
			(acre-feet )	Runoff (inches)	
Jan	1.25	3.32	9,520	0.31	3.76
Feb	1.34	3.56	13,490	0.43	5.33
Mar	2.39	6.34	27,990	0.90	11.05
Apr	3.61	9.58	36,060	1.16	14.24
May	5.12	13.59	39,210	1.26	15.48
Jun	5.44	14.44	42,420	1.36	16.75
Jul	3.77	10.01	17,200	0.55	6.79
Aug	3.55	9.42	9,530	0.31	3.76
Sep	4.27	11.33	15,030	0.48	5.93
Oct	3.20	8.49	15,030	0.48	5.93
Nov	2.31	6.13	16,890	0.54	6.67
Dec	1.43	3.80	10,880	0.35	4.30
TOTAL	37.68	100	253,250	8.12	100

<sup>(1)</sup> Source: National Weather Service <http://w2.weather.gov/climate/xmacis.php?wfo=ict>

<sup>(2)</sup> 2016 USACE Southwestern Division Reservoir Control Center Annual Water Control Report

National USACE missions associated with water resource development projects may include flood risk management, water conservation, navigation, and hydroelectric power generation, which all serve to protect the built and natural resources of a region from the climate extremes of drought and floods. This creates a more resilient and sustainable region for the health, welfare, and energy security of its citizens. Maintaining a healthy vegetative cover and tree canopy on Federal lands within the constraints imposed by primary project purposes helps reduce stormwater runoff and soil erosion; mitigates air pollution; and moderates temperatures. The USACE Strategic Sustainability Performance Plan implements EO 13693, stating:

*“As a prominent Federal entity, a key participant in the use and management of many of the Nation’s water resources, a critical team member in the design, construction, and management of military and civil infrastructure, and responsible members of the Nation’s citizenry, the USACE strives to protect, sustain, and improve the natural and manmade environment of our Nation and is committed to sustainability and compliance with applicable environmental and energy statutes, regulations and Executive Orders.*

*Sustainability is ... a natural part of the USACE decision processes, [and is a] part of our organizational culture. USACE is a steward for some of the Nation’s most important natural resources and we must ensure our stakeholders and partners receive products and services that provide for sustainable solutions that address short and long-term environmental, social, and economic considerations.”*

### 2.1.3 Geology

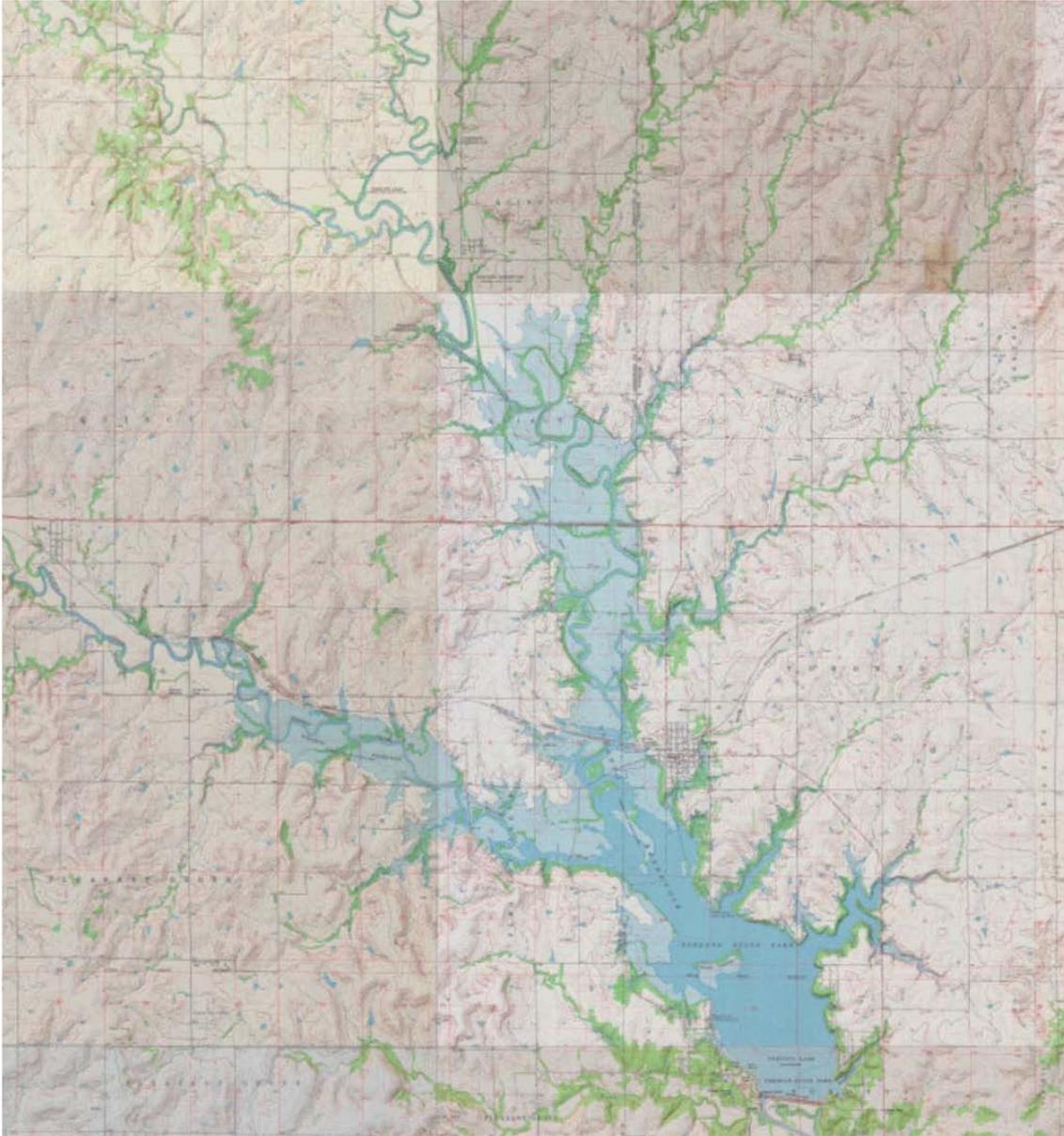
Toronto Lake area contains rock formations of sandstone hills formed on thick sandstones in the Lawrence and Stranger Formations. These sandstones were deposited in deep, alluvial valleys dating back to the Pennsylvanian Age. These formations are predominantly shale with a few limestone beds that have a slight regional dip to the west. To the east the shale and limestone beds are overlain by a layer of sandstone of considerable thickness. Rock outcroppings create plateaus that lend scenic value to the landscape.

One of the sandstones that characterize this region is the Ireland Sandstone Member of the Lawrence Formations that was deposited in an ancient river valley that existed in eastern Kansas during the Pennsylvanian Period. Where this sandstone is at or close to the surface, rain and runoff have soaked into the pores between the sand grains and created a freshwater aquifer that supplies water to farms and some small towns in its vicinity.

### 2.1.4 Topography

Located in the gently rolling terrain of the Verdigris River valley, Toronto Lake includes a variety of terrain. Upstream bottom lands are primarily cultivated due to deep soils and relatively flat terrain. Wooded slopes supports forest and grasslands and is often dryer uplands with shallow rocky or sandy soils. The base of steep

hillsides and ravines are moister and support hardwoods. The prairie area supports a mixture of tall and midgrasses with numerous herbaceous and woody plants.



**Figure 2.2 Toronto Lake Topography** (Source: Google Maps)

### 2.1.5 Hydrology and Groundwater

The Verdigris River and Walnut Creek flow into Toronto Lake. According to the United States Geological Survey (USGS) Lake Hydro data, the mean runoff in the watershed is 8.9 inches per year; the mean precipitation in the watershed is 38.6 inches per year; and the mean loss due to evaporation for the lake is 51.5 inches per year. The peak discharge, which occurred from June 29 to July 16, 1951, amounted to 130,000 cubic feet per second with a corresponding volume of 518,450 acre-feet.

The maximum flood volume, which occurred in July 1904, amounted to 614,000 acre-feet, which is equivalent to 15.77 inches of runoff from the drainage area above the dam site. The maximum volume for a single rise during that flood occurred from July 6 to July 11, 1904, and amounted to 379,800 acre-feet.

### 2.1.6 Soils

A soil survey by the Natural Resource Conservation Service (NRCS) shows there are all 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 soil class data for project lands is provided in Table 2.3. This data is compiled by the NRCS and is a standard component of natural resources inventories on USACE lands. This, and other inventory data, is recorded in the USACE Operations and Maintenance Business Information Link (OMBIL).

**Table 2.3 Soil Classes**

<b>Soil Class</b>	<b>Acreage</b>
Class I	414
Class II	2,432
Class III	389
Class IV	136
Class V	1,350
Class VI	794
Class VII	417
Class VIII	31

A general description of the soils at Toronto Lake and the land capability classes are described below.

- *Class I* soils have slight limitations that restrict their use.
- *Class II* soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.
- *Class III* soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.
- *Class IV* soils have very severe limitations that restrict the choice of plants or require very careful management, or both.
- *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* 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* soils have very severe limitations that make them unsuited to cultivation and that restrict their use mainly to grazing, forestland, or wildlife.

- *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.

All eight soil classes exist on USACE lands at Toronto Lake, with the predominate classes being II and V. In general, these soils are appropriate for pasture, range, forestland, and wildlife food or cover. Detailed information on all soil types surrounding Toronto Lake is available on websites maintained by the NRCS, U.S. Department of Agriculture.

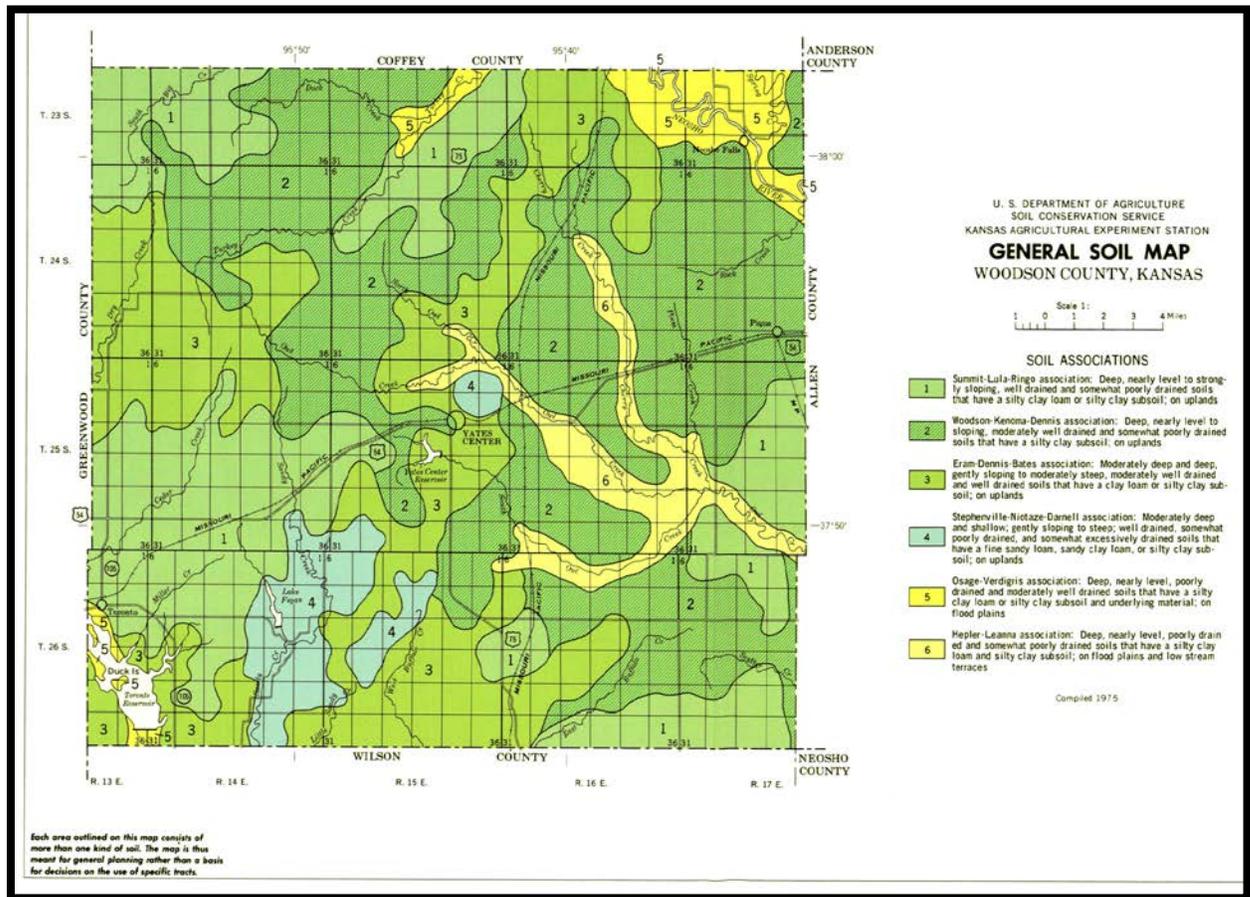


Figure 2.3 General Soils Map, Woodson County, KS (Source: NRCS)

## 2.2 ECOREGION AND NATURAL RESOURCE ANALYSIS

Natural resources present at Toronto Lake include the waters, wetlands, soils, vegetation, and fish and wildlife, including those species listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and the State of Kansas. The stewardship of natural resources on USACE administered lands adheres to ecosystem management principles as described in USACE regulations ER and EP

1130-2-540. Effective stewardship is imperative to the sustainability and use of project resources. The baseline analysis of the natural resources on USACE-administered lands relied heavily on the information provided in the 2016 KDWPT Strategic Wildlife Action Plan (SWAP) as well as fisheries reports generated by KDWPT.

### 2.2.1 Vegetative Resources

USACE regulations and policy require a basic inventory of the vegetation at all operational projects. This inventory, referred to in *EP 1130-2-540* as a Level 1 inventory, classifies the vegetation in accordance with the National Vegetation Classification System (NVCS) down to the Sub-Class level which is a very broad classification level. The inventory data, presented in Table 2.4, is recorded in the USACE national database referred to as the OMBIL 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 NVCS, and for most management prescriptions, down to the individual species level of dominant vegetation.

**Table 2.4 Vegetation Classification and Condition 2016 Inventory**

Division	Order	Class	Sub-Class	Total Sub-Class Acreage	Sustainable Areas	Transitioning Acres	Degraded Acres	Total Conditioned Acres
<b>NON-VEGETATED (includes open water surface of the lake and eroded shoreline)</b>	Non-Vegetated	Non-Vegetated	Non-Vegetated	2,650	2,650	0	0	2,650
<b>VEGETATED</b>	Herb Dominated	Herbaceous Vegetation	Annual graminoid or forb vegetation	100	0	100	0	100
<b>VEGETATED</b>	Shrub Dominated	Shrubland (Scrub)	Deciduous shrubland (shrub)	1,000	100	900	0	1,000
<b>VEGETATED</b>	Tree Dominated	Closed Tree Canopy	Deciduous closed tree canopy	2,473	1,500	700	273	2,473
<b>VEGETATED</b>	Tree Dominated	Open Tree Canopy	Deciduous closed tree canopy	2,400	400	1600	400	2,400
<b>Totals</b>				<b>8,623</b>	<b>4,650</b>	<b>3,300</b>	<b>673</b>	<b>8,623</b>

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

Toronto Lake has remarkable habitat diversity, including upland and riparian woodlands, prairie glades and clear streams and rivers with excellent aquatic biodiversity. The characteristic habitat of the area is upland woodland on sandstone outcrops dominated by post oak and blackjack oaks and make up the northern

reaches of the Ancient Cross Timbers Area. These species have little commercial timber value and thus are not managed for sustained yield of forest products.

As described in the SWAP, the vegetation at Toronto Lake includes woodlands characteristic of the Chautauqua Hills Ecological Focus Area (EFA), and tallgrass prairie characteristic of the Flint Hills EFA. Woodlands include old growth stands of post oak – blackjack oak associations and oak-hickory associations. Riparian woodlands include stands of elm-ash-cottonwood associations. The native prairie consists of a mixture of tall and mid-grasses as well as numerous herbaceous and woody plants. These include, but are not limited to big and little bluestem, bitter sneezeweed, broomsedge, Canadian thistle, Indiangrass, purple top, ragweed species, sideoats grama, silver bluestem, and switchgrass. Johnsongrass is a common invasive species found in many native prairie areas.



**Photo 2-1 Vegetation at Toronto Lake** (Source USACE)

### 2.2.2 Wetlands

In accordance with national USACE policy, wetlands at operational projects are inventoried using the protocol established by the USFWS in their *Classification of Wetlands and Deepwater Habitats of the United States*. The majority of wetlands in the vicinity of Toronto Lake are in the palustrine system; however, wetlands classified in the lacustrine and riverine systems are also present (USFWS, 2016).

Wetlands classified as palustrine are nontidal and are dominated by trees, shrubs, emergent aquatic vegetation, mosses, or lichens. Within these three systems (palustrine, lacustrine, and riverine), wetlands have been further classified as limnetic and littoral (lacustrine); emergent, forested, scrub-shrub, unconsolidated bottom, and unconsolidated shore (palustrine); and lower perennial (riverine). Many of the wetland types have been further classified as diked/impounded or excavated, indicating that they formed under conditions created by humans.

The wetlands in the vicinity of Toronto Lake are also subject to different hydrologic regimes, including seasonally flooded, semi-permanently flooded, and permanently flooded. Additionally, marshes have been constructed to provide habitat for migratory birds in the Toronto Wildlife Area at Toronto Lake.

**Table 2.5 Wetland Classification 2016 Inventory**

System	Sub-System	Class	Class Acres
Lacustrine	Limnetic	Unconsolidated Bottom	2,354
Lacustrine	Littoral	Aquatic Bed	10
Lacustrine	Littoral	Unconsolidated Shore	776
Palustrine	-	Aquatic Bed	884
Palustrine	-	Emergent Wetland	329
Palustrine	-	Forested Wetland	1,237
Palustrine	-	Scrub-Shrub Wetland	81
Palustrine	-	Unconsolidated Bottom	1
Palustrine	-	Unconsolidated Shore	163
Riverine	Intermittent	Streambed	39
Riverine	Lower Perennial	Unconsolidated Bottom	10
Riverine	Lower Perennial	Unconsolidated Shore	1
Total Un-inventoried Project Fee-Owned Area			0

Source: USACE OMBIL

### 2.2.3 Fish and Wildlife Resources

The interface of upland areas with the water of the lake and river directly and indirectly supports a wide diversity of aquatic and terrestrial wildlife. Fish and wildlife are an essential component of management and public use at Toronto Lake and include game and non-game species and their habitat. The Toronto Point Area of Cross Timbers State Park encompasses 1,075 acres of nature preserve, and overlooks Toronto Lake. The area provides needed habitat for many species of wildlife including some of the 8 species listed in the SWAP as Tier 1 Species of Greatest Conservation Need (SGCN) and 70 species listed as Tier 2 SGCN within the Flint Hills and Chautauqua Hills EFAs. These SGCN species require large contiguous tracts of native prairie. The area also provides visitors an opportunity to see some of the most diverse flora and fauna found in Kansas, and provides needed

habitat for unique area wildlife, including the bald eagle, great horned owl, and over 200 species of migratory and year-round birds. All users of wildlife areas must be aware of and follow state rules and regulations. The following is a description of the fish and wildlife resources found at Toronto Lake.

### Fisheries Resources

Toronto Lake consists of 2,308 acres of surface water at conservation pool, with various species of warm water fish present. Popular fish species present at Toronto Lake include white bass, crappie, channel catfish and flathead catfish, and largemouth and spotted bass. Numerous brush piles in the lake provide habitat for black bass, bluegill and sunfish. Other species present include carp, buffalo, brim, gizzard shad, and longnose gar. Walleye and striped bass have also been stocked in the lake. A 2017 Fishing Report prepared by KDWPT provides the summary information for Toronto Lake by species, overall fishing quality, size of fish, baits and methods, and location. The report indicates that channel catfish, largemouth bass, white bass and white crappie are all of good quality. The information for 2017 was compiled by KDWPT following electrofishing in 2016.



**Photo 2-2 Fishing at Toronto Lake** (Source Cross Timbers State Park Facebook)

KDWPT lists the Verdigris River and tributaries as being Eastern Stream/Small River Habitats. Other Eastern Stream/Small River Habitats in Kansas include rivers and tributaries in the Neosho, Missouri, Eastern Arkansas, Kansas, and Marais des Cygnes river basins, all of which are described by KDWPT as declining in terms of quantity and quality. In spite of overall declining quantity and

quality of aquatic habitat within the southeastern region of Kansas, fishing at Toronto Lake remains popular and fishing for white bass is considered excellent. Fish species found in the lake include gizzard shad, drum fish, smallmouth buffalo, carp, green sunfish, crappie, largemouth bass, white bass, channel catfish, bluegill bullhead, carpsucker, flathead catfish, gar, walleye, largemouth buffalo, and redhorse. Fisheries management efforts are carried out primarily by KDWPT. Specific information on fish resources at Toronto Lake can be found on KDWPT's website.

### Wildlife Resources

The Toronto Lake area is home to over 400 species of game and non-game wildlife. Bird populations include a mix of resident and migratory neotropical and nearctic species including, but not limited to prairie chickens, scissor-tailed flycatchers, Henslow's sparrows, eastern bluebirds, and northern orioles. Visitors to Toronto Lake can experience year-round viewing for white-tailed deer, red fox, raccoon, and turkey. In the summer, great blue herons can be seen, and the spring and fall feature many migratory birds including waterfowl. Being on the eastern edge of the Central Waterfowl Flyway, waterfowl migrating through the area include mallard, pintail, teal, widgeon, gadwall, wood duck, shoveler, ring-necked, lesser scaup, redhead, canvasback, hooded mergansers, Canada geese, lesser snow geese, and white-front geese. Plovers and sandpipers can be found at the lake, as can the American white pelicans, bald eagles, purple martins, and turkey vultures. Quail, coyotes, hawks, rabbits, and squirrels, as well as box turtles, painted turtles, common garter snakes, and six lined racerunners can be found. Farming for wildlife, native plant restoration, timber management, and prescribed burning are management techniques used by KDWPT and USACE to provide food and cover for a variety of wildlife.

### 2.2.4 Threatened and Endangered Species

Federally-listed threatened and endangered species having potential habitat on USACE lands and waters, as identified by USFWS Information for Planning and Conservation (IPaC) Trust Resources report, are listed in Table 2.6. The IPaC Trust Resources Report is provided in Appendix C. The report identifies six threatened, endangered, or candidate species for the Toronto Lake area. In addition to the threatened and endangered species, there are a number of migratory bird species of particular conservation concern that may be affected by activities at Toronto Lake. A complete listing of migratory birds with potential to be affected by activities at Toronto Lake can be found in the IPaC report in Appendix C of this Plan. The State of Kansas also lists a



**Photo 2-3 Neosho Mucket**

number of species similar to those federally listed species. The Kansas State list for Greenwood and Woodson counties are also included in Appendix C.

**Table 2.6 Federal Threatened and Endangered Species for Toronto Lake Area**

	Status	Has Critical Habitat	Biological Opinion Issued
<b>Mammals</b>			
Northern Long-eared Bat ( <i>Myotis septentrionalis</i> )	Threatened	No	No
<b>Fish</b>			
Topeka Shiner ( <i>Notropis topeka</i> )	Endangered	No	No
Neosho Madtom ( <i>Noturus placidus</i> )	Threatened	No	No
<b>Clams</b>			
Neosho Mucket ( <i>Lampsilis rafinesqueana</i> )	Endangered	No	No
Rabbitsfoot ( <i>Quadrula cylindrical cylindrical</i> )	Threatened	No	No
<b>Insects</b>			
American Burying Beetle ( <i>Nicrophorus americanus</i> )	Endangered	No	No

Source: IPaC Report, U.S. Fish and Wildlife Service

### 2.2.5 Invasive Species

An invasive species is defined as a plant or animal that is non-native (alien) to an ecosystem and whose introduction causes, or is likely to cause, economic and/or environmental harm, or harm to human health. Invasive plants are introduced species that can thrive in areas beyond their normal range of dispersal. These plants are characteristically adaptable, aggressive, and have high reproductive capacity. Tables 2.7 lists the invasive species known to be present at Toronto Lake. The list is updated periodically to reflect changes as new species are found. As can be seen, both Johnson grass and *Sericea lespedeza* have expanded, in part due to budget constraints preventing aggressive treatment.

**Table 2.7 Invasive Species 2010-2015 Acres Affected**

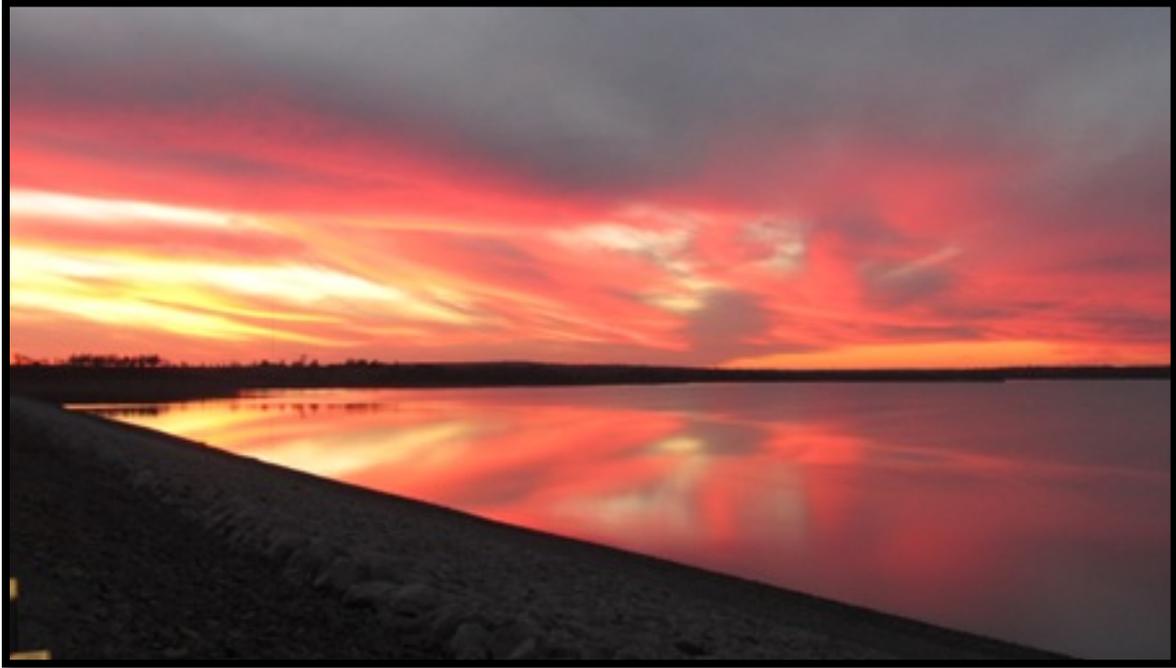
Common Name	2010	2011	2012	2013	2014	2015*	2016*
Multiflora rose	1	1	1	1	1	1	0
Quack grass	1	1	1	1	1	1	0
Crownvetch	0	0	0	0	0	0	1
Johnson grass	0	0	0	0	0	0	15
<i>Sericea lespedeza</i>	10	10	10	10	10	10	50

\*Budget constraints in 2015 and 2016 prevented the treatment of 50 acres

Source: USACE Invasive Species Profile System OMBIL

### 2.2.6 Visual and Scenic Resources

Because Toronto Lake sits within three separate ecoregions, the area offers a variety of scenic areas. The lake features dense hardwood forests slopes, open rolling prairies, rock outcroppings, and streambeds. The rural nature of Toronto Lake, limited clearing, and unobstructed views over the lake give it a picturesque quality that visitors prize.



**Photo 2-4 Sunset on Toronto Lake** (Source: USACE)

### 2.2.7 Sedimentation and Shoreline Erosion

Toronto Lake drains a watershed of approximately 730 square-miles. Land use/land cover is dominated by grasslands/herbaceous (71%), pasture/hay (15%), deciduous forest (5%), cultivated cropland (4%), and developed open space (3%). Sedimentation surveys for Toronto Lake have been conducted at project construction (1960), again in 1966, 1977, 1995, and most recently in 2010. These surveys estimate an approximate loss of 40% (approximately 10,800 acre-feet) of storage below the top of the conservation pool in the 50 years between the time of construction and 2010. Most recently, approximately 13% of original storage in this zone was lost in the 15 years between 1995 and 2010, for an annual rate of loss of approximately 0.9% over that period. To date, sediment accumulation in the conservation pool has not severely impacted authorized project purposes and, as is the case for nearly all federal reservoirs, there are no plans to dredge all or portions of Toronto Lake. A general discussion of sedimentation can be found in Chapter 6.

### 2.2.8 Water Quality

The Kansas Department of Health and Environment (KDHE) water quality data collected from 1992 to 2007 revealed that Toronto Lake ranks as the ninth highest for total phosphorus (TP) concentration of the 24 federal reservoirs in the State. TP concentrations are four times greater than the statewide benchmark of 23 ug/L. The total suspended solids (TSS) concentration, indicative of turbid conditions, is the third highest among the federal reservoirs, and the lake has low water clarity. Thus, siltation and dissolved oxygen deficiencies encompass that primary water-quality problems in Toronto Lake, classifying the Lake as “impaired” according to the Clean Water Act. The KDHE has set forth an implementation strategy for the watershed to reduce the amount of phosphorus and sediment entering the lake. For more information concerning water quality and strategies for Toronto Lake see the KDHE website ([www.kdheks.gov](http://www.kdheks.gov)).

Due to impairment issues, Toronto Lake has a high priority in the Water Restoration and Protection Strategy (WRAPS) program. The program establishes best management practices for improving water quality and is funded in part through the Kansas Water Office, with appropriations from the Kansas Water Plan Fund; and the Kansas Department of Health and Environment, through EPA Section 319 Nonpoint Source Pollution Control Grant # C9007405-11. For Toronto Lake, the program focuses on reducing sediment and phosphorus. A further discussion of the WRAPS program at Toronto Lake can be found in Chapter 6 of this Master Plan, and a copy of the Toronto Reservoir 9 Element Watershed Plan Summary can be found in Appendix D.

## **2.3 CULTURAL RESOURCES**

Cultural resources preservation and management is an equal and integral part of all resource management at Civil Works operating projects. The term “cultural resources” is a broad term which includes, but is not limited to, historic and prehistoric archaeological sites, deposits, and features, as well as burials; historic and prehistoric districts comprised of groups of structures or sites; cultural landscapes; built environment resources such as buildings, structures (such as bridges), and objects; traditional cultural properties and sacred sites such as burials, cemeteries, and features or sites associated with significant events or practices in the traditional culture of an ethnic group. Cultural resources which are identified as eligible for listing in the National Register of Historic Places (NRHP) are referred to as “historic properties,” regardless of category.

Numerous cultural resources laws 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. Stewardship of cultural resources on Corps Civil Works water resources projects is an important part of the overall Federal responsibility. Guidance is derived from a number of cultural resources laws and regulations, including but not limited to Sections 106 and 110 of the National Historic Preservation Act (NHPA) of 1966 (as

amended); Archaeological Resources Protection Act (ARPA) of 1979; Native American Graves Protection and Repatriation Act (NAGPRA); and 36 CFR Part 79, Curation of Federally-Owned and Administered Archeological Collections. Implementing regulations for Section 106 of the NHPA and NAGPRA are 36 CFR Part 800 and 43 CFR Part 10, respectively. All cultural resources laws and regulations should be addressed under the requirements of the National Environmental Policy Act (NEPA) of 1969 (as amended), as applicable.

### 2.3.1 Archaeology

Prior to impoundment of the reservoir, the Inter-Agency Archaeological Salvage Program, River Basin Surveys conducted three seasons of archaeological investigations of the reservoir area, recording a total of 57 archaeological sites (Howard 1964:324; Johnson 1957; Moorman 1953). In 1981, a crew from Wichita State University (Rohn et al. 1981) surveyed 3,523 acres at the Toronto Lake project, recording 28 prehistoric sites and 2 historic sites. Of the previously recorded sites, Rohn relocated and reevaluated only eight. The remainder of the previously recorded sites were either destroyed, deeply buried by siltation, inundated, or mis-plotted. The majority of the sites which have been identified on Toronto Reservoir project lands do not have NRHP recommendations, and therefore their eligibility is unknown.

In the larger regional area there are hundreds of archaeological sites and historic standing structures on record with the Kansas State Historical Society (KSHS). Limited archaeological investigations have been, and continue to be, carried out at Toronto Reservoir for compliance with Section 106 of the NHPA.

### 2.3.2 Cultural History Sequence

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

Paleoindian: 13,500 to 8000 BP

Archaic: 8000 to 2000 BP

Woodland: AD 1 to 800

Plains Village: AD 800 to 1500

Protohistoric (Contact Period): AD 1500 to 1825

Historic: AD 1825 to present

#### *Paleoindian Period*

While it is becoming increasingly evident that humans likely arrived in the Central Plains as early as 30,000 years ago, the Paleoindian Period is the earliest well substantiated archaeological period in the project region. Signature stone tools are unnotched lanceolate projectile points, fluted (Clovis and Folsom) and unfluted (Plainview, Dalton, and others), often found in contexts where mammoth or bison remains also occur. During this period, small bands of hunters and gatherers relied largely on the hunting of megafauna such as mammoth and bison; however, sites in

Eastern Kansas have exhibited evidence of reliance on a wide variety of plant and animal species. Many sites display evidence for hunting and processing large mammals, while others include a more generalized economy during most or all seasons.

The Dalton Complex is well represented in Eastern Kansas and spans the period from the end of the Paleoindian period and into the Early Archaic. This complex is based upon the presence of Dalton points and points known to be associated with Dalton points, and appears to represent more localized diverse economies, which may have included large game hunting. Paleoindian sites in most of the project area are deeply buried in alluvial stream deposits. A limited number of Paleoindian sites has been recorded in the project area, though sites with both Paleoindian and Archaic deposits are better represented.

### *Archaic Period*

During the Archaic period, an increase in seasonal variability of resources and increasing populations resulted in changing settlement and subsistence patterns. Repeated occupation of sites, often on a seasonal basis, and features such as rock-lined hearths, roasting pits, and grinding tools reflect intensive plant processing and the cyclical exploitation of resources. Increasing diversity of stone tools through time reflects the increasing variability of faunal and floral resources and diversity of activities taking place at habitation sites. Projectile points from the Middle and Late Archaic are stylistically quite different (typically notched and stemmed) from those of the Paleoindian period. Archaic assemblages in the project area include a variety of contracting and expanding stemmed large dart points, scrapers, and grinding implements (such as manos and metates). The Archaic period is traditionally divided into Early, Middle, and Late periods, the overall extent of which was approximately 8,000 BP to 2,000 BP. While the Archaic period is considered pre-ceramic (in that pottery for storage and cooking is not present), a ceramic bead from the Coffey site and small effigy heads from the William Young site are the earliest ceramic figures currently identified in the United States, both from Archaic horizons. Fiber tempered ceramics from the Nebo Hill phase in Northeast Kansas represent some of the earliest tempered pottery in the United States.

### *Woodland*

The Woodland Period in Kansas (referred to in Kansas as the Early Ceramic Period) was a time of continuity marked by incorporation of new technologies and intensification of resources. The appearance in the archaeological record of small corner notched projectile points indicates that the bow and arrow was in use. Cultivation of plants began during this period and is often referred to as “insipient horticulture”. The presence of ceramic sherds indicates that ceramic use in the form of pottery for storage and cooking had become widespread. Archaeological assemblages from this period indicate people were living in semi-permanent villages and dispersed communities, using settlement strategies such as seasonal mobility, targeted long distance resource procurement by portions of the community or household, and intensification of wild and domestic plants to meet their needs. Small

game and aquatic resources remained essential in subsistence. Projectile points from this period include, in addition to the small corner notched points, large contracting stem points and large corner-notched projectile points in a variety of styles, indicating continued use of the atlatl and darts, as well as spears likely employed for symbolic political or religious effect.

The Cuesta Phase and the Greenwood Phase are the primary named Woodland phases present in the project area. Sites attributed to these phases in Southeast Kansas are characterized by large circular to oval houses (indicated by large diameter postmolds) and middens. Cuesta Phase pottery motifs and artifact styles mirrored those characteristic of earlier Hopewellian sites in Northeast Kansas and to the east in Ohio and Illinois. For this reason, sites attributed to the Cuesta Phase have long been referred to as Middle Woodland sites. However, radiocarbon dating of curated materials from excavations at sites attributed to the Cuesta phase indicates that the phase dates to the late Woodland. Additional radiocarbon dates obtained from recent fieldwork also yielded late Woodland dates. The differences between Cuesta Phase and Greenwood Phase are nominal and sites attributed to the two phases may represent the same archaeological culture. Many sites attributed to the Greenwood phase have yielded pottery motifs like those found on Cuesta Phase sites and house patterns and size are the same. It is often unclear on what basis a site is attributed to the Greenwood phase rather than the Cuesta phase.

### *Plains Village*

People during the Plains Village time period (A.D. 800 to 1500) grew crops and hunted and gathered wild resources. Artifact assemblages contain gardening tools along with triangular arrow points for hunting. Sites from this time are often identified in lowland terraces of waterways where gardening was viable. The Pomona Variant is the archaeological culture associated with watersheds in southeastern Kansas. Distinguishing traits include shell-tempered pottery of types attributed by Kansas archaeologists to the Middle Ceramic period, remains of round wattle and daub houses, and a scarcity of cultigen remains such as maize, possibly reflecting less dependence on farming than in other geographic areas during this time. However, the scarcity of identified cultigens is also the result of poor preservation and excavation and processing methods not designed to recover native cultigens, the remains of which are much smaller than maize.

### *The Protohistoric (Contact) Period*

The period from A.D. 1500-1825 is referred to as the Protohistoric (or Contact) Period. Villagers aggregated into large fortified villages situated along major rivers during this time period. Also during this time, non-native explorers, trappers, and traders visited the region, and land claims by first the Spanish, and then the French brought great change. Great Bend Aspect sites in central, south-central, and southeast Kansas represent the villages encountered by Francisco Coronado in 1541. People lived in large, circular grass houses, grew crops, and hunted bison and small game. The archaeological record documents significant long distance trade with the southwest. Items such as painted and glazed pottery,

turquoise beads and pendants, and shell beads distinctive to the Southwest Pueblo cultures attest to the extent of the trade networks in place. This way of life continued into the eighteenth century and later sites are attributed to the Wichita and Affiliated Tribes.

In 1682, Robert Cavelier, Sieur de la Salle, claimed the territory drained by the Mississippi as part of the French Empire in North America. By 1700, French traders were established in the region and had developed trading relationships with Wichita groups in the Arkansas Valley and with the Osage to the east. The fur trade became a significant enterprise, and intergroup violence increased. Diseases swept through the region during this time period, dramatically reducing local populations. This, combined with increased intergroup violence, resulted in the coalescence of communities into large villages, often with defensive fortifications. The tribes today known as the Wichita and Affiliated Tribes and the Osage Nation are represented by such villages near the project area.

The Wichita and Affiliated Tribes were historically known as the Wichitas, Wacos, Taovayas, Tawakonis, and Kichais. Protohistoric Wichita sites from the early 1700's have been identified south of the Toronto River area in Cowley County, Kansas, and in Kay County, Oklahoma, and to the east in Wilson County, Kansas. These Protohistoric Wichita sites, dating from the 1700s, provide evidence of the extent of French influence on the central and southern Plains, as artifact assemblages from these sites contain metal musket parts from French firearms, glass trade beads, copper kettle pieces, and European gunflints. Villagers did not dramatically change the function of material culture in spite of this influx of European goods. Rather, they incorporated French goods into existing material culture frameworks. Guns were used until no longer viable, and then were hammered into hoes similar in shape to bison scapula hoes (which had seen long use on the Plains). Copper kettles were hammered flat and used to create tinklers- copper cones sewn to clothing- and other items of personal adornment. The Osage had villages to the east of the protohistoric Wichita Villages, including just to the east and southeast of the project area in Wilson County and Montgomery Counties, Kansas, and they often fought the Wichita over access to trade goods.

### 2.3.3 Historical Resources in Kansas

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

In the 1820s, Kansas was designated Indian Territory and closed to white settlement. Congress passed the Indian Removal Act in 1830, and the Cherokee were promised land in the project region by the U.S. Government. The land was already occupied by the Osage and this resulted in conflicts over territory and resources. The Nebraska-Kansas Act of 1854 delineated Kansas as an organized incorporated territory of the United States from May of 1854, until January 29, 1861,

when the eastern portion of the territory was admitted to the Union as the state of Kansas. The period between 1854 and 1859 was a time of violence between anti-slavery abolitionists and pro-slavery groups, which led to Kansas Territory being called “Bleeding Kansas.” By the time the Civil War commenced, Kansas had joined the Union and formally rejected slavery, therefore Kansas regiments joined the Union Army. Pro-slavery Kansans fought for the Confederacy.

Kansas was an important state to bring into the Union, as transcontinental railroads were planned to cross through the area, and farmland was highly desirable. In the project region, several Grand Osage and Little Osage villages were inhabited until the Osage were relocated to the Osage Reservation in Oklahoma. The Osage occupied the region from the 1700s through their departure to Oklahoma in 1872. Historic Osage village sites are documented close to the project area.

Historic site types in the area include historic Indian villages, camps, towns, burials, and agencies, trading posts, Euroamerican homesteads and ranches, Indian homes, and farmsteads, and freed slave homesteads and farms. Related types of resources are trails, wells, cisterns, privies, rock walls, foundations or foundation piers, cellar depressions, chimneys (stone or brick), stairs, railroad lines, cattle trails, roads, schools, cemeteries, dumps, and water diversion features.

## **2.4 DEMOGRAPHIC AND ECONOMIC RESOURCES**

The socio-economic data analysis was completed to encompass both Fall River and Toronto Lakes to their proximity to one another. Though the lakes each have unique circumstances in terms of adjacent development, the impact of the surrounding counties to the lakes is essentially the same.

### 2.4.1 Zone of Influence

The zone of interest for the purpose of the Fall River and Toronto Master Plans socio-economic analysis includes the neighboring counties of Greenwood and Woodson in southeast Kansas. Fall River Lake is located in Greenwood County, and Toronto Lake is located in Woodson County.

The total population for the zone of interest in 2015 was 9,604, as shown in Table 2.8. Approximately 67% of the zone of interest’s population resides in Greenwood County and 33% resides in Woodson County. Both are rural counties, with their combined population making up less than 1% of the total population of the state of Kansas.

Wichita State University’s Center for Economic Development and Business Research forecasts negative growth in the zone of interest between 2015 and 2044 (as compared with the 2015 U.S. Census Bureau American Community Survey population estimates). Annual growth rates of -1.8% and -1.6% are projected in Greenwood and Woodson Counties, respectively. During the same period, the population of Kansas is projected to increase at an annual rate of 0.5%, and the

national growth rate is expected to be 0.7% per year based on the U.S. Census Bureau's population estimates and projections.

**Table 2.8 2000 and 2015 Population Estimates and 2044 Projections**

Geographical Area	2000 Population Estimate	2015 Population Estimate	2044 Population Projection
Kansas	2,688,418	2,892,987	3,337,654
Greenwood County	7,673	6,393	3,776
Woodson County	3,788	3,211	2,014
<b>Zone of Interest Total</b>	<b>11,461</b>	<b>9,604</b>	<b>5,790</b>

Source: U.S. Census Bureau, Population Division (2000 Estimate); U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 Estimate) Wichita State University, Center for Economic Development and Business Research (2044 Projections)

#### 2.4.2 Population by Gender and Age

The distribution of the population among gender is displayed in Table 2.9. The zone of interest has a gender distribution of 49% male and 51% female, making it similar to the state of Kansas, which is approximately 50% male and 50% female. Greenwood County is 49% male and 51% female, and Woodson County is 50% male and 50% female.

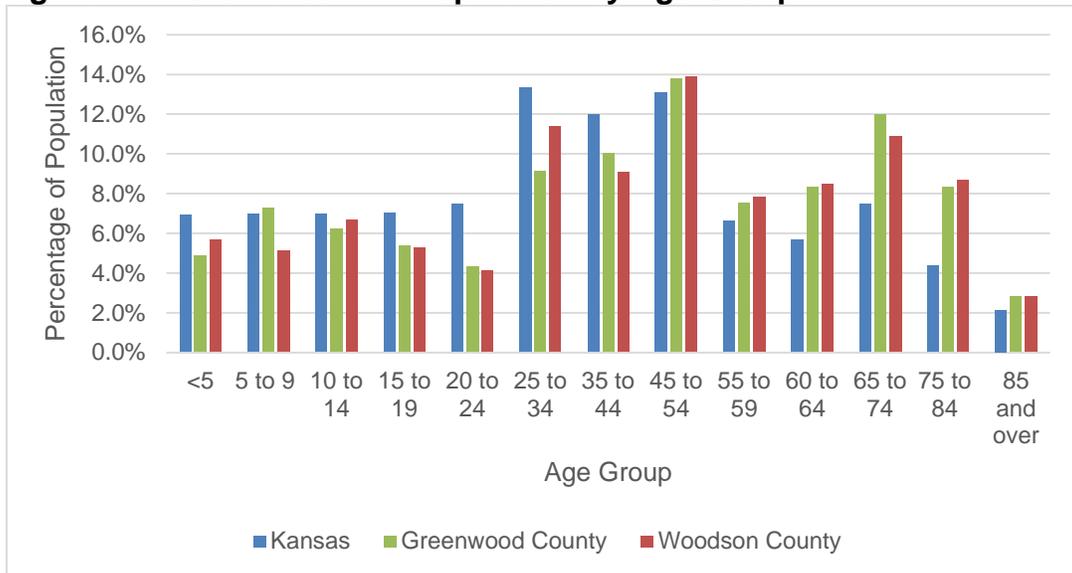
**Table 2.9 2015 Percent of Population Estimate by Gender**

Geographical Area	Male	Female
<b>Kansas</b>	1,439,862	1,453,125
<b>Greenwood County</b>	3,120	3,273
<b>Woodson County</b>	1,606	1,605
<b>Zone of Interest Total</b>	<b>4,726</b>	<b>4,878</b>
<b>Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 Estimate)</b>		

Source: U.S. Census Bureau, Population Division (2000 Estimate)

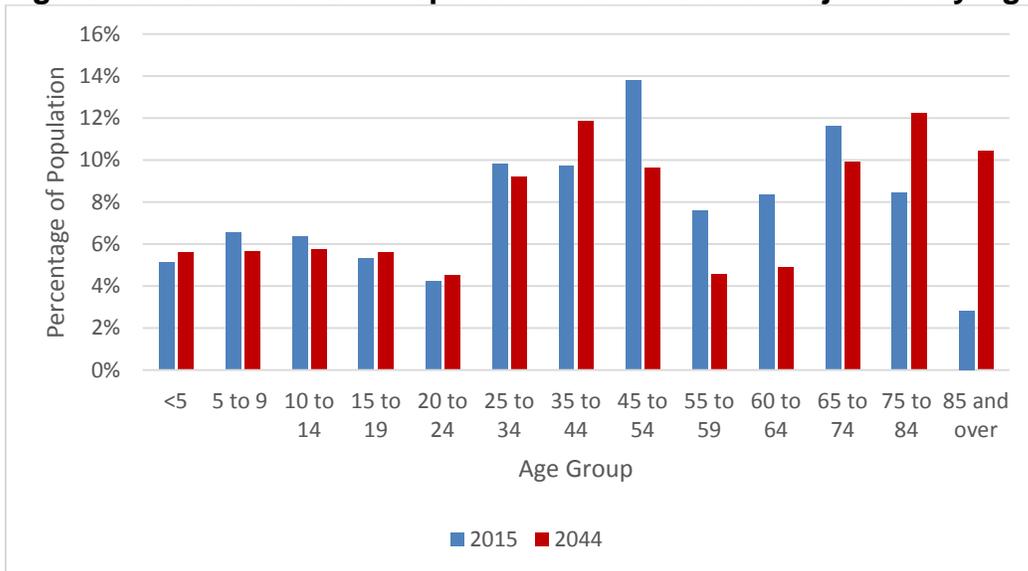
Figure 2.4 shows the distribution of the population by age group. As displayed in Figure 1, Greenwood and Woodson Counties both have a smaller percentage of the population that are ages 0 to 44 and a larger percentage ages 45 and over as compared to the state of Kansas. Figure 2.5 displays the zone of interest's population estimate for 2015 compared to the 2044 projections. The forecast shows relatively stable distribution between the two years for ages 0 to 44. However, between 2015 and 2044, the population ages 45 to 64 will decrease while the population ages 75 to 85 will increase.

**Figure 2.4 2015 Percent of Population by Age Group**



Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 estimate)

**Figure 2.5 2015 and 2044 Population Estimate and Projection by Age Group**



Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 estimate); Wichita State University Center for Economic Development and Business Research (2044 Projections)

### 2.4.3 Population by Race and Hispanic Origin

Population by race and Hispanic Origin is displayed in Table 2.10. The zone of interest population is approximately 93% White, 3% Hispanic or Latino, and 3% two or more races. The other race categories account for less than 1% each of the population. By comparison, the state's population is approximately 77% White, 11% Hispanic or Latino, 6% Black, 3% Asian, and 3% two or more races.

**Table 2.10 2015 Population Estimate by Race/Hispanic Origin**

Area	White	Black	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some Other race alone	Two or more races	Hispanic or Latino
<b>Kansas</b>	2,228,789	164,058	20,209	75,045	1,627	1,928	78,113	323,218
<b>Greenwood County</b>	5,912	10	16	3	0	0	212	240
<b>Woodson County</b>	3,019	17	9	5	0	0	77	84
Zone of Interest Total	<b>8,931</b>	<b>27</b>	<b>25</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>289</b>	<b>324</b>

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 Estimate)

### 2.4.4 Education

Table 2.11 displays the highest level of education attained by the population ages 25 and over. In the zone of interest, 3% of the population has less than a 9<sup>th</sup> grade education, and another 7% has between a 9<sup>th</sup> and 12<sup>th</sup> grade education; 40% has a high school diploma or equivalent and another 27% has some college and no degree; 7% has an Associate's degree; 12% has a Bachelor's degree; and 5% has a graduate or professional degree. In Kansas, 4% of the population has less than a 9<sup>th</sup> grade education; another 6% has between a 9<sup>th</sup> and 12<sup>th</sup> grade education; 27% has at least a high school diploma or equivalent; 24% has some college; 8% has an Associate's degree; 20% has a Bachelor's degree; and 11% has a graduate or professional degree.

**Table 2.11 2015 Population Estimate by Highest Level of Educational Attainment, Population 25 Years of Age and Older**

Area	Highest Level of Educational Attainment							
	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
<b>Kansas</b>	1,869,698	72,669	110,237	505,583	452,272	148,723	374,220	205,994
<b>Greenwood County</b>	4,596	145	320	1,845	1,220	308	518	240
<b>Woodson County</b>	2,347	32	198	911	622	209	299	76
Zone of Interest Total	<b>6,943</b>	<b>177</b>	<b>518</b>	<b>2,756</b>	<b>1,842</b>	<b>517</b>	<b>817</b>	<b>316</b>

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 estimate)

#### 2.4.5 Employment

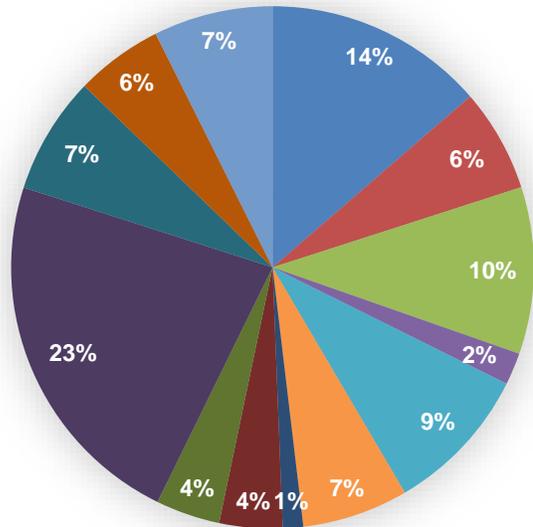
Employment by sector is presented in Table 2.12 and Figure 2.6. The largest percentage of the zone of interest is employed in the Educational services, and health care and social assistance sector at 23%, followed by 14% in Agriculture, forestry, fishing and hunting, and mining, 10% in Manufacturing, and 9% in Retail Trade. The Transportation and warehousing, and utilities sector, the Arts, entertainment, and recreation and accommodation and food services sector, and the Public Administration sector each employ 7% of the zone of interest population. The Construction sector employs 6% of the population; 5% is employed in Other services, except public administration, and the remainder of the employment sectors each comprise less than 5% of the zone of interest's labor force. The Kansas Department of Labor, Labor Market Information Services projects the most growth (over 20% change each) between 2012 and 2022 for the state as a whole in the following ten industries: Non-store Retailers, Social Assistance, Professional, Scientific & Technical Services, Warehousing & Storage, Ambulatory Health Care Services, Administrative & Support Services, Nursing & Residential Care Facilities, Construction of Buildings, Waste Management & Remediation Services, and Crop Production.

**Table 2.12 Annual Average Employment by Sector**

Employment Sector	Geographic Area			
	Kansas	Greenwood County	Woodson County	Zone of Interest Total
Civilian employed population 16 years and over	1,401,197	2,876	1,557	4,433
Agriculture, forestry, fishing and hunting, and mining	49,432	375	230	605
Construction	88,203	189	94	283
Manufacturing	176,444	300	158	458
Wholesale trade	39,010	24	64	88
Retail trade	155,335	308	100	408
Transportation and warehousing, and utilities	66,266	147	144	291
Information	30,584	18	38	56
Finance and insurance, and real estate and rental and leasing	84,958	116	57	173
Professional, scientific, and management, and administrative and waste management services	125,338	122	54	176
Educational services, and health care and social assistance	345,985	655	351	1006
Arts, entertainment, and recreation, and accommodation and food services	111,387	243	79	322
Other services, except public administration	63,899	179	61	240
Public administration	64,356	200	127	327

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 Estimate)

## Percentage of ZOI



- Agriculture, forestry, fishing and hunting, and mining
- Construction
- Manufacturing
- Wholesale trade
- Retail trade
- Transportation and warehousing, and utilities
- Information
- Finance and insurance, and real estate and rental and leasing
- Professional, scientific, and management, and administrative and waste management services
- Educational services, and health care and social assistance
- Arts, entertainment, and recreation, and accommodation and food services

**Figure 2.6 Zone of Interest Employment by Sector**

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 Estimate)

### 2.4.6 Households, Income and Poverty

Table 2.13 displays an estimate of the number of households and average household sizes in the zone of interest as of 2015. There were approximately 1.1 million households in the state of Kansas with an average household size of 2.53. The zone of interest contained approximately 4,355 of those homes with an average household size of 2.23 in Greenwood County and 2.08 in Woodson County.

**Table 2.13 2015 Households and Household Size**

Area	Total Households	Average Household Size
<b>Kansas</b>	1,113,472	2.53
<b>Greenwood County</b>	2,824	2.23
<b>Woodson County</b>	1,531	2.08
<b>Zone of Interest Total</b>	<b>4,355</b>	<b>NA</b>

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 estimate)

As shown in Table 2.14, median household income in the zone of interest in 2015 was \$38,838 in Greenwood County and \$35,787 in Woodson County, which is considerably lower than the median household income of \$52,205 in Kansas. Per capita income in the zone of interest (\$22,699) was also lower than the state, which had a per capita income of \$27,706 in 2015.

**Table 2.14 2015 Median and Per Capita Income**

Geographic Area	Median Household Income	Per Capita Income
<b>Kansas</b>	\$52,205	\$27,706
<b>Greenwood County</b>	\$38,838	\$23,335
<b>Woodson County</b>	\$35,787	\$21,432
<b>Zone of Interest Total</b>	<b>N/A</b>	<b>\$22,699</b>

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 Estimate)

As shown in Table 2.15, in the zone of interest, 17.7% of the population's incomes fell below the poverty level within the last twelve months as of 2015 compared to 13.6% of the state. In terms of families below the poverty level, both counties within the zone of interest had a greater percentage of families below the poverty level than the state of Colorado (9.1%).

**Table 2.15 Percent of Families and People Whose Income in the Past 12 Months is Below the Poverty Level (2015)**

<b>Geographic Area</b>	<b>All Persons</b>	<b>All Families</b>
<b>Kansas</b>	13.6%	9.1%
<b>Greenwood County</b>	15.1%	11.9%
<b>Woodson County</b>	22.8%	14.9%
<b>Zone of Interest Total</b>	<b>17.7%</b>	<b>N/A</b>

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates (2015 Estimate)

## **2.5 RECREATION FACILITIES, ACTIVITIES, NEEDS AND TRENDS**

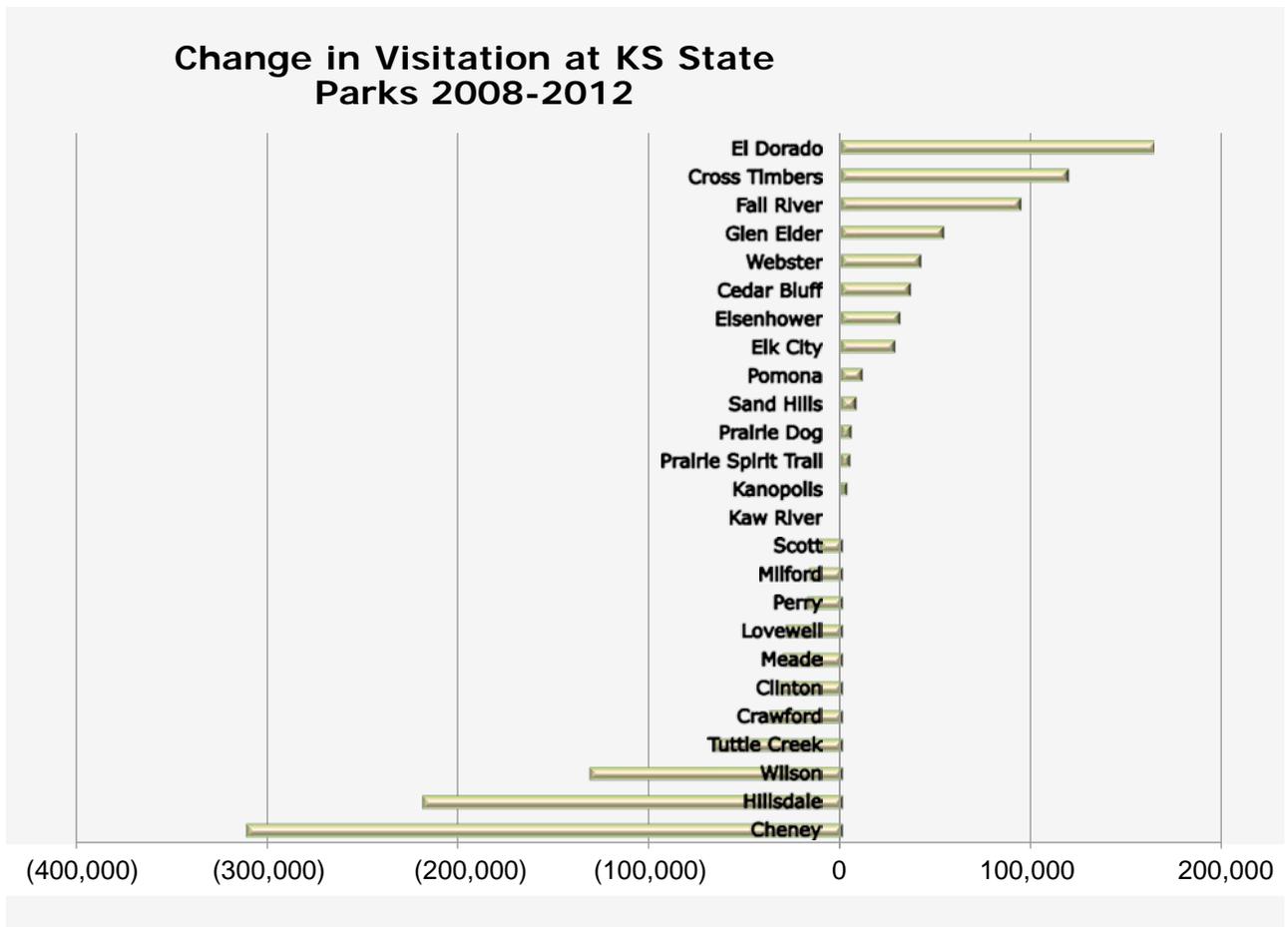
Recreational facilities at Toronto Lake are comprised of six parks, which are all managed by the KDWPT. Located in the Flint Hills region, the lake is surrounded by tree species such as oak, cottonwood, elm situated on gently rolling terrain that gradually slopes to the water's edge, creating a scenic shoreline. Recreational activities include picnicking, camping, hiking, boating, hunting, watersports, and birdwatching.

### 2.5.1 Zone of Interest

The visitation market area, or zone of interest, is the area from which the majority of visitors to the lake originate. This zone is the area within approximately a 100-mile radius of Toronto Lake.

### 2.5.2 Visitation Profile

As illustrated in Figure 2.7, visitation to Cross Timbers (formally Toronto Point) State Park grew from 2008 to 2012 and is expected to continue growing. As discussed in the following sections, Toronto Lake supports many of the trends in outdoor recreation.



**Figure 2.7 Change in Visitation at State Parks 2008-2012** (Source Kansas SCORP)

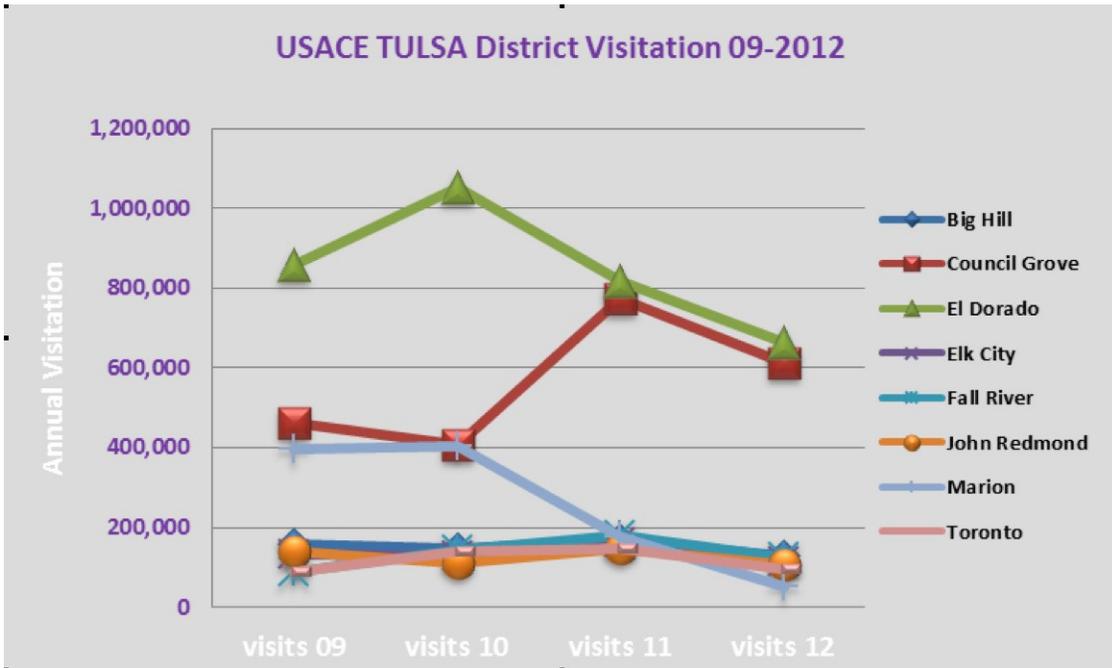
For state managed parks, the following visitation information was retrieved for Toronto Lake from the Reserve America system. As can be seen in Table 2.16, 24 percent of visitation to the state parks at Toronto Lake originate from Wichita, Kansas.

**Table 2.16 Top Five Percent State Park Visitation by State and City**

State	Percent Visitation	City	Percent Visitation
Kansas	84	Wichita, KS	24
Oklahoma	3.71	Yates Center, KS	6
Missouri	3.93	Iola, KS	5
Arkansas	1.56	Olathe, KS	3.7
Texas	.98	Lawrence, KS	3

Source: Kansas SCORP

Figure 2.8 illustrates USACE managed parks at the Tulsa District. As can be seen, there is variation in visitation trends in many parks, most likely due to weather and related biological factors, such as blue-green algae blooms. Since Toronto's parks are managed by the State of Kansas, this serves to illustrate the trends in overall visitation and not necessarily the popularity of the parks at Toronto Lake.



**Figure 2.8 USACE Tulsa District Managed Park – Kansas 2009-2012** (Source: Kansas SCORP)

### 2.5.3 Recreation Areas and Facilities

Recreational areas and facilities are regionally popular at Toronto Lake. Table 2.17 shows each of the recreational facilities, who manages them, and what amenities they offer. After the impoundment of Toronto Lake in 1960 USACE developed four public-use areas designated as: Dam Site, Mann's Cove, Overlook, and Woodson Cove. The Kansas Department of Wildlife, Parks, and Tourism (KDWPT) developed two public-use areas designated as Holiday Hill and Toronto Point. Today, all the parks at Toronto Lake are managed by KDWPT under the collective title of Cross Timbers State Park. USACE remains responsible for dam operations and natural resources management on lands not leased or licensed to KDWPT.

According to the 2015 Kansas Statewide Comprehensive Outdoor Recreation Plan's (SCORP) reservation profile, Cross Timbers State Park has had 458 reservations from visitors coming from 6 miles to 378 miles, with an average distance of 71 miles.

**Table 2.17 Recreational Facilities and Operating Agencies**

FACILITIES	Boat Launching Ramps	Picnic Area	Designated Campsites	Drinking Water	Restrooms	Group Shelter	Showers	Swimming Beaches	Changing House	Nature Trail	Dump Stations	Electrical	Playground
<b>LOCATION</b>													
Woodson Cove		*	*		*								
Toronto Point <sup>(1)</sup>	*	*	*	*	*		*	*	*	*	*	*	
Overlook				*	*								
East Spillway Area			*		*								
Holiday Hill	*	*	*	*	*		*			*		*	
Mann's Cove			*	*	*								
Operating Agency	Kansas Department of Wildlife and Parks												

<sup>(1)</sup> The six areas listed in this table are all part of Cross Timbers State Park

*Fishing and Hunting*

Toronto Lake features an abundance of some of the largest white bass in the world. Other sport fish in the lake include black and white crappie, largemouth bass, channel catfish, bluegill and other sunfish species, flathead catfish, walleye and freshwater drum. Lake lands are open for public hunting, except for developed recreation areas and lands near the dam and other project operations structures. Principal wildlife species in the area include bobwhite quail, squirrel, cottontail rabbit, deer, mourning dove, ducks, geese and greater prairie chicken. Duck Island and the upper half of the lake totaling 4,366 acres (including both land and water areas) is licensed to the KDWPT. The area is managed primarily for public hunting of upland game, waterfowl and deer. Both hunting and fishing are in accordance with state laws.

*Camping and Picnicking*

Five developed recreation park areas are available within the Cross Timbers State Park at Toronto Lake for camping and picnicking enjoyment. Available facilities include boat ramps, picnic tables, campsites, swimming beaches and sanitary facilities. Camping areas for full RV hookups, group camping areas and primitive camping is available.

*Boating*

For boating enthusiasts there are approximately 2,308 acres of lake surface for an enjoyable outdoor experience. Boating on the lake is in accordance with Kansas State boating laws and USACE regulations.

### Sightseeing

Toronto Lake is located in the scenic valley of the Verdigris River in southern Kansas. Upon arrival at the lake, visitors will be impressed with the dam structure itself. The lake is surrounded by oak, cottonwood, elm and other tree species common to the area. The gently rolling terrain gradually slopes to the water's edge creating a scenic shoreline. This picturesque setting is an open invitation to the visitor for picnicking, camping, hiking and other outdoor recreation. For birdwatchers, there are many species of birds native to the area to enjoy.

### Swimming

Cross Timbers State Park has one designated swimming area located within the Toronto Point Area.

### Trails

Five trails are located within the park system. All trails are open to travel by foot for walking, hiking and backpacking:

- Toronto Point:
  - Chautauqua Hills Trail - 1.5 and 11 mile loops
  - Ancient Oaks Trail – one mile
- Woodson Cove:
  - Overlook Trail – 1.25 mile loop
- Holiday Hills:
  - Oak Ridge Trail - 0.5 mile
  - Blackjack Ridge Trail – one mile loop

All trails are open to travel by foot for walking, hiking and backpacking. Four of these trails are also open to non-motorized uses including jogging and mountain biking. The Ancient Oaks Trail is open to hiking only and is a self-guided interpretive trail. This trail has educational plaques that describe the age of each tree and outstanding historical events in North America and the United States that occurred at the same time each tree was a seedling.

#### 2.5.4 Commercial Concession Leases

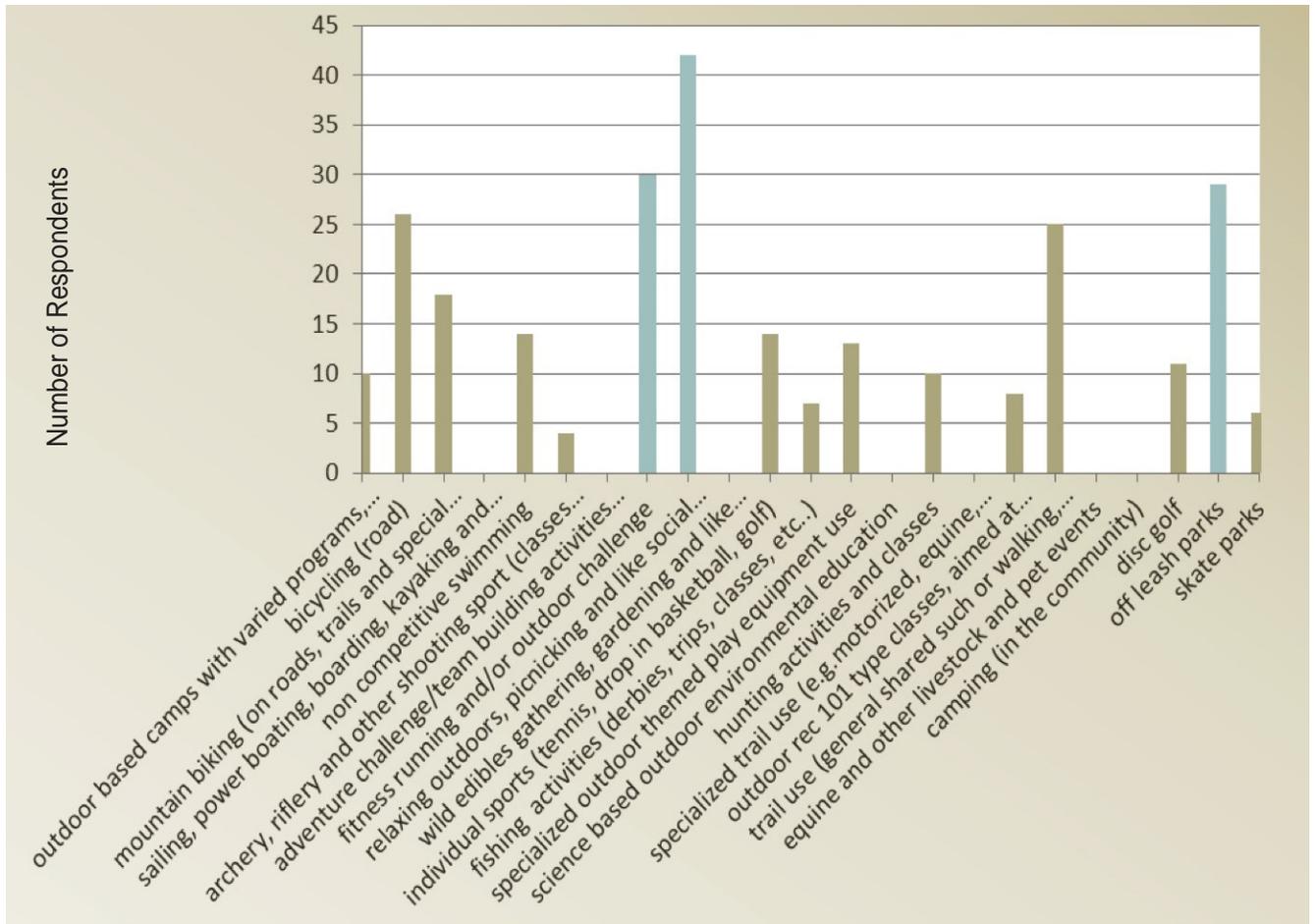
Concessionaires provide valuable services to the public at USACE lakes across the United States. USACE makes efforts to attract concessionaires that are able to establish suitable, well-maintained businesses that will offer desirable water-related services to the general public. Presently, at Toronto Lake demand for such facilities is non-existent. USACE will continue to provide opportunities for desired recreation through partnerships with other agencies.

### 2.5.5 Recreation Analysis – Trends

To help provide Kansas communities statewide with informational resources for recreational needs and trends across the state, KDWP released the 2015 SCORP. The SCORP serves to address emerging issues in 2015 Kansas outdoor recreation and set goals for the next five years. According to the Kansas SCORP the following are activities showing significant participation increases:

- Wildlife based recreation showed encouraging gains. Fishing and several forms of hunting saw new participants.
- Boating/water based activities (when grouped) all fared well. These include paddleboards, but also kayaking, boardsailing, windsurfing, sailing and canoeing.
- Health and fitness enhancing activities dominated the list of activities attracting new participants. A subgroup (trail running – adventure racing – triathlons, etc.) leads specific activities. This participation is supported by input from agency professionals who rank it high in popularity. Recent “Warrior Dash” type activities in the Kansas City, Kansas metropolitan area drew as many as 30,000 young adults (ages 18-35).

Figure 2.9 illustrates the survey results from the 2015 Kansas SCORP of the most popular individual outdoor recreational activities. As seen, the most popular activities are relaxing outdoors, picnicking and other social activities, all activities supported by Toronto Lake.



**Figure 2.9 Most Popular Individual Outdoor Activities 2009-2012 – KS Public Supplier’s Survey** (Source: State of Kansas SCORP)

### 2.5.7 Recreation Analysis – Needs

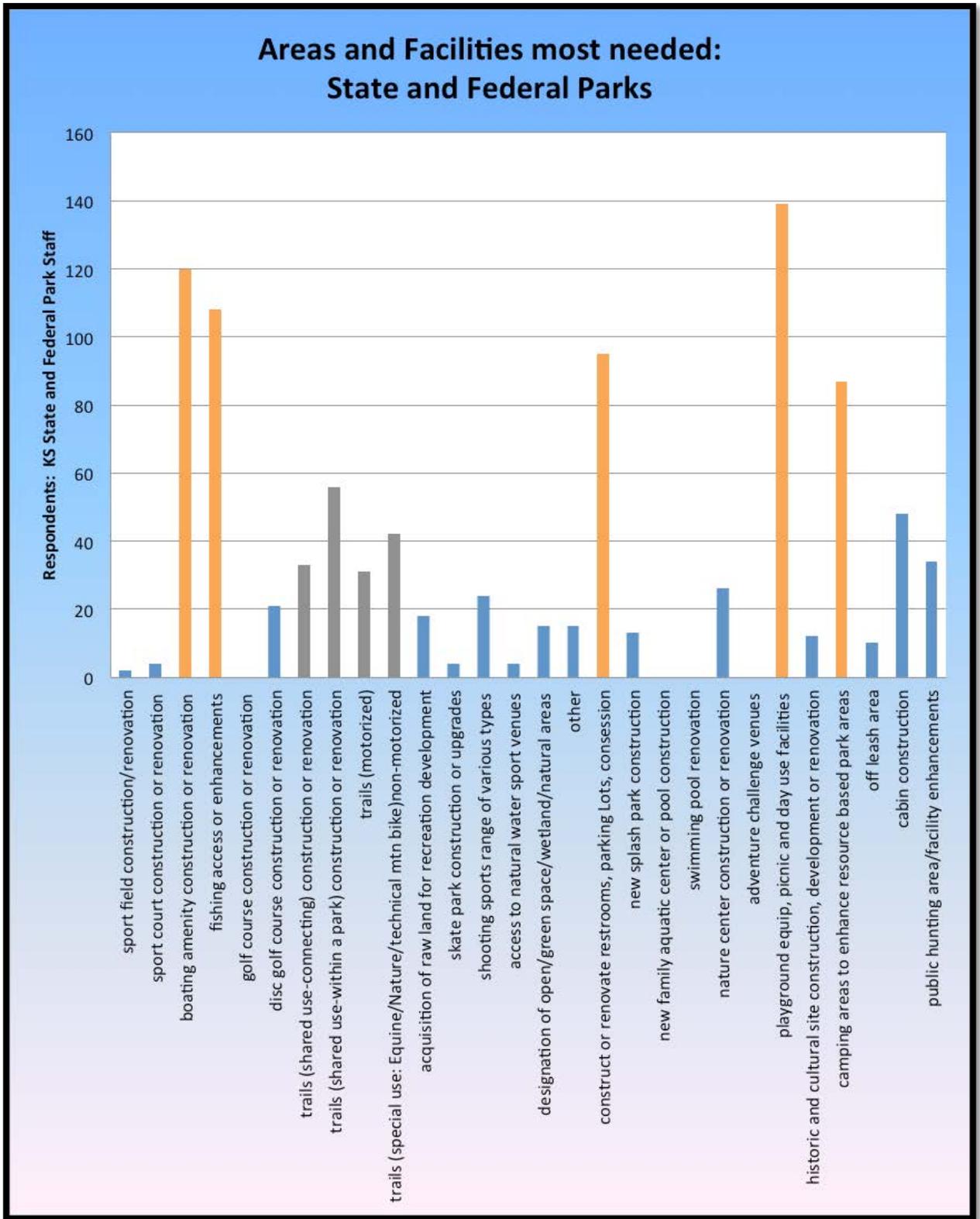
The activities addressed above are supported by USACE at Toronto Lake. Wildlife based recreation accounts for a substantial amount of Toronto Lake’s outdoor recreation demand, both by adjacent residents and by visitors. After a period of decline, recent statistics show generally favorable growth in various sectors of this user group according to the SCORP. Boating in Kansas, like hunting and fishing, has been noticeably impacted by drought since 2011. The 2012 year was particularly severe with several water bodies completely inaccessible. 2013 brought some relief in the eastern half of the state.

Water based recreation is a crucial aspect of outdoor recreation in Kansas, making up a substantial core of the visitors to USACE and State managed parks. Recreational boating activities in Kansas are expected to increase following 2015 precipitation within the region. Fitness and health enhancing outdoor experiences are popular in a variety of formats. Those of an individual nature are increasing while traditional team sports (football, baseball, and soccer) are in decline. Triathlons and

road racing both ranked in the top five outdoor activities attracting new participants. Support for this type of activity was also provided by agency professionals, who in a 2013 Supplier's Survey ranked fitness and trail running as the fastest growing outdoor pursuits. Figure 2.10 illustrates the areas and facilities identified as most needed in state and federal parks in Kansas.



**Photo 2-5 Boating at Kansas Lakes** (Source: USACE)



**Figure 2.10 Recreational Areas and Facilities Most Needed: State and Federal Parks** (Source: 2015 Kansas SCORP)

### 2.5.9 Summary Discussion – Needs and Trends

Given the outdoor recreation trends information shown in Figure 2.9 above, it is evident that future recreation development at Toronto Lake should focus less on campgrounds and more on providing increased trail opportunities (of all kinds), more facilities for family and group gatherings, and more wildlife and nature-related viewing opportunities. USACE should also place a high priority on the protection and retention of large, undeveloped parcels of public land. Doing so responds to outdoor recreation needs expressed in the SCORP. The large expanses of natural habitat on public land are held in high regard by the citizens throughout the zone of interest for Toronto Lake. This Plan responds to these needs through revised land classifications, new management objectives and conceptual management plans for each land classification.

### 2.5.10 Recreation Carrying Capacity

The plan formulated herein proposes to provide a variety of activities and to encourage optimal use of present public use areas, where possible, based on the carrying capability of the land. The carrying capability of the land is determined primarily by the distinct characteristics of the site. These characteristics, both natural and manmade, are development constraints that often determine the type of facilities that should be provided.

Having facilities that cater to a variety of tastes and different members of the family will encourage visitors to enjoy the lake. No recreation carrying capacity studies have been conducted at Toronto Lake. Presently, USACE manages recreation areas using historic visitation data combined with best professional judgment to address recreation areas considered to be overcrowded, overused, underused, or well balanced. USACE will continue to work with KDWPT to identify possible causes and effects of overcrowding and overuse and apply appropriate best management practices including: site management, regulating visitor behavior, and modifying visitor behavior.

## **2.6 REAL ESTATE**

Total project area at Toronto Lake encompasses 8,733 acres. Of this total area, 6,073 acres of land to the conservation pool were acquired in fee simple title by USACE. Above the area acquired in fee simple title 4,996 acres were encumbered with a perpetual flowage easement. These are the official acres and may differ from those in other parts of this plan due to better measurement technology, erosion and sedimentation.

Purchase of flowage easement by the Government constitutes payment for the right to flood and for the damage and expense to the landowner resulting from project operation. Construction of buildings for habitation or alteration of the existing

terrain will not be permitted in the flowage easement area. Construction of structures and improvements for use other than habitation will require formal authorization and coordination with USACE Operations and Real Estate Divisions.

Prospective buyers of property adjacent to Toronto Lake are strongly encouraged to determine the location of the flowage easement line on any property they are considering purchasing. Flowage easements may or may not be located on deeds or plats provided by the seller(s).

Individuals and companies interested in leases to provide services to the public on Government fee lands should be aware that there are specific restrictions and procedures they must follow. In many cases, individuals or companies will be encouraged to pursue a sublease with an existing lessee, such as a marina. Any leases for new services must go out for bid after a marketing study is completed if the Government determines that the prospective service or product would be beneficial to users at Toronto Lake. Direct questions regarding this topic to the lake office at 2453 Lake Road, Fall River, Kansas 67047.

#### 2.6.1 Encroachments and Trespass

Individuals or entities without specific, written permission from the District Engineer are prohibited from conducting business on Government property under the Code of Federal Regulations, Title 36 CFR, 327.18. Government property is monitored by Toronto Lake 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 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 Tulsa District Real Estate Division and/or Office of Counsel. 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. At Toronto Lake, the most common encroachments are unauthorized mowing and paths, unauthorized structures such as fences and temporary structures, grazing, storage of personal property on USACE lands, and tree and vegetation removal.

### 2.6.2 Outgrants

The term “outgrant” is a broad term used by USACE to describe a variety of real estate instruments wherein an interest in real property has been conveyed by USACE to another party. Outgrants at Toronto Lake include leases, licenses, easements, consents, permits, and others. Outgrants do not include the Shoreline Use Permits that authorize private structures and activities owned or conducted by adjacent landowners such as boat docks and vegetation modification. At present, there are approximately 48 recorded outgrants in effect on USACE lands and flowage easements at Toronto Lake. These outgrants include the following:

- 40 Easements
- 4 Consents
- Miscellaneous licenses including the license for the KDWPT Toronto Reservoir and Wildlife Area
- 1 Recreation/Public Park lease to KDWPT for Cross Timbers State Park

## **2.7 PERTINENT PUBLIC LAWS**

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

- Public Law 59-209, Antiquities Act of 1906. - The first federal law established to protect what are now known as "cultural resources" on public lands. It provides a permit procedure for investigating "antiquities" and consists of two parts: An act for the Preservation of American Antiquities, and Uniform Rules and Regulations.
- Public Law 74-292, Historic Sites Act of 1935. - Declares it to be a national policy to preserve for (in contrast to protecting from) the public, historic (including prehistoric) sites, buildings, and objects of national significance. This act provides both authorization and a directive for the Secretary of the Interior, through the National Park Service, to assume a position of national leadership in the area of protecting, recovering, and interpreting national archeological historic resources. It also establishes an "Advisory Board on National Parks; Historic Sites, Buildings, and Monuments, a committee of eleven experts appointed by the Secretary to recommend policies to the Department of the Interior".
- Public Law 75-761, Flood Control Act of 1938. - 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 Toronto Lake.
- Title 16 U.S. Code §§ 668-668a-d, 54 Stat. 250, Bald Eagle Protection Act of 1940, as amended. This Act prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or any

manner, any bald eagle [or any golden eagle], alive or dead, or any part, nest, or egg thereof. The Act defines “take” as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.

- Public Law 78-534, Flood Control Act of 1944. - Section 4 of the act as last amended in 1962 by Section 207 of Public Law 87-874 authorizes USACE to construct, maintain, and operate public parks and recreational facilities in reservoir areas and to grant leases and licenses for lands, including facilities, preferably to federal, state or local governmental agencies. This law also authorized the creation of the Southwestern Power Administration (SWPA), then within the Dept. of the Interior and now within the Dept. of Energy, as the agency responsible for marketing and delivering the power generated at federal reservoir projects.
- Public Law 79-525, River and Harbor Act of 1946. - This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.
- PL 79-526, Flood Control Act of 1946 (24 July 1946), amends PL78-534 to include authority to grant leases to non -profit organizations at recreational facilities in reservoir areas at reduced or nominal fees.
- Public Law 83-780, Flood Control Act of 1954. - This act authorizes the construction, maintenance, and operation of public park and recreational facilities in reservoir areas under the control of the Department of the Army and authorizes the Secretary of the Army to grant leases of lands in reservoir areas deemed to be in the public interest.
- Public Law 85-624, Fish and Wildlife Coordination Act 1958. - 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.
- Public Law 86-523, Reservoir Salvage Act of 1960, as amended. This Act provides for (1) the preservation of historical and archeological data that might otherwise be lost or destroyed as the result of flooding or any alteration of the terrain caused as a result of any Federal reservoir construction projects; (2) coordination with the Secretary of the Interior whenever activities may cause loss of scientific, prehistoric, or archeological data; and (3) expenditure of funds for recovery, protection, and data preservation. This Act was amended by Public Law 93-291.
- Public Law 86-717, Forest Cover Conservation Act, 6 Sept. 1960. - This act provides for the protection of forest cover for reservoir areas under this jurisdiction of the Secretary of the Army and the Chief of Engineers.
- Public Law 87-88, Federal Water Pollution Control Act Amendments of 1961, as amended. Section 2(b)(1) of this Act gives USACE responsibility for water quality

management of USACE reservoirs. This law was amended by the Federal Water Pollution Control Act Amendment of 1972, Public Law 92-500.

- Public Law 87-874, Rivers and Harbors Act of 1962. - This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.
- Public Law 88-578, Land and Water Conservation Fund Act of 1965. - This act established a fund from which Congress can make –appropriations for outdoor recreation. Section 2(2) makes entrance and user fees at reservoirs possible by deleting the words "without charge" from Section 4 of the 1944 Flood Control Act as amended.
- Public Law 89-72, Federal Water Project Recreation Act of 1965. - This act requires that not less than one-half the separable costs of developing recreational facilities and all operation and maintenance costs at Federal reservoir projects shall be borne by a non-Federal public body. A USACE/OMB implementation policy made these provisions applicable to projects completed prior to 1965.
- Public Law 89-90, Water Resources Planning Act (1965). - This act established the Water Resources Council and gives it the responsibility to encourage the development, conservation, and use of the Nation's water and related land resources on a coordinated and comprehensive basis.
- Public Law 89-272, Solid Waste Disposal Act, as amended by PL 94-580, dated October 21, 1976. - This act authorized a research and development program with respect to solid-waste disposal. It proposes (1) to initiate and accelerate a national research and development program for new and improved methods of proper and economic solid-waste disposal, including studies directed toward the conservation of national resources by reducing the amount of waste and unsalvageable materials and by recovery and utilization of potential resources in solid waste; and (2) to provide technical and financial assistance to State and local governments and interstate agencies in the planning, development, and conduct of solid-waste disposal programs.
- Public Law 89-665, Historic Preservation Act of 1966. - 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.
- Public Law 90-483, River and Harbor and Flood Control Act of 1968, Mitigation of Shore Damages. - Section 210 restricted collection of entrance fee at USACE lakes and reservoirs to users of highly developed facilities requiring continuous presence of personnel.

- Public Law 91-190, National Environmental Policy Act of 1969 (NEPA). - 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.
- Public Law 91-611, River and Harbor and Flood Control Act of 1970. - Section 234 provides that persons designated by the Chief of Engineers shall have authority to issue a citation for violations of regulations and rules of the Secretary of the Army, published in the Code of Federal Regulations.
- Public Law 92-347, Golden Eagle Passbook and Special Recreation User Fees. - This act revises Public Law 88-578, the Public Land and Water Conservation Act of 1965, to require Federal agencies to collect special recreation user fees for the use of specialized sites developed at Federal expense and to prohibit USACE from collecting entrance fees to projects.
- Public Law 92-500, Federal Water Pollution Control Act Amendments of 1972. - The Federal Water Pollution Control Act of 1948 (PL 845, 80th Congress), as amended in 1956, 1961, 1965 and 1970 (PL 91- 224), established the basic tenet of uniform State standards for water quality. Public Law 92-500 strongly affirms the Federal interest in this area. "The objective of this act is to restore and maintain the chemical, physical and biological integrity of the Nation's waters."
- Public Law 92-516, Federal Environmental Pesticide Control Act of 1972. - This act completely revises the Federal Insecticide, Fungicide and Rodenticide Act. It provides for complete regulation of pesticides to include regulation, restrictions on use, actions within a single State, and strengthened enforcement.
- Public Law 93-81, Collection of Fees for Use of Certain Outdoor Recreation Facilities. - This act amends Section 4 of the Land and Water Conservation Act of 1965, as amended to require each Federal agency to collect special recreation use fees for the use of sites, facilities, equipment, or services furnished at Federal expense.
- Public Law 93-205, Conservation, Protection, and Propagation of Endangered Species Act of 1973, as amended. This law repeals the Endangered Species Conservation Act of 1969. It also directs all Federal departments/agencies to carry out programs to conserve endangered and threatened species of fish, wildlife, and plants and to preserve the habitat of these species in consultation with the Secretary of the Interior. This Act establishes a procedure for coordination, assessment, and consultation. This Act was amended by Public Law 96-159.

- Public Law 93-251, Water Resources Development Act of 1974. - Section 107 of this law establishes a broad Federal policy which makes it possible to participate with local governmental entities in the costs of sewage treatment plant installations.
- Public Law 93-291, Archeological Conservation Act of 1974. - The Secretary of the Interior shall coordinate all Federal survey and recovery activities authorized under this expansion of the 1960 act. The Federal Construction agency may transfer up to one percent of project funds to the Secretary with such transferred funds considered non-reimbursable project costs.
- Public Law 93-303, Recreation Use Fees. - This act amends Section 4 of the Land and Water Conservation Act of 1965, as amended, to establish less restricted criteria under which Federal agencies may charge fees for the use of campgrounds developed and operated at Federal areas under their control.
- Public Law 93-523, Safe Drinking Water Act. - The act assures that water supply systems serving the public meet minimum national standards for protection of public health. The act (1) authorizes the Environmental Protection Agency to establish Federal standards for protection from all harmful contaminants, which standards would be applicable to all public water systems, and (2) establishes a joint Federal-State system for assuring compliance with these standards and for protecting underground sources of drinking water.
- Public Law 94-422, Amendment of the Land and Water Conservation Fund Act of 1965. - Expands the role of the Advisory Council. Title 2 - Section 102a amends Section 106 of the Historical Preservation Act of 1966 to say that the Council can comment on activities which will have an adverse effect on sites either included in or eligible for inclusion in the National Register of Historic Places.
- Public Law 95-217, Clean Water Act of 1977, as amended. This Act amends the Federal Water Pollution Control Act of 1970 and extends the appropriations authorization. The Clean Water Act is a comprehensive Federal water pollution control program that has as its primary goal the reduction and control of the discharge of pollutants into the nation's navigable waters. The Clean Water Act of 1977 has been amended by the Water Quality Act of 1987, Public Law 100-4.
- Public Law 95-341, American Indian Religious Freedom Act of 1978. The Act protects the rights of Native Americans to exercise their traditional religions by ensuring access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.
- Public Law 95-632, Endangered Species Act Amendments of 1978. This law amends the Endangered Species Act Amendments of 1973. Section 7 directs agencies to conduct a biological assessment to identify threatened or endangered species that may be present in the area of any proposed project. This assessment is conducted as part of a Federal agency's compliance with the requirements of Section 102 of NEPA.

- Public Law 96-95, Archeological Resources Protection Act of 1979. This Act protects archeological resources and sites that are on public and tribal lands, and fosters increased cooperation and exchange of information between governmental authorities, the professional archeological community, and private individuals. It also establishes requirements for issuance of permits by the Federal land managers to excavate or remove any archeological resource located on public or Indian lands.
- Public Law 98-63, Supplemental Appropriations Act of 1983. This Act authorized the USACE Volunteer Program. The United States Army Chief of Engineers may accept the services of volunteers and provide for their incidental expenses to carry out any activity of USACE, except policymaking or law or regulatory enforcement.
- Public Law 99-662, The Water Resources Development Act (WRDA) 1986. - Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure. Establishes new requirements for cost sharing.
- PL101-233, North American Wetland Conservation Act (13 Dec 1989), directs the conservation of North American wetland ecosystems and requires agencies to manage their lands for wetland/waterfowl purposes to the extent consistent with missions.
- PL101-336, Americans with Disabilities Act of 1990 (ADA), 26 July 1990, as amended by the ADA Amendments Act of 2008 (PL110-325), prohibits discrimination based on disabilities in, among others, the area of public accommodations and requires reasonable accommodations for persons with disabilities.
- PL101-601, Native American Graves Protection and Repatriation Act (16 Nov 1990), requires Federal agencies to return Native American human remains and cultural items, including funerary objects and sacred objects, to their respective peoples.
- PL 102-580, Water Resources Development Act (WRDA) of 1992 (31 Oct 1992) authorizes USACE to accept contributions of funds, materials and services from non-Federal public and private entities to be used for managing recreational sites and facilities and natural resources.
- PL 103-66 Omnibus Reconciliation Act-Day use fees (10 Aug 1993), authorizes USACE to collect fees for the use of developed recreational sites and facilities, including campsites, swimming beaches and boat ramps.
- PL104-303, WRDA 1996. Authorizes recreation and fish and wildlife mitigation as purposes of a project, to the extent that the additional purposes do not adversely affect flood control, power generation, or other authorized purposes of a project.
- PL104-333, Omnibus Parks and Public Lands Management Act of 1996,(12 Nov 1996), created an advisory commission to review the current and anticipated demand for recreational opportunities at lakes or reservoirs managed by the

Federal Government and to develop alternatives to enhance such opportunities for such use by the public.

- PL106-147, Neo-tropical Migratory Bird Conservation Act (20 July 2000), promotes the conservation of habitat for neo-tropical migratory birds.
- The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

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## CHAPTER 3 - RESOURCE GOALS AND OBJECTIVES

### 3.1 INTRODUCTION

This chapter sets forth goals and objectives necessary to achieve the USACE vision for the future of Toronto Lake. The terms “goals” and “objectives” are often defined as synonymous, but in the context of this Plan, goals express the overall desired end state of the cumulative land and recreation management programs at Toronto Lake. Resource objectives specify task-oriented actions necessary to achieve the master plan goals.

### 3.2 RESOURCE GOALS

The following goals are the priorities for consideration when determining management objectives and development activities. Implementation of these goals is based upon time, manpower, and budget. The objectives provided in this chapter are established to provide high levels of stewardship to USACE managed lands and resources while still providing a high level of public service. These goals will be pursued through the use of a variety of mechanisms such as: assistance from volunteer efforts, hired labor, contract labor, permit conditions, remediation, and special lease conditions. It is the intention of Toronto Lake staff to provide a realistic approach to the management of all resources. The following statements based on *EP 1130-2-550*, Chapter 3, express the goals for the Toronto Lake Master Plan.

- GOAL A.** Provide the best management practices to respond to regional needs, resource capabilities and capacities, and expressed public interests consistent with authorized project purposes.
- GOAL B.** Protect and manage project 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 project natural resources.
- GOAL D.** Recognize the unique qualities, characteristics, and potentials of the project.
- 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; bring 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 Tulsa District, Toronto Lake Project Office. The objectives stated in this Master Plan support the goals of the Master Plan, USACE Environmental Operating Principles (EOPs), and applicable national performance measures. They reflect needs and trends identified in the KDWPT 2015 SCORP and 2016 SWAP are consistent with authorized project purposes, federal laws and directives, regional needs, resource capabilities, and they consider public input. 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 Toronto Lake to the greatest extent possible. Implementation of the objectives will require close coordination between KDWPT and USACE and are dependent available funds. The following tables list the objectives for Toronto Lake.

**Table 3.1 Recreational Objectives**

Recreational Objectives	Goals				
	A	B	C	D	E
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, separation of day use and camping facilities, improved electrical service at campsites.	*		*		
Increase opportunities for day use activities, especially picnicking. Provide a sufficient number of campsites in popular areas.	*		*		
Optimize opportunities for hunting game wildlife species on all USACE lands where such activities are appropriate and in accordance with natural resource management objectives. Work with KDPWT to maintain the Toronto Lake Public Hunting Area Map and Guide to accurately reflect the status of hunting opportunities and special restrictions for all USACE lands.	*		*	*	*
Monitor boating traffic and evaluate the need to conduct a comprehensive recreation boating use study to ensure visitor safety and enjoyment.	*		*		
Provide new 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 various partners to expand existing and develop new trails.	*		*		*
Consider pool fluctuations in design and placement of recreation facilities such as campsites, boat ramps, courtesy docks and restrooms, as well as tree planting and general landscaping.	*	*	*	*	
Ensure consistency with USACE Recreation Strategic Plan.					*
Monitor the SCORP to insure that USACE is responsive to outdoor recreation trends, public needs and resource protection within a regional framework. All plans by others will be evaluated in light of USACE policy and operational aspects of Toronto Lake.					*

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

**Table 3.2 Natural Resource Management Objectives**

Natural Resource Management Objectives	Goals				
	A	B	C	D	E
Give priority to the preservation and improvement of wild land values in public use planning, design, development, and management activities. Give high priority to examining project lands for the presence of vegetative characteristic of the Level IV Cross Timbers, Osage Cuestas, and Flint Hills Ecological Regions as well as other priority habitats identified by KDWPT.	*	*		*	*
Consider partnering with groups and agencies for the preservation of ancient cross timbers and tall grassland prairies.		*		*	*
Consider flood/conservation pool levels to ensure that natural resources are managed in ways that are compatible with project purposes.	*	*		*	
Actively manage and conserve fish and wildlife resources, especially threatened and endangered species and Species of Greatest Conservation Need by implementing ecosystem management principles. Key among these principles is the use of native species adapted to the Level IV Cross Timbers. Flint Hills, and Osage Cuestas ecological regions in restoration and mitigation plans.	*	*		*	*
Actively manage principal game wildlife species by establishing means of taking within specified public hunting areas in accordance with the regulatory processes of KDWPT.	*	*	*		*
Manage high density and low-density recreations lands in ways that enhance benefits to wildlife.					*
Optimize resources, labor, funds, and partnerships for protection and restoration of fish and wildlife habitats.		*			*
Minimize activities that disturb the scenic beauty and aesthetics of the lake.	*	*	*	*	
Ensure that adverse impacts resulting from land use actions, including outgrants, are appropriately mitigated to restore the value of the land to the nation.		*		*	*
Implement prescribed fire as a management tool to promote the vigor and health of Cross Timbers. Flint Hills, and Osage Cuestas ecoregions.	*	*			*

Natural Resource Management Objectives	Goals				
	A	B	C	D	E
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 communities. Emphasize actions that promote butterfly and /or pollinator habitat, migratory bird habitat, and habitat for birds listed by USFWS as Birds of Conservation Concern.	*	*		*	*

**Table 3.3 Visitor Information, Education, and Outreach Objectives**

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

**Table 3.4 General Management Objectives**

General Management Objectives	Goals				
	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.					*
Reference Recreation Infrastructure Investment Strategy (RIIS) if funding levels change in future years.					*
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 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.					*

**Table 3.5 Cultural Resources Management Objectives**

Cultural Resources Management Objectives	Goals				
	A	B	C	D	E
As funding permits, complete an inventory of cultural resources and implement the Cultural Resources Management Plan.	*	*		*	*
Increase public awareness and education of regional history.		*		*	*
Stop unauthorized excavation and removal of cultural resources.		*		*	*
Provide access by Tribal members 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 project 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. There are four possible categories of allocation identified in USACE regulations for acquisition: Operations, Recreation, Fish and Wildlife, and Mitigation. At Toronto Lake, the only land allocation category that applies is Operations, which is defined as those lands that are required to operate the project for the primary authorized purposes of flood risk management, water supply, and navigation. The remaining allocations of Recreation, Fish and Wildlife, and Mitigation would apply only if lands had been acquired specifically for these purposes.

## 4.2 LAND CLASSIFICATION

### 4.2.1 General

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

### 4.2.2 Prior Land Classifications

Previous versions of the Toronto Lake Master Plan included land classification criteria that were similar, but not identical to the current criteria. These prior land classifications were based more on projected need than on actual experience, which resulted in some areas being classified for a type of use that has not, or is not likely to occur. Additionally, in the 40-odd years since the previous Master Plan was published, USACE land management policy, wildlife habitat values, surrounding land use, and regional recreation trends have changed significantly giving rise to the need for revised land classifications. Refer to Table 8.1 in Chapter 8 for a summary of land classification changes from the prior classifications to the current classifications.

### 4.2.3 Current Land Classifications

USACE regulations require project lands to be classified in accordance with the primary use for which project lands are managed. There are six primary categories and four sub categories of classification identified in USACE regulations including:

- Project Operations
- High Density Recreation
- Mitigation
- Environmentally Sensitive Areas
- Multiple Resource Management Lands
  - Low Density Recreation
  - Vegetation Management
  - Wildlife Management
  - Future/Inactive Recreation Areas
- Water Surface

The land and water surface classifications for Toronto Lake were established after taking into account public comments, input from key stakeholders including elected officials, city and county governments, and lessees operating on USACE land. Additionally, wildlife habitat values and concerns, as well as outdoor recreation trends analysis provided in the 2015 Kansas SCORP were used in decision-making. Also included in the analysis were historical public use and land management patterns that have developed since publication of the 1979 Master Plan. 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, project office, and maintenance yards, all of which must be maintained to carry out the authorized purpose of flood control. In addition to the operational activities taking place on these lands, limited recreational use may be allowed for activities such as public access to the fishing pier in the tailrace area of the powerhouse. Regardless of any limited recreation use allowed on these lands, the primary classification of Project Operations will take precedent over other uses. There are 46 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 Toronto Lake there are 1,216 acres classified as High Density Recreation land. Refer to Table 2.17 for a listing of the current High Density Recreation Areas at Toronto Lake. Each of the High Density Recreation areas is described briefly in Chapter 5 of this Plan.

#### 4.2.6 Mitigation

This classification is used only for lands allocated for mitigation for the purpose of offsetting losses associated with the development of the project. No Mitigation lands are allocated for Toronto Lake; therefore, no lands are classified as Mitigation lands.

#### 4.2.7 Environmentally Sensitive Areas (ESA)

These are areas where scientific, ecological, cultural, and aesthetic features have been identified. There are no acres classified as ESA at Toronto Lake.

#### 4.2.8 Multiple Resource Management Lands

This classification is divided into four sub-classifications identified as Low Density Recreation, Wildlife Management, Vegetative Management, and Future/Inactive Recreation Areas. A given tract of land may be classified using one or more of these sub-classifications but the primary sub classification should reflect the dominant use of the land. Typically, Multiple Resource Management Lands support only passive, non-intrusive uses with very limited facilities or infrastructure. Where needed, some areas may require basic facilities that include, but are not limited to minimal parking space, a small boat ramp, and/or primitive sanitary facilities. There are 5,070 acres of land under this classification at Toronto Lake. The

following paragraphs list each of the sub-classifications, and the number of acres and primary uses of each.

- Low Density Recreation. These are lands that may support passive public recreational use (e.g., fishing, hunting, wildlife viewing, natural surface trails, hiking, etc.). There are no acres under this classification at Toronto Lake.
- Wildlife Management. This land classification applies to those lands managed primarily for the conservation of fish and wildlife habitat. These lands generally include comparatively large contiguous parcels, most of which are located within 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. There 5,070 acres of land included in this classification at Toronto Lake.
- Vegetative Management. 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 of land included in this classification at Toronto Lake.
- Future or Inactive Recreation. These are lands with site characteristics compatible with High Density Recreation development. These are areas where High Density Recreation development was anticipated in prior land classifications, but the development either never took place or was minimal. These areas are typically closed to vehicular traffic and will be managed as multiple resource management lands until development takes place. There no of land included in this classification at Toronto Lake.

#### 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 USACE or lessees with navigational or informational buoys or signs, or are denoted on public maps and brochures. The four sub-categories of water surface classification include:

- Restricted. These areas are restricted to the extent that public access is not allowed for reasons of public safety, and for project operations and security purposes. The areas include water surface in front of the intake gate control tower, major water supply intakes, and designated swimming beaches. Approximately nine acres of water surface are classified as Restricted at Toronto Lake. These areas are depicted on the land classification maps in Appendix A.

- Designated No-Wake. There are approximately 864 acres of water surface at Toronto Lake classified as Designated No-Wake for reasons of public safety and protection of property and shorelines. This includes the area around the six boat ramps as well as a large area of the lake that was not cleared and requires a no-wake designation. The water surface acreage in this classification can vary significantly depending on lake elevation. No-wake areas are typically denoted by buoys in appropriate areas.
- Fish and Wildlife Sanctuary. These areas are managed with annual or seasonal boating access restrictions to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning. There are no acres of Fish and Wildlife Sanctuary at Toronto Lake.
- Open Recreation. This classification encompasses the majority of the lake water surface and is open to general recreation with boats being the primary means of transport. Boaters are advised through maps and brochures, or signs at boat ramps and marinas, 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 1,435 acres of water surface at Toronto Lake are classified as Open Recreation.

A summary of land classifications at Toronto Lake is provided in Table 4.1. Acreages were calculated using historical and GIS data. A map representing these areas can be found in Appendix A.

**Table 4.1 Land Classification Acres at Toronto Lake**

<b>Classification</b>	<b>*Acres</b>
Project Operations	46
High Density Recreation	1,216
Environmental Sensitive Areas	-
<b>Multiple Resource Managed Lands:</b>	
Low Density Recreation	-
Wildlife Management	5,070
Vegetative Management	-
Future/Inactive Recreation Areas	-
<b>Water Surface:</b>	
Restricted	9
Designated No-wake	864
Fish and Wildlife Sanctuary	-
Open Recreation	1,435
<b>Total Acreage</b>	<b>8,640</b>
<b>Note:</b> Acreages are approximate and are based on GIS data. Totals vary depending on changes in lake levels, sedimentation, and shoreline erosion.	

\*Due to better measurement technology, erosion and sedimentation Toronto Lake increased 352 acres of land and lost 352 acres of water.

### **4.3 PROJECT EASEMENT LANDS**

These are 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. Only flowage easements exist at Toronto Lake. 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 4,996 acres of flowage easement lands at Toronto Lake.

## CHAPTER 5 - RESOURCE PLAN

### 5.1 RESOURCE PLAN OVERVIEW

This chapter describes in broad terms how each land classification within the Master Plan will be managed. All management goals described in Section 3.2 apply to each of the land classification, but the primary goal(s) for each classification is listed below for emphasis. Refer to section 3.3 for a listing of resource objectives applicable to each management goal. Refer to Appendix A for maps showing the various land classifications.

Management of all lands, recreation facilities, and related infrastructure must take into consideration the effects of pool fluctuations associated with authorized project purposes. Management actions are dependent on congressional appropriations, the financial capability of lessees and other key stakeholders, and the contributions of labor and other resources by volunteers. The land classifications and applicable management goals for each classification for Toronto Lake include the following:

- Project Operations ..... Goal A
- High Density Recreation ..... Goal C
- Environmentally Sensitive Areas ..... Goal B, D, E
- Multiple Resource Management Lands for:
  - Low Density Recreation ..... Goal C
  - Wildlife Management ..... Goal B, E
  - Vegetation Management ..... Goal B, E

A more descriptive and detailed plan for managing project lands can be found in the Toronto Lake OMP. The OMP is an annually-updated, task and budget oriented plan identifying tasks necessary to implement the Resource Plan and achieve the goals and objectives of the Master Plan.

### 5.2 PROJECT OPERATIONS

Project Operations is land associated with the dam, spillway, levees, lake office, maintenance facilities, and other areas solely for the operation of the project. There are 46 acres of lands under this classification, which are managed by the USACE. The management plan for this area is to continue providing physical security necessary to ensure sustained operations of the dam and related facilities including restricting public access in hazardous locations near the dam and spillway.

### 5.3 HIGH DENSITY RECREATION

Toronto Lake has 1,216 acres classified as High Density Recreation. These lands are developed for intensive recreational activities for the visiting public including day use and campgrounds. National USACE policy set forth in ER and EP 1130-2-550, Chapter 16, limits recreation development on USACE lands to those activities that are dependent on a project's natural resources and typically include water-based activities, overnight use, and day use such as 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.

All High Density Recreation areas at Toronto Lake are leased to, and operated by the KDWPT. The KDWPT is responsible for the operation and maintenance of their leased areas, and although USACE does not provide direct maintenance within any of the leased locations, it may occasionally lend support where appropriate. The USACE reviews requests and ensures compliance with applicable laws and regulations for proposed activities in all leased and USACE-operated HDR areas. USACE works with partners to ensure that recreation areas are managed and operated in accordance with the objectives prescribed in Chapter 3.

The following is a description of the parks operated by KDWPT on USACE lands at Toronto Lake, some of which are highly developed, while others have only basic facilities and limited development. Maps showing existing parks and facilities can be found in Appendix A.

#### 5.3.1 Leased Parks

HDR Lands leased to KDWPT exist as distinct and separate areas that are collectively managed as Cross Timbers State Park. Each distinct area is described below:

Toronto Point Area - Toronto Point Area encompasses 505 acres on the north end of Toronto Lake. The park is operated by the KDWPT and serves as day use and camping recreation. The day use recreation offers two boat ramps, trails, ADA fishing pier, an amphitheater, a courtesy dock, beach, gazebo, and basketball court. The campground offers 4 cabins, 15 water, electric, and sewer campsites, 43 water and electric campsites, 1 electric campsite, 80 primitive campsites, a group camp with 11 water and electric sites, 3 shower houses, 2 vault privies, a playground, a dump station, and a park attendant booth.

Holiday Hill and Dam Site Area - Holiday Hill Area encompasses 400 acres on the southwest end of Toronto Lake. The park is operated by the KDWPT and provides day use and camping recreation. The day use recreation offers three boat ramps, a beach, and picnic areas. The campground offers 1 water, electric, and

sewer campsite, 7 water and electric campsites, 7 electric campsites, 21 primitive campsites, 2 shower houses, a vault privy, and a park attendant booth.

Mann's Cove Area - Mann's Cove Area encompasses 23 acres on the northeast end of Toronto Lake. The park is operated by the KDWPT and serves as day use and camping recreation. Day use recreation offers a boat ramp and picnic areas. The campground offers 15 primitive campsites and a vault privy.

Woodson Cove Area - Woodson Cove Area encompasses 82 acres on the southeast end of Toronto Lake. The park is operated by the KDWPT and serves as day use recreation area. The day use recreation offers trails, picnic areas, and a vault privy.

### 5.3.2 Trails

Five trails are located within the state park system at Toronto Lake. All trails are open to travel by foot for walking, hiking, and backpacking. Four of these trails are also open to non-motorized uses including jogging and mountain biking.

- *The Ancient Oaks Trail* is a one-mile long, self-guided interpretive trail for hiking only. This trail has educational plaques that describe the age of each tree and outstanding historical events in North America and the United States that occurred at the same time each tree was a seedling.
- *The Chautauqua Hills Trail* features four connecting loops, for hiking and mountain Biking. The shortest loop is 1.5 miles long and the largest is 11 miles long through both the woodland and the prairies of the central plains.
- *The Overlook Trail* is a 1.25 mile-long trail for hikers and mountain bikers through the Cross Timbers ecosystem. It is rated moderate to difficult for hikers, and the many sandstone outcroppings and steep ravines make it challenging for mountain bikers.
- *The Blackjack Trailhead* is a one-mile trail is rated moderate for hikers and mountain bikers. The open-canopy is good for wildlife viewing.
- *The Oak Ridge Trailhead* is a 0.5-mile long trail rated moderate and appropriate for novice hikers and mountain bikers of multiple ages and abilities.

## **5.4 ENVIRONMENTALLY SENSITIVE AREAS**

ESA's are areas where scientific, ecological, cultural or aesthetic features have been identified. Designation of these lands is not limited to just lands that are otherwise protected by laws such as the Endangered Species Act, the National Historic Preservation Act or applicable state statues. These areas must be managed

to ensure they are not adversely impacted. Typically, limited or no development of public use is allowed on these lands. No agricultural or grazing uses are permitted on these lands unless necessary for a specific resource management benefit, such as prairie restoration and management. These areas are typically distinct parcels located within another, and perhaps larger, land classification, area. There are no acres at Toronto Lake under this classification.

## **5.5 MULTIPLE RESOURCE MANAGEMENT LANDS**

Multiple Resource Management Lands (MRML) are organized into four sub-classifications. These sub-classifications are: Low Density Recreation, Wildlife Management, Vegetative Management, and Future/Inactive Recreation Areas. The following is a description of each sub-classification's resource objectives, acreages, and description of use.

### 5.5.1 MRML - Low Density Recreation

Lands with this classification have minimal development or infrastructure that support passive public use such as hiking, nature photography, bank fishing, and hunting. 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, 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. There are no acres of MRML – Low Density Recreation at Toronto Lake.

### 5.5.2 MRML - Wildlife Management

There are 5,070 acres of MRML – Wildlife Management at Toronto Lake. 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 2.7 and 2.8 in Chapter 2). Future management may include such activities as placement of nesting structures, construction of water features or brush piles, prescribed fire, fencing, removal of invasive species, and planting of specific food-producing plants that may be necessary to support wildlife needs. KDWPT employs many of these same management practices on the Cross Timbers State Park area, but may also implement enhancement practices such as agricultural leases that may benefit waterfowl and planting sunflower fields to attract doves for hunters. 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

There are federally-listed threatened or endangered species that could and do utilize habitat within the Toronto Lake area. Therefore, any work conducted on this project will be in accordance to the Endangered Species Act and will be appropriately coordinated with the USFWS. The species of focus within this area of consideration are animals listed as a threatened or endangered species under the Endangered Species Act. These species (Table 2.6) will continue to receive attention to ensure they are managed in accordance to their habitat needs.

USACE also manages non-game wildlife, with some non-game programs, such as songbird nest box construction and installation of bat boxes, performed on an intermittent basis. The plan is to continue these initiatives in order to provide some form of management for non-game species. Conservation and protection of habitat that is typical of the three ecoregions in which Toronto Lake is located will be given high priority. Priority will also be given to the improvement or restoration of existing wetlands, or the construction of wetlands where topography, soil type, and hydrology are appropriate.

Use of available funds for wildlife management must be prioritized to meet legal mandates and regional priorities. While exceptions can occur, management actions will be guided by the following, in order of priority: 1) Protect federal and state-listed threatened and endangered species, 2) Meet the needs of species protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, 3) Meet the needs of rare species and Species of Greatest Conservation Need, and 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 USACE and approved through state regulatory processes. Natural surface pedestrian trails are appropriate for most Wildlife Management areas.

### 5.5.3 Vegetative Management

These are lands designated for stewardship of forest, prairie, and other native vegetative cover. Passive recreation activities, such as hiking on natural surface trails, wildlife photography, and hunting may be allowed in these areas. There are no acres of Vegetative Management Areas at Toronto Lake.

### 5.5.4 Future or Inactive Recreation Areas

These areas either have site characteristics compatible with potential future development or are currently closed recreation areas. These areas will be managed for multiple resources until opportunities to develop or reopen them arise. There are no acres of Future or Inactive Recreation at Toronto Lake.

## **5.6 WATER SURFACE**

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 classified using the following classifications:

- Restricted
- Designated No-Wake
- Fish and Wildlife Sanctuary
- Open Recreation

At conservation pool level of 901.5 NGVD there are 2,308 acres of surface water. Buoys are managed by USACE with close coordination with the KDWPT. These buoys help mark hazards, swim beaches, boats keep-out and no-wake areas. The following water surface classifications are designated at Toronto Lake.

### 5.6.1 Restricted

Restricted water surface includes those areas where recreational boating is prohibited or restricted for project operations and safety and security purposes. The total acreage of Restricted water surface is approximately 9 acres. The Restricted water surface at Toronto Lake includes the areas near the dam and one swim beach. Future management calls for one or more of the following management measures: placement of buoys, placement of signs near boat ramps, and describing the areas on maps available to the public.

### 5.6.2 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. There are six boat ramps at Toronto Lake where no wake restrictions are in place for public safety and protection of property. There is also a large area of the lake that was not cleared and requires a no-wake

designation. Designated No-Wake areas at Toronto Lake include approximately 864 acres. Future management of these areas rests with USACE and our partner agencies at Toronto Lake. Specific measures to be taken include: placement of buoys, placement of signs near boat ramps, and describing the areas on maps available to the public

### 5.6.3 Fish and Wildlife Sanctuary

This water surface classification applies to areas with annual or seasonal restrictions to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning. There are no acres of Fish and Wildlife Sanctuary water surface at Toronto Lake.

### 5.6.4 Open Recreation

Open Recreation includes all water surface areas available for year round or seasonal water-based recreational use. Approximately 1,435 acres of Toronto 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 Kansas. USACE encourages all boaters and swimmers to wear their lifejackets at all times and to learn to swim well.

## **5.7 RECREATIONAL SEAPLANE OPERATIONS**

Recreation seaplane landings and takeoffs may occur on water surface areas where this activity is not prohibited. Seaplane restrictions are published by the Federal Aviation Administration in their Notice to Airmen and are also set forth in Title 36 of the Code of Federal Regulations, Chapter III, Part 327.4. Restricted areas for seaplanes at USACE managed lakes were established through public meetings and an EA circa 1980. The seaplane policy for USACE' Tulsa District is found in the Notice to Seaplane Pilots (see Appendix F), which lays out the general restrictions as well as lake-specific restrictions for seaplane operation. Once on the water, seaplanes are considered to be water vessels and fall under guidelines for watercraft.

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## **CHAPTER 6 - SPECIAL TOPICS/ISSUES/CONSIDERATIONS**

### **6.1 SEDIMENTATION**

By design, reservoirs constructed for flood control purposes drain extensive land areas and are therefore characterized by large watersheds. As a result, reservoirs may be subject to input and accumulation of large quantities of sediments transported from their watersheds, particularly when drainage areas are characterized by erodible soils and land uses that expose soils to erosion and transport during significant rainfall events. Such land uses may include agricultural practices such as row crop farming and other practices resulting in soil disturbance. Large federal reservoirs are designed to accommodate high sediment inputs over time, though sediment accumulation eventually decreases the capacity of these lakes for water storage. Typically, sedimentation is event-driven with most sediment loading occurring during major inflow events. The rate of storage loss varies by lake and sediment accumulation over time is typically monitored by periodic sedimentation surveys.

The conservation pool (the upper limit of which is sometimes referred to as “normal” pool level) contains all the water stored for project purposes such as water quality, water supply, fish and wildlife, and recreation. Over time, accumulation of sediment in the conservation pool decreases the capacity for water storage and, in extreme cases, may severely affect authorized project purposes. Watershed protection strategies that decrease soil erosion at the source are generally viewed as the most effective means of reducing reservoir sedimentation. Owing to prohibitively high costs and environmental effects, large-scale dredging of federal reservoirs is currently rarely employed as a means of restoring lost capacity. Details of sedimentation for Toronto Lake can be found in Chapter 2.

### **6.2 WATERSHED RESTORATION AND PROTECTION STRATEGY**

The Watershed Restoration and Protection Strategy (WRAPS) is a framework that allows for increased stakeholder involvement in issues that impact their watershed. Administered by the Kansas Department of Health and Environment under the authority of the 1998 Clean Water Action Plan, this program helps communities identify protection needs and opportunities, create goals and action items to accomplish those goals, and funding to the stakeholders to implement the action items.

Each WRAPS group has a nine-element plan that guides their activities. The Toronto Watershed Nine Element plan is written to address impairments relating to dissolved oxygen, eutrophication, and siltation. Best management practices will be put in place specifically to address impacts from croplands, rangelands, and other livestock activities.

Specifically, impairments addressed in the Toronto Lake WRAPS are the impacts of sedimentation, nitrogen, and phosphorus by targeting rangeland, livestock, cropland and streambank areas. Best management practices for reducing phosphorus and sediment within croplands include riparian buffers, no-till cultivation, conservation rotation, and grassed waterways within the watershed. Best management practices for reducing phosphorus and sediment rangeland include repairing ephemeral gullies and brine scars, and for livestock include vegetative filter strips. The steps within the WRAPS program involve building awareness and education, engaging local leadership, monitoring and evaluation of watershed conditions, and assessment, planning, and implementation of the WRAPS process at the local level.

### **6.3 POOL ELEVATION**

Toronto Lake possesses two active zones or “pools” defined by elevation and established at the time the reservoir was designed by USACE and authorized by Congress. The flood control pool at Toronto Lake is normally kept empty but is periodically used to catch and control upstream flows, which without the dam, could cause downstream flooding. Flood control storage at Toronto Lake exists between elevations 901.5 and 931.0 ft. NGVD. Storage in the flood control pool is only used to minimize downstream flooding during periods of rainfall and the objective of operating the lake is to evacuate this pool as quickly as possible while minimizing downstream flood impacts. The bottom elevation of the flood control pool (901.5 ft.) defines the transition point between flood control and conservation pools at Toronto Lake.

The conservation pool stores water to support authorized project purposes. The conservation pool for Toronto Lake exists between elevations 896.0 and 901.5 ft. NGVD. Accordingly, the top of the Toronto Lake conservation pool (sometimes referred to as “normal” pool elevation) is 901.5 ft. NGVD as authorized by Congress. Based on the most recent sediment survey (2010), Toronto Lake contains approximately 16,507 acre-feet (a unit of volume equal to one acre of surface area and a depth of 1 foot) of storage at the top of the conservation pool. While the lake level at any given time may vary depending upon withdrawals, reservoir releases, drought, or rainfall, which replenishes water in the conservation pool or fills portions of the flood control pool, the objective of operating the lake is to maintain a lake level as close to the top of the conservation pool as possible.

Changing the elevation of the top of the conservation pool of a federal reservoir from that authorized by Congress is not a simple, inexpensive, or trivial matter. This action requires redistribution or “reallocation” of storage between authorized pools, typically increasing the elevation of the conservation pool by reallocating from flood storage for some clearly identified and defined need – often an increase in storage for water supply. This requires detailed study of the impacts to authorized project purposes as well as associated environmental impacts. Depending upon the nature of the request, detailed studies and any mitigation

required to change conservation pool elevations may require considerable cost-sharing by non-federal entities requesting the changes. Finally, depending on the extent and nature of reallocation of storage, final approval of such changes may require Congressional authorization.

There are currently no identified needs or requests for reallocation of storage or changes to authorized pool elevations at Toronto Lake. Accordingly, there are no current plans to study or implement changes to authorized pool levels or operations from those currently in place.

#### **6.4 MOTORIZED VEHICLES**

The operation of motorized vehicles on roadways within USACE managed property at Toronto Lake is governed by applicable Federal, state, and local laws and regulated by authorized enforcement officials (36 CFR 327.2 and 327.26). Off-road operation of any motorized vehicle is strictly prohibited at Toronto Lake except by those performing authorized volunteer or contract work on behalf of the government or those under special permit. When used in official capacities, drivers of off-road vehicles will wear clothing clearly identifying them as government employees, contractors, or volunteers. When not in use, these vehicles will be parked or stored at a designated location.

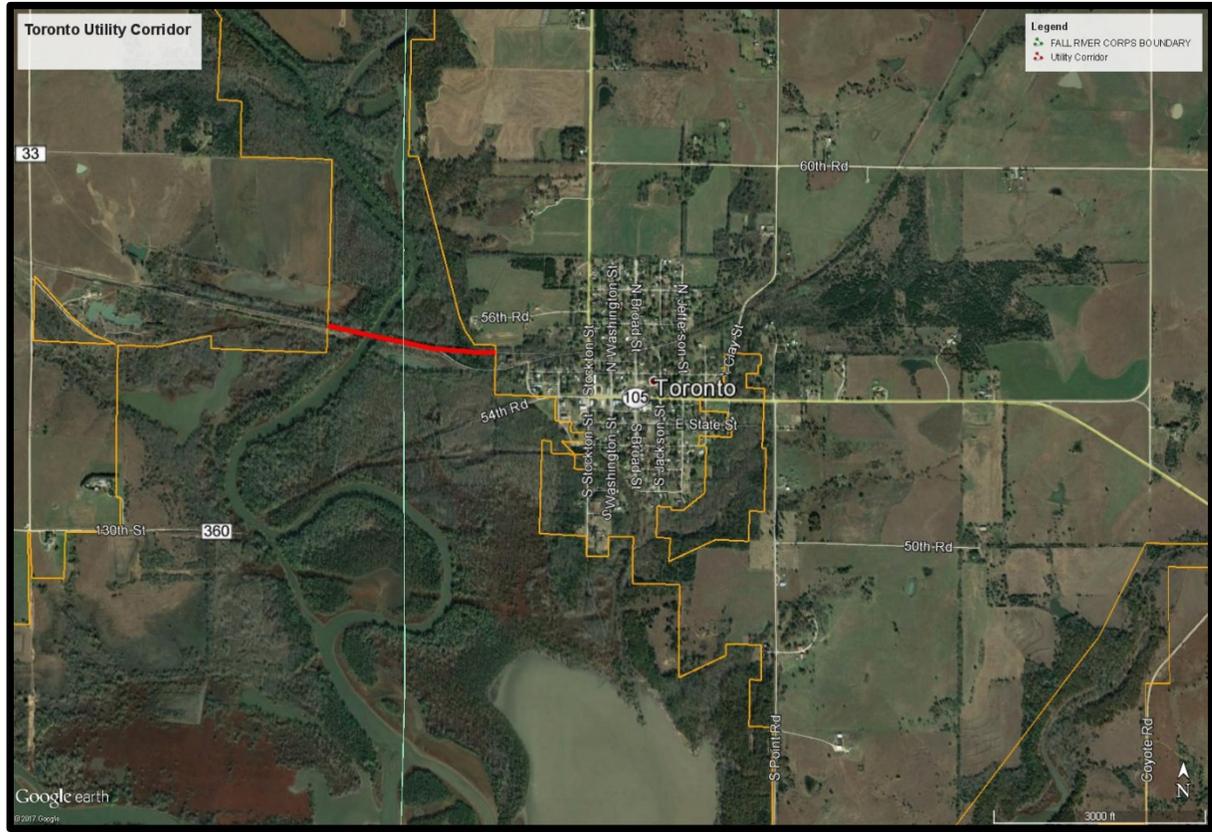
#### **6.5 KANSAS STATE HONOR CAMP**

The State of Kansas constructed a 100-man honor camp just west of the KDWPT Cross Timbers State Park office as part of the KDWPT State Park lease at Toronto Lake. The camp contains a dormitory, a kitchen and mess hall, classrooms, and recreational facilities. Occupants based at the camp performed maintenance and minor construction work in the State Park areas at Toronto and Fall River Lakes as part of the State's rehabilitation program. On 26 February 2009, the State of Kansas closed the Kansas State Honor Camp at Toronto Lake due to budget cuts. Since that date, the facility has been unoccupied. The State Park has performed the minimum amount of maintenance to take care of the facility. Currently, the State Park and USACE are seeking parties interested in subleasing the facility as a recreational outgrant.

#### **6.6 UTILITY CORRIDOR**

Given the close proximity of Toronto Lake and the town of Toronto, Kansas, future requests may be received by the lake office for easements or other real estate instruments across public lands at Toronto Lake for electric transmission lines, water lines, fiber optic cable, or other similar utilities entering Toronto, Kansas from the west. In the event that these requests are compliant with all USACE policies, regulations, and federal laws, a preferred utility corridor utilizing the abandoned Missouri and Pacific Railroad bed which crosses federal lands and enters Toronto, Kansas immediately from the west is the preferred route for these utilities. This

corridor represents a pre-disturbed area of high elevation, the use of which would be anticipated to result in the least impacts to public lands. This corridor is shown in Figure 6-1.



**Figure 6.1 USACE Preferred Utility Corridor Alignment**

As with any other non-recreational request for use of Corps of Engineers public lands, outgrant requests for utilities across lands at Toronto Lake using the corridor described above or any other route will be initially evaluated against criteria established in the USACE Non-Recreation Outgrant Policy (Engineering Regulation (ER) 1130-2-550, Chapter 17, September 30, 2013). Accordingly, the primary rationale for authorizing any future such request will be one of two reasons: (1) there is no viable alternative to the activity or structure being located on public land or waters; or (2) there is a direct benefit to the government. Factors such as cost impacts to the request or the perceived availability of underutilized or unused Corps lands or waters will not have bearing on the determination of viability. If a request meets one of these two criteria, it will further be evaluated in light of compatibility with authorized project purposes, compliance with statutory and regulatory requirements, including environmental and cultural resource laws, cumulative impacts, and overall long-term public interest factors. Further details can be found in Chapter 17 of ER 1130-2-550. Any outgrant request for use the corridor described above or other routes across public lands at Toronto Lake and not conclusively

meeting criteria described above will not be processed for approval by the Tulsa District Corps of Engineers.

Finally, any request for utilities across government-owned lands at Toronto Lake, to include any use of the corridor described above, will be further subject to evaluation, review, and coordination under a number of federal environmental laws and regulations prior to approval. These laws include, but are not limited to, the National Environmental Policy Act (NEPA), National Historic Preservation Act, Endangered Species Act, Clean Water Act, and numerous other statutes. Necessary review and coordination for any environmental laws have not been conducted for use of the corridor described above for specific requests, but would be required at the time such requests are received and processed by the Corps of Engineers.

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## **CHAPTER 7 - PUBLIC AND AGENCY COORDINATION**

### **7.1 PUBLIC AND AGENCY COORDINATION**

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 Toronto Lake. An integral part of this effort is gathering public comment and engaging stakeholders in the process of planning. USACE policy guidance in ER and EP 1130-2-550 requires thorough public involvement and agency coordination throughout the master plan revision process including any associated environmental assessment process. Public involvement is especially important at Toronto Lake to ensure that future management actions are both environmentally sustainable and responsive to public outdoor recreation needs in the region. The following milestones provide a brief look at the overall process of revising the Toronto Lake MP and SMP.

The USACE began planning to revise the Toronto Lake MP and SMP in fall of 2016. The objectives for a master plan revision were to (1) update land classifications to reflect changes in USACE land management policies since 1979 and (2) update 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 INPUT AND PUBLIC MEETINGS**

The first action was a scheduled public scoping meeting providing an avenue for public and agency stakeholders to ask questions and provide comments. Two public meetings were held that included information from both Fall River and Toronto Lakes. The public scoping meetings were held on 15 November 2016 in Eureka, Kansas, and in Fredonia, Kansas on 17 November 2016. The Tulsa District placed advertisements on the USACE webpage, social media and print publications two weeks prior to the public scoping meeting.

USACE staff hosted the workshop, which was conducted in an open format. Participants were asked to sign in at a table where staff provided the participants with information regarding the structure of the scoping meeting and comment forms. After signing in, participants were directed to be seated in the auditorium and a PowerPoint presentation was presented by the Project Manager for the Master Plan Revision PDT to convey information about the following topics:

- Public Involvement Process
- Project Overview
- Overview of the National Environmental Policy Act process
- Master Plan and current land classifications
- How to Submit Comments

At the conclusion of the presentation USACE representatives were available to answer questions and receive written comments at information tables. Interested persons had the opportunity to comment about the project using a variety of methods, including the following:

- Filling out a comment form at the open house
- Taking a comment form home to be returned at a later date
- Submitting a comment using electronic mail
- Submitting a comment and mailing it in on letterhead or choice of paper

The 15 November 2016 scoping meeting was attended by nine people and the 17 November 2016 meeting was attended by 26 people, not including USACE personnel. Four of the nine attendees at the 15 November meeting were from agencies, while the majority of attendees at the 17 November meeting consisted of (22 of 26) general public or local residents.

### **7.3 PUBLIC AND AGENCY REVIEW OF DRAFT MP, EA, SMP AND FONSI**

The final draft Master Plan, Shoreline Management Plan and Environmental Assessment was made available for public and agency review online beginning 08 August 2017. The process of announcing the availability of the draft final Master Plan and the requirements for submitting comments included sending an announcement via letters and e-mails to agencies and public officials, and e-mailing announcements to those who previously attended meetings or submitted comments leaving their e-mail address. A press release was submitted simultaneously to local and regional news agencies for publication.

Public and agency comments for the draft final master plan were accepted through 08 September 2017. During this timeframe, two written comments were received; one from the general public stating no comment, and one from SHPO stating no comment. A copy of the letter received from SHPO is included in the EA. The final version of the Master Plan, EA and FONSI is signed by the District Engineer for implementation. The final version of the SMP is signed by the Division Commander. The final versions will be posted on the District website.

## **CHAPTER 8 - SUMMARY OF RECOMMENDATIONS**

### **8.1 SUMMARY OVERVIEW**

The preparation of this Master Plan for Toronto Lake followed the recent 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 new guidance include the preparation of contemporary Resource Objectives, Classification of project lands using the newly 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, and consideration of regional recreation and natural resource management priorities identified by other federal, state, and municipal authorities. 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 Toronto Lake. Factors considered in the Plan development were identified through public involvement and review of regional and statewide planning documents including the SCORP.

### **8.2 LAND RECLASSIFICATION PROPOSAL**

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 how lands are being managed now and in the foreseeable future. The new land classification standards will also comply with current USACE guidance. Public comment was solicited to assist in making these land reclassification decisions. Chapter 7 of this Plan describes the public involvement process and Appendix E provides a summary of public comments received. After analyzing public comment, examining recreational trends, and taking into account regional natural resource management priorities, USACE team members reclassified the Federal lands associated with Toronto Lake as described in Table 8.1.

**Table 8.1 Change in Land Classification**

Prior Land Classifications (1979)	Acres	New Land Classifications	Acres	Net Difference
Project Operations	44	Project Operations (PO)	46	2
Recreation – Intensive Use	1,086	High Density Recreation (HDR)	1,216	130
		Environmentally Sensitive Areas (ESA)	-	-
Recreation – Low Density	335	Multiple Resource Management – Low Density Recreation (LDR)	-	-335
Wildlife Management	4515	Multiple Resource Management – Wildlife Management (WMA)	5,070	555
		Multiple Resource Management – Vegetation Management (VMA)	-	-
		Future/Inactive Recreation Areas	-	-

\* **Note:** These acreage figures were measured using GIS technology and may vary slightly from official land acquisition records.

Table 8.2 lists the descriptions and justifications for the reclassification of USACE lands at Toronto Lake. Some variation in total acreages occurred due to better measuring technology and changes in landforms over the past 40 years due to sedimentation and erosion.

**Table 8.2 Changes and Justifications for New Land Classifications<sup>(1)</sup>**

Land Classification	Description of Changes <sup>(2)</sup>	Justification
Project Operations	The net increase in PO from 44 acres to 46 acres was the result of reclassifying 2 LDR acres used for material storage.	All lands classified as PO are managed and used primarily in support of critical operational requirements related to the primary missions of flood risk management, and water conservation. The reclassification of these acres used for material storage will have no effect on current or projected public use.
High Density Recreation	The increase in HDR from 1,086 to 1,216 was due to reclassifying 178 acres from	The reclassified acres are part of the KDWPT license and is appropriately classified as HDR to align with

Land Classification	Description of Changes <sup>(2)</sup>	Justification
	LDR on the west side of the dam and 48 acres from HDR to MRML-WM on the area north of the lake.	current and future use. The reclassification to from LDR to actively managed HDR areas will not affect current or projected public use.
Environmentally Sensitive Areas	There are no lands classified as ESA at Toronto Lake.	
MRML – Low Density Recreation	<p>The elimination of LDR classified lands were the result of the following:</p> <ul style="list-style-type: none"> <li>• 155 acres to MRML-WM on the north side of the lake.</li> <li>• 2 acres to PO on the north end of the dam.</li> <li>• 178 acres to HDR on the west side of the dam.</li> </ul>	The lands were reclassified to reflect more accurately how the lands are being use. These changes support management actions and recreational trends identified in the SCORP. Public use of all areas that were reclassified will not be affected now or in the foreseeable future. Public access in the form of natural surface hiking and biking trails is compatible with these classifications.
MRML – Wildlife Management	<p>The increase in MRML-WM from 4,515 acres to 5,070 acres resulted from the following reclassifications:</p> <ul style="list-style-type: none"> <li>• 48 acres from HDR in the area north of the lake.</li> <li>• 155 acres from MRL-LDR in the area north of the lake.</li> <li>• 352 acres additional acres due to sedimentation</li> </ul>	The lands reclassified from LDR, and HDR, to MRML-WM to better align current and future uses to the appropriate land classification in areas that have wildlife support functions. These reclassifications will have no effect on current or projected public use.
MRML – Vegetation Management	There are no lands classified as MRML-VM at Toronto Lake.	
Future/Inactive Recreation Areas	There are no lands classified as Future/Inactive recreation at Toronto Lake.	

(1)The land classification changes described in this table are the result of changes to more than 100 individual parcels of land ranging from a few acres to several hundred acres. Acreages were measured using GIS technology. The acreage numbers provided are approximate.

(2) Acreages are based on GIS measurements and may vary from Net Difference totals detailed in Table 8.1

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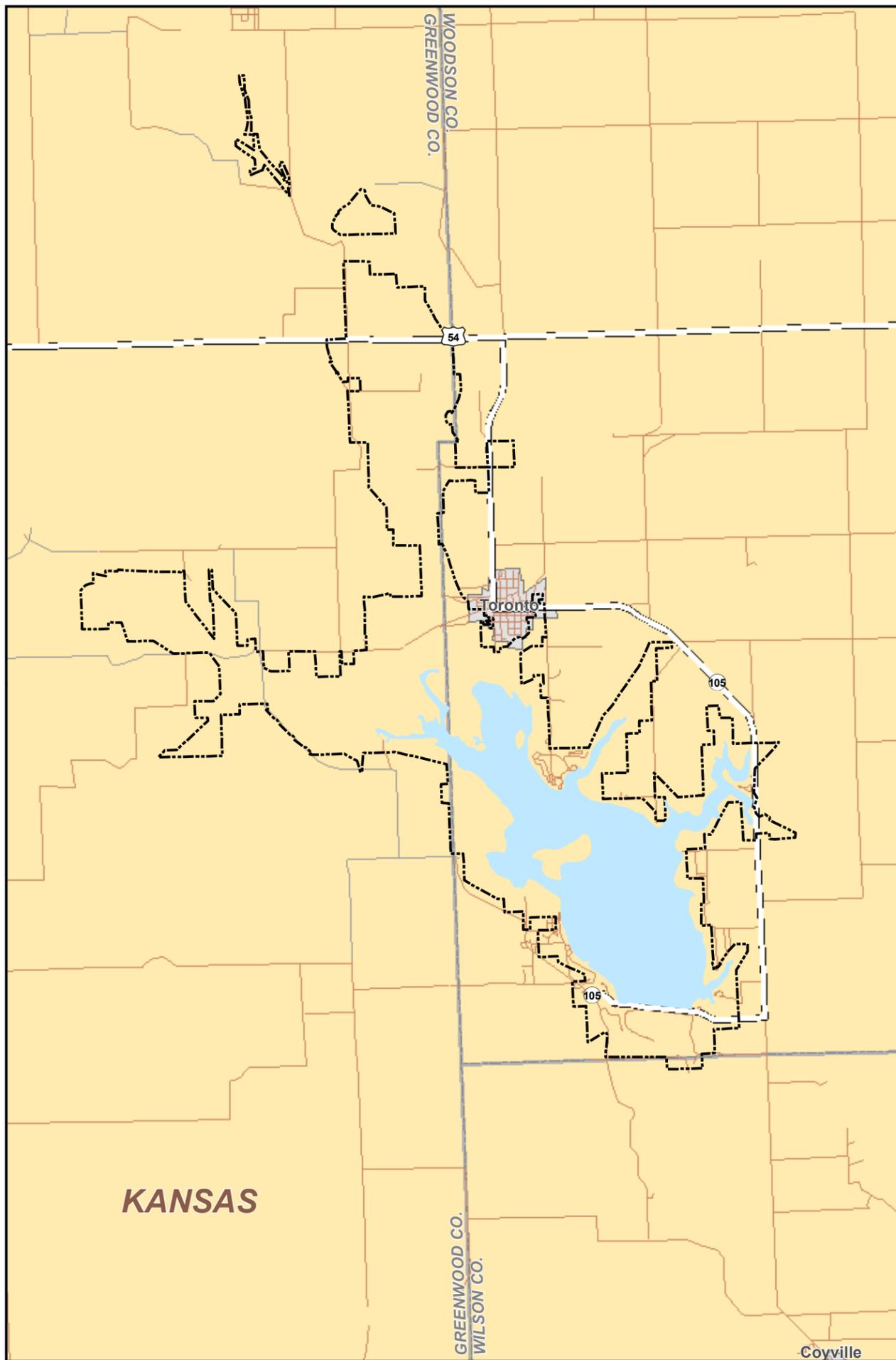
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# **APPENDIX A - LAND CLASSIFICATION, MANAGING AGENCIES, AND RECREATION MAPS**

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# INDEX TO MASTER PLAN MAPS

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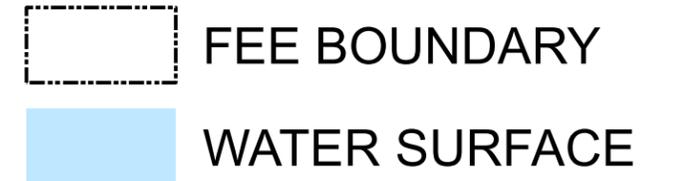
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TL17MP-OW-01	WATER SURFACE CLASSIFICATIONS

## LAND CLASSIFICATION

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TL17MP-OC-02	LAND AND WATER CLASSIFICATIONS (02)
TL17MP-OC-03	LAND AND WATER CLASSIFICATIONS (03)
TL17MP-OC-04	LAND AND WATER CLASSIFICATIONS (04)

## RECREATIONAL AREAS

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TL17MP-OR-02	WOODSON COVE
TL17MP-OR-03	MANN'S COVE
TL17MP-OR-04	TORONTO POINT
TL17MP-OR-05	HOLIDAY HILL

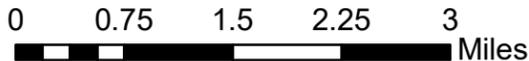




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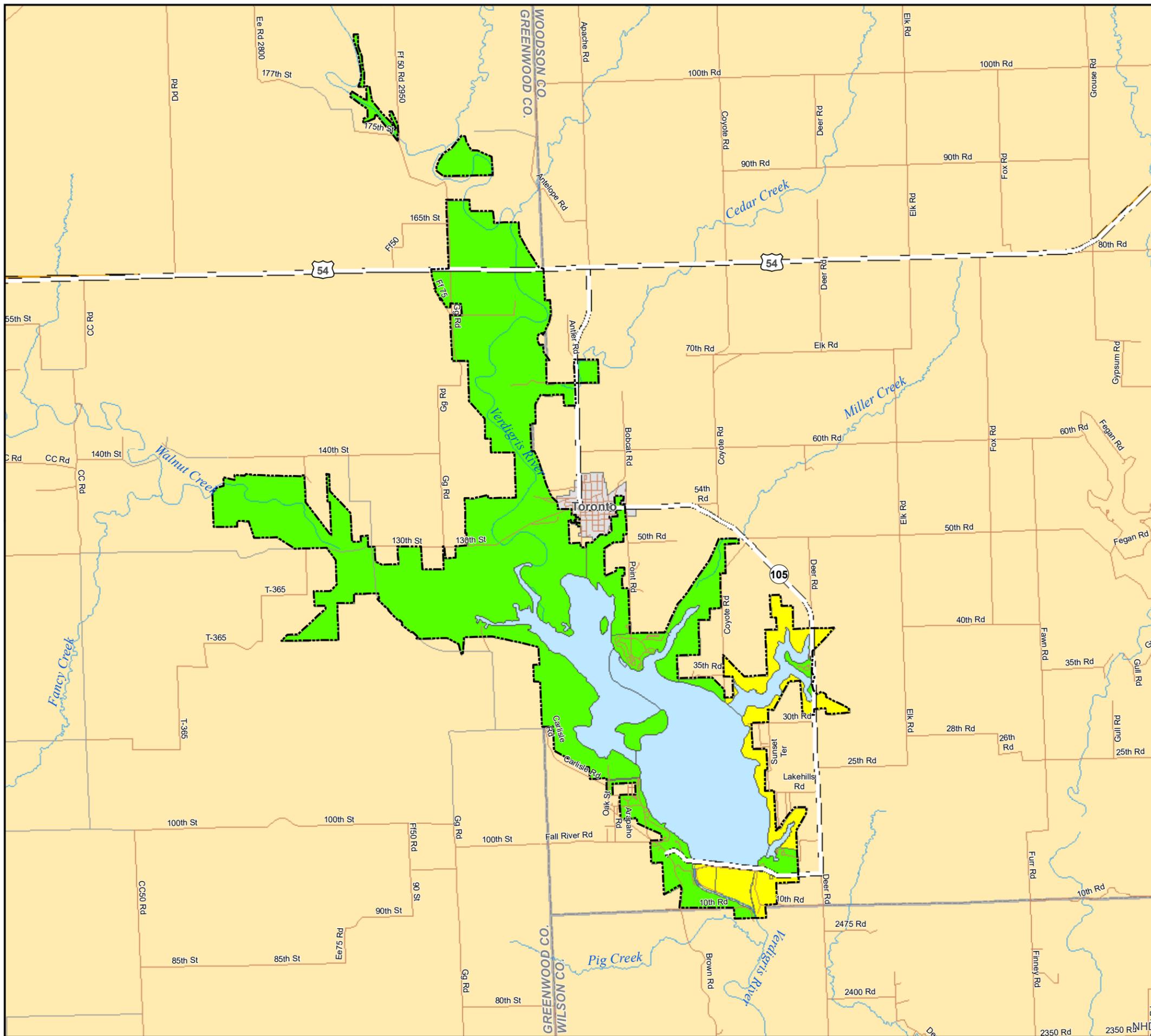
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TORONTO DAM - TORONTO LAKE  
TORONTO LAKE MASTER PLAN  
PROJECT LOCATION AND MAP INDEX

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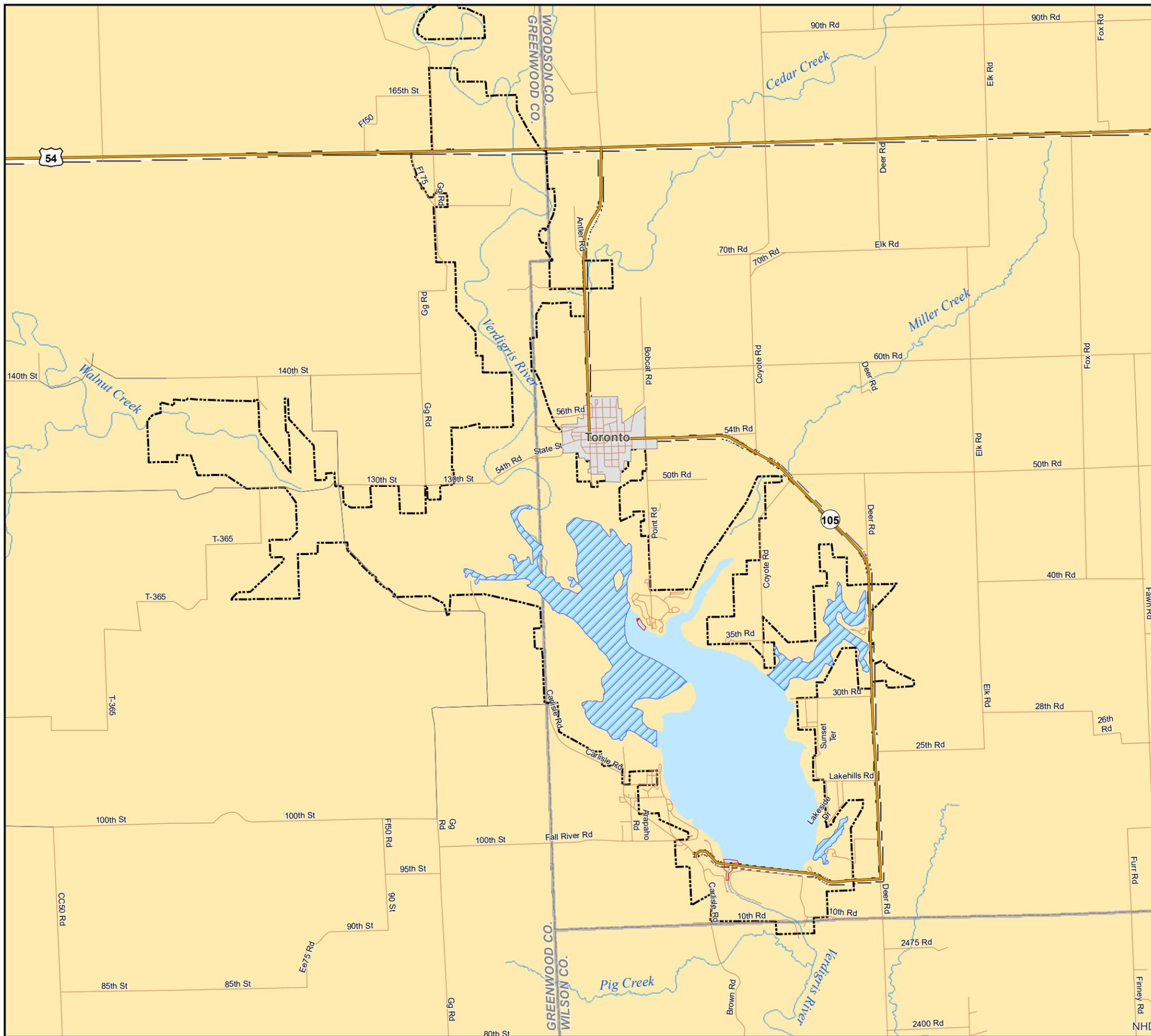
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AGENCY LAND MANAGEMENT**



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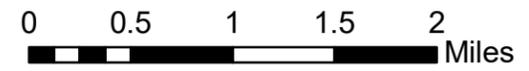
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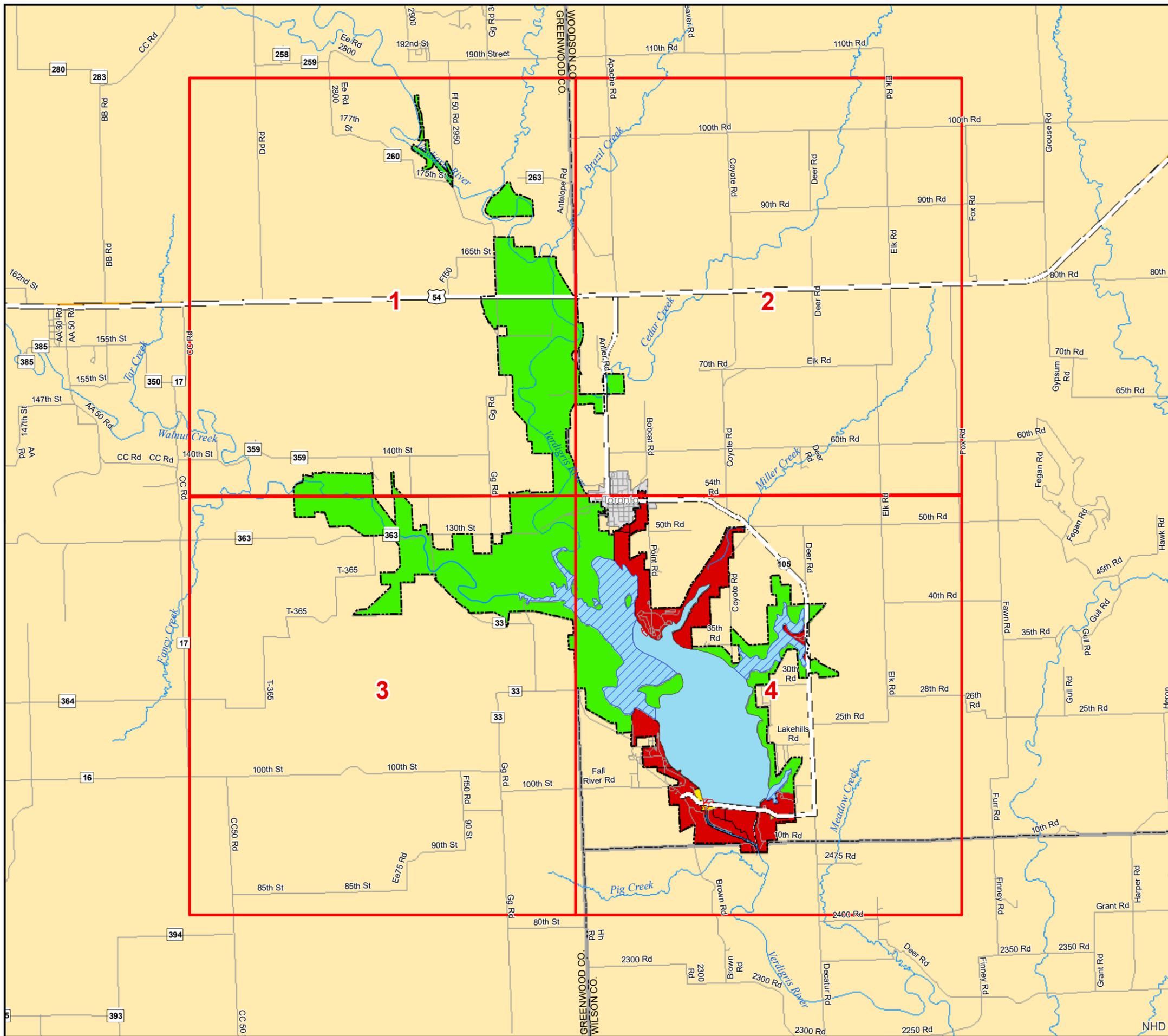
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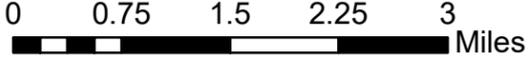
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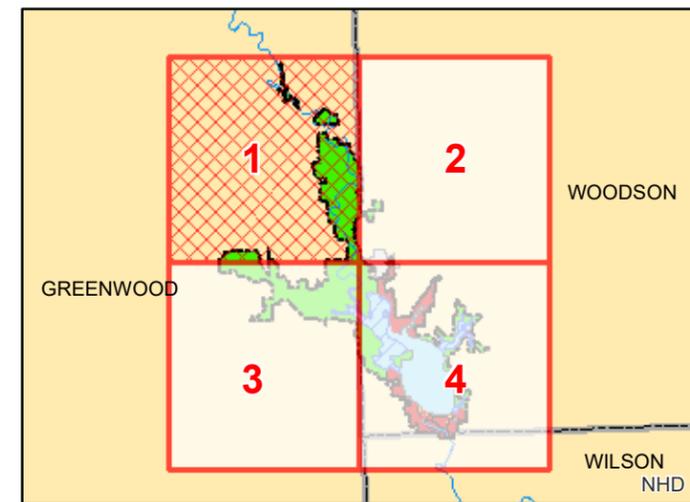
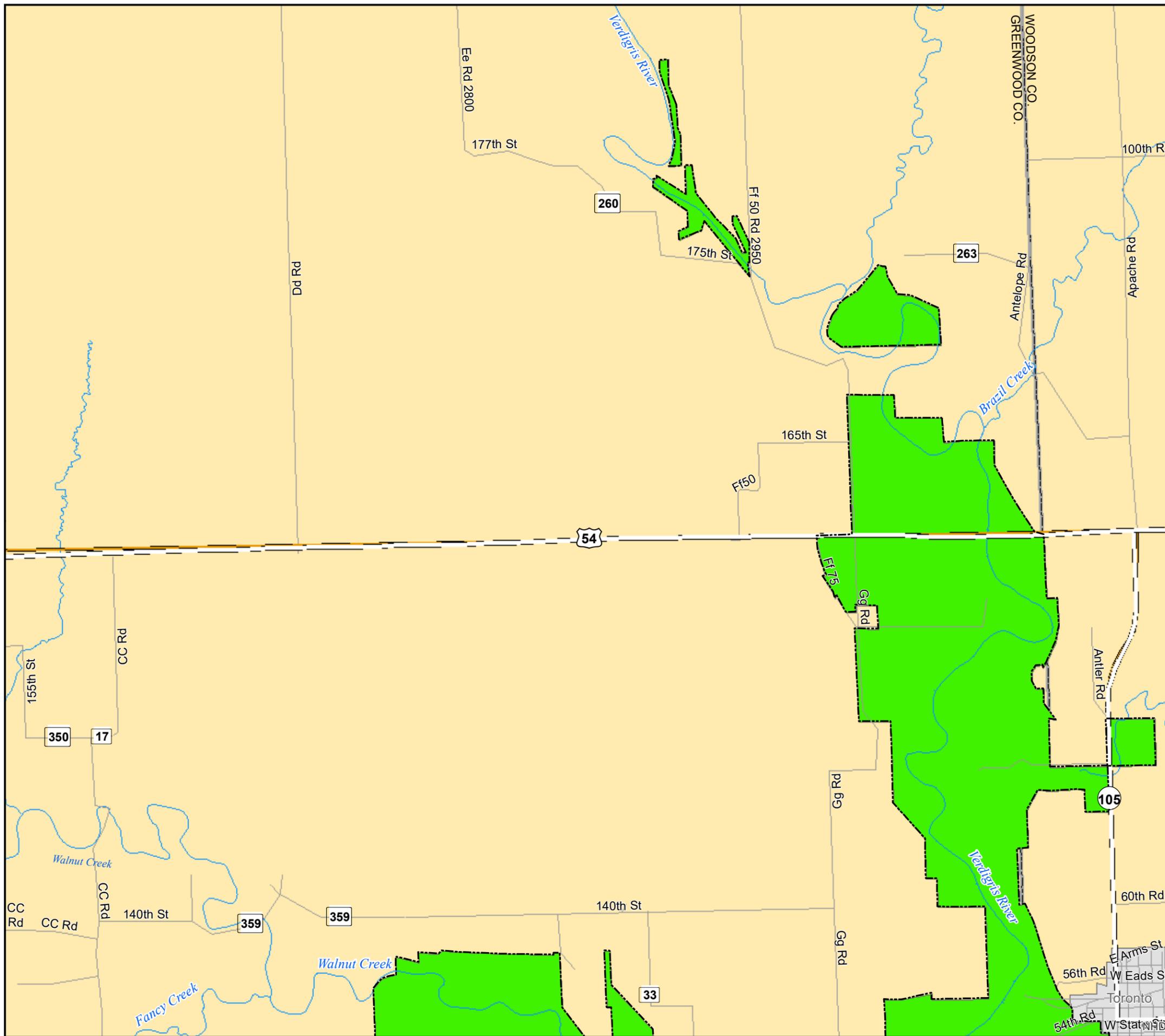
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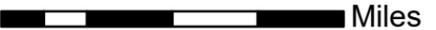
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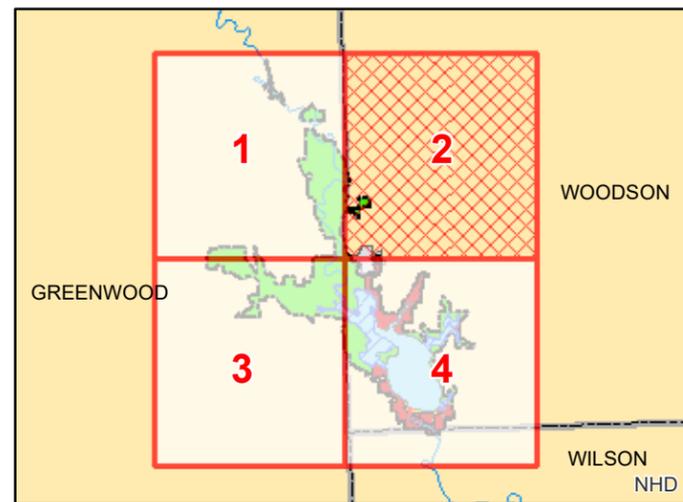
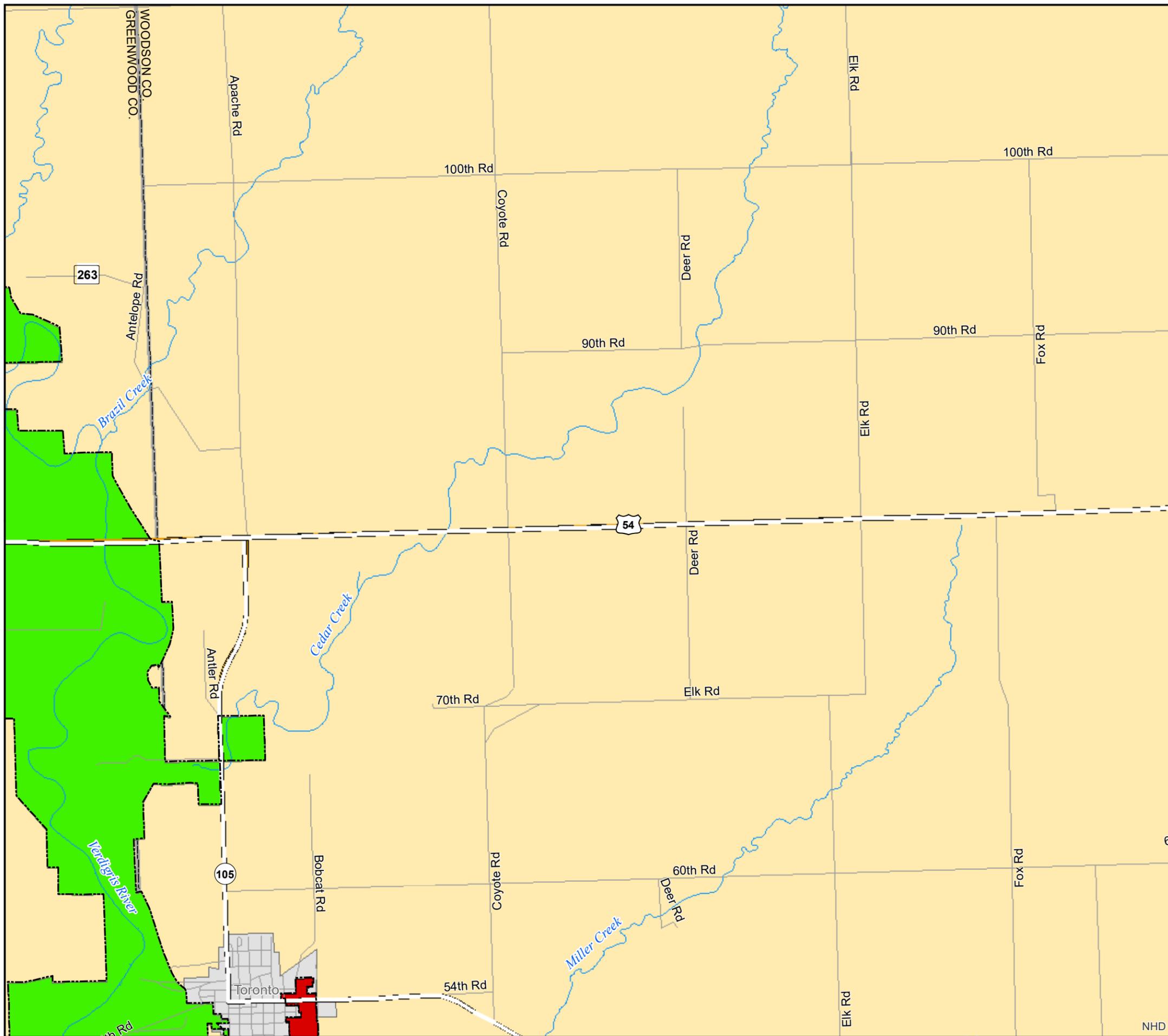
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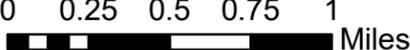
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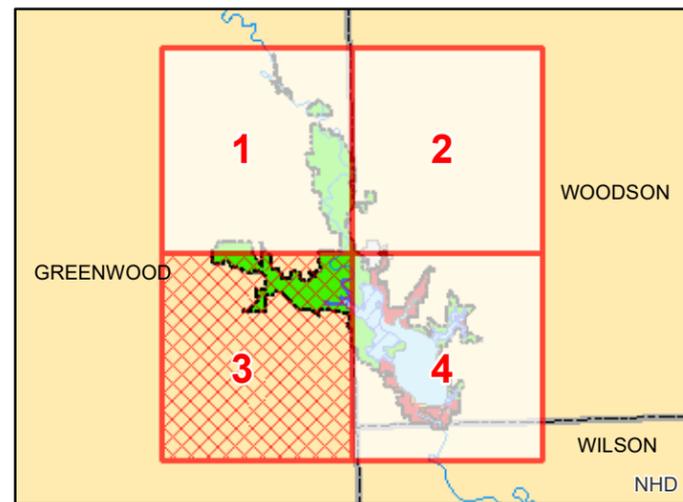
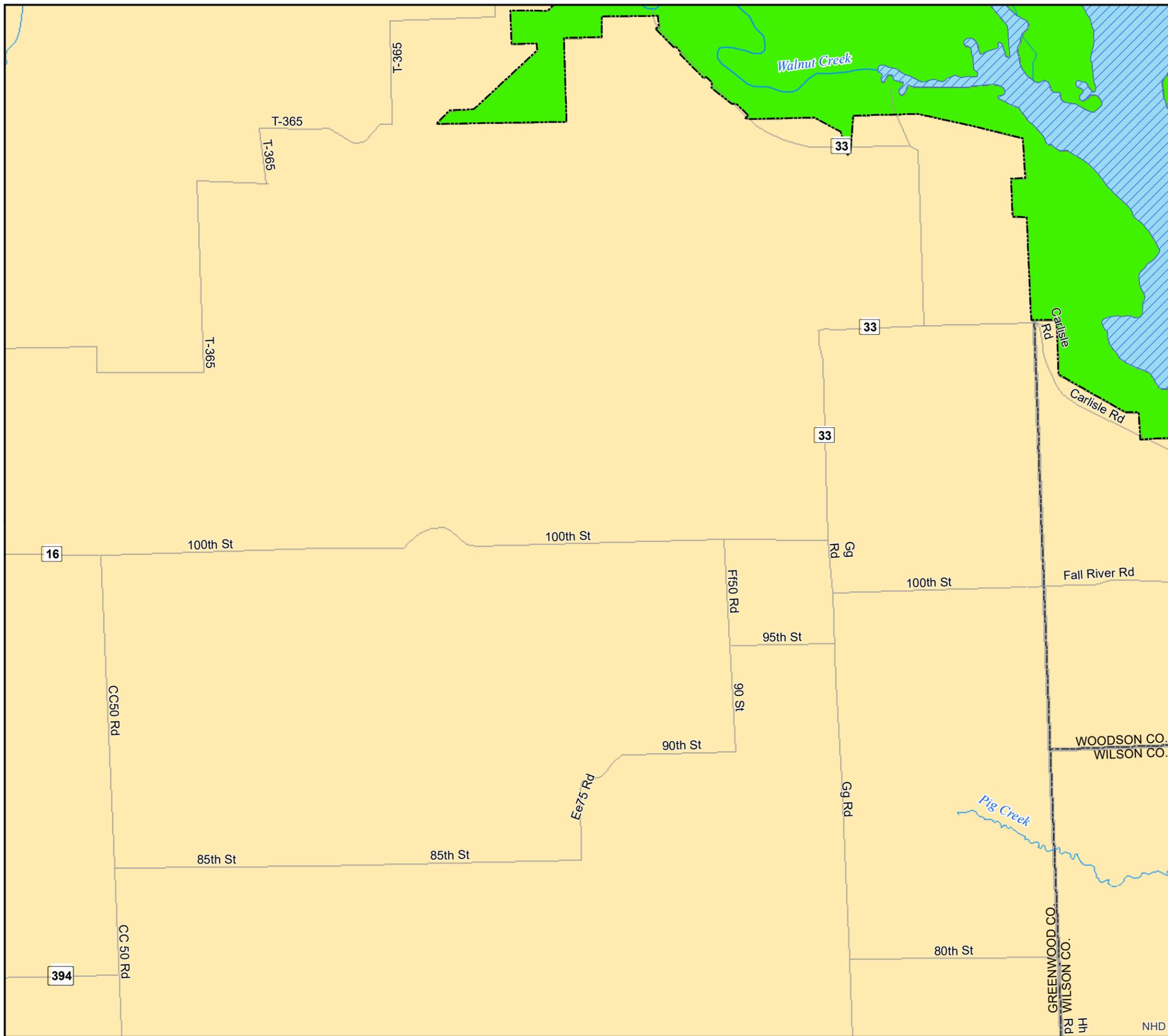
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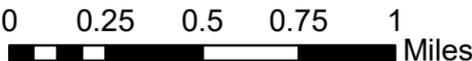
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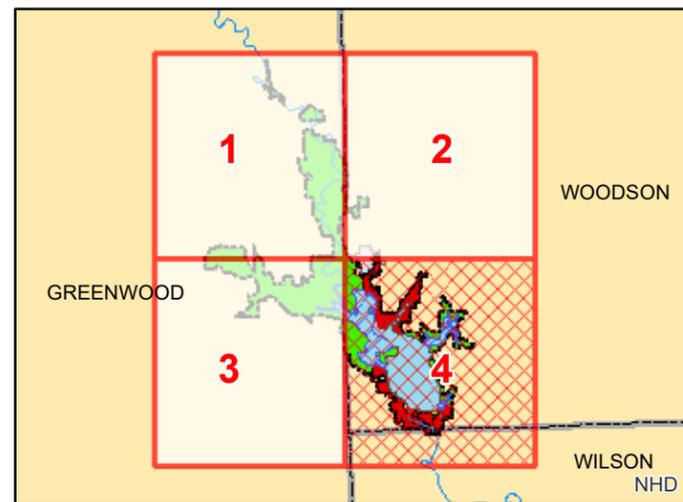
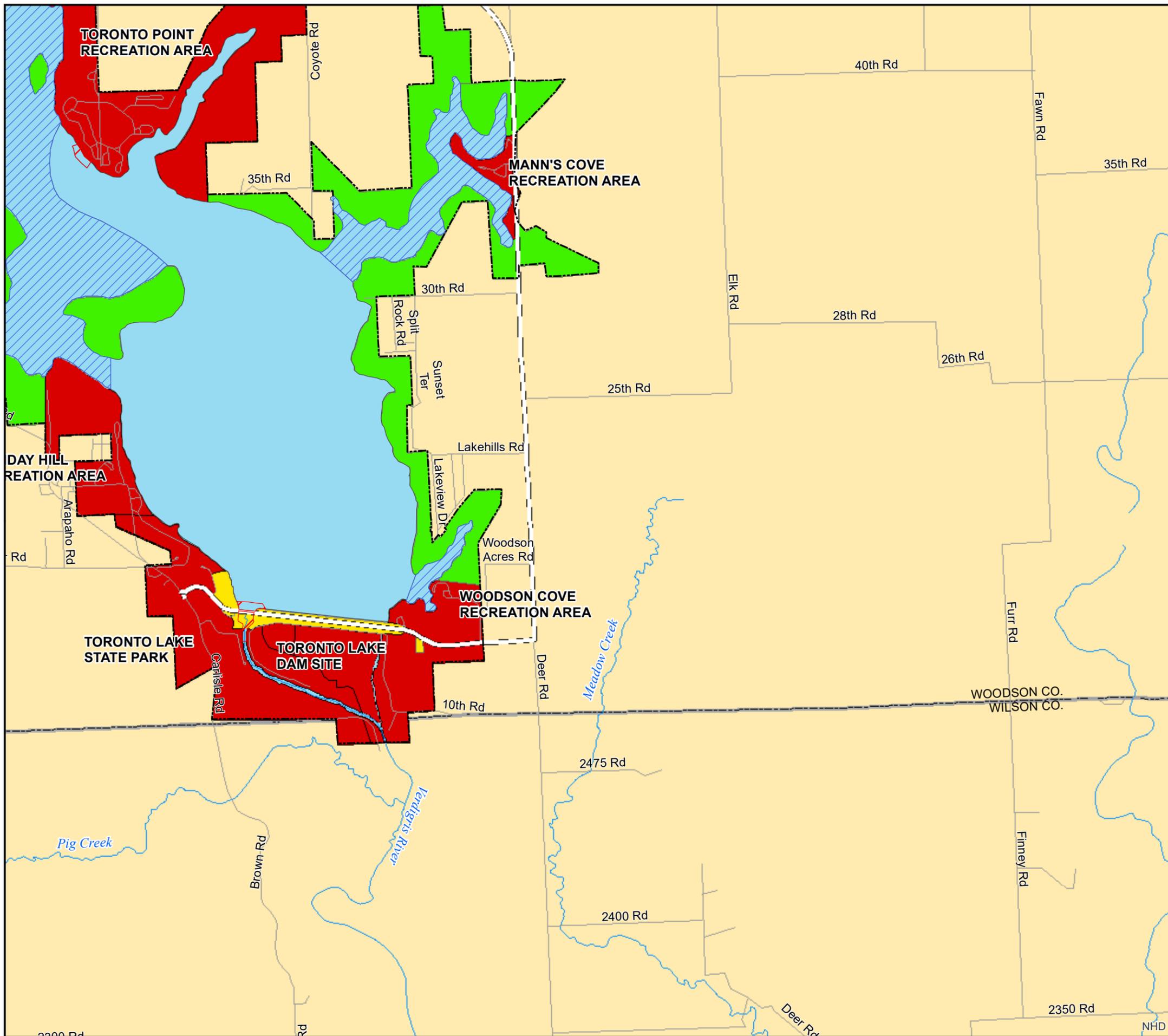
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**TORONTO DAM - TORONTO LAKE**

**TORONTO LAKE MASTER PLAN**

**LAND AND WATER CLASSIFICATIONS**

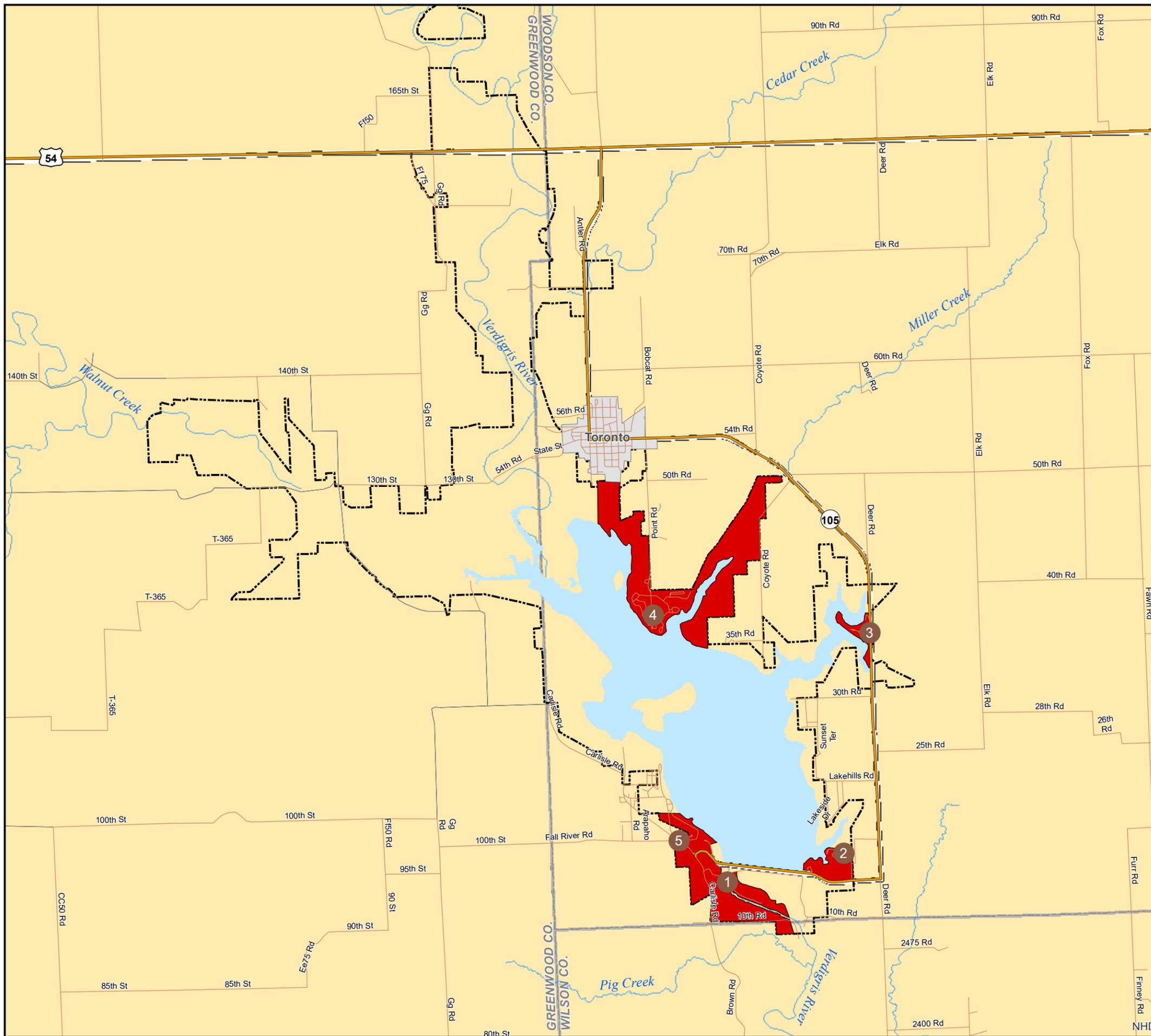
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- GOVERNMENT MANAGED PUBLIC USE AREAS**
- 1 TORONTO DAM SITE
  - 2 WOODSON COVE RECREATION AREA
  - 3 MANN'S COVE RECREATION AREA
  - 4 TORONTO POINT RECREATION AREA
  - 5 HOLIDAY HILL RECREATION AREA



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

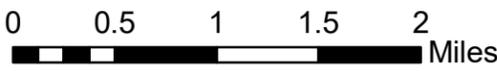
TORONTO DAM VERDIGRIS RIVER, KANSAS

**TORONTO DAM - TORONTO LAKE**

**TORONTO LAKE MASTER PLAN**

**GOVERNMENT MANAGED  
PUBLIC RECREATIONAL AREAS**





0 0.5 1 1.5 2 Miles

DATE: SEPTEMBER 2017	MAP NO. TL17MP-OR-0A
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ITEM	EXISTING
BOAT RAMP	
COURTESY DOCK	
GROUP CAMPSITES	
CAMPSITES	
ELECTRICAL HOOK-UP	
GROUP PICNIC SHELTER	
PICNIC SITES	
VAULT TOILET	
RESTROOMS	2
SHOWERS	
DUMP STATION	

-  FEE BOUNDARY
-  WATER SURFACE: RESTRICTED
-  WATER SURFACE: DESIGNATED NO WAKE AREAS
-  SPILLWAY STRUCTURE
-  RESTROOM



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

TORONTO DAM VERDIGRIS RIVER, KANSAS

TORONTO DAM - TORONTO LAKE

TORONTO LAKE MASTER PLAN

RECREATIONAL AREAS  
(DAM SITE)



0 225 450 675 900 Feet

DATE:

SEPTEMBER 2017

MAP NO.

TL17MP-OR-01



ITEM	EXISTING
BOAT RAMP	
COURTESY DOCK	
GROUP CAMPSITES	
CAMPSITES	
ELECTRICAL HOOK-UP	
GROUP PICNIC SHELTER	
PICNIC SITES	1
VAULT TOILET	1
RESTROOMS	
SHOWERS	
DUMP STATION	

-  FEE BOUNDARY
-  WATER SURFACE: DESIGNATED NO WAKE AREAS
-  PICNIC SITES
-  VAULT TOILET



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

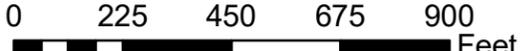
TORONTO DAM
VERDIGRIS RIVER, KANSAS

**TORONTO DAM - TORONTO LAKE**

**TORONTO LAKE MASTER PLAN**

**RECREATIONAL AREAS  
(WOODSON COVE)**

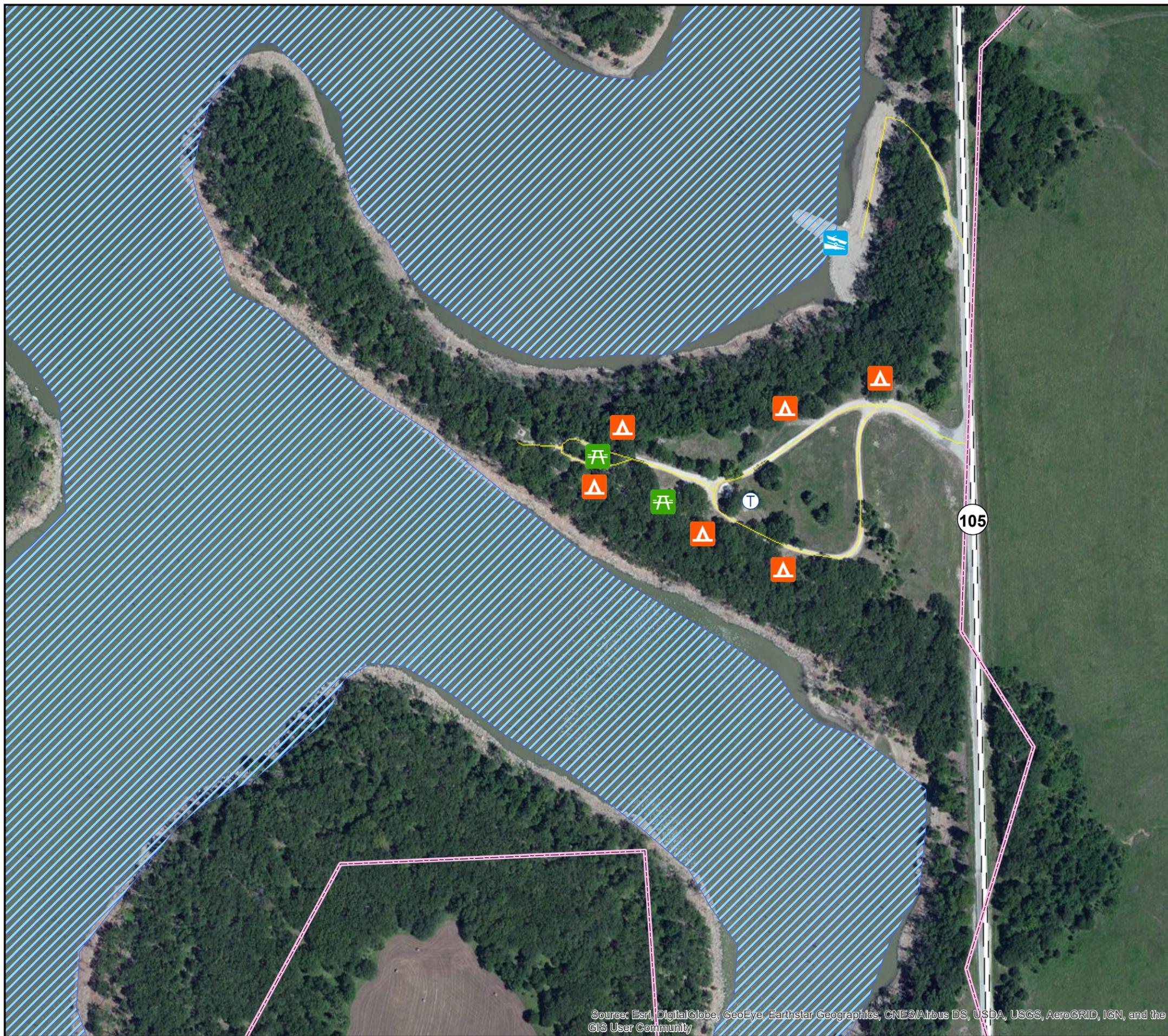




0 225 450 675 900 Feet

DATE: SEPTEMBER 2017	MAP NO. TL17MP-OR-02
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



ITEM	EXISTING
BOAT RAMP	1
COURTESY DOCK	
GROUP CAMPSITES	
CAMPSITES	15
ELECTRICAL HOOK-UP	
GROUP PICNIC SHELTER	
PICNIC SITES	2
VAULT TOILET	1
RESTROOMS	
SHOWERS	
DUMP STATION	

-  FEE BOUNDARY
-  WATER SURFACE: DESIGNATED NO WAKE AREAS
-  CAMPING, PRIMITIVE
-  BOAT RAMPS
-  PICNIC SITES
-  VAULT TOILET



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

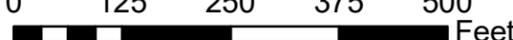
TORONTO DAM
VERDIGRIS RIVER, KANSAS

**TORONTO DAM - TORONTO LAKE**

**TORONTO LAKE MASTER PLAN**

**RECREATIONAL AREAS  
(MANN'S COVE)**





0 125 250 375 500 Feet

DATE: SEPTEMBER 2017	MAP NO. TL17MP-OR-03
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



ITEM	EXISTING
BOAT RAMP	2
COURTESY DOCK	2
GROUP CAMPSITES	1
CAMPSITES	144
ELECTRICAL HOOK-UP	64
GROUP PICNIC SHELTER	1
PICNIC SITES	
VAULT TOILET	2
RESTROOMS	2
SHOWERS	3
DUMP STATION	1

-  FEE BOUNDARY
-  WATER SURFACE: RESTRICTED
-  WATER SURFACE: DESIGNATED NO WAKE AREAS
-  COURTESY DOCK
-  MODERN CABIN
-  PRIMITIVE CAMP SITE
-  CAMPING, GROUP
-  CAMPING, IMPROVED
-  PAY STATION
-  BOAT RAMPS
-  SWIM BEACH
-  PLAYGROUND
-  GROUP SHELTERS
-  RESTROOM
-  SANITARY DUMP STATIONS
-  SHOWERS
-  VAULT TOILET



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

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TORONTO DAM VERDIGRIS RIVER, KANSAS

TORONTO DAM - TORONTO LAKE

TORONTO LAKE MASTER PLAN

RECREATIONAL AREAS  
(TORONTO POINT)



0    250    500    750    1,000

Feet

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DATE: SEPTEMBER 2017	MAP NO. TL17MP-OR-04
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



ITEM	EXISTING
BOAT RAMP	3
COURTESY DOCK	
GROUP CAMPSITES	
CAMPSITES	36
ELECTRICAL HOOK-UP	15
GROUP PICNIC SHELTER	
PICNIC SITES	1
VAULT TOILET	1
RESTROOMS	2
SHOWERS	2
DUMP STATION	

- FEE BOUNDARY
- CAMPING, PRIMITIVE
- CAMPING, IMPROVED
- PAY STATION
- BOAT RAMPS
- COURTESY DOCK
- GROUP SHELTERS
- RESTROOM
- SHOWERS
- VAULT TOILET

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

---

TORONTO DAM VERDIGRIS RIVER, KANSAS

TORONTO DAM - TORONTO LAKE

TORONTO LAKE MASTER PLAN

RECREATIONAL AREAS  
(HOLIDAY HILL)

0    225    450    675    900 Feet

DATE:	MAP NO.
SEPTEMBER 2017	TL17MP-OR-05

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

# **APPENDIX B - NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) DOCUMENTATION**

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# Environmental Assessment for the Toronto Lake Master Plan and Shoreline Management Plan

Verdigris River  
Arkansas River Basin  
Woodson and Greenwood Counties,  
Kansas



US Army Corps  
of Engineers®  
Tulsa District

September 2017

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**FINDING OF NO SIGNIFICANT IMPACT  
ENVIRONMENTAL ASSESSMENT FOR THE  
TORONTO LAKE MASTER PLAN AND SHORELINE MANAGEMENT PLAN  
Woodson and Greenwood Counties, Kansas**

In accordance with the National Environmental Policy Act of 1969, including guidelines in 33 Code of Federal Regulations Part 230, the Tulsa District and the Regional Planning and Environmental Center of the U.S. Army Corps of Engineers (USACE) have assessed the potential impacts that the alternative management scenarios set forth in the 2017 revisions of the Toronto Lake Master Plan and the Toronto Lake Shoreline Management Plan would have on the natural, cultural, and human environments.

The 2017 MP is a revision of the 1979 MP that was an update of the original 1951 MP. A MP 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 Toronto Lake project. The 2017 MP revision is needed to comply with current USACE regulations and guidance, refine land classifications to meet authorized purposes, which identify current resource objectives that address a mix of natural resource and recreation management objectives that are compatible with regional goals.

The 2017 Shoreline Management Plan (SMP) is a revision to the original 1976 Lakeshore Management Plan. The current revision is needed to update the SMP format and to document the current shoreline allocations and the extent to which management practices achieve a balance between permitted private uses and resource protection for general public use.

The Environmental Assessment (EA) evaluated the implementation of the 2017 MP and SMP with special attention given to revised land classifications, new resource management objectives, a conceptual resource plan for each land classification category, and shoreline allocation categories.

The Proposed Action includes a revised MP and SMP, coordination with the public, and reflects ecological, socio-demographic, and outdoor recreation trends that are currently influencing the lake, as well as those anticipated to occur within the planning horizon of 2017 to 2042, a 25-year period. Required surface water, land, and shoreline classification changes associated with the Proposed Action include reclassifications to balance resource objectives, and include the following:

<b>Surface Water Classification</b>	<b>Proposed Action Description</b>	<b>Justification</b>
Restricted	Reclassification of 9 acres to Restricted in areas near the dam and the one designated swimming area.	Restricted classification is where recreational boating is prohibit or restricted for project operations, safety and security purposes.
Designated No-Wake	Reclassification of 864 acres of surface water to Designated No-Wake in areas near the six boat ramps and a section of the lake that was not cleared of trees, which could pose threats to boater's safety.	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.
Open Recreation	Reclassification of 1,435 acres to the Open Recreation classification.	Open Recreation include all surface water areas available for year-around or seasonal water-based recreational use.
Fish and Wildlife Sanctuary	There are no surface water acres classified as Fish and Wildlife Sanctuary areas at Toronto Lake.	
<b>Land Classification</b>	<b>Proposed Action Description</b>	<b>Justification</b>
Project Operations (PO)	The net increase in PO from 44 acres to 46 acres was the result of reclassifying two Low Density Recreation (LDR) acres used for material storage.	All lands classified as PO are managed and used primarily in support of critical operational requirements related to the primary missions of flood risk management, and water conservation. The reclassification of these acres used for material storage will have no effect on current or projected public use.
High Density Recreation (HDR)	The increase in HDR from 1,086 to 1,216 was due to reclassifying: <ul style="list-style-type: none"> <li>• 178 acres from LDR on the west side of the dam.</li> <li>• 48 acres from HDR to Wildlife Management (WM) in the area north of the lake.</li> </ul>	The reclassified acres are part of the Kansas Department of Wildlife, Parks, and Tourism (KDWPT) license and is appropriately classified as HDR to align with current and future use. The reclassification from LDR to actively managed HDR areas will not affect current or projected public use.
Environmentally Sensitive Areas (ESA)	There are no lands classified as ESA at Toronto Lake.	
Multiple Resource Management Lands (MRML) -- LDR	The elimination of LDR classified lands were the result of the following reclassifications: <ul style="list-style-type: none"> <li>• 155 acres to WM on the north side of the lake.</li> <li>• 2 acres to PO on the north end of the dam.</li> <li>• 178 acres to HDR on the west side of the dam.</li> </ul>	The lands were reclassified to reflect more accurately how the lands are being use. These changes support management actions and recreational trends identified in the SCORP. Public use of all areas that were reclassified will not be affected now or in the foreseeable future. Public access in the form of natural surface hiking and biking trails is compatible with these changes.
MRML -- WM	The increase in WM from 4,515 acres to 5,070 acres resulted from the following reclassifications:	The lands reclassified from LDR and HDR to WM better align current and future uses to the appropriate land

	<ul style="list-style-type: none"> <li>• 48 acres from HDR in the area north of the lake.</li> <li>• 155 acres from LDR in the area north of the lake.</li> <li>• 352 acres additional acres due to sedimentation in the reservoir.</li> </ul>	classification in areas that have wildlife support functions. These reclassifications will have no effect on current or projected public use.
MRML – Vegetation Management (VM)	There are no lands classified as VM at Toronto Lake.	
MRML – Future/Inactive Recreation Area	There are no lands classified as Future/Inactive Recreation at Toronto Lake.	
<b>Shoreline Classification</b>	<b>Proposed Action Description</b>	<b>Justification</b>
Limited Development Areas	There are no shoreline areas classified as Limited Development Areas at Toronto Lake.	
Public Recreation Areas	Approximately 12 miles of shoreline are allocated as Public Recreation Areas, which is roughly 12 percent of the total shoreline at Toronto Lake.	Shorelines areas designated as Public Recreation Areas are Federal, State, or similar public use areas.
Protected Shoreline Areas	Approximately 42 miles of shoreline are allocated as Protected Shoreline Areas, which is roughly 76 percent of the total shoreline at Toronto Lake.	Shoreline areas designated as Protected Shoreline Areas are primarily to protect or restore aesthetic, fish and wildlife, cultural or other environmental values.
Prohibited Access Areas	Approximately 0.9 miles of shoreline are allocated as Prohibited Access Areas, which is roughly 2 percent of the total shoreline at Toronto Lake.	Shoreline areas designated as Prohibited Access Areas are primarily for security reasons, the protection of ecosystems, and the physical safety of the recreation visitor.

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

The Proposed Action was chosen because it would meet regional goals associated with good stewardship of land and water resources, would meet regional recreation goals, and would allow for continued use and development of project lands without violating national policies or public laws.

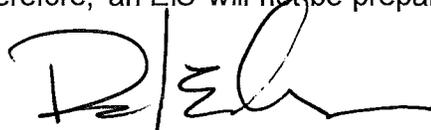
The EA and comments received from other agencies have been used to determine whether the Proposed Action requires the preparation of an Environmental Impact Statement (EIS). All environmental, social, and economic factors that are relevant to the recommended alternative have been considered in this assessment. These include, but are not limited to, climate and climate change, environmental justice, cultural resources, air quality, visual aesthetics, prime farmland, water quality, wetlands, fish and wildlife, invasive species, migratory birds, and threatened and endangered species.

Based on the EA, it is my finding that implementation of the revisions in the 2017 MP and SMP for Toronto Lake will have no significant adverse impact on the environment and will not constitute a major Federal action significantly affecting the quality of the human environment. Therefore, an EIS will not be prepared.

30 JAN 2018

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Date



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PAUL E. OWEN, P.E.  
Brigadier General, U.S. Army  
Commanding

## ENVIRONMENTAL ASSESSMENT ORGANIZATION

This Environmental Assessment (EA) evaluates the potential environmental and socioeconomic impacts of the Toronto MP and SMP revision. This EA will facilitate the decision process regarding the Proposed Action and alternatives.

- SECTION 1 INTRODUCTION* of the Proposed Action summarizes the purpose of and need for the Proposed Action, provides relevant background information, and describes the scope of the EA.
- SECTION 2 PROPOSED ACTION AND ALTERNATIVES* examines alternatives for implementing the Proposed Action and describes the recommended alternative.
- SECTION 3 AFFECTED ENVIRONMENT* describes the existing environmental and socioeconomic setting.
- ENVIRONMENTAL CONSEQUENCES* identifies the potential environmental and socioeconomic effects of implementing the Proposed Action and alternatives.
- SECTION 4 CUMULATIVE IMPACTS* describes the impact on the environment that may result from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions.
- SECTION 5 COMPLIANCE WITH ENVIRONMENTAL LAWS* provides a listing of environmental protection statutes and other environmental requirements.
- SECTION 6 IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES* identifies any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action should it be implemented.
- SECTION 7 PUBLIC AND AGENCY COORDINATION* provides a listing of individuals and agencies consulted during preparation of the EA.
- SECTION 8 REFERENCES* provides bibliographical information for cited sources.
- SECTION 9 LIST OF PREPARERS* identifies persons who prepared the document and their areas of expertise.
- APPENDIX A PUBLIC AND AGENCY COORDINATION*

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# **ENVIRONMENTAL ASSESSMENT**

## **Master Plan and Shoreline Management Plan Toronto Lake Woodson and Greenwood Counties, Kansas**

### **SECTION 1: INTRODUCTION**

The United States Army Corps of Engineers (USACE) is proposing to adopt and implement the 2017 Toronto Lake Master Plan (MP) and Shoreline Management Plan (SMP). The 2017 MP is a revision of the current 1979 MP, which updated the original 1951 MP. The MP 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 Toronto Lake project. It is a vital tool for responsible stewardship and sustainability of the project's natural and cultural resources, as well as the provision of outdoor recreation facilities and opportunities on Federal land associated with Toronto Lake for the benefit of present and future generations. The 2017 SMP is an update to the original 1976 Lakeshore Management Plan. The SMP establishes policy and guidance for the protection of desirable environmental characteristics of the lake and restoration of the shoreline where degradation has occurred.

Adoption and implementation of the 2017 MP and SMP (Proposed Action) would create potential impacts on the natural and human environments, and as such, this Environmental Assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, (Public Law 91-190), and 33 Code of Federal Regulations (CFR) Part 230.

#### **1.1 PROJECT LOCATION AND SETTING**

Toronto Lake, which has a total drainage area of 730 square miles, is located in the Arkansas River Basin on the Verdigris River tributary at river mile 271.5, about four miles southeast of town of Toronto in Woodson County, Kansas. A small portion of the lake lies within Greenwood County to the west (see Figure 1.1 in the 2017 MP). Toronto Lake, formally Toronto Dam and Reservoir, it is a multipurpose water resources project constructed and operated by the U.S. Army Corps of Engineers, Tulsa District. The construction of the reservoir was contained in the Flood Control Act of 1938, as modified by the Flood Control Act of 1941. Construction was initiated in November of 1954 and the project was placed in full operation for flood control in March 1960. The project is included in a four-lake system with Elk City, Fall River, and, the authorized but never constructed, Neodesha Lake for flood control and low-flow regulation for pollution abatement and supplemental water supply on the Verdigris River in Kansas. Toronto Lake has the following primary purposes:

- Flood risk management
- Water supply

- Water quality
- Fish and wildlife
- Recreation

The dam and associated infrastructure, as well as all lands acquired for the Toronto Lake project, are federally owned and administered by the USACE.

Environmental stewardship, though not listed as a primary project purpose, is a major responsibility and inherent mission in the administration of federally owned lands. Other laws, including but not limited to Public Law 91-190, NEPA, and Public Law 86-717, Forest Cover Act, place emphasis on the environmental stewardship of Federal lands and USACE-administered Federal lands, respectively.

## **1.2 PURPOSE OF AND NEED FOR THE ACTION**

The purpose of the Proposed Action is to ensure that the conservation and sustainability of the land, water, and recreational resources on Toronto Lake are in compliance with applicable environmental laws and regulations and to maintain quality lands for future public use. The 2017 MP is intended to serve as a comprehensive land and recreation management plan with an effective life of approximately 25 years. The 2017 SMP is intended to establish policy and guidance for the protection of desirable environmental characteristics of the lake and restoration of the shoreline where degradation has occurred.

The need for the Proposed Action is to bring the 1979 MP up to date and to reflect ecological, socio-political, and socio-demographic changes that are currently impacting Toronto Lake, as well as those changes anticipated to occur through 2042. The 1979 plan was sufficient for prior land use planning and management until recently as changes in outdoor recreation trends, regional land use, population, current legislative requirements and USACE management policy indicated the need to revise the plan. Additionally, increasing fragmentation of wildlife habitat, national policies related to climate change resiliency and growing demand for recreational access and protection of natural resources are all factors affecting Toronto Lake and the Verdigris River Valley region in general. In response to these continually evolving trends, the USACE determined that a full revision of the 1979 plan would be required. Similarly, the Proposed Action would update the original 1976 Lakeshore Management Plan. The current revision is needed to update the SMP format and to document the current shoreline allocations and the extent to which management practices protect shoreline resources while allowing safe unrestricted use.

The following factors may influence reevaluation of management practices and land uses:

- Changes in national policies or public law mandates
- Operations and maintenance budget allocations
- Recreation area closures
- Facility and infrastructure improvements

- Cooperative agreements with stakeholder agencies (such as Kansas Department of Wildlife, Parks and Tourism [KDWPT] and the U.S. Fish and Wildlife Service [USFWS]) to operate and maintain public lands
- Evolving public concerns
- Shoreline degradation and/or protection of desirable environmental characteristics

### **1.3 SCOPE OF THE ACTION**

This EA addresses implementation of the 2017 MP and SMP with special attention given to revised land and surface water classifications, new resource management objectives, and a conceptual resource plan for each land classification category. The EA also analyzes the potential impacts that implementing the 2017 MP and SMP would have on the natural, cultural, and human environments.

The typical focus of NEPA compliance consists of environmental impact assessments for individual projects, rather than for long-range plans. However, application of NEPA to more strategic decisions not only meets the Council on Environmental Quality (CEQ) implementing regulations (CEQ 2005) and USACE regulations for implementing NEPA (USACE 1988), but also allows the USACE to consider the environmental consequences of its actions long before any physical activity is implemented. Multiple benefits can be derived from such early consideration. Effective and early NEPA integration with the planning process can significantly increase the usefulness of both the 2017 MP and SMP to the decision maker.

NEPA documents prepared concurrently with an revised MP and revised SMP can influence and modify strategic land use decisions, whereas environmental impact documents prepared after a MP or SMP has been updated would have little influence on strategic decisions already included in the plan. The intention of the 2017 MP is to develop a 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 Toronto Lake project. It is a vital tool for responsible stewardship and sustainability of the project's natural and cultural resources, and the provision of outdoor recreation facilities and opportunities on Federal land associated with Toronto Lake for the benefit of present and future generations. The 2017 MP 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 not feasible to define the exact nature of potential impacts for all potential actions prior to receiving specific project proposals. Therefore, environmental consequences may be less than or may, in fact, exceed what is described in this EA. To ensure that future environmental consequences are identified and documented as accurately as possible, additional NEPA coordination will be conducted, as appropriate, for future projects that are the result of the implementation of the 2017 MP or SMP.

## SECTION 2: PROPOSED ACTION AND ALTERNATIVES

The project need is to revise the 1979 MP and 1976 SMP so that they are compliant with current USACE regulations and guidance, incorporate public needs, and recognize surrounding land use and recreational trends. As part of this process, which includes public outreach and comment, two alternatives were developed for evaluation, including a No Action Alternative. The Action Alternative was developed using land classifications that indicate the primary use for which project lands would be managed. USACE regulations specify five possible categories of land classification: Project Operations, High Density Recreation, Mitigation, Environmentally Sensitive Areas, and Multiple Resource Managed Lands. Multiple Resource Managed Lands are divided into four subcategories: Low Density Recreation, Wildlife Management, Vegetative Management, and Future/Inactive Recreation Areas.

USACE regulations specify four possible categories of shoreline allocation: Limited Development Areas, Public Recreation Areas, Protected Shoreline Areas, and Prohibited Access Areas.

The USACE guidance recommends the establishment of resource goals and objectives for purposes of development, conservation, and management of natural, cultural, and man-made resources at a project. Goals describe the desired end state of overall management efforts, whereas resource objectives are specific task-oriented actions necessary to achieve the overall MP goals. Goals and objectives are guidelines for obtaining maximum public benefits while minimizing adverse impacts on the environment and are developed in accordance with 1) authorized project purposes; 2) applicable laws and regulations; 3) resource capabilities and suitabilities; 4) regional needs; 5) other governmental plans and programs; and 6) expressed public desires.

In the context of the 2017 MP, goals express the overall desired end state of the MP, whereas resource objectives are specific task-oriented actions necessary to achieve the MP goals. The objectives in the 2017 MP are intended to provide project benefits, meet public needs, and foster environmental sustainability of Toronto Lake to the greatest extent possible. The goals for the Toronto Lake MP include the following:

- Goal A: Provide the best management practices (BMPs) to respond to regional needs, resource capabilities and capacities, and expressed public interests consistent with authorized project purposes.
- Goal B: Protect and manage project 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 project natural resources.
- Goal D: Recognize the unique qualities, characteristics, and potentials of the project.
- Goal E: Provide consistency and compatibility with natural objectives and other state and regional goals and programs.

In addition to the above goals, USACE management activities are also 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 on the environment; bring systems approaches to the full life cycle of our processes and work.
- Build and share an integrated scientific, economic, and social knowledge base that supports a greater understanding of the environment and impacts of our work.
- Respect the views of individuals and groups interested in USACE activities; listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment.

Specific resource objectives to accomplish these goals can be found in Chapter 3, Section 3.3 of the 2017 MP.

The Proposed Action would meet regional goals associated with good stewardship of land and water resources, would meet regional recreation goals, would address identified recreational trends, and would allow for continued use and development of project lands and shorelines without violating national policies or public laws.

## **2.1 ALTERNATIVE 1: NO ACTION ALTERNATIVE**

Under the No Action Alternative, the USACE would not approve the adoption or implementation of the 2017 MP and SMP. Instead the USACE would continue to manage Toronto Lake's natural resources as set forth in the 1979 MP and 1976 SMP. The 1979 MP would continue to provide the only source of comprehensive management guidelines and philosophy. However, the 1979 MP is out of date and does not reflect the current ecological, socio-political, or socio-demographic conditions of Toronto Lake or those that are anticipated to occur through 2042. The No Action Alternative, while it does not meet the purpose of or need for the Proposed Action, serves as a benchmark of existing conditions against which Federal actions can be evaluated, and as such, the No Action Alternative is included in this EA, as prescribed by CEQ regulations.

## **2.2 ALTERNATIVE 2: PROPOSED ACTION**

Under the Proposed Action, the USACE proposes to adopt and implement the 2017 MP and SMP. The 2017 MP would replace the 1979 MP and provide an up-to-

date management plan that follows current Federal laws and regulations while sustaining Toronto Lake's natural resources and providing recreational experiences for the next 25 years.

The 2017 MP proposes to classify all Federal lands lying above elevation 901.5 feet National Geodetic Vertical Datum (NGVD) into management classification categories. These management classification categories would allow uses of Federal property that meet the definition of the assigned category and ensure the protection of natural resources and environmental stewardship while allowing maximum public enjoyment of the lake's resources.

The proposed land classification categories are defined as follows:

- Project Operations (PO): Lands required for the dam, spillway, switchyard, levees, dikes, offices, maintenance facilities, and other areas used solely for the operation of Toronto Lake.
- High Density Recreation (HDR): Lands developed for the intensive recreational activities for the visiting public including day use and campgrounds. These areas could also be for commercial concessions and quasi-public development.
- Environmentally Sensitive Areas (ESAs): Areas where scientific, ecological, cultural, or aesthetic features have been identified.
- Multiple Resource Management Lands (MRML): Allows for the designation of a predominate use with the understanding that other compatible uses may also occur on these lands.
  - MRML - Low Density Recreation (LDR): Lands with minimal development or infrastructure that support passive recreational use (primitive camping, fishing, hunting, trails, wildlife viewing, etc.).
  - MRML - Wildlife Management (WM): Lands designated for stewardship of fish and wildlife resources.
  - MRML - Vegetation Management (VM): Lands designated for stewardship of forest, prairie, and other native vegetative cover.
  - Future or Inactive Recreation. These are lands with site characteristics compatible with HDR development. These are areas where HDR development was anticipated in prior land classifications, but the development either never took place or was minimal. These areas are typically closed to vehicular traffic and will be managed as MRML until development takes place.
- Surface Water: Allows for surface water zones.
  - Restricted: Water areas restricted for Toronto Lake operations, safety, and security.
  - Designated No-Wake: Water areas to protect environmentally sensitive shoreline areas and recreational water access areas from disturbance and areas to protect public safety.
  - Open Recreation: Water areas available for year-round or seasonal water-based recreational use.

- Fish and Wildlife Sanctuary: These areas are managed with annual or seasonal boating access restrictions to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning.

Table 2-1 shows the proposed classifications and acres contained in each classification, Table 2-2 shows the surface water classifications, and Table 2-3 provides the justification for the proposed reclassification.

**Table 2-1. Proposed Toronto Lake Land Classifications**

1979 Land Classifications	Acres	Proposed New Land Classifications	Acres
Operations and Maintenance	44	PO	46
Recreation – Intensive Use	1,086	HDR	1,216
		ESA	0
Recreation – Low Density	335	MRML – LDR	0
Wildlife Management	4,515	MRML – WM	5,070

\*Land classification acreages were derived using geographic information system technology and do not reflect the official land acquisition records. The current land classification acres, including water surface, in the 2017 MP total to 8,640. Source: USACE 2017

**Table 2-2. Proposed Toronto Lake Surface Water Classifications**

Surface Water Classification	Acres
Restricted	9
Designated No-Wake	864
Open Recreation	1,435
Fish and Wildlife Sanctuary	0

Source: USACE 2017

**Table 2-3. Justification for the Proposed Reclassification**

Land Classification	Proposed Action Description	Justification
PO	The net increase in PO from 44 acres to 46 acres was the result of reclassifying 2 acres of LDR used for material storage.	All lands classified as PO are managed and used primarily in support of critical operational requirements related to the primary missions of flood risk management, and water conservation. The reclassification of these acres used for material storage will have no effect on current or projected public use.
HDR	The increase in HDR from 1,086 to 1,216 were the result of the following reclassifications: <ul style="list-style-type: none"> <li>• 178 acres from LDR on the west side of the dam.</li> <li>• 48 acres to WM in the area north of the lake.</li> </ul>	The reclassified acres are part of the Kansas Department of Wildlife, Parks, and Tourism (KDWPT) license and are appropriately classified as HDR to align with current and future use. The reclassification to from LDR to actively managed HDR areas will not affect current or projected public use.

Land Classification	Proposed Action Description	Justification
ESA	There are no lands classified as ESA at Toronto Lake.	
MRML -- LDR	The elimination of LDR classified lands were the result of the following reclassifications: <ul style="list-style-type: none"> <li>• 155 acres to WM on the north side of the lake.</li> <li>• 2 acres to PO on the north end of the dam.</li> <li>• 178 acres to HDR on the west side of the dam.</li> </ul>	The lands were reclassified to reflect more accurately how the lands are being use. These changes support management actions and recreational trends identified in the SCORP. Public use of all areas that were reclassified will not be affected now or in the foreseeable future. Public access in the form of natural surface hiking and biking trails is compatible.
MRML -- WM	The increase in WM from 4,515 acres to 5,070 acres resulted from the following reclassifications: <ul style="list-style-type: none"> <li>• 48 acres from HDR in the area north of the lake.</li> <li>• 155 acres from LDR in the area north of the lake.</li> <li>• 352 additional acres due to sedimentation.</li> </ul>	The lands reclassified from LDR and HDR, to WM better align current and future uses to the appropriate land classification in areas that have wildlife support functions. These reclassifications will have no effect on current or projected public use.
MRML – VM	There are no lands classified as VM at Toronto Lake.	
MRML – Future/Inactive Recreation Area	There are no lands classified as Future/Inactive recreation at Toronto Lake.	

<sup>(1)</sup> The land classification changes described in this table are the result of changes to more than 100 individual parcels of land ranging from a few acres to several hundred acres. Acreages were measured using GIS technology. The acreage numbers provided are approximate.

<sup>(2)</sup> Acreages are based on GIS measurements and may vary from Net Difference totals detailed in Table 8.1 in the 2017 Toronto Lake MP.

Source: USACE 2017

### Project Operations

In the 2017 MP, there are 46 acres of land under this classification, all of which are managed by the USACE. Land designated as Project Operations lands are associated with the dam, spillway, levees, lake office, maintenance facilities, and other areas used primarily for the purposes of flood risk management, water conservation water quality, and fish and wildlife habitat. The management plan for this area is to continue providing physical security necessary to ensure sustained operations of the dam and related facilities, including restricting public access in hazardous locations near the dam and spillway.

### High Density Recreation

The 2017 MP stipulates that lands managed under this classification are lands developed for intensive recreational activities for the visiting public, including day use

and campgrounds, and encompass 1,216 acres. National USACE policy set forth in Engineering Regulation (ER) and Engineer Pamphlet (EP) 1130-2-550, Chapter 16, limits recreation development on USACE lands to those activities that are dependent on a project's natural resources and typically include water-based activities, overnight use, and day use such as marinas, campgrounds, picnic areas, trails, swimming beaches, and boat launching ramps. 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.

All HDR areas at Toronto Lake are leased to the KDWPT. The KDWPT is responsible for the operations and maintenance of their leased areas, and although USACE does not provide direct maintenance within any of the leased locations, it may occasionally lend support where appropriate. Maps showing existing parks and facilities at Toronto Lake can be found in Appendix A of the 2017 MP.

### Environmentally Sensitive Areas

ESA lands are those areas where scientific, ecological, cultural and /or aesthetic features or significance are identified that need to be protected. Designation of these lands is not limited to just lands that are otherwise protected by laws such as the Endangered Species Act, the National Historic Preservation Act (NHPA), or applicable state statutes. These areas must be managed to ensure they are not adversely impacted. Typically, limited or no development for public use is allowed on these lands. No agricultural or grazing uses are permitted on these lands unless necessary for a specific resource management benefit, such as prairie restoration and management. These areas are typically distinct parcels located within another, and perhaps larger, land classification area. In addition to endangered species habitat, a few areas are designated as ESAs due to the unique viewsheds and scenic qualities of the area. Additional consideration is given to unique or scarce habitat types such as bottomland hardwood forests located along river and creek bottoms when determining which areas should be designated as ESAs. There are no acres designated as ESAs in the 2017 Toronto Lake MP.

### 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. The following paragraphs describe the various sub-classifications of MRML at Toronto Lake, as well as the resource objectives, acreages, and management plan for each sub-classification.

#### MRML – Low Density Recreation

These are lands with minimal development or infrastructure that support passive public use including, but not limited to, hiking, nature photography, bank fishing, and hunting. Future management of these lands calls for maintaining a healthy, ecologically adapted vegetative cover to reduce erosion and improve aesthetics. Prevention of unauthorized use such as trespass or encroachments is an important management objective for all USACE lands, but is especially important for those lands in close proximity to private development. 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. Maintenance of an identifiable property boundary is also a high priority in these areas. There are no acres of MRML – LDR at Toronto Lake.

#### MRML – Wildlife Management

These are lands designated for the stewardship of fish and wildlife resources and are managed by the USACE. In the 2017 MP, there are 5,070 acres of land designated as MRML – WM at Toronto Lake. Future management of these lands calls for managing the habitat to support native, ecologically adapted vegetation which in turn supports native wildlife species. Specific management techniques including, but not limited to, placement of nesting structures, construction of water features or brush piles, prescription burning, fencing, removal of invasive species, implementation of enhancement practices such as agricultural leases that may benefit waterfowl and planting of specific food producing plants may be necessary to support wildlife needs, such as sunflower fields to attract doves for hunters.

Non-game wildlife is also managed by USACE. Other non-game programs, such as song bird nest box construction and installation of bat boxes, are performed on an intermittent basis. The plan is to continue these initiatives in order to provide some form of management for non-game species. Conservation and protection of habitat that is typical of the three ecoregions in which Toronto Lake sits with highly unique or diverse areas will be given high priority. Priority will also be given to the improvement or restoration of existing wetlands, or the construction of wetlands where topography, soil type, and hydrology are appropriate.

Use of available funds for wildlife management must be prioritized to meet legal mandates and regional priorities. While exceptions can occur, management actions will be guided by the following, in order of priority: 1) protect federal and state-listed threatened and endangered species; 2) meet the needs of species protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act; 3) meet the needs of rare species and Species in Conservation Need see Appendix C of and the 2017 MP for the KDWPT listing); 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 recommended by USACE and approved through state regulatory processes. However, management of WM lands is prioritized to accomplishing the Natural Resources Management objectives identified in Chapter 3 of the 2017 MP.

Current public use of these lands includes hiking and horseback riding on existing trails, bank fishing, canoeing and kayaking, and hunting. Future public use includes all existing uses and expansion of natural surface trail opportunities where feasible.

## Surface Water

In accordance with the national USACE policy set forth in EP 1130-2-550, the surface water of Toronto Lake at the conservation pool elevation may be classified using the following four classifications:

- Restricted
- Designated No-Wake
- Fish and Wildlife Sanctuary
- Open Recreation

At the conservation pool elevation of 901.5 feet NGVD, Toronto Lake has a water surface area of 2,308 acres. The following water surface classifications are designated at Toronto Lake:

### *Restricted*

Restricted surface water includes those areas where recreation boating is prohibited or restricted for project operations, safety, and security purposes. There are nine acres of surface water designated as restricted at Toronto Lake. These include the areas upstream and downstream of the Toronto Dam and the one designated swimming area at Toronto Lake in the Toronto Point public use area. Future management calls for one or more of the following management measures: placement of buoys and describing the areas on maps available to the public.

### *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. Designated No-Wake areas at Toronto Lake include approximately 864 acres. This includes areas around six boat ramps and a large area of the lake that was not cleared, is a safety hazard for recreational boaters, and requires a no-wake designation. Future management of these areas rests with USACE and our partner agencies at Toronto Lake. Specific measures to be taken include: placement of buoys, placement of signs near boat ramps, and describing areas on maps available to the public.

### *Open Recreation*

Open Recreation includes all water surface areas available for year-round or seasonal water-based recreational use. With the exception of the Restricted and Designated No-Wake areas described in the above paragraphs, the remaining surface water of approximately 1,435 acres at Toronto Lake is designated as Open Recreation. Boaters are advised through maps, brochures, and signs at boat ramps and marinas, that navigational 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 Kansas. USACE encourages all boaters and swimmers to wear their lifejackets at all times and to learn to swim well.

### *Fish and Wildlife Sanctuary*

This surface water classification applies to areas that are managed 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 Fish and Wildlife Sanctuary surface water at Toronto Lake.

### *Shoreline Management Areas*

The 2017 SMP would replace the original 1976 Lakeshore Management Plan and provide policy and guidance for protection and restoration of the shoreline. Regulations call for SMPs to be reviewed by the District Commander on a 5-year cycle to determine the need for possible updates and public comment. .

The proposed shoreline allocations are defined as follows:

- Limited Development Areas: Shoreline areas allocated for private activities.
- Public Recreation Areas: Shoreline areas that are public recreational sites for Federal, State or similar public use and for commercial concessionaire facilities.
- Protected Areas: Shoreline areas that are designated to protect or restore aesthetic, fish and wildlife, cultural or other environmental values, or for physical protection of the shoreline.
- Prohibited Access Areas: Shoreline areas allocated for security reasons, the protection of ecosystems, and the physical safety of the recreation visitor.

Table 2-4 provides the shoreline classifications at Toronto Lake.

**Table 2-4. Proposed Toronto Lake Shoreline Classifications**

<b>Classification</b>	<b>Miles</b>
Limited Development Areas	0
Public Recreation Areas	12
Protected Shoreline Areas	42
Prohibited Access Areas	0.9

Source: USACE 2017

### Project Easement Lands

Project Easement lands are lands on which easement interests were acquired. Easement interests convey to the Federal government certain rights to use or restrict the use of the land for specific purposes. Easement lands are typically classified as Operations Easement, Flowage Easement, or Conservation Easement. At Toronto 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. In the 2017 MP and SMP, there are 4,996 acres of land designated as flowage easement lands at Toronto Lake.

## **2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION**

Other alternatives to the Proposed Action were initially considered as part of the scoping process for this EA. However, none met the purpose of and need for the Proposed Action or the current USACE regulations and guidance. Furthermore, no other alternatives addressed public concerns. Therefore, no other alternatives are being carried forward for further analysis in this EA.

The results of the public scoping process and planning team workshops formed the basis for the preferred alternative. In addition, the planning team determined that the following three additional alternatives, although ultimately eliminated from further consideration, should be explained to demonstrate that a wider range of alternatives were considered.

### **Alternative 3: Revise MP to Only Reflect Changes in Land Classification Names with No Change in Operation and Use**

Under this alternative, the MP would be reviewed, coordinated with the public, and revised with the limitation that the land classification names would be changed to the extent that the new land classifications would essentially match the old classifications. The new classifications would comply with USACE regulations and guidance and would result in the following:

- 44 acres of PO
- 1,086 acres of HDR
- 335 acres of MRML - LDR
- 4,515 acres of MRML - WM

Alternative 3 would meet USACE regulations and guidance. However, this action would not reflect changes in land management and land uses that have occurred over time or that are needed to meet regional goals and objectives. Therefore, this alternative was eliminated from further consideration.

### **Alternative 4: Revise MP and SMP to Meet Authorized Project Purposes and to Maximize Recreation**

Under this alternative, the MP would be reviewed, coordinated with the public, and revised with the provision that all project lands (excluding PO lands) would be reclassified to HDR to intensify highly developed recreational use such as full-service campgrounds, day-use areas, comprehensive resorts, and concession facilities. This alternative would result in the following classifications of project lands:

- 46 acres of PO
- 6,286 acres of HDR

The SMP would also be reviewed, coordinated with the public, and revised to allow future development and expansion of private dock facilities to increase recreational access and opportunities.

Alternative 4 would provide recreation opportunities and economic uses to the public. However, it would eliminate potential ESAs, LDR, WM, VM, and Future/Inactive Recreation land classifications, which would not support regional goals associated with good stewardship of land and water resources. Public scoping did not result in requests for this action. Management of developed areas would require additional lake staff, as current staffing is limited. This action would not be compatible with cultural resources management plans and could violate national policies or public laws. Therefore, this alternative was eliminated from further consideration.

**Alternative 5: Revise MP and SMP to Meet Authorized Project Purposes and to Maximize Natural Resource Management**

Under this alternative, the MP revisions would be reviewed, coordinated with the public, and revised with the provision that all project lands (excluding PO lands) would be reclassified to a category that would intensify natural resource management. This would include reclassification of all project lands to either MRML - WM, VM, or ESAs. This alternative would result in the following classification of project lands:

- 46 acres of PO
- 6,286 acres of WM/VM/ESA

The SMP would also be reviewed, coordinated with the public, and revised to require removal of all existing docks to emphasize natural resources management and comply with current shoreline allocations.

Alternative 5 would support regional goals associated with good stewardship of land and water resources. However, it would eliminate classifications such as LDR and HDR and Future/Inactive Recreation Areas, which would reduce recreation opportunities and would not meet regional recreation goals. This action could violate national policies or public laws. Additionally, national USACE policy and public law requires that prior written commitments to existing grandfathered private dock owners on Toronto Lake be honored. Therefore, this alternative was eliminated from further consideration.

### **SECTION 3: AFFECTED ENVIRONMENT AND CONSEQUENCES**

This section of the EA describes the natural and human environments that exist at the project and the potential impacts of the No Action Alternative (Alternative 1) and Proposed Action (Alternative 2), outlined in Section 2.0 of this document. Only those issues that have the potential to be affected by any of the alternatives are described, per CEQ guidance (40 CFR § 1501.7 [3]). 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. For example, no body of water in the Toronto Lake watershed is designated as a Federally Wild or Scenic River, so this resource will not be discussed. Also there are no Hazardous, Toxic, or Radioactive Waste (HTRW) issues at Toronto Lake so this resource will not be discussed either.

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 § 1508.8 [a]). Indirect effects are caused by the action and are later in time or further removed in distance but are still reasonably foreseeable (40 CFR § 1508.8 [b]). As discussed in this section, the alternatives may create temporary (less than 1 year), short-term (up to 3 years), long-term (3 to 10 years following the MP revision), or permanent effects.

Whether an impact is significant depends on the context in which the impact occurs and the intensity of the impact (40 CFR § 1508.27). The context refers to the setting in which the impact 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 the purpose of this analysis, the intensity of impacts would be classified as negligible, minor, moderate, or major. The intensity thresholds are defined as follows:

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

### **3.1 LAND USE**

Toronto Lake was originally authorized by the Flood Control Acts of 1938 and 1941. Construction on the Toronto Lake Dam began in 1954 and was completed in 1960. The total project area at Toronto Lake encompasses 8,640 acres, which were acquired in fee simple title by USACE. Of this total area, 6,332 acres are land and 2,308 acres are surface water at normal or conservation pool elevation 901.5 NGVD (based on GIS). Four thousand nine hundred and ninety-six acres are encumbered with a perpetual Flowage Easement. Purchase of flowage easement by the Government constitutes payment for the right to flood and for the damage and expense to the landowner resulting from project operation. Construction of buildings for habitation or alteration of the existing terrain are not permitted in the flowage easement area.

Outgrants at Toronto Lake include leases, licenses, easements, consents, permits, and others. Outgrants do not include the Shoreline Use Permits that authorize

private structures owned and/or activities conducted by adjacent landowners such as boat docks and vegetation modification. At present, there are approximately 48 recorded outgrants in effect on USACE lands and flowage easements at Toronto Lake. These outgrants include the following:

- 40 Easements
- 4 Consents
- 1 Recreational/Park lease
- 3 Miscellaneous licenses

All HDR areas at Toronto Lake are leased to the KDWPT. The KDWPT is responsible for the operation and maintenance of their leased areas, and although USACE does not provide direct maintenance within any of the leased locations, it may occasionally lend support where appropriate. The USACE reviews requests and ensures compliance with applicable laws and regulations for proposed activities in all leased HDR areas and USACE PO lands. USACE works with partners to ensure that recreation areas are managed and operated in accordance with the objectives prescribed in Chapter 3 of the 2017 MP.

The following is a description of the public-use areas operated by KDWPT on USACE lands at Toronto Lake, some of which are highly developed, while others have only basic facilities and limited development. Maps showing existing parks and facilities can be found in Appendix A of the 2017 MP. All the public-use areas are located within the 1,075 acres of Cross Timbers State Park (formerly known as Toronto Point State Park).

#### Leased Public-Use Areas

Toronto Point Area – Toronto Point encompasses 505 acres on the north end of Toronto Lake. The public use area is operated by the KDWPT and serves as day use and camping recreation. The day use recreation offers 2 boat ramps, trails, ADA fishing pier, an amphitheater, a courtesy dock, swimming beach, gazebo, and basketball court. The campground offers 4 cabins, 15 water, electric, and sewer campsites, 43 water and electric campsites, 1 electric campsite, 80 primitive campsites, a group camp with 11 water and electric sites, 3 shower houses, 2 vault privies, a playground, a dump station, and a park attendant booth.

Holiday Hill Area - Holiday Hill encompasses 400 acres on the southwest end of Toronto Lake. The public use area is operated by the KDWPT and serves as day use and camping recreation. The day use recreation offers 3 boat ramps, a beach, and picnic areas. The campground offers 1 water, electric, and sewer campsite, 7 water and electric campsites, 7 electric campsites, 21 primitive campsites, 2 shower houses, a vault privy, and a park attendant booth.

Mann's Cove Area - Mann's Cove State Park encompasses 23 acres on the northeast end of Toronto Lake. The public use area is operated by the KDWPT and serves as day use and camping recreation. Day use recreation offers a boat ramp and picnic areas. The campground offers 15 primitive campsites and a vault privy.

Woodson Cove Area - Woodson Cove State Park encompasses 82 acres on the southeast end of Toronto Lake. The park is operated by the KDWPT and serves as day use recreation area. The day use recreation offers trails, picnic areas and a vault privy.

The remaining acres in the Cross Timbers State Park are made up of the East Spillway area and the Overlook area, which have limited amenities.

### Trails

Five trails are located within the state park system at Toronto Lake. All trails are open to travel by foot for walking, hiking, and backpacking. Four of these trails are also open to non-motorized uses including jogging and mountain biking.

- *The Ancient Oaks Trail* is a one-mile long, self-guided interpretive trail for hiking only. This trail has educational plaques that describe the age of each tree and outstanding historical events in North America and the United States that occurred at the same time each tree was a seedling.
- *The Chautauqua Hills Trail* features four connecting loops, for hiking and mountain biking. The shortest loop is 1.5 miles long and the longest is 11 miles long through both the woodland and prairies of the central plains.
- *The Overlook Trail* is a 1.25 mile-long trail for hikers and mountain bikers through the Cross Timbers ecosystem. It is rated moderate to difficult for hikers, and the many sandstone outcroppings and steep ravines make it challenging for mountain bikers.
- *The Blackjack Trailhead* is a one-mile trail rated moderate for hikers and mountain bikers. This open-canopy trail is good for wildlife viewing.
- *The Oak Ridge Trailhead* is a 0.5-mile long trail rated moderate and appropriate for novice hikers and mountain bikers of multiple ages and abilities.

#### **3.1.1 Alternative 1: No Action Alternative**

The No Action Alternative for Toronto Lake is defined as the USACE taking no action, which means neither the MP nor the SMP would be revised. No new resources analysis, resources management objectives, or land-use and shoreline classifications would occur. The operation and maintenance of USACE lands and shorelines at Toronto Lake would continue as outlined in the existing MP and SMP. Although this alternative does not result in a MP or SMP that meets current regulations and guidance, there would be no significant impacts on land uses on Toronto Lake lands.

#### **3.1.2 Alternative 2: Proposed Action**

The objectives for revising the Toronto Lake MP and SMP were to describe current and foreseeable land uses and taking into account expressed public opinion and USACE policies that have evolved to meet day-to-day operational needs.

The USACE intends to continue leasing the high density recreation areas to KDWPT. There are no plans to expand these recreation lands beyond the 1,216 acres designated with the HDR land classification. Emphasis will be placed on improving existing facilities, including such activities as upgrading aging water and electrical infrastructure, improving energy efficiency and sustainability of facilities, repairing or

replacing outdated restrooms, and paving gravel roads in several parks. The changes required for the Proposed Action were developed to help fulfill regional goals associated with good stewardship of land and water resources that would allow for continued use and development of project lands. Therefore, implementation of the Proposed Action would not result in significant impacts on land uses on project lands.

Under Proposed Action, existing docks would be grandfathered and allowed to remain, but construction of new docks would be prohibited. Therefore, there would be no change in existing levels of access to the lake. Under the Proposed Action, there would be also be no change to the current shoreline allocation. Therefore, activities would remain much the same.

## **3.2 WATER RESOURCES**

### Surface Water

Toronto Lake has approximately 2,308 surface water acres with 55 miles of shoreline at conservation pool elevation 901.5 NGVD. The flood control pool ranges from elevation 901.5 – 931.0. NGVD. This creates a lake area of approximately 11,740 acres at total flood control pool and holds back floodwaters originating from 730 square miles of drainage area above the dam. In addition to flood control storage, the conservation storage totals 10,660 acre-feet of which 10,260 acre-feet is in permanent storage for sedimentation reserve, and the remaining 400 acre-feet is used for release water during dry periods for supplemental water supply.

### Hydrology and Groundwater

The hydrology of the watershed is dominated by the Verdigris River and Walnut Creek which flow into Toronto Lake. The watershed tends to be flashy during rainfall events, followed by low flows during dry weather but otherwise does not sustain flow during extended dry periods. The majority of the watershed is underlain by Pennsylvanian Wabaunsee Group of thick, water-tight shales, thus little ground water exists around the lake except in the stream alluvium. Surface water is used predominantly by municipalities and irrigators; in fact, surface water makes up over 98 percent of the water used in the Kansas part of the Verdigris River basin. Ground water supplies are quite limited in the basin, occurring mostly in alluvial aquifers.

### Wetlands

Waters of the United States are defined within the Clean Water Act (CWA), and jurisdiction is addressed by the USACE and United States Environmental Protection Agency (USEPA). 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, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Table 3-1 lists the acreages of various types of wetlands present at Toronto Lake. Wetland classifications presented are derived from the National Wetlands Inventory database (USFWS 2016). Figure 3-1 depicts the location of the different wetland types within the Toronto Lake project lands boundary.

**Table 3-1. Wetland Classification 2016 Inventory**

<b>Wetland Types</b>			
<b>System</b>	<b>Sub-System</b>	<b>Class</b>	<b>Total Acres</b>
Lacustrine	Limnetic	Unconsolidated Bottom	2,354
Lacustrine	Littoral	Aquatic Bed	10
Lacustrine	Littoral	Unconsolidated Shore	776
Palustrine	None	Aquatic Bed	884
Palustrine	None	Emergent Wetland	329
Palustrine	None	Forested Wetland	1,237
Palustrine	None	Scrub-Shrub Wetland	81
Palustrine	None	Unconsolidated Bottom	1
Palustrine	None	Unconsolidated Shore	163
Riverine	Intermittent	Streambed	39
Riverine	Lower Perennial	Unconsolidated Bottom	10
Riverine	Lower Perennial	Unconsolidated Shore	1

Note: Acreages from the USFWS website do not match exactly with the USACE digitized acreages.

# Toronto Lake: NWI Mapped Wetlands

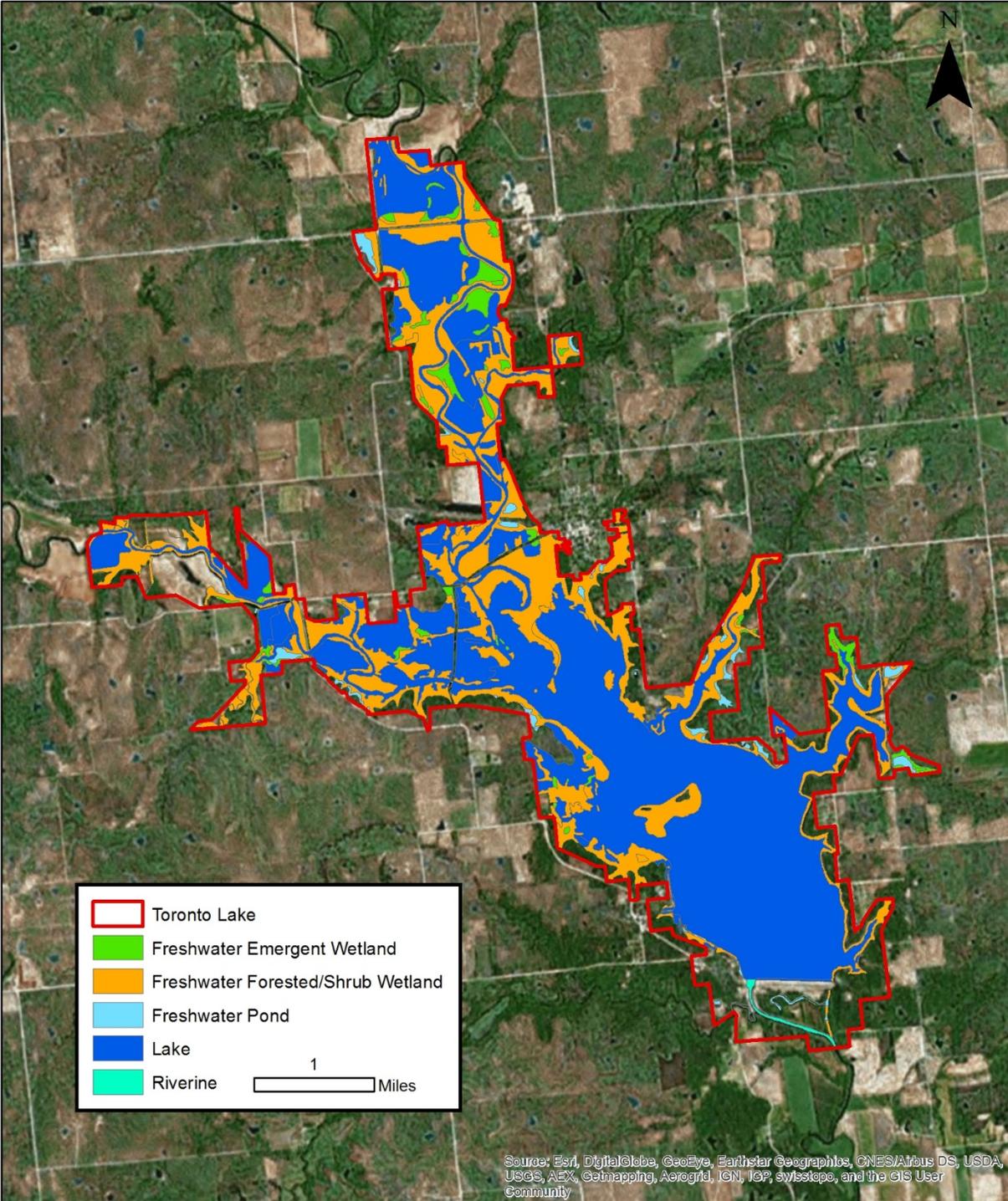


Figure 3-1. Wetlands at Toronto Lake

## Water Quality

The Kansas Department of Health and Environment (KDHE) water quality data collected from 1992 to 2007 revealed that Toronto Lake ranks as the ninth highest for total phosphorus (TP) concentration of the 24 federal reservoirs in the State. Total phosphorus concentrations are four times greater than the statewide benchmark of 23 ug/L. The total suspended solids (TSS) concentration, indicative of turbid conditions, is the third highest among the federal reservoirs, and the lake has low water clarity. Thus, siltation and dissolved oxygen deficiencies comprise the primary water quality problems in Toronto Lake, leading to the lake being classified as “impaired” according to the Clean Water Act. The KDHE has set forth an implementation strategy for the watershed to reduce the amount of phosphorus and sediment entering the lake. For more information concerning water quality and strategies for Toronto Lake see the KDHE website ([www.kdheks.gov](http://www.kdheks.gov)).

Due to impairment issues, Toronto Lake has a high priority in the Water Restoration and Protection Strategy (WRAPS) program. The program establishes best management practices for improving water quality. For Toronto Lake, the program focuses on reducing sediment and phosphorus. A further discussion of the WRAPS program at Toronto Lake can be found in Chapter 6 of the MP and a copy of the Toronto Reservoir 9 Element Watershed Plan Summary can be found in Appendix D.

### **3.2.1 Alternative 1: No Action Alternative**

There would be no impacts on water resources as a result of implementing the No Action Alternative, since there would be no change to the existing MP.

### **3.2.2 Alternative 2: Proposed Action**

The reclassifications and resource management objectives required for the Proposed Action would allow land management and land uses to be compatible with the goals of good stewardship of water resources (e.g., conservation of emergent wetlands, erosion control, and improving water quality); therefore, there would be no significant adverse impacts on water resources.

## **3.3 CLIMATE**

Toronto Lake lies in a region characterized by moderate winters and comparatively long summers. In spring, summer, and fall, prevailing winds are from the south and southwest. The mean annual temperature in the vicinity of the dam site is 69 degrees (°) Fahrenheit (F). The maximum recorded temperature was 121° F. The recorded low was -21° F. The growing season, between killing frosts, is normally from April to the middle of October. The mean annual precipitation over the contributing portion of the Verdigris River basin above Toronto Lake is approximately 37 inches.

### **3.3.1 Alternative 1: No Action Alternative**

The No Action Alternative does not involve any activities that would contribute to changes in existing conditions. There would be no short- or long-term, minor, moderate or major, beneficial, or adverse impacts on climate as a result of implementing the No Action Alternative.

### 3.3.2 Alternative 2: Proposed Action

Revision of the Toronto Lake MP and SMP would have no impact on the climate of the study area.

## 3.4 CLIMATE CHANGE AND GREENHOUSE GASES

Federal guidance and direction regarding climate change evaluation is currently in flux. Several EOs have been issued in recent years that direct federal agencies to address climate change and Green House Gas (GHG) emissions with emission reductions and preparedness planning and implementation. President Obama issued EO 13653, Preparing the U.S. for the Impacts of Climate Change in 2013, which was rescinded by President Trump's EO 13783, Promoting Energy Independence and Economic Growth in 2017. EO 13693, Planning for Federal Sustainability in the Next Decade (2015) requires federal agencies to meet emission-reducing goals associated with energy use, water use, building design and utilization, fleet vehicles, and procurement and acquisition decisions.

Federal agencies are required to consider GHG emissions and climate change in environmental assessment in accordance with NEPA. On August 1, 2016, the CEQ issued final guidance on the consideration of GHG emissions and climate change in NEPA review, however, EO 13783 directed the CEQ to rescind that guidance. At the same time, case law in the Ninth Circuit still requires climate change analysis: "The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct" (Center for Biological Diversity v. National Highway Traffic Safety Administration, 538 F.3d 1172, 1217 [9<sup>th</sup> Cir. 2008]). Consistent with case law, an analysis of climate change impacts was conducted for this EA.

The general operations and recreation facilities associated with Toronto Lake do not generate significant amounts of GHG emissions. Toronto Lake Project Office has management plans in place such as routine equipment maintenance, holistic vegetative management plans, natural resource management plans, and public education and outreach programs to protect regional natural resources. In addition, the Toronto Lake Project Office will continue monitoring programs as required to meet applicable laws and policies.

Two Executive Orders (EOs), EO 13514 and EO 13693, as well as the President's Climate Action Plan (CAP) set forth requirements to be met by federal agencies. These requirements range from preparing general preparedness plans to meeting specific goals to conserve energy and reduce GHG emissions. In response to the EOs and CAP, the USACE prepared an Adaptation Plan, which is still in effect. The Adaptation Plan includes the following USACE policy statement:

*It is the policy of USACE to integrate climate change preparedness and resilience planning and actions in all activities for the purpose of enhancing the resilience of our built and natural water-resource infrastructure and the effectiveness of our military support mission, and to reduce the potential vulnerabilities of that infrastructure and those missions to the effects of climate change and variability.*

The USACE manages 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 EO 13693 and related USACE policy.

#### **3.4.1 Alternative 1: No Action Alternative**

The No Action Alternative does not involve any activities that would contribute to changes in existing conditions. There would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on climate change or contributions to GHG emissions as a result of implementing the No Action Alternative.

#### **3.4.2 Alternative 2: Proposed Action**

Under the Proposed Action, current Toronto Lake project management plans and monitoring programs would not be changed. There would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on climate change or contributions to GHG emissions as a result of the revised 2017 MP and SMP. In the event that GHG emission issues become significant enough to impact the current operations at Toronto Lake, the 2017 MP and all associated documents would be reviewed and revised as necessary.

### **3.5 AIR QUALITY**

The USEPA established nationwide air quality standards to protect public health and welfare in 1971. The State of Kansas 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<sub>3</sub>), Carbon Monoxide (CO), Sulfur Dioxide (SO<sub>2</sub>), Nitrogen Oxide (NO), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), and Lead (Pb). Based on both Federal and state air quality standards, an area can be classified as either an "attainment," "maintenance," or "non-attainment" area for each pollutant. According to Kansas Department of Health and Environment (KDHE) current State Implementation Plan (KDHE 2015), the Toronto Lake area (Greenwood and Woodson Counties) is an attainment area and does not require a pollutant control strategy. The closest state air quality monitoring station located in northeast Neosha County near the city of Chanute, southeast of Toronto Lake, describes the air quality as good. The air quality data collected at that station on 13 July 2017 indicated that all measured indices were found to be in the Good range of 0 – 50 ppm. The Ozone measurement for 13 July 2017 was 8 ppm.

#### **3.5.1 Alternative 1: No Action Alternative**

There would be no short- or long-term, minor, moderate or major, beneficial, or adverse impacts on air quality as a result of implementing the No Action Alternative, since there would be no change to the existing MP or SMP.

#### **3.5.2 Alternative 2: Proposed Action**

Existing operation and management of Toronto Lake is compliant with the Clean Air Act and would not change with implementation of the 2017 MP. No short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on air quality would

occur as a result of implementing the proposed revisions to the Toronto Lake MP and SMP.

### **3.6 TOPOGRAPHY, GEOLOGY, AND SOILS**

#### Topography

Located in the gently rolling lands of the Verdigris River valley, Toronto Lake includes a variety of terrain. Upstream bottom lands are primarily cultivated due to deep soils and relatively flat terrain. Wooded slopes supports forest and grasslands and are often dryer uplands with shallow rocky or sandy soils. The base of steep hillsides and ravines are moister and support hardwoods. The prairie area supports a mixture of tall and mid-grasses with numerous herbaceous and woody plants.

#### Geology

Toronto Lake area contains rock formations of hills formed on thick sandstones in the Lawrence and Stranger Formations. These sandstones formations, which were deposited in deep, alluvial valleys dating back to the Pennsylvanian Age, are predominantly shale with a few limestone beds that have a slight regional dip to the west. To the east the shale and limestone beds are overlain by a layer of sandstone of considerable thickness. Rock outcroppings create plateaus that lend scenic value to the landscape.

#### Soils

The soils surrounding Toronto Lake are comprised of four different associations: Eram-Dennis-Bates, Summit-Lula-Ringo, Osage-Verdigris, and Stephenville-Niotaze-Darnell.

The Eram-Dennis-Bates association consists of moderately deep, gently sloping to moderately steep, moderately well drained and well drained soils that have a clay loam or silty clay subsoil, on uplands. The soils in this association were formed in material weathered from clayey and sandy shale and sandstone. This association is mostly in native grasses and used primarily for grazing.

The Summit, Lula-Ringo association consists of deep, nearly level to strongly sloping, well drained and somewhat poorly drained soils that have a silty clay loam or silty clay subsoil, on uplands. The soils in this association were formed in material weathered from alkaline and calcareous clay shale and limestone. About two-thirds of the acreage made up of this association in Woodson County is native grasses, with a small acreage in woodlands and the rest is cultivated.

The Osage-Verdigris association consists of deep, nearly level, poorly drained and moderately well drained soils that have a silty clay loam or silty clay subsoil and underlying material, on floodplains. This soils in this association formed in clayey and loamy alluvium. Most of the acreage of this association is cultivated with a few small acres in woodland and native grasses.

The Stephenville-Niotaze-Darnell association consists of moderately deep and shallow, gently sloping to steep, well drained and somewhat poorly drained soils that

have a fine sandy loam, sandy clay loam, or silty clay subsoil, on uplands. The soils in this association were formed in material weathered from shale and sandstone. Nearly all the acreage made up of this association is in woodlands with small areas of native grasses interspersed throughout.

Prime Farmlands do occur within the Toronto Lake project. Detailed information on all soil types surrounding Toronto Lake is available on websites maintained by the U.S. Department of Agriculture, NRCS.

Sedimentation surveys for Toronto Lake have been conducted periodically over the years and, most recently in 2010. These surveys estimate an approximate loss of 40% (approximately 10,800 acre-feet) of storage below the top of the conservation pool in the 50 years between the time of construction and 2010. Most recently, approximately 13% of original storage in this zone was lost in the 15 years between 1995 and 2010, for an annual rate of loss of approximately 0.9% over that period. To date, sediment accumulation in the conservation pool has not severely impacted authorized project purposes and, as is the case for nearly all federal reservoirs, there are no plans to dredge all or portions of Toronto Lake.

### **3.6.1 Alternative 1: No Action Alternative**

The No Action Alternative does not involve any activities that would contribute to changes in existing conditions, so there would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on topography, geology, soils, or shoreline erosion as a result of implementing the No Action Alternative.

### **3.6.2 Alternative 2: Proposed Action**

Topography, geology, and soils were considered during the refining process of land reclassifications for the 2017 MP. Toronto Lake area lands were reclassified to reflect more accurately how the lands are currently being utilized. For example, HDR acreage increased from 1,086 acres to 1,216 acres, while all the LDR acres were converted to other classifications, mostly HDR and WM, reflecting their current use. Areas currently developed as park would continue to operate as parks and no change would occur. The reclassifications and resource management objectives required for the Proposed Action would allow land management and land uses to be compatible with the goals of good stewardship of natural resources, and would not cause any ground disturbing activities, which could impact soils. Therefore, under the Proposed Action, there would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on topography, geology, or soils as a result of implementing the 2017 MP and SMP.

## **3.7 NATURAL RESOURCES**

### Ecoregion

Toronto Lake lies between the northern end of the Cross Timbers ecoregion to the south and east, and the Flint Hills ecoregion on the lake's north and west edge, while the eastern edge of the lake lies in the Osage Cuestas of the Central Irregular Plains.

The Cross Timbers area extends through eastern Oklahoma into northern Texas. In Kansas this region is known as the Chautauqua Hills and has a diversity of habitat that include upland woodlands on sandstone outcrops dominated by post and blackjack oak, surrounded by terraces of prairie and gently rolling terrain gradually sloping to the water's edge.

The Flint Hills area is characterized by tall grasses and is the smallest grassland ecoregion in North America. It covers the Flint Hills of Kansas and the Osage Plains of northeastern Oklahoma. It can be distinguished from other grasslands to the north by its low diversity of flora and fauna, and its thin soil layer spread over distinct beds of limestone. Abundant residual flint is eroding out of the bedrock in the rocky uplands.

The Osage Cuestas ecoregion is a transition zone characterized by gentle undulating plains and perennial streams. The soils are silty and clayey, supporting mostly tall grass prairie in the west, where Toronto Lake lies, and oak hickory woodlands in the east. The land provides a mosaic of woodland, cropland, and grassland.

Woodlands include old growth stands of post oak-blackjack oak and oak-hickory associations. Riparian woodlands include stands of elm-ash-cottonwood associations. The native prairie on Toronto Lake's consists of a mixture of tall and mid-grasses as well as numerous herbaceous and woody species. Common native grasses include big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), silver bluestem (*Bothriochloa saccharoides*), switchgrass (*Panicum virgatum*), bitter sneezeweed (*Helenium amarum*), broomsedge (*Andropogon virginicus*), Canadian thistle (*Cirsium arvense*), purple top (*Tridens flavus*), ragweed species (*Ambrosia* sp.), and sideoats grama (*Bouteloua curtipendula*). Johnsongrass (*Sorghum halepense*) is a common invasive species found in many native prairie areas.

### Fisheries and Wildlife Resources

Section 2.2 of the MP details the rich natural resources of Toronto Lake, which provides habitat for an abundance of both game and non-game fish and wildlife species. The lake provides a quality fishery, as well as quality wildlife habitat on public lands associated with the project.

Toronto Lake provides fishing opportunities for the boater with 2,308 acres of surface water at conservation pool and for the bank angler with more than 12 miles of public shoreline recreation access. Fish resources at Toronto Lake include crappie (*Pomoxis* sp.), channel catfish (*Ictalurus punctatus*), flathead catfish (*Pylodictis olivaris*), white bass (*Monroe chrysops*), largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), gizzard shad (*Dorosoma cepedianum*), drum fish (*Apolodinotus grunniens*), smallmouth buffalo (*Ictiobus bubalus*), largemouth buffalo (*Ictiobus cyprinellus*), carp (*Cyprinus carpio*), green sunfish (*Lepomis cyanellus*), gar (*Lepisosteidae* sp.), and redhorse (*Moxostoma carinatum*). In addition, walleye (*Sander vitreus*) and striped bass (*Morone saxatilis*) have also been stocked in the lake by KDWPT.

There are 8,640 acres of Federal land managed by USACE at Toronto Lake with 5,070 acres designated as MRML- Wildlife Management. These management areas are

popular with hunters and individuals wishing to observe wildlife in their natural habitat. The Toronto Lake area is home to over 400 species of game and non-game wildlife. Bird populations include a mix of resident and migratory neotropicals and waterfowl. Visitors to Toronto Lake can experience year-round viewing for white-tailed deer (*Odocoileus virginiana*), turkey (*Meleagris gallopavo*), red fox (*Vulpes vulpes*), feral hogs (*Sus scrofa*), bobwhite quail (*Colinus virginianus*), mourning dove (*Zenaida macroura*), fox squirrel (*Sciurus niger*), cottontail rabbit (*Sylvilagus floridanus*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*).

In the summer, great blue herons (*Ardea herodias*) can be seen, and the spring and fall features many migratory birds including waterfowl. Being on the eastern edge of the Central Waterfowl Flyway, waterfowl migrating through the area include mallard (*Anas platyrhynchos*), northern pintail (*Anas acula*), blue-winged teal (*Apatula discors*), American widgeon (*Anas americana*), gadwall (*Anas strepera*), wood duck (*Aix sponsa*), northern shoveler (*anas clypeata*), ring-necked (*Aythya collaris*), lesser scaup (*Aythya affinis*), redhead (*Aythya americana*), canvasback (*Aythya valisineria*), hooded mergansers (*Lophodytes cucullatus*), Canada geese (*Branta canadensis*), lesser snow geese (*Chen caerulescens*), and white-front geese (*Anser albifrons*). Plovers (*Charadriinae sp.*) and sandpipers (*Scolopacidae sp.*) can be found at the lake, as can American white pelicans (*Pelecanus erythrorhynchos*), bald eagles (*Haliaeetus leucocephalus*), purple martins (*Progne sp.*), and turkey vultures (*Cathartes aura*). Common reptiles include box turtles (*Terrapene sp.*), painted turtles (*Chrysemys picta*), common garter snakes (*Thamnophis sirtalis*), and six lined racerunners (*Aspidoscelis sexlineata*). Planting forage crops for wildlife, native plant restoration, timber management, and prescribed burning are management techniques used by KDWPT and USACE to provide food and cover for a variety of wildlife.

### **3.7.1 Alternative 1: No Action Alternative**

The No Action Alternative does not involve any activities that would contribute to changes in existing conditions; therefore, no short- or long-term, major, moderate, or minor, beneficial, or adverse impacts on natural resources would be anticipated as a result of implementing the No Action Alternative.

### **3.7.2 Alternative 2: Proposed Action**

The reclassifications, resource management objectives, and resource plans required for the Proposed Action would allow land management and land uses to be compatible with the goals of good stewardship of natural resources. The Proposed Action would allow project lands to continue supporting the USFWS and the KDWPT missions associated with wildlife conservation and implementation of operational practices that would protect and enhance wildlife and fishery populations and habitat. In addition, the Proposed Action would be compatible with conservation principles and measures to protect migratory birds as mandated by EO 13186.

The reclassification of an additional 555 acres of MRML-WM lands protects natural resources from various types of adverse impacts such as habitat fragmentation. Under this reclassification, multiple land parcels that were previously classified as Recreation Areas were converted because the USACE recognized the areas as having an extremely high ecological value, being significant for public use and enjoyment, and

by reclassifying those areas it would ensure they are given the highest order of protection among possible land classifications. The reclassification of these lands will have minimal effect on current or projected public use. However, long-term, beneficial impacts on natural resources could occur as a result of implementing the reclassifications outlined in the 2017 MP.

There would be no short- or long-term, major, moderate, or minor, beneficial or adverse impacts on natural resources anticipated as a result of implementing the 2017 SMP since the Plan is not proposing any significant modifications that would impact natural resources.

### **3.8 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. All Federal agencies are required to implement protective measures for designated species and to use their authorities to further the purposes of the Endangered Species Act. The Secretary of the Interior and the Secretary of Commerce (marine species) are responsible for the identification of threatened or endangered species and development of any potential recovery plans.

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 on, 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 activities. Although not afforded protection by the Endangered Species Act, candidate species may be protected under other Federal or state laws.

There are six Federally-listed species that could be found at Toronto Lake, but no candidate species (USFWS 2017). A list of these species is presented in Table 3-2. No Critical Habitat has been designated within or near Toronto Lake. The species identified as Threatened, Endangered or Candidate Species by KDWPT that are not Federally-listed are included in Appendix C of the 2017 MP.

**Table 3-2. Federally Listed Endangered and Threatened Species with Potential to Occur at Toronto Lake**

Common Name	Scientific Name	Federal Status	State Status
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Threatened	Not listed
Neosha Madtom	<i>Noturus placidus</i>	Threatened	Threatened
Topeka shiner	<i>Notropis topeka</i>	Endangered	Not listed
Neosho Mucket	<i>Lampsilis rafinesqueana</i>	Endangered	Endangered
Rabbitsfoot	<i>Quadrula cylindrical cylindrical</i>	Threatened	Threatened
American Burying Beetle	<i>Nicrophorus americanus</i>	Endangered	Endangered

Source: USFWS 2017

### 3.8.1 Alternative 1: No Action Alternative

The No Action Alternative does not involve any activities that would contribute to changes in existing conditions; therefore, no short- or long-term, major, moderate, or minor, beneficial, or adverse impacts on threatened and endangered species would be anticipated as a result of implementing the No Action Alternative.

### 3.8.2 Alternative 2: Proposed Action

Under the Proposed Action, the USACE would continue cooperative management plans with the USFWS and KDWPT to preserve, enhance, and protect wildlife habitat resources. To further management opportunities and beneficially impact habitat diversity, the reclassifications proposed in the 2017 MP include 5,070 acres MRML – WM. Under this reclassification, several land parcels that were previously classified as Recreation Areas were converted to wildlife management in order to recognize those areas having the high ecological value and to ensure they are given a high order of protection among possible land classifications. The conversion of these lands will have no effect on current or projected public use. However, long-term, beneficial impacts on natural resources could occur as a result of implementing the reclassifications outlined in the 2017 MP. Any future activities that could potentially result in impacts on Federally-listed species will be coordinated with USFWS through Section 7 of the Endangered Species Act.

There would be no short- or long-term, major, moderate, or minor, beneficial or adverse impacts to Threatened or Endangered Species or their critical habitat anticipated as a result of implementing the 2017 SMP since the Plan is not proposing any significant modifications that would impact natural resources.

## 3.9 INVASIVE SPECIES

An invasive species is defined as a plant or animal that is non-native to an ecosystem and whose introduction causes, or is likely to cause, economic and/or environmental harm, or harm to human health. Invasive plants are introduced species

that can thrive in areas beyond their normal range of dispersal. These plants are characteristically adaptable, aggressive, and have high reproductive capacity. Table 3.3 lists the invasive species known to be present at Toronto Lake. The list is updated periodically to reflect changes as new species are found. As can be seen, both Johnson grass and *Sericea lespedeza* are considered as having major impacts on project lands at Toronto Lake. The *Sericea lespedeza* has been on the invasive species list for several years, but its presence has expanded, in part due to budget constraints preventing aggressive treatment.

**Table 3-3. Invasive Species Found at Toronto Lake**

Common Name	Scientific Name	Native/Non-native	Acres Impacted	Prevalence
Crownvetch	<i>Securigera varia</i>	Non-native	1	Minor
Johnson grass	<i>Sorghum halepense</i>	Non-native	15	Major
<i>Sericea lespedeza</i>	<i>Lespedeza cuneata</i>	Non-native	50	Major

Source: 2016 OMBIL Invasive Species Records for Toronto Lake

### 3.9.1 Alternative 1: No Action Alternative

The No Action Alternative does not involve any activities that would contribute to changes in existing conditions, so Toronto Lake would continue to be managed according to the existing invasive species management practices. There would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts from invasive species as a result of the No Action Alternative.

### 3.9.2 Alternative 2: Proposed Action

The land reclassifications, resource objectives, and resource plan required to revise the Toronto Lake MP are compatible with the lake's invasive species management practices. Therefore, invasive species would continue to be managed, and no significant adverse impacts on resources would occur as a result of implementing the 2017 MP and SMP.

## 3.10 CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES

Historic site types in the Toronto Lake area include historic Indian villages, camps, towns, burials, and agencies, trading posts, Euroamerican homesteads and ranches, Indian homes and farmsteads, and freed slave homesteads and farms. Related types of resources are trails, wells, cisterns, privies, rock walls, foundations or foundation piers, cellar depressions, chimneys (stone or brick), stairs, railroad lines, cattle trails, roads, schools, cemeteries, dumps, and water diversion features.

Dependent on funding, a Cultural Resources Management Plan for Federal property at Toronto Lake would be developed and incorporated into the Operational Management Plan in accordance with Engineering Pamphlet (EP) 1130-2-540. The purpose of the Cultural Resources Management Plan would be to provide a comprehensive program to direct the historic preservation activities and objectives at Toronto Lake. Completion of a full inventory of cultural resources at Toronto Lake is a long-term objective that is needed for compliance with Section 110 of the NHPA. All

currently known and newly recorded sites would be evaluated to determine their eligibility for the National Register of Historic Places (NRHP).

In accordance with Section 106 of the NHPA, any proposed ground-disturbing activities or projects would require cultural resource surveys to locate and evaluate historic and prehistoric resources. Resources determined eligible for the NRHP must be protected from proposed project impacts or the impacts must be mitigated. All future cultural resource investigations at Toronto Lake would be coordinated with the State Historic Preservation Officer and Federally-recognized Tribes to ensure compliance with the NHPA, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act.

### **3.10.1 Alternative 1: No Action Alternative**

There would be no additional short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on cultural, historical, or archaeological resources as a result of implementing the No Action Alternative, as there would be no changes to the existing MP or SMP.

### **3.10.2 Alternative 2: Proposed Action**

Impacts on cultural, historical, and archaeological resources were considered during the refinement processes of land reclassifications. Based on previous surveys at Toronto Lake, the required reclassifications, resource objectives, and resource plans would not change current cultural resource management plans or alter areas where these resources exist. All future ground disturbing activities or projects would be coordinated with the State Historic Preservation Officer and Federally-recognized Tribes to ensure compliance with Section 106 of the NHPA, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act. Therefore, no significant adverse impacts on cultural, historical, or archaeological resources would occur as a result of implementing the 2017 MP and SMP.

## **3.11 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE**

The socio-economic data analysis in section 2.4 of the MP encompasses both Fall River and Toronto Lakes due to their proximity to one another. Though the lakes each have unique circumstances in terms of adjacent development, the impact of the surrounding counties to the lakes is essentially the same. All the table references in the subsequent paragraphs in this section of the EA can be found in 2017 MP.

### Demographic Characteristics

The 2017 MP details the demographics of the zone of interest. The zone of interest for the purpose of the Fall River and Toronto MPs socio-economic analysis includes the neighboring counties of Greenwood and Woodson in southeast Kansas. Fall River Lake is located in Greenwood County and Toronto Lake is primarily located in Woodson County with a small portion in Greenwood County. At the time of the construction of Toronto Lake, Woodson and Greenwood Counties were at their highest population totals on record. This was sparked by a local economy driven by oil, cattle, and the railroad. Overtime the oil business slowly dried up and the railroad companies abandoned many of their lines that support the local communities. Today, the

population of the counties is less than half as when Toronto Lake was constructed and cattle ranching and farming industries have become the main source of economy for the local area.

The total population for the zone of interest in 2015 was 9,604, as shown in Section 2.4.1 of the MP. Approximately 67% of the zone of interest's population resides in Greenwood County and 33% resides in Woodson County. Both are rural counties, with their combined population making up less than 1% of the total population of the state of Kansas. Negative annual growth is forecast in the zone of interest between 2015 and 2044 by Wichita State University's Center for Economic Development and Business Research. Research forecasts annual growth rates of -1.8% and -1.6% in Greenwood and Woodson Counties, respectively.

The distribution of the population among gender is approximately 49 percent male and 51 percent female in all geographical areas, as shown in Table 2.9 in the 2017 Toronto Lake MP. The largest percentage of the population is over age 45. Older age groups are expected to increase in size by 2044.

Race and ethnicity for the zone of interest are shown in Table 2.10 in the MP. The U.S. Census estimates show that the region is heavily White (93 percent). Hispanic or Latino accounts for three percent, two or more races account for another three percent, while the other race categories account for less than one percent each.

Table 2.11 in the MP displays the highest level of education attained by the population age 25 and over in both Kansas and the zone of interest. The largest percentage in the zone of interest has a high school credential. Table 2.12 in the MP provides details of the labor force in the zone of interest. The largest percentage of the population from the zone of interest is employed in the educational services, and health care and social assistance sector. As shown in Table 2.14 in the MP, median household income in the zone of interest in 2015 was \$38,838 in Greenwood County and \$35,787 in Woodson County, which is considerably lower than the median household income of \$52,205 in Kansas (US Bureau of the Census. 2015).

In terms of families below the poverty level, both counties within the zone of interest had a greater percentage of families below the poverty level than the state of Kansas. It is expected that both Woodson and Greenwood counties will continue to be rural in nature over the next 25 years. The population is expected to maintain or shrink from the current numbers, and no major change is expected in demographics.

### Environmental Justice

Analysis of demographic data on race and ethnicity and poverty provides information on minority and low-income populations that could be affected by the proposed actions. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, Pacific Islander, or Other. Poverty status is used to define low-income. Poverty is defined as the number of people with income below poverty level. A potential disproportionate impact may occur when the minority in the study area exceeds 50 percent or when the percent minority and/or low-income in the study area are meaningfully greater than those in the region.

Counties in the zone of interest have substantially lower minority populations than the state of Kansas, as shown in Table 2.10 in the MP, and all have minority populations that are below 50 percent. Both counties within the zone of interest had a greater percentage of families below the poverty level than the state of Kansas (9.1%).

It has been recognized that the potential for impacts on the health and safety of children is greater where projects are located near residential areas. The U.S. Census estimates show that persons 19 and under is roughly 22 percent of the population in Greenwood and Woodson Counties (Figure 2.4 of the MP).

### **3.11.1 Alternative 1: No Action Alternative**

Under the No Action Alternative, there would be no changes to the existing MP or SMP, with the USACE continuing to manage Toronto Lake's natural resources as set forth in the 1979 MP. There would be no short- or long-term, minor, moderate, or major adverse impacts on socioeconomic resources. Beneficial socioeconomic impacts existing as a result of the implementation of the 1979 MP would continue, as visitors would continue to come to the lake from surrounding areas. In addition to camping in KDWPT-operated campgrounds, many visitors purchase goods such as groceries, fuel, and camping supplies locally, eat in local restaurants, stay in local hotels and resorts, play golf at local golf courses, and shop in local retail establishments. These activities would continue to bring revenues to local companies, provide jobs for local residents, and generate local and state tax revenues. There would be no disproportionately high or adverse impacts on minority or low-income populations or children with the implementation of the No Action Alternative.

### **3.11.2 Alternative 2: Proposed Action**

Under the Proposed Action, the land reclassifications, resources objectives, and resource plan reflect changes in land management and land uses that have occurred since 1979. Toronto Lake offers a variety of free recreational opportunities for visitors. It is beneficial to the local economy through direct and indirect job creation and local spending by visitors. Beneficial impacts would be similar to the No Action Alternative. There would be no adverse impacts on economy in the area and no disproportionately high or adverse impacts on minority or low-income populations or children as a result of the implementation of the 2017 MP and SMP.

## **3.12 RECREATION**

The primary area having a significant influence on the public use and management of Toronto Lake includes Greenwood and Woodson Counties, Kansas. The majority of visitors to Toronto Lake come from within a 100-mile radius of the lake. Available data on the city of origin for campers in KDWPT parks shows that a large majority of campers are coming from Wichita, Kansas. Toronto Lake visitors are a diverse group ranging from campers who utilize the campgrounds around the lake, full-time and part-time residents of the private housing developments that border the lake, hunters who utilize the WM areas around the lake, day users who picnic in the state-operated parks, and many other user groups.

Recreational facilities at Toronto Lake are comprised of six public-use areas, all of which are managed by KDWPT. Located in the Flint Hills region, the lake is surrounded

by trees situated on gently rolling terrain that gradually slopes to the water's edge, creating a scenic shoreline. Recreational activities include picnicking, camping, hiking, boating, hunting, watersports, and birdwatching.

To help provide Kansas communities statewide with resources for recreational needs and trends across the state, KDWPT released the 2015 Statewide Comprehensive Outdoor Recreation Plan (SCORP). The SCORP serves to address emerging issues in 2015 Kansas outdoor recreation and set goals for the next five years. Survey results from the 2015 Kansas SCORP indicate that the most popular individual outdoor recreational activities are relaxing outdoors, picnicking and other social activities, all activities supported by Toronto Lake.

Wildlife based recreation accounts for a substantial amount of Toronto Lake's outdoor recreation demand, both by adjacent residents and by visitors. Water based recreation is a crucial aspect of outdoor recreation in Kansas, making up a substantial core of the visitors to USACE- and State-managed parks. Fitness and health enhancing outdoor experiences are popular in a variety of formats. Those of an individual nature are increasing while traditional team sports (football, baseball, and soccer) are in decline.

Based on the SCORP results, it is evident that future recreation development at Toronto Lake should focus less on campgrounds and more on providing increased trail opportunities (of all kinds), more facilities for family and group gatherings, and more wildlife and nature-related viewing opportunities. USACE should also place a high priority on the protection and retention of large, undeveloped parcels of public land. The large expanses of natural habitat on public land are held in high regard by the citizens throughout the zone of interest for Toronto Lake.

### **3.12.1 Alternative 1: No Action Alternative**

Under the No Action Alternative, there would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on recreational resources, as there would be no changes to the existing MP.

### **3.12.2 Alternative 2: Proposed Action**

Toronto Lake is beneficial to the local visitors and also offers a variety of free recreation opportunities. Even though the amount of acreage available for HDR would increase slightly and LDR would be eliminated with implementation of the 2017 MP, these land reclassifications reflect changes in land management and land uses that have occurred at Toronto Lake since 1979. The conversion of these lands would have no effect on current or projected public use. The 2017 MP responds recreational needs through revised land classifications, new management objectives and conceptual management plans for each land classification. Therefore, no adverse impacts on area recreational resources would result from implementation of the Toronto Lake 2017 MP and SMP.

## **3.13 AESTHETIC RESOURCES**

Toronto Lake is known for its rolling prairies and tree-dotted valleys, sheltered by limestone-capped ridges and abundant wildlife viewing opportunities. This makes it a popular destination for boating and camping. While Toronto Lake does not have a

Visitor Center, the many trails can be used for interpretation, including nature walks and plant identification.

### **3.13.1 Alternative 1: No Action Alternative**

There would be no short- or long-term, minor, moderate, or major, beneficial, or adverse impacts on visual resources as a result of implementing the No Action Alternative, as there would be no changes to the existing MP or SMP.

### **3.13.2 Alternative 2: Proposed Action**

Toronto Lake currently plays a pivotal role in availability of public use areas and open space in Woodson County. Even though the amount of acreage available for MRML - WM would increase by 555 acres, HDR would increase by 130 acres, and LDR would be eliminated with implementation of the 2017 MP, these land reclassifications reflect changes in land management and land uses that have occurred since 1979 at Toronto Lake. The conversion of these lands would have no effect on current or projected public use or visual aesthetics. Furthermore, the increase in the acreage of land classified as MRML – WM would protect lands that are aesthetically pleasing and limit future development. Therefore, no adverse impacts on visual resources would result from implementation of the 2017 MP or SMP.

## **3.14 HEALTH AND SAFETY**

As mentioned earlier in this document, Toronto Lake's authorized purposes include flood risk management, water supply, water quality, fish and wildlife, and recreation. Compatible uses incorporated in project operation management plans include conservation and fish and wildlife habitat management components. The USACE, with some assistance from the KDWPT, 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 improve public safety. These include safe boating and swimming regulations, safe hunting regulations, and speed limit and pedestrian signs for park roads. Toronto Lake also has solid waste management plans in place for camping and day use areas and a water sampling program for designated swimming beaches. Toronto Lake has USACE personnel in place to enforce these policies, rules, and regulations during normal park hours.

### **3.14.1 Alternative 1: No Action Alternative**

Under the No Action Alternative, the 2017 MP would not be revised. No significant adverse impacts on human health or safety would be anticipated.

### **3.14.2 Alternative 2: Proposed Action**

Under the Proposed Action, the proposed revisions to the Toronto Lake MP would be compatible with project safety management plans. The revised surface water classifications of Restricted and Designated No-Wake areas would improve boating safety near key recreational water access areas such as boat ramps and the designated swimming beach and in a large portion of the reservoir that was not cleared of standing trees which could be a hazard to recreational boaters. The Project would continue to have reporting guidelines in place should water quality become a threat to public health. Existing regulations and safety programs throughout the Toronto Lake Project area

would continue to be enforced to ensure public safety. There would be no short- or long-term, minor, moderate, or major, adverse impacts on public health and safety as a result of implementing the Proposed Action.

### 3.15 SUMMARY OF CONSEQUENCES AND BENEFITS

Table 3-4 provides a tabular summary of the consequences and benefits for the No Action and Proposed Action alternatives for each of the 13 assessed resource categories.

**Table 3-4. Summary of Consequences and Benefits**

Resource	Change Resulting from Revised MP	Environmental Consequences		Benefits Summary
		No Action Alternative	Proposed Action	
Land Use	No effect on private lands. Emphasis is on protection of wildlife and environmental values on USACE land and maintaining current level of developed recreation facilities and permitted private docks	Fails to recognize recreation trends and regional natural resource priorities.	Recognizes recreation trends and regional natural resource priorities identified by USACE, KDWPT, and public comment.	Land classification changes and new resource objectives fully recognize passive use recreation trends and regional environmental values such as protection of Cross Timbers forests and Flint Hills native prairies.
Water Resources Including: Groundwater, Wetlands, and Water Quality	Small change to recognize value of wetlands.	Fails to recognize the water quality benefits of good land stewardship and need to protect wetlands.	Promotes restoration and protection of wetlands and good land stewardship.	Specific resource objective promotes restoration and protection of wetlands.
Climate	Minor change to recognize need for sustainable, energy efficient design.	Fails to promote sustainable, energy efficient design.	Promotes land management practices and design standards that promote sustainability.	Specific resource objectives promote climate change resiliency. LEED standards for green design, construction, and operation activities will be employed to the extent practicable.
Climate Change and Greenhouse Gases	Same as for Climate	Same as for Climate	Same as for Climate	Same as for Climate
Air Quality	No change	No effect	No effect	No added benefit

Resource	Change Resulting from Revised MP	Environmental Consequences		Benefits Summary
		No Action Alternative	Proposed Action	
Topography, Geology and Soils	Minor change to place emphasis on good stewardship of land and water resources.	Fails to specifically recognize known and potential soil erosion problems.	Encourages good stewardship that would reduce existing and potential erosion.	Specific resource objectives call for stopping erosion from overuse and land disturbing activities.
Natural Resources	Moderate benefits through land reclassification and resource objectives.	Fails to recognize federal, state, and regional priorities calling for protection of wildlife habitat.	Gives full recognition of federal, state, and regional trends and priorities related to natural resources.	Reclassification of lands includes 555 additional acres of WM lands making a total of 5,070 acres being emphasized for stewardship of natural resources and fish and wildlife habitats. Limits to vegetation modification by adjacent landowners are specified
Threatened and Endangered Species	Minor change to recognize both federal and state-listed species.	Fails to recognize current federal and state-listed species.	Fully recognizes federal and state-listed species as well as rare species listed by KDWPT.	The MP sets forth the most recent listing of federal and state-listed species.
Invasive Species	Minor change to recognize several recent and potentially aggressive invasive species.	Fails to recognize current invasive species and associated problems.	Fully recognizes current species and the need to be vigilant as new species may occur.	Specific resource objectives specify that invasive species shall be monitored and controlled as needed.
Cultural Resources	Minor change to recognize current status of cultural resources.	Included cursory information about cultural resources that is inadequate for future management and protection.	Recognizes the presence of cultural resources and places emphasis on protection and management.	Specific resource objectives specify that a complete inventory of cultural resources and implementation of a Cultural Resources Management Plan will be undertaken, as funding permits.
Socioeconomics and Environmental Justice	No change	No effect	No effect	No added benefit

Resource	Change Resulting from Revised MP	Environmental Consequences		Benefits Summary
		No Action Alternative	Proposed Action	
Health and Safety	Minor change to promote public safety awareness.	Fails to emphasize public safety programs.	Recognizes the need for public safety programs.	Includes specific management objectives to increase water safety outreach efforts. Also, classifies 873 acres of water surface as restricted and designated no-wake for public safety purposes.
Recreation	Moderate benefits to outdoor recreation programs.	Fails to recognize current outdoor recreation trends.	Fully recognizes current outdoor recreation trends.	Specific management objectives focused on outdoor recreation opportunities and trends are included.

#### SECTION 4: CUMULATIVE IMPACTS

The most severe environmental degradation may not result from the direct effects of any particular action, but from the combination of effects of multiple, independent actions over time. As defined in 40 CFR 1508.7 (CEQ Regulations), a cumulative effect is the impact on the environment which 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 actions.

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

##### 4.1 PAST IMPACTS WITHIN THE ZONE OF INTEREST

Toronto Lake was originally authorized by the Flood Control Act of 1938, as modified by the Flood Control Act of 1941. Construction of the reservoir was initiated in November of 1954 and the project was placed in full operation for flood control in March 1960. The total project area at Toronto Lake encompasses 8,640 acres, which at conservation pool elevation 901.5 NGVD includes 6,332 acres of land and 2,308 acres

of surface water. Of this total area, 4,996 acres are encumbered with a perpetual flowage easement.

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

Future management of the 4,996 acres of Flowage Easement Lands at Toronto Lake includes routine inspection of these areas to ensure that the Government's rights specified in the easement deeds are protected. In almost all cases, the Government acquired the right to prevent placement of fill material or habitable structures on the easement area. Placement of any structure that may interfere with the USACE flood risk management and water conservation missions may also be prohibited.

Both Woodson and Greenwood Counties where Toronto Lake is located are rural counties with small populations, 3,211 and 6,396, respectively. According to Wichita State University's Center for Economic Development and Business Research, annual growth rates of -1.6 percent and -1.8 percent are projected in Woodson and Greenwood Counties, respectively, into the future, at least through 2044, the last year included in the period of projection. As such, no large transportation or business infrastructure projects are expected in either county that could be included in the cumulative impacts analysis.

Similarly, there are no planned future development of public-use areas on Toronto Lake project lands. Currently, KDWPT manages all four of the public-use areas – Toronto Point State Park (also known as Cross Timbers State Park), Holiday Hill State Park, Mann's Cove State Park, and Woodson Cove State Park. Neither USACE nor KDWPT are planning to develop additional public-use areas, but instead improve on the infrastructure, amenities, and facilities within the existing public-use areas.

Given the close proximity of Toronto Lake and the town of Toronto, Kansas, future requests may be received by the lake office for easements or other real estate instruments across public lands at Toronto Lake for electric transmission lines, water lines, fiber optic cable, or other similar utilities entering Toronto, Kansas from the west. In the event that these requests are compliant with all USACE policies, regulations, and federal laws, a preferred utility corridor utilizing the abandoned Missouri and Pacific Railroad bed which crosses federal lands and enters Toronto, Kansas immediately from the west is the preferred route for these utilities. This corridor represents a pre-disturbed area of high elevation, the use of which would be anticipated to result in the least impacts to public lands.

As with any other non-recreational request for use of USACE public lands, outgrant requests for utilities across lands at Toronto Lake using the corridor described above or any other route will be initially evaluated against criteria established in the USACE Non-Recreation Outgrant Policy (ER 1130-2-550, Chapter 17, September 30, 2013). Accordingly, the primary rationale for authorizing any future such request will be one of two reasons: (1) there is no viable alternative to the activity or structure being located on public land or waters; or, there is a direct benefit to the government. Factors such as cost impacts to the request or the perceived availability of underutilized or

unused USACE lands or waters will not have bearing on the determination of viability. If a request meets one of these two criteria, it will further be evaluated in light of compatibility with authorized project purposes, compliance with statutory and regulatory requirements, including environmental and cultural resource laws, cumulative impacts, and overall long-term public interest factors. Further details can be found in Chapter 17 of ER 1130-2-550. Any outgrant request for the corridor described above or other routes across public lands at Toronto Lake and not conclusively meeting criteria described above will not be processed for approval by the Tulsa District.

Finally, any request for utilities across government-owned lands at Toronto Lake, to include any use of the corridor described above, will be further subject to evaluation, review, and coordination under a number of federal environmental laws and regulations prior to approval. These laws include, but are not limited to, NEPA, NHPA, Endangered Species Act, Clean Water Act, and numerous other statutes. Necessary review and coordination for any environmental laws have not been conducted for use of the corridor described above for specific requests, but would be required at the time such requests are received and processed by USACE.

### **4.3 ANALYSIS OF CUMULATIVE IMPACTS**

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

#### **4.3.1 Land Use**

A major impact would occur if any action is inconsistent with adopted land use plans or if an action would substantially alter those resources required for, supporting, or benefiting the current use. Land use around Toronto Lake has experienced little change in the past several years. Under the No Action Alternative, land use would not change. Although the Proposed Action would result in the reclassification of project lands, the reclassifications were developed to help fulfill regional goals associated with good stewardship of land resources that would allow for continued use of project lands. Therefore, cumulative impacts on land use within the area surrounding Toronto Lake, when combined with past and proposed actions in the region, are anticipated to be negligible.

#### **4.3.2 Water Resources**

A major impact would occur if any action is inconsistent with adopted surface water classifications or water use plans, or if an action would substantially alter those resources required for, supporting, or benefiting the current use. Toronto Lake was

developed for flood risk management, water supply, water quality, fish and wildlife, and recreation purposes. The reclassifications and resource objectives identified in the 2017 MP and SMP are compatible with water use plans and surface water classification; further, they were developed to help fulfill regional goals associated with good stewardship of water resources that would allow for continued use of water resources associated with Toronto Lake. Therefore, cumulative impacts on water resources within the area surrounding Toronto Lake, when combined with past, present, and proposed future actions in the region, are anticipated to be negligible.

#### **4.3.3 Climate**

The Proposed Action would neither affect nor be affected by the climate. Therefore, implementation of the revised land use classifications in the 2017 MP and revisions to the SMP, when combined with other existing and proposed projects in the region, would not result in major cumulative impacts on the climate.

#### **4.3.4 Climate Change and GHG**

Under the Proposed Action, current Toronto Lake project management plans and monitoring programs would not be changed. In the event that GHG emission issues become significant enough to impact the current operations at Toronto Lake, the 2017 MP and all associated documents would be reviewed and revised as necessary. Therefore, implementation of the 2017 MP and SMP, when combined with other existing and proposed projects in the region, would result in negligible cumulative impacts on climate change or GHG.

#### **4.3.5 Air Quality**

No major highway or roadway projects are scheduled near the zone of interest for Toronto Lake nor is development of business or industries that might be significant contributors of emissions; thereby limiting the amount of new emissions that could potentially affect air quality within the region. The Proposed Action would not adversely impact air quality within the area. Vehicle traffic along park and area roadways and routine daily activities in nearby communities contribute to current and future emission sources; however, due to the rural nature of the area, those impacts are negligible. Seasonal prescribed burning could occur on Toronto Lake and would have minor, negative impacts on air quality through elevated ground-level ozone and particulate matter concentrations; however, these seasonal burns would be scheduled so that impacts are minimized. Cumulative air quality impacts associated with implementation of the 2017 MP and SMP, when combined with other existing and proposed projects in the region, are anticipated to be negligible.

#### **4.3.6 Topography, Geology, and Soils**

A major impact would occur if the action exacerbates or promotes long-term erosion, if the soils are inappropriate for the proposed construction and would create a risk to life or property, or if there would be a substantial reduction in agricultural production or loss of Prime Farmland soils. However, implementation of the Proposed Action would not contribute significantly to cumulative impacts on topography, geology, and soils within the area surrounding Toronto Lake, when combined with past and proposed actions in the region.

#### **4.3.7 Natural Resources**

By implementing the 2017 MP, the required reclassifications, resource objectives, and resource plan would allow land management and land uses to be compatible with the goals of good stewardship of natural resources. The Proposed Action would allow project lands to continue supporting USFWS and KDWPT missions associated with wildlife conservation and implementation of operational practices that would protect and enhance wildlife and fishery populations and habitat. In addition, the Proposed Action would be compatible with conservation principles and measures to protect migratory birds as mandated by EO 13186. Long-term, beneficial impacts on natural resources could occur as a result of implementing the reclassifications outlined in the 2017 MP. Therefore, implementation of the 2017 MP and SMP, when combined with other existing and proposed projects in the region, would result in minor to moderate beneficial cumulative impacts on natural resources in the Toronto Lake area.

#### **4.3.8 Threatened and Endangered Species**

A major impact on protected species would occur if any action resulted in a jeopardy opinion for any endangered, threatened, or rare species. Under the Proposed Action, the USACE would continue cooperative management plans with USFWS and KDWPT to preserve, enhance, and protect wildlife habitat resources. To further management opportunities and beneficially impact habitat diversity, the reclassifications, resources objectives, and resource plan proposed in the 2017 MP and SMP include 5,070 acres of MRML- WM. Therefore, implementation of the 2017 MP and SMP, when combined with other existing and proposed projects in the region, would result in minor to moderate beneficial cumulative impacts on natural resources in the Toronto Lake area.

#### **4.3.9 Invasive Species**

The Proposed Action would have beneficial impacts on native species as a result of continued efforts to manage invasive species. Therefore, implementation of the 2017 MP and SMP, when combined with other existing and proposed projects in the region, would not result in adverse cumulative impacts on native species as a result of invasive species control efforts. In fact, beneficial cumulative impacts would occur on native species through implementation of the 2017 MP and other programs within the region supported by agencies such as KDWPT and USFWS.

#### **4.3.10 Cultural, Historical, and Archaeological Resources**

The Proposed Action would not affect cultural resources or historic properties. Therefore, this action, when combined with other existing and proposed projects in the region, would not result in major cumulative impacts on cultural resources or historic properties.

#### **4.3.11 Socioeconomics and Environmental Justice**

The Proposed Action would not result in the displacement of persons (minority, low-income, children, or otherwise) as a result of implementing the reclassifications, resource objectives, and resource plan proposed in the 2017 MP and SMP. Therefore, the effects of the Proposed Action on environmental justice and the protection of

children, when combined with other ongoing and proposed projects in the Toronto Lake area, would not be considered a major cumulative effect.

#### **4.3.12 Recreation**

Toronto Lake provides regionally significant outdoor recreation benefits including a variety of free recreation opportunities. Even though the amount of acreage available for HDR increased slightly and LDR acres were decreased to zero implementing the reclassifications, resources objectives, and resource plan proposed in the 2017 MP, these changes reflect changes in land management and historic recreation use patterns that have occurred since 1979 at Toronto Lake. The conversion of these lands would have no effect on current or projected public use. Therefore, implementation of the 2017 MP and SMP, when combined with other existing and proposed projects in the region, would result in negligible beneficial cumulative impacts on area recreational resources.

#### **4.3.13 Aesthetic Resources**

No impacts on visual or aesthetic resources would occur as a result of implementing the reclassifications, resources objectives, and resource plan proposed in the 2017 MP and SMP. The Proposed Action, in conjunction with other projects in the region, would result in minor beneficial cumulative impacts on the visual resources in the Toronto Lake area.

#### **4.3.14 Health and Safety**

No health or safety risks would be created by the Proposed Action. The effects of implementing the 2017 MP and SMP, when combined with other ongoing and proposed projects in the Toronto Lake area, would not be considered a major cumulative effect.

### **SECTION 5: COMPLIANCE WITH ENVIRONMENTAL LAWS**

This EA has been prepared to satisfy the requirements of all applicable environmental laws and regulations, and has been prepared in accordance with the 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 1979 MP is consistent with the USACE's Environmental Operating Principles. The following is a list of applicable environmental laws and regulations that were considered in the planning of this project and the status of compliance with each:

Fish and Wildlife Coordination Act of 1958, as amended – The USACE initiated public involvement and agency scoping activities to solicit input on the 2017 MP and SMP revision process, as well as identify reclassification proposals, and any significant issues related to the Proposed Action. Information provided by USFWS and KDWPT on fish and wildlife resources has been utilized in the development of the 2017 MP and SMP.

Endangered Species Act of 1973, as amended – Current lists of threatened or endangered species were compiled for the revision of the 1979 MP. There would be no adverse impacts on threatened or endangered species resulting from the implementation of the 2017 MP and SMP, but beneficial impacts, such as acres being added for habitat protection and fish and wildlife management, would occur.

Executive Order 13186 (Migratory Bird Habitat Protection) – Sections 3a and 3e of EO 13186 direct Federal agencies to evaluate the impacts of their actions on migratory birds, with emphasis on species of concern, and inform the USFWS of potential negative impacts on migratory birds. Proposed revisions to the 1979 MP and 1976 Lakeshore Management Plan would not result in adverse impacts on migratory birds or their habitat; in fact, beneficial impacts could occur through protection of habitat as a result of implementation of the 2017 MP and SMP.

Migratory Bird Treaty 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 in a manner similar to the prohibition of “take” of threatened and endangered species under the Endangered Species Act. The timing of resource management activities would be coordinated to avoid impacts on migratory and nesting birds.

Clean Water Act of 1977 – The Proposed Action is in compliance with all state and Federal CWA regulations and requirements and is regularly monitored by the USACE and KDHE for water quality. A state water quality certification pursuant to Section 401 of the CWA is not required for implementation of the 2017 MP and SMP. There would be no change in the existing management of the reservoir that would impact water quality.

National Historic Preservation Act of 1966, as amended – Compliance with the NHPA of 1966, as amended, requires identification of all properties in the project area listed in, or eligible for listing in, the NRHP. All previous surveys and site salvages were coordinated with the Kansas State Historic Preservation Officer. Known sites are mapped and avoided by maintenance activities. Cultural resource surveys and/or evaluations would be required prior to any earthmoving or other potentially impacting activities in areas that have not undergone previous cultural resource surveys and/or evaluations.

Clean Air Act of 1977 – The USEPA established nationwide air quality standards to protect public health and welfare. Existing operation and management of the reservoir is compliant with the Clean Air Act and will not change with implementation of the 2017 MP and SMP.

Farmland Protection Policy Act of 1980 and 1995 – The FPPA's purpose is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. While there is Prime Farmland on Toronto Lake project lands based on the NRCS Web Soil Survey Map, implementation of the 2017 MP and SMP is not expected to impact Prime Farmland as no ground disturbing activities are being proposed outside of areas already impacted by HDR usage. Any future ground disturbing activities within areas designated as Prime Farmland will be coordinated with NRCS.

Executive Order 11990, Protection of Wetlands – EO 11990 requires Federal agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in executing Federal projects. The Proposed Action complies with EO 11990.

Executive Order 13690, Establishing a Federal Flood Risk Management Standard and Process for Further Soliciting and Considering Stakeholder Input, which amends Executive Order 11988, Floodplain Management – This EO directs Federal agencies to evaluate the potential impacts of proposed actions in floodplains. The operation and management of the existing project complies with EO 11988 and this will not change with implementation of the 2017 MP and SMP.

CEQ Memorandum dated August 11, 1980, Prime or Unique Farmlands – Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The Proposed Action would not impact Prime Farmland present on Toronto Lake project lands as no ground disturbing activities are being proposed outside the areas already impacted by high intensity recreation usage.

Executive Order 12898, Environmental Justice – This EO directs Federal agencies to achieve environmental justice to the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review. Agencies are required to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. Implementation of the 2017 MP and SMP would not result in a disproportionate adverse impact on minority or low-income population groups.

## **SECTION 6: IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES**

NEPA requires that Federal agencies identify “any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented” (42 U.S.C. § 4332). An irreversible commitment of resources occurs when the primary or secondary impacts of an action result in the loss of future options for a resource. Usually, this is when the action affects the use of a nonrenewable resource or it affects a renewable resource that takes a long time to renew. The impacts for this project from the reclassification of land would not be considered an irreversible commitment because subsequent MP revisions could result in some lands being reclassified to a prior, similar land classification. An irretrievable commitment of resources is typically associated with the loss of productivity or use of a natural resource (e.g., loss of production or harvest). No irreversible or irretrievable impacts on Federally protected species or their habitat is anticipated from implementing revisions to the Toronto Lake MP and SMP.

## **SECTION 7: PUBLIC AND AGENCY COORDINATION**

In accordance with 40 CFR §§1501.7, 1503, and 1506.6, the USACE initiated public involvement and agency scoping activities to solicit input on the 2017 MP and SMP revision process, as well as identify reclassification proposals and any significant issues related to the Proposed Action. The USACE began its public involvement process with a public scoping meeting to provide an avenue for public and agency stakeholders to ask questions and provide comments. The public scoping meetings

were held on 15 November 2016 in Eureka, Kansas, and in Fredonia, Kansas on 17 November 2016. The USACE, Tulsa District, placed advertisements on the USACE webpage, social media, and print publications prior to the public scoping meeting.

Following the release of the Draft MP, Draft SMP, and Environmental Assessment with a Draft Finding of No Significant Impact (FONSI), a 30-day public review period was initiated to collect public comments. Appendix A includes a copy of the news release and a sample stakeholder letter. The EA was coordinated with agencies having legislative and administrative responsibilities for environmental protection. Copies of comments received from the agencies and public are included in Appendix A. Please refer to Chapter 7 of the 2017 MP for a summary of comments received at the public meetings.

## **SECTION 8: REFERENCES**

- CEQ. 2005. 40 Code of Federal Regulations, Parts 1500-1508, Regulations for Implementing the Procedural Provisions of NEPA. Council on Environmental Quality.
- KDHE. 2015. State Implementation Plan (Air Quality).
- KDWPT. 2015. Kansas Statewide Comprehensive Outdoor Recreation Plan.
- KDWPT. 2016. Strategic Wildlife Action Plan.
- KDWPT. 2017. Fishing Report for Fall River and Toronto Lakes.
- USACE. 2013. EP 1130-2-550, Project Operations, Recreation Operations and Maintenance Guidance and Procedures. HQ, USACE.
- USACE. 1988. ER 200-2-2, Procedures for Implementing NEPA. HQ, USACE.
- USACE. 2015. OMBIL Environmental Stewardship Module. USACE, Tulsa District, Oklahoma.
- USACE. 2015. OMBIL Recreation Module. USACE, Tulsa District, Oklahoma.
- USACE. 2016. OMBIL Invasive Species Records. USACE, Tulsa District, Oklahoma.
- US Bureau of the Census. 2015. American Fact Finder Website.
- USFWS. 2017. Information for Planning and Conservation (IPaC) website: <https://ecos.fws.gov/ipac/>

## **SECTION 9: LIST OF PREPARERS**

Marcia Hackett – Regional Technical Specialist, Regional Planning and Environmental Center; 20 years of USACE experience.

Mandy McGuire – Regional Technical Specialist, Regional Planning and Environmental Center; 7 years of USACE experience.

Jennifer Purcell – Regional Economist, Regional Planning and Environmental Center; 2 years of USACE experience.

Holly C. Smith – Archaeologist, Natural Resources and Recreation Branch, Operations Division, Tulsa District; 7 years USACE experience





**DEPARTMENT OF THE ARMY**  
**UNITED STATES ARMY CORPS OF ENGINEERS, TULSA DISTRICT**  
**1645 SOUTH 101 EAST AVENUE**  
**TULSA OK 74128-4609**

Operations Division  
Fall River and Toronto Lakes

Example of Letter Sent to Stakeholders

Address

Dear Stakeholder:

The Tulsa District is initiating a review and revision of the master plan (MP) and the shoreline management plan (SMP) for Fall River Lake and Toronto Lakes, Kansas. The MP is the strategic land management document that guides the comprehensive management and development of all project recreational, natural, and cultural resources throughout the life of a Corps lake project. It is a vital tool for efficient and cost-effective management, development, and use of project lands. The SMP is the document that helps to ensure the shoreline and adjacent public lands are managed and developed to protect the environment of our lakes.

Two informal public workshops for discussion of the MP, SMP, and associated National Environmental Policy Act process have been scheduled for 6:00 p.m. to 8:00 p.m. on **November 15, 2016**, at the Eureka Public Library, 606 N. Main, Eureka, KS and **November 17, 2016** at the Fredonia Public Library, 807 Jefferson, Fredonia, KS.

The workshops will be come-and-go format with no formal presentation. We invite and encourage you to attend one or both workshops anytime between listed times, visit the information tables, and discuss MP and SMP issues with our staff. Comment forms will be provided at the workshop or you are welcome to submit comments in any form throughout the MP revision process.

Thank you for your interest in Fall River and Toronto Lakes. We welcome your comments and participation at the public workshop and throughout the MP and SMP review process. Questions should be directed to me at 620-658-4445 or e-mail [Christopher.l.hammerschmidt@usace.army.mil](mailto:Christopher.l.hammerschmidt@usace.army.mil).

Sincerely,

Christopher Hammerschmidt  
Lake Manager



# NEWS RELEASE

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

**BUILDING STRONG®**

Release No. 12  
For Immediate Release:  
October 31, 2016

Contact:  
Christopher Hammerschmidt, 620-658-4445  
Christopher.l.hammerschmidt@usace.army.mil

## **Public meetings announced for Fall River, Toronto Lake master plan**

**TULSA** – The Tulsa District, U.S. Army Corps of Engineers announces two public meetings to discuss the review and revision to the master plans and shoreline management plans for Fall River Lake and Toronto Lake, November 15 and November 17.

The first informal public meeting to discuss the master plan and shoreline management plan will take place at the Eureka Public Library, 606 N. Main St in Eureka, KS 67045, Nov. 15 from 6 p.m. to 8 p.m.

The second informal public meeting to discuss the master plan and shoreline management plan will take place at the Fredonia Public Library, 807 Jefferson St. in Fredonia, KS 66736, Nov. 17 from 6 p.m. to 8 p.m.

No formal presentation will take place but members of the public are invited to visit information tables and to ask questions and present any comments about the master plans and shoreline management plans to Corps of Engineers staff.

The master plan is the strategic land management document that guides the comprehensive management and development of all project recreational, natural, and cultural resources throughout the life of a Corps lake project. It is a vital tool for efficient and cost-effective management, development, and use of project lands.

The shoreline management plan is the document that helps to ensure the shoreline and adjacent public lands are managed and developed to protect the environment and to achieve balance between permitted private uses and resource protection for general public use of Corps lakes.

Members of the public may submit comments by mail to Christopher Hammerschmidt, 2453 Lake Road, Fall River, KS 67047. Members of the public can also submit comments by e-mailing Christopher.l.hammerschmidt@usace.army.mil or by calling 620-658-4445.

KSR&C No. 17-08-116

August 22, 2017

Christopher Hammerschmidt  
US Army Corps of Engineers, Tulsa District  
1645 South 101 East Avenue  
Tulsa, OK 74128-4609

Via E-Mail

RE: Revised Master Plans, Fall River and Toronto Lakes  
U.S. Army Corps of Engineers  
Greenwood and Woodson Counties

Dear M. Hammerschmidt:

In accordance with 36 CFR 800, the Kansas State Historic Preservation Office has reviewed the revised Master Plans and Environmental Assessments for those actions as presented in your public notice dated August 8, 2017. We concur that adoption of the proposed Master Plans at the two lakes will have no adverse effect on cultural resources as defined in 36 CFR 800. We assume that ground-disturbing projects will continue to be submitted individually as they have in the past. Our office has no objection to adoption of the Revised Master Plans for Fall River and Toronto Lakes.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214) or Lauren Jones at 785-272-8681 (ext. 225).

Sincerely,

Jennie Chinn, Executive Director and  
State Historic Preservation Officer



Patrick Zollner  
Deputy SHPO

**APPENDIX C - FEDERAL AND STATE THREATENED AND  
ENDANGERED SPECIES LISTS**

TRUST RESOURCES REPORT – USFWS

FISH AND WILDLIFE SERVICE – OFFICIAL SPECIES LIST OF THREATENED  
AND ENDANGERED SPECIES OCCURRING AT FALL RIVER LAKE

STATE OF KANSAS -GREENWOOD COUNTY THREATENED AND  
ENDANGERED SPECIES LIST

STATE OF KANSAS – WOODSON COUNTY THREATENED AND ENDANGERED  
SPECIES LIST

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**IPaC**

U.S. Fish &amp; Wildlife Service

# IPaC resource list

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

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

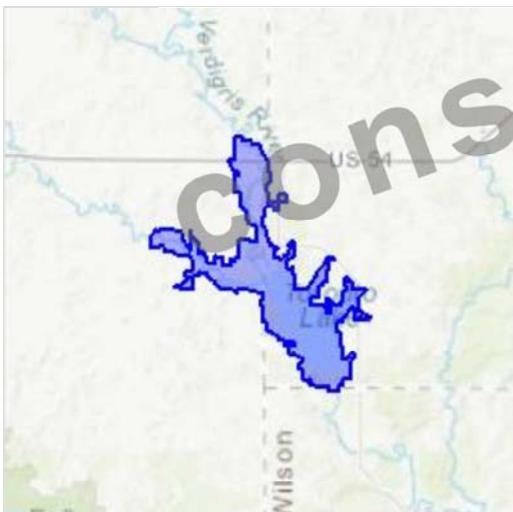
## Project information

**NAME**

Toronto Lake Master Plan and Shoreline Management Plan Revision

**LOCATION**

Greenwood, Wilson and Woodson counties, Kansas



## DESCRIPTION

The

Toronto Lake (Woodson and Greenwood Counties, Kansas) Master Plan is the long-term strategic land use management document that guides the comprehensive management and development of all the project's recreational, natural, and cultural resources. Under the guidance of ER-1130-2-550 Change 7, the Plan guides the efficient and cost-effective development, management, and use of project lands. It is a dynamic tool that provides for the responsible stewardship and sustainability of the project's resources for the benefit of present and future generations. The Plan works in tandem with the Operational Management Plan (OMP), which is the implementation tool for the resource objectives and development needs identified in the Master Plan. The Master Plan guides and articulates the USACE responsibilities pursuant to federal laws. Efforts are under way to revise the current Toronto Lake Master, last revised in 1979. The Master Plan revision will update land classifications, plan for the modernization of existing parks, and inform the management of wildlife and other resource lands within USACE managed property at Toronto Lake for the next 25 years. The purpose of Shoreline Management Plan (SMP) is to establish policy and guidance for the protection of desirable environmental characteristics of the lake while. The 1976 Lakeshore Management Plan (now SMP) is being revised concurrently with the lake's Master Plan.

## Local office

Kansas Ecological Services Field Office

(785) 539-3474

(785) 539-8567

2609 Anderson Avenue

Manhattan, KS 66502-2801

## Endangered species

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

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

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

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

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

#### Listed species

<sup>1</sup> are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

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

## Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Fishes

NAME	STATUS
Neosho Madtom <i>Noturus placidus</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/2577">https://ecos.fws.gov/ecp/species/2577</a>	Threatened
Topeka Shiner <i>Notropis topeka</i> (=tristis) There is a <b>final critical habitat</b> designated for this species. Your location is outside the designated critical habitat. <a href="https://ecos.fws.gov/ecp/species/4122">https://ecos.fws.gov/ecp/species/4122</a>	Endangered

## Clams

NAME	STATUS
Neosho Mucket <i>Lampsilis rafinesqueana</i> There is a <b>final critical habitat</b> designated for this species. Your location is outside the designated critical habitat. <a href="https://ecos.fws.gov/ecp/species/3788">https://ecos.fws.gov/ecp/species/3788</a>	Endangered
Rabbitsfoot <i>Quadrula cylindrica cylindrica</i> There is a <b>final critical habitat</b> designated for this species. Your location is outside the designated critical habitat. <a href="https://ecos.fws.gov/ecp/species/5165">https://ecos.fws.gov/ecp/species/5165</a>	Threatened

## Insects

NAME	STATUS
American Burying Beetle <i>Nicrophorus americanus</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/66">https://ecos.fws.gov/ecp/species/66</a>	Endangered

## Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

# 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 activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service

<sup>3</sup>. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

- 
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)

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data <http://www.birdscanada.org/birdmon/default/datasummaries.jsp>

The migratory birds species listed below are species of particular conservation concern (e.g. [Birds of Conservation Concern](#)) that may be potentially affected by activities in this location. It is not a list of every bird species you may find in this location, nor a guarantee that all of the bird species on this list will be found on or near this location. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To view available data on other bird species that may occur in your project area, please visit the [AKN Histogram Tools](#) and [Other Bird Data Resources](#). To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

NAME	SEASON(S)
Acadian Flycatcher <i>Empidonax virescens</i>	Breeding
Bald Eagle <i>Haliaeetus leucocephalus</i> <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	Year-round
Bell's Vireo <i>Vireo bellii</i> <a href="https://ecos.fws.gov/ecp/species/9507">https://ecos.fws.gov/ecp/species/9507</a>	Breeding
Bewick's Wren <i>Thryomanes bewickii</i> ssp. <i>bewickii</i>	Year-round
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> <a href="https://ecos.fws.gov/ecp/species/9399">https://ecos.fws.gov/ecp/species/9399</a>	Breeding
Black-crowned Night-heron <i>Nycticorax nycticorax</i> <a href="https://ecos.fws.gov/ecp/species/6487">https://ecos.fws.gov/ecp/species/6487</a>	Breeding
Dickcissel <i>Spiza americana</i>	Breeding
Field Sparrow <i>Spizella pusilla</i>	Year-round
Golden Eagle <i>Aquila chrysaetos</i> <a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a>	Wintering
Grasshopper Sparrow <i>Ammodramus savannarum</i> <a href="https://ecos.fws.gov/ecp/species/8879">https://ecos.fws.gov/ecp/species/8879</a>	Breeding
Harris's Sparrow <i>Zonotrichia querula</i>	Wintering
Henslow's Sparrow <i>Ammodramus henslowii</i> <a href="https://ecos.fws.gov/ecp/species/3941">https://ecos.fws.gov/ecp/species/3941</a>	Breeding
Hudsonian Godwit <i>Limosa haemastica</i>	Migrating
Kentucky Warbler <i>Oporornis formosus</i>	Breeding

Least Bittern <i>Ixobrychus exilis</i> <a href="https://ecos.fws.gov/ecp/species/6175">https://ecos.fws.gov/ecp/species/6175</a>	Breeding
Loggerhead Shrike <i>Lanius ludovicianus</i> <a href="https://ecos.fws.gov/ecp/species/8833">https://ecos.fws.gov/ecp/species/8833</a>	Year-round
Mississippi Kite <i>Ictinia mississippiensis</i>	Breeding
Northern Flicker <i>Colaptes auratus</i>	Year-round
Painted Bunting <i>Passerina ciris</i>	Breeding
Peregrine Falcon <i>Falco peregrinus</i> <a href="https://ecos.fws.gov/ecp/species/8831">https://ecos.fws.gov/ecp/species/8831</a>	Breeding
Prothonotary Warbler <i>Protonotaria citrea</i>	Breeding
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i>	Year-round
Rusty Blackbird <i>Euphagus carolinus</i>	Wintering
Short-eared Owl <i>Asio flammeus</i> <a href="https://ecos.fws.gov/ecp/species/9295">https://ecos.fws.gov/ecp/species/9295</a>	Year-round
Snowy Plover <i>Charadrius alexandrinus</i>	Breeding
Swainson's Hawk <i>Buteo swainsoni</i> <a href="https://ecos.fws.gov/ecp/species/1098">https://ecos.fws.gov/ecp/species/1098</a>	Breeding
Upland Sandpiper <i>Bartramia longicauda</i> <a href="https://ecos.fws.gov/ecp/species/9294">https://ecos.fws.gov/ecp/species/9294</a>	Breeding

**What does IPaC use to generate the list of migratory bird species potentially occurring in my specified location?**

**Landbirds:**

Migratory birds that are displayed on the IPaC species list are based on ranges in the latest edition of the National Geographic Guide, Birds of North America (6th Edition, 2011 by Jon L. Dunn, and Jonathan Alderfer). Although these ranges are coarse in nature, a number of U.S. Fish and Wildlife Service migratory bird biologists agree that these maps are some of the best range maps to date. These ranges were clipped to a specific Bird Conservation Region (BCR) or USFWS Region/Regions, if it was indicated in the 2008 list of Birds of Conservation Concern (BCC) that a species was a BCC species only in a particular Region/Regions. Additional modifications have been made to some ranges based on more local or refined range information and/or information provided by U.S. Fish and Wildlife Service biologists with species expertise. All migratory birds that show in areas on land in IPaC are those that appear in the 2008 Birds of Conservation Concern report.

### **Atlantic Seabirds:**

Ranges in IPaC for birds off the Atlantic coast are derived from species distribution models developed by the National Oceanic and Atmospheric Association (NOAA) National Centers for Coastal Ocean Science (NCCOS) using the best available seabird survey data for the offshore Atlantic Coastal region to date. NOAA/NCCOS assisted USFWS in developing seasonal species ranges from their models for specific use in IPaC. Some of these birds are not BCC species but were of interest for inclusion because they may occur in high abundance off the coast at different times throughout the year, which potentially makes them more susceptible to certain types of development and activities taking place in that area. For more refined details about the abundance and richness of bird species within your project area off the Atlantic Coast, see the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other types of taxa that may be helpful in your project review.

About the NOAA/NCCOS models: the models were developed as part of the NOAA/NCCOS project: [Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#). The models resulting from this project are being used in a number of decision-support/mapping products in order to help guide decision-making on activities off the Atlantic Coast with the goal of reducing impacts to migratory birds. One such product is the [Northeast Ocean Data Portal](#), which can be used to explore details about the relative occurrence and abundance of bird species in a particular area off the Atlantic Coast.

All migratory bird range maps within IPaC are continuously being updated as new and better information becomes available.

**Can I get additional information about the levels of occurrence in my project area of specific birds or groups of birds listed in IPaC?**

### **Landbirds:**

The [Avian Knowledge Network \(AKN\)](#) provides a tool currently called the "Histogram Tool", which draws from the data within the AKN (latest, survey, point count, citizen science datasets) to create a view of relative abundance of species within a particular location over the course of the year. The results of the tool depict the frequency of detection of a species in survey events, averaged between multiple datasets within AKN in a particular week of the year. You may access the histogram tools through the [Migratory Bird Programs AKN Histogram Tools](#) webpage.

The tool is currently available for 4 regions (California, Northeast U.S., Southeast U.S. and Midwest), which encompasses the following 32 states: Alabama, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin.

In the near future, there are plans to expand this tool nationwide within the AKN, and allow the graphs produced to appear with the list of trust resources generated by IPaC, providing you with an additional level of detail about the level of occurrence of the species of particular concern potentially occurring in your project area throughout the course of the year.

#### **Atlantic Seabirds:**

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

## Facilities

### Wildlife refuges

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

THERE ARE NO REFUGES AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

# Wetlands in the National Wetlands Inventory

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](#).

This location overlaps the following wetlands:

## FRESHWATER EMERGENT WETLAND

[PEMAh](#)

[PEMCh](#)

## FRESHWATER FORESTED/SHRUB WETLAND

[PFOAh](#)

[PSSAh](#)

[PFOA](#)

[PSSCh](#)

## FRESHWATER POND

[PUSAh](#)

[PABFh](#)

[PUSCh](#)

[PABF](#)

[PABKx](#)

## LAKE

[L1UBHh](#)

[L2USAh](#)

[L2USCh](#)

[L2ABFh](#)

## RIVERINE

[R2UBG](#)

A full description for each wetland code can be found at the National Wetlands Inventory website: <https://ecos.fws.gov/ipac/wetlands/decoder>

### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### **Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### **Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Kansas Ecological Services Field Office  
2609 Anderson Avenue  
Manhattan, KS 66502-2801  
Phone: (785) 539-3474 Fax: (785) 539-8567

In Reply Refer To:

July 03, 2017

Consultation Code: 06E21000-2017-SLI-0577

Event Code: 06E21000-2017-E-01140

Project Name: Toronto Lake Master Plan and Shoreline Management Plan Revision

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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 Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

## 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:

**Kansas Ecological Services Field Office**

2609 Anderson Avenue

Manhattan, KS 66502-2801

(785) 539-3474

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## Project Summary

Consultation Code: 06E21000-2017-SLI-0577

Event Code: 06E21000-2017-E-01140

Project Name: Toronto Lake Master Plan and Shoreline Management Plan Revision

Project Type: LAND - MANAGEMENT PLANS

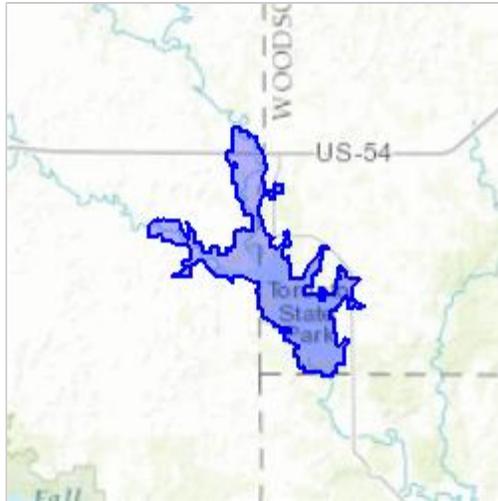
**Project Description:** The Toronto Lake (Woodson and Greenwood Counties, Kansas) Master Plan is the long-term strategic land use management document that guides the comprehensive management and development of all the project's recreational, natural, and cultural resources. Under the guidance of ER-1130-2-550 Change 7, the Plan guides the efficient and cost-effective development, management, and use of project lands. It is a dynamic tool that provides for the responsible stewardship and sustainability of the project's resources for the benefit of present and future generations. The Plan works in tandem with the Operational Management Plan (OMP), which is the implementation tool for the resource objectives and development needs identified in the Master Plan. The Master Plan guides and articulates the USACE responsibilities pursuant to federal laws. Efforts are under way to revise the current Toronto Lake Master, last revised in 1979. The Master Plan revision will update land classifications, plan for the modernization of existing parks, and inform the management of wildlife and other resource lands within USACE managed property at Toronto Lake for the next 25 years. The purpose of Shoreline Management Plan (SMP) is to establish policy and guidance for the protection of desirable environmental characteristics of the lake while. The 1976 Lakeshore Management Plan (now SMP) is being revised concurrently with the lake's Master Plan.

**Project Location:**

Approximate location of the project can be viewed in Google Maps:

<https://www.google.com/maps/place/37.79013756997091N95.96379921058953W>

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Counties: Greenwood, KS | Wilson, KS | Woodson, KS

### Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on your 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. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

### Mammals

NAME	STATUS
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

## Fishes

NAME	STATUS
Neosho Madtom ( <i>Noturus placidus</i> ) No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/2577">https://ecos.fws.gov/ecp/species/2577</a>	Threatened
Topeka Shiner ( <i>Notropis topeka</i> (=tristis)) Population: Wherever found, except where listed as an experimental population There is a <b>final critical habitat</b> designated for this species. Your location is outside the designated critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/4122">https://ecos.fws.gov/ecp/species/4122</a>	Endangered

## Clams

NAME	STATUS
Neosho Mucket ( <i>Lampsilis rafinesqueana</i> ) There is a <b>final critical habitat</b> designated for this species. Your location is outside the designated critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/3788">https://ecos.fws.gov/ecp/species/3788</a>	Endangered
Rabbitsfoot ( <i>Quadrula cylindrica cylindrica</i> ) There is a <b>final critical habitat</b> designated for this species. Your location is outside the designated critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5165">https://ecos.fws.gov/ecp/species/5165</a>	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>	Endangered

## Critical habitats

There are no critical habitats within your project area.

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## Greenwood County



### Threatened and Endangered (T&E) Species

#### Critical

**OUACHITA KIDNEYSHELL MUSSEL** *Ptychobranchnus occidentalis*

State: Threatened Federal: N/A Critical Habitat: Yes

**WESTERN FANSHELL MUSSEL** *Cyprogenia aberti*

State: Endangered Federal: N/A Critical Habitat: Yes

**TOPEKA SHINER** *Notropis topeka*

State: Threatened Federal: Endangered Critical Habitat: Yes

**NEOSHO MUCKET MUSSEL** *Lampsilis rafinesqueana*

State: Endangered Federal: Endangered Critical Habitat: Yes

#### Non-Critical

**PLAINS MINNOW** *Hybognathus placitus*

State: Threatened Federal: N/A Critical Habitat: No

**WHOOPING CRANE** *Grus americana*

State: Endangered Federal: Endangered Critical Habitat: No

**BUTTERFLY MUSSEL** *Ellipsaria lineolata*

State: Threatened Federal: N/A Critical Habitat: No

**FLUTEDSHELL MUSSEL** *Lasmigona costata*

State: Threatened Federal: N/A Critical Habitat: No

**LEAST TERN** *Sterna antillarum*

State: Endangered Federal: Endangered Critical Habitat: No

**PIPING PLOVER** *Charadrius melodus*

State: Threatened Federal: Threatened Critical Habitat: No

**SNOWY PLOVER** *Charadrius alexandrinus*

State: Threatened Federal: N/A Critical Habitat: No

**NORTHERN MAP TURTLE** *Graptemys geographica*

State: Threatened Federal: N/A Critical Habitat: No

**EASTERN SPOTTED SKUNK** *Spilogale putorius*

State: Threatened Federal: N/A Critical Habitat: No

**RABBITSFOOT MUSSEL** *Quadrula cylindrica*  
 State: Endangered Federal: Threatened Critical  
 Habitat: No

**AMERICAN BURYING BEETLE** *Nicrophorus americanus*  
 State: Endangered Federal: Endangered Critical  
 Habitat: No

**Species In Need of Conservation (SINC)**

**Critical**

There are no SINC species with critical habitat in Greenwood county

**Non-Critical**

**Brindled Madtom** *Noturus miurus*  
 State: SINC Federal: N/A Critical Habitat: No

**Prairie Mole Cricket** *Gryllotalpa major*  
 State: SINC Federal: N/A Critical Habitat: No

**Spotted Sucker** *Minytrema melanops*  
 State: SINC Federal: N/A Critical Habitat: No

**Wartyback Mussel** *Quadrula nodulata*  
 State: SINC Federal: N/A Critical Habitat: No

**Western Hognose Snake** *Heterodon nasicus*  
 State: SINC Federal: N/A Critical Habitat: No

**Black Tern** *Chlidonias niger*  
 State: SINC Federal: N/A Critical Habitat: No

**Short-eared Owl** *Asio flammeus*  
 State: SINC Federal: N/A Critical Habitat: No

**Deertoe Mussel** *Truncilla truncata*  
 State: SINC Federal: N/A Critical Habitat: No

**Golden Eagle** *Aquila chrysaetos*  
 State: SINC Federal: N/A Critical Habitat: No

**Yellow Sandshell Mussel** *Lampsilis teres*  
 State: SINC Federal: N/A Critical Habitat: No

**Cardinal Shiner** *Luxilus cardinalis*  
 State: SINC Federal: N/A Critical Habitat: No

**Creeper Mussel** *Strophitus undulatus*  
 State: SINC Federal: N/A Critical Habitat: No

**Eastern Hognose Snake** *Heterodon platirhinos*  
 State: SINC Federal: N/A Critical Habitat: No

**Fawnsfoot Mussel** *Truncilla donaciformis*  
 State: SINC Federal: N/A Critical Habitat: No

**Bobolink** *Dolichonyx oryzivorus*  
 State: SINC Federal: N/A Critical Habitat: No

**Henslow's Sparrow** *Ammodramus henslowii*  
 State: SINC Federal: N/A Critical Habitat: No

**Crawfish Frog** *Lithobates areolata*  
 State: SINC Federal: N/A Critical Habitat: No

**Fatmucket Mussel** *Lampsilis siliquoidea*  
 State: SINC Federal: N/A Critical Habitat: No



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## Woodson County



### Threatened and Endangered (T&E) Species

#### Critical

**NEOSHO MADTOM** *Noturus placidus*

**State:** Threatened **Federal:** Threatened **Critical Habitat:** Yes

**OUACHITA KIDNEYSHELL MUSSEL** *Ptychobranchus occidentalis*

**State:** Threatened **Federal:** N/A **Critical Habitat:** Yes

**WESTERN FANSHELL MUSSEL** *Cyprogenia aberti*

**State:** Endangered **Federal:** N/A **Critical Habitat:** Yes

**FLAT FLOATER MUSSEL** *Anodonta suborbiculata*

**State:** Endangered **Federal:** N/A **Critical Habitat:** Yes

**FLUTEDSHELL MUSSEL** *Lasmigona costata*

**State:** Threatened **Federal:** N/A **Critical Habitat:** Yes

**NEOSHO MUCKET MUSSEL** *Lampsilis rafinesqueana*

**State:** Endangered **Federal:** Endangered **Critical Habitat:** Yes

**EASTERN SPOTTED SKUNK** *Spilogale putorius*

**State:** Threatened **Federal:** N/A **Critical Habitat:** Yes

**RABBITSFOOT MUSSEL** *Quadrula cylindrica*

**State:** Endangered **Federal:** Threatened **Critical Habitat:** Yes

#### Non-Critical

**BUTTERFLY MUSSEL** *Ellipsaria lineolata*

**State:** Threatened **Federal:** N/A **Critical Habitat:** No

**LEAST TERN** *Sterna antillarum*

**State:** Endangered **Federal:** Endangered **Critical Habitat:** No

**REDSLOT CHUB** *Nocomis asper*

**State:** Threatened **Federal:** N/A **Critical Habitat:** No

**PIPING PLOVER** *Charadrius melodus*

**State:** Threatened **Federal:** Threatened **Critical Habitat:** No

**SNOWY PLOVER** *Charadrius alexandrinus*

**State:** Threatened **Federal:** N/A **Critical Habitat:** No

**NORTHERN MAP TURTLE** *Graptemys geographica*

**State:** Threatened **Federal:** N/A **Critical Habitat:** No

**AMERICAN BURYING BEETLE** *Nicrophorus americanus*

**State:** Endangered **Federal:** Endangered **Critical Habitat:** No

### Species In Need of Conservation (SINC)

## Critical

There are no SINC species with critical habitat in Woodson county

## Non-Critical

**Ozark Emerald Dragonfly** *Somatochlora ozarkensis*  
State: SINC Federal: N/A Critical Habitat: No

**Prairie Mole Cricket** *Gryllotalpa major*  
State: SINC Federal: N/A Critical Habitat: No

**Slough Darter** *Etheostoma gracile*  
State: SINC Federal: N/A Critical Habitat: No

**Southern Bog Lemming** *Synaptomys cooperi*  
State: SINC Federal: N/A Critical Habitat: No

**Spike Mussel** *Elliptio dilatata*  
State: SINC Federal: N/A Critical Habitat: No

**Wartyback Mussel** *Quadrula nodulata*  
State: SINC Federal: N/A Critical Habitat: No

**Black Tern** *Chlidonias niger*  
State: SINC Federal: N/A Critical Habitat: No

**Short-eared Owl** *Asio flammeus*  
State: SINC Federal: N/A Critical Habitat: No

**Golden Eagle** *Aquila chrysaetos*  
State: SINC Federal: N/A Critical Habitat: No

**Washboard Mussel** *Megaloniaias nervosa*  
State: SINC Federal: N/A Critical Habitat: No

**Southern Flying Squirrel** *Glaucomys volans*  
State: SINC Federal: N/A Critical Habitat: No

**Blue Sucker** *Cyprinus elongatus*  
State: SINC Federal: N/A Critical Habitat: No

**Fawnsfoot Mussel** *Truncilla donaciformis*  
State: SINC Federal: N/A Critical Habitat: No

**Gravel Chub** *Erimystax x-punctatus*  
State: SINC Federal: N/A Critical Habitat: No

**Bobolink** *Dolichonyx oryzivorus*  
State: SINC Federal: N/A Critical Habitat: No

**Henslow's Sparrow** *Ammodramus henslowii*  
State: SINC Federal: N/A Critical Habitat: No

**Long-billed Curlew** *Numenius americanus*  
State: SINC Federal: N/A Critical Habitat: No

**Yellow-throated Warbler** *Setophaga dominica*  
State: SINC Federal: N/A Critical Habitat: No

**Cerulean Warbler** *Setophaga cerulean*  
State: SINC Federal: N/A Critical Habitat: No

**Crawfish Frog** *Lithobates areolata*  
State: SINC Federal: N/A Critical Habitat: No

**Round Pigtoe Mussel** *Pleurobema sintoxia*  
State: SINC Federal: N/A Critical Habitat: No

**Eastern Whip-poor-will** *Antrostomas vociferus*  
State: SINC Federal: N/A Critical Habitat: No

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# APPENDIX D - TORONTO RESERVOIR – 9 ELEMENT WATERSHED PLAN SUMMARY

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# Toronto Lake: Water Quality Status Fact Sheet

### Location

Toronto Lake is a 2,800 acre lake, located in the scenic Flint Hills region of Kansas with a maximum depth of approximately 5.5 m and a mean depth of 2.1 m. Construction was completed by the Tulsa District Corps of Engineers in 1960 by damming the Verdigris River and Walnut Creek to control flooding.

### Land Use

Toronto Lake lies within a 690-sq. mile watershed that is predominantly grassland (70%). Pasture/hay occupies 15% of the watershed, while forest accounts for 5% and cropland 4% of the total land area within the watershed.

### Water Quality's Decline

Toronto Lake is a Class A primary contact recreational water for public swimming. Other designated uses include aquatic life support, food procurement, drinking water, ground water recharge, industrial water supply, irrigation use and livestock watering use.

KDHE water quality data collected from 1992 to 2007 revealed that Toronto Lake ranks as the ninth highest for total phosphorus (TP) concentration of the 24 federal reservoirs in the state. TP concentrations range between 55-108 µg/L, with an average concentration of 81 µg/L, which is ~4 times greater than the statewide benchmark of 23 µg/L.

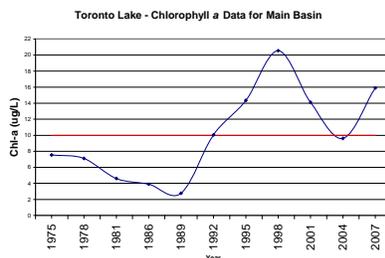
The total suspended solids (TSS) concentration, indicative of turbid conditions, is high and averages about 30 mg/L, third highest among the federal reservoirs. Because of the appearance of high turbidity values, the lake has low water clarity with an average secchi depth value of 35 cm. Eutrophication

along with siltation and dissolved oxygen deficiencies encompass the primary water-quality problems in Toronto Lake.

### Eutrophication

Though eutrophication occurs naturally, it can be accelerated through an anthropogenic process that causes reservoirs to become more productive or eutrophic due to excessive nutrient additions from their associated watersheds.

The chlorophyll *a* (Chla) concentration has been used as a general trophic indicator of a waterbody. Toronto Lake averages 14.9 µg/L of Chla, which ranks as the 13<sup>th</sup> highest in the state among the federal reservoirs. The occurrence of low Chla concentrations is closely associated with low water clarity (or high turbidity) conditions. High turbidity, caused by suspended particles, negatively affects phytoplankton communities and light penetration.



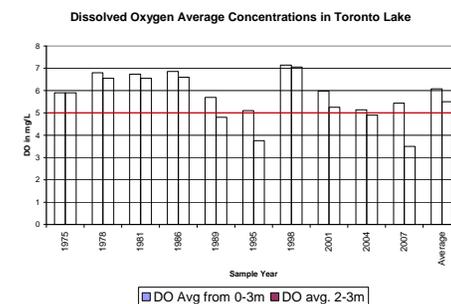
The average total nitrogen concentration within Toronto Lake is 0.64 mg/L. Toronto Lake is generally limited by light and nitrogen. However, during the years with the higher chlorophyll *a* concentrations (1995, 1998, and 2007) the lake was co-limited by light, nitrogen and phosphorus.

### Siltation

Toronto Lake has high inorganic turbidity and high levels of siltation. The lake is shallow and sediment is re-suspended easily due to wind, motorboat traffic, and moderate to high inflow events. Siltation is aggravated during large runoff events when releases from Toronto Lake are minimized to accommodate flood control along the Verdigris River, which causes large silt deposits within the lake and the inflowing river channels. Subsequent runoff events of moderate duration then facilitate the transport of that deposited sediment into the lake where it may settle out.

### Dissolved Oxygen

Dissolved Oxygen concentrations significantly drop around the 4-meter depth range in Toronto Lake. Temperature readings are generally stable throughout the water column, indicating that the lake is not stratified. Low dissolved oxygen concentrations are likely prevalent when the lake is turbid and temperatures are warmer. The decomposition of plant material has lowered the dissolved oxygen concentrations toward the lake bottom.



### Fish Community

Toronto Lake offers sports-fishing opportunities throughout the year and is known for having “an abundance of some of the largest white bass in the world” (USACE). According to the Kansas Department of Wildlife

and Parks fish survey, the number of adult fish Captured Per Unit Time Effort (CPUE) shows that white bass have been increasing, largemouth bass fluctuate from year to year and white crappie have remained somewhat stable. Bottom feeding fish are dominated by variable gizzard shad populations and channel catfish have been stable.

### Runoff Potential

Runoff plays an important role in transporting nutrients and sediment to the lake. It occurs as precipitation is greater than soil permeability. According to the Natural Resources Conservation Service's soil database (STATSGO), the soils in the watershed have low permeability values. Eighty-one percent of the soils have permeability  $\leq 0.56$ "/hr. The watershed-average soil permeability is 0.43"/hr.

### Restoration of Toronto Lake

Based on the Clean Water Act, a waterbody that does not meet water quality standards is considered "impaired". The Clean Water Act requires states to develop a clean-up plan for all impairments. The clean-up plan and the process used to develop it is the Total Maximum Daily Load (TMDL). A TMDL for Toronto Lake was developed to address eutrophication, siltation, and dissolved oxygen in 2007.

The TMDL provides allocations for phosphorus (TP), nitrogen, and total suspended solids (TSS) loads. A lake model (BATHTUB) was utilized to determine phosphorus and nitrogen allocations to the lake. In order to improve the trophic condition of Toronto Lake from its fully eutrophic status, the desired endpoint of the TMDL is to maintain the summer chlorophyll *a* concentration below 10  $\mu\text{g/L}$ . In order to improve the clarity of the water column and the siltation impairment, the endpoint should also result in an increase in the average transparency of the lake to 0.7 meters, as measured by the secchi disk depth within the main basin of the lake. In addition dissolved

oxygen should exceed 5 mg/L for the entire water column of the lake. The model results concluded that the total phosphorus and total nitrogen concentrations entering the lake from both Walnut Creek and the Verdigris River must be reduced by 30% to achieve the necessary load reductions for the lake.

Parameter	Current Avg. Condition	TMDL	Percent Reduction
TP Annual Load (lbs/year)	71,686	50,585	29.4%
TP Daily Load (lbs/day)*	373.2	263.3	29.4%
TN Annual Load (lbs/year)	691,437	490,450	29.1%
TN Daily Load (lbs/day)*	5077	3601	29.1%
TP Main Basin ( $\mu\text{g/L}$ )	73.0	52.4	28%
TN Main Basin ( $\mu\text{g/L}$ )	636.0	492.3	23%
Secchi Depth (m)	0.4	> 0.70	75% Increase

### Sources

Nonpoint sources are the main contributor for the nutrient input and impairment in Toronto Lake. Runoff transporting nutrient loads associated with animal wastes and cultivated crops where fertilizer has been applied contribute to the eutrophic condition of the lake. Load allocations within the TMDL resulting from nonpoint sources for phosphorus and nitrogen are 43,913 lbs/year and 419,868 lbs/year respectively. Wasteload allocations associated with point sources total 1,383 lbs/year and 6,289 lbs/year for phosphorus and nitrogen respectively. Point sources attribute to less than 3% of the total allocations for phosphorus and nitrogen. The discharging point sources in the watershed include the Cities of Toronto, Hamilton, and Madison.

Siltation loading comes predominantly from nonpoint source pollution as well. Overland runoff can easily carry sediment to the stream segments and eventually to the lake. The level of the siltation impairment can be measured through secchi depth readings, which can be improved through setting allocations and reductions for total suspended solids (TSS) for Toronto Lake. The TMDL calculated the current

sedimentation rate at 96,300 tons/year of TSS (sediment) accumulating on the bottom of the lake each year and the TMDL for TSS is set at 55,854 tons/year based on a regression calculation. Therefore a 42% TSS reduction is necessary to achieve a secchi depth of 0.7 m.

### Priorities

In general the areas that should be targeted for implementation include the HUC12 subwatersheds along the main stem of Walnut Creek, and the Verdigris River in addition to the subwatersheds adjacent to the lake

TSS Load	TSS tons/year	TSS tons/day*
Wasteload Allocation	21	0.1
Load Allocation	50248	261.5
Margin of Safety	5585	29.1
TSS TMDL	55854	290.7

### Implementation of Watershed Management in Reducing Phosphorus Entering the Lake

To abate excessive phosphorus and sediment, here are several recommended agricultural practices: (1) Apply nutrient best management practices (BMPs) to reduce nutrient additions from excess fertilization; (2) Promote and adopt continuous no-till cultivation to minimize soil erosion and nutrient transports; (3) Install grass buffer strips along streams; (4) Reduce activities within riparian areas; (5) Setback both confined and non-confined animal feeding operation sites; and (6) Construct ponds/detention basins, erosion control structures and/or wetlands to reduce soil erosion and to trap sediment and lower peak runoff rates.



## APPENDIX E – SEAPLANE MAP

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# TORONTO LAKE SEA PLANE GUIDE

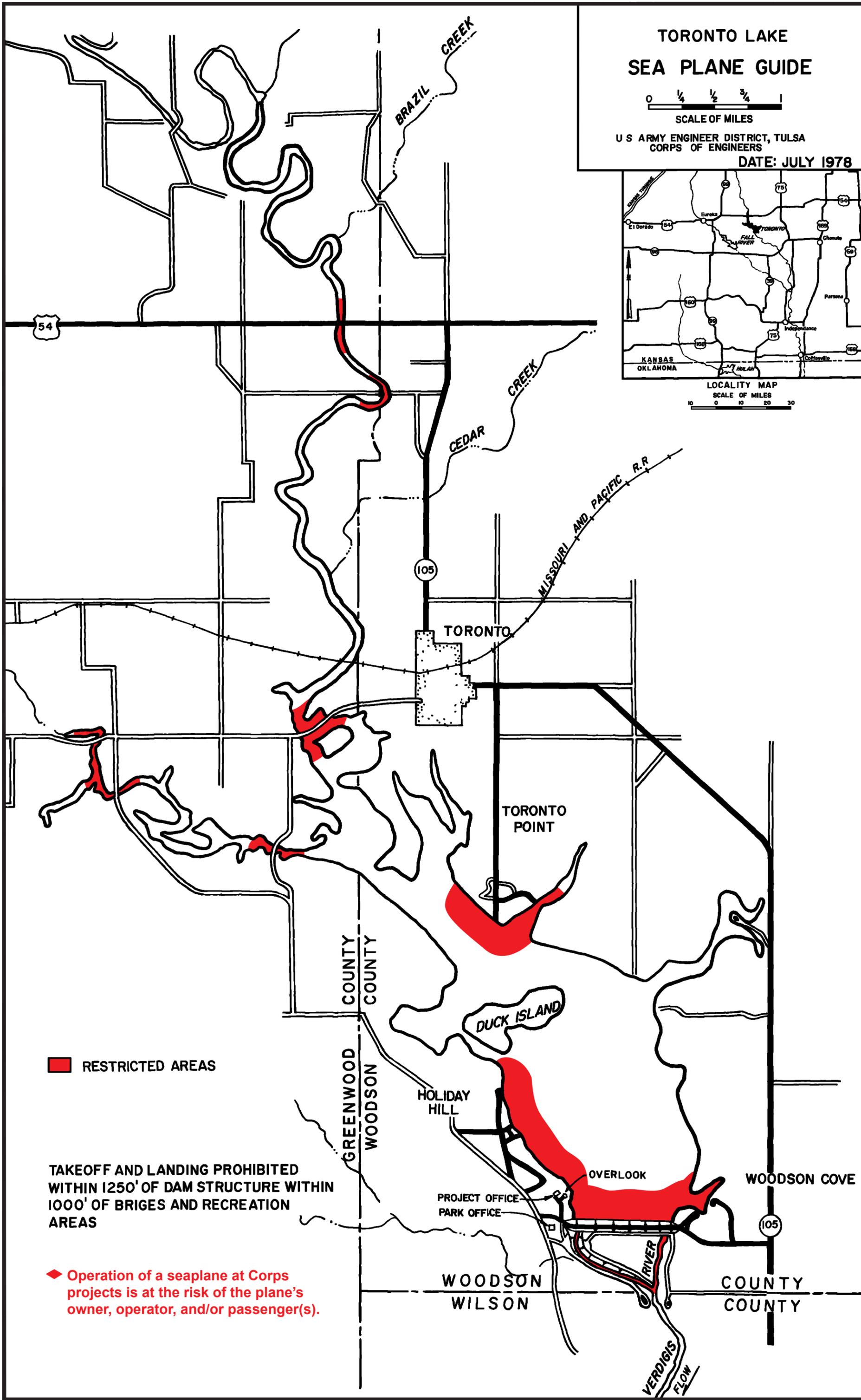


U S ARMY ENGINEER DISTRICT, TULSA  
CORPS OF ENGINEERS

DATE: JULY 1978



LOCALITY MAP  
SCALE OF MILES  
0 10 20 30



 RESTRICTED AREAS

TAKEOFF AND LANDING PROHIBITED  
WITHIN 1250' OF DAM STRUCTURE WITHIN  
1000' OF BRIGES AND RECREATION  
AREAS

◆ Operation of a seaplane at Corps  
projects is at the risk of the plane's  
owner, operator, and/or passenger(s).

COUNTY  
WOODSON  
GREENWOOD  
COUNTY

WOODSON  
WILSON

COUNTY  
COUNTY

BRAZIL  
CREEK

CEDAR  
CREEK

TORONTO

TORONTO  
POINT

DUCK  
ISLAND

HOLIDAY  
HILL

PROJECT OFFICE  
PARK OFFICE

OVERLOOK

WOODSON COVE

VERDIGIS  
FLOW  
RIVER

MISSOURI AND PACIFIC  
R.R.

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## APPENDIX F – ACRONYMS

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ADA	Americans with Disabilities Act
ARPA	Archaeological Resources Protection Act of 1979
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
DC	District Commander
DM	Design Memorandum
DQC	District Quality Control
EA	Environmental Assessment
EC	Engineer Circular
EFA	Ecological Focus Area
EM	Engineering Manual
EO	Executive Order
EP	Engineering Pamphlet
EPA	United States Environmental Protection Agency
ER	Engineering Regulation
ESA	Environmentally Sensitive Area
FONSI	Finding of No Significant Impact
FT	Feet
GIS	Geographical Information Systems
HDR	High Density Recreation
HQ	USACE Headquarters
IPaC	USFWS Information for Planning and Conservation
KDHE	Kansas Department of Health and Environment

KDWPT	Kansas Department of Wildlife, Parks, and Tourism
KS	Kansas
KSHS	Kansas State Historical Society
LDR	Low Density Recreation
MGD	Million Gallons per Day
MP	Master Plan or Master Planning
MRML	Multiple Resource Management Lands
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act, 1970
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NRCS	Natural Resource Conservation Service
NVCS	National Vegetation Classification System
O&M	Operations and Maintenance
OMB	Office of Management and Budget
OMBIL	Operations and Maintenance Business Information Link
OMP	Operations Management Plan for a specific lake Project
OPM	Operations Project Manager
PDT	Project Delivery Team
PM	Project Management or Project Manager
PMBP	Project Management Business Processes
PMP	Project Management Plan

PO	Project Operations
SINC	Species in Need of Conservation
SHPO	State Historical Preservation Office
SCORP	State Comprehensive Outdoor Recreation Plan
SWAP	Strategic Wildlife Action Plan
TP	Total Phosphorous
TSS	Total Suspended Solids
Ug/L	Micrograms per Liter
US	United States
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
USFW	U. S. Fish and Wildlife Service
VMA	Vegetative Management Area
WMA	Wildlife Management Area
WRAPS	Water Restoration and Protection Strategy
WRDA	Water Resources Development Act

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