

United States Army Corps of Engineers  
Louisville District

# Caesar Creek Lake Master Plan

2020



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## CHAPTER 1 - INTRODUCTION

### 1.1 PROJECT AUTHORIZATION

The Caesar Creek Project was authorized by the Congress of the United States as part of the Flood Control Act, approved 28 June 1938 (Public Law 761, 75th Congress, 1st session). Post authorization changes include water supply and water quality control as Project purposes within the purview of the Water Supply Act of 1958, as amended (Public Law 85-500) and the Water Pollution Control Act of 1961 (Public Law 87-88).

As a general authority applicable to all USACE reservoir projects, Section 4 of the Flood Control Act of 1944, Public Law 78-534 (codified as amended at 16 U.S.C. § 460d), authorized the Chief of Engineers to construct, maintain and operate public park and recreational facilities at Corps of Engineers water resources development projects for free public use. Pursuant to the authority of Section 4, USACE may manage the levels of its reservoirs and time water releases, to a reasonable degree, to benefit recreation uses. Under this general authority, recreation was added as an operating purpose of Caesar Creek Lake through subsequent congressionally authorized reports of the Chief of Engineers.

The Fish and Wildlife Coordination Act of 1958, Public Law 85-624 (codified as amended at 16 U.S.C. §§ 661, et seq.) authorizes the conservation of fish and wildlife as a purpose of USACE reservoirs. The Act provides that “wildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development programs through the effectual and harmonious planning, development, maintenance, and coordination of wildlife conservation and rehabilitation...in the United States.” It also authorizes the Secretary of Interior to “provide assistance to, and cooperate with, Federal, State, and public or private agencies and organizations in the development, protection, rearing, and stocking of all species of wildlife, resources thereof, and their habitat [and] . . . to make surveys and investigations of the wildlife of the public domain, including lands and waters or interests therein acquired or controlled by any agency of the United States.”

The Endangered Species Act of 1973, Public Law 93-205 (codified as amended at 16 U.S.C. §§ 1531, et seq.), with the declared policy of Congress that “Federal agencies shall cooperate with State and local agencies to resolve water resource issues in concert with conservation of endangered species,” provides additional authority to operate USACE projects to protect threaten or endangered fish or wildlife.

### 1.2 PROJECT PURPOSE

Caesar Creek Lake provides flood risk management to the Little Miami River and reduces flood stages at all points downstream along the Ohio River as a unit in the comprehensive plan for the Ohio River Basin. The lake also operates for the storage of water for water supply and water quality control, and for recreation and fish and wildlife activities. The Miami River Area Office and Regional Visitor Center are located at the Project.

### 1.3 MASTER PLAN PURPOSE AND SCOPE

The Caesar Creek Lake Master Plan (Master Plan) is the strategic land use management document that guides the comprehensive management, development, and use for recreation, natural resources, and cultural resources in an efficient and cost-effective manner throughout the life of the Caesar Creek Lake Project for the next 25 years. It is a vital tool for responsible stewardship and sustainability of the

facility's resources for the benefit of present and future generations. This Master 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 dynamic and flexible based on changing conditions.

The Master Plan is based on responses to regional and local needs, resource capabilities and suitability and expressed public interests consistent with authorized Project purposes and pertinent legislation and regulations. It provides a District-level policy consistent with national objectives and other State and regional goals and programs. The plan is distinct from the project-level implementation emphasis of the Operational Management Plan (OMP). The Master Plan also does not address details of design, management and administration, and implementation. These are specifically addressed in the Caesar Creek Lake OMP. In addition, the Master Plan does not address the specifics of regional water quality, shoreline management with respect to private actions conducted by adjoining landowners such as vegetation modification. The operation and maintenance of primary Project operations facilities, including but not limited to the dam, spillway, and gate-controlled outlet, are also not included in this Master Plan.

#### 1.4 GENERAL WATERSHED DESCRIPTION

The Caesar Creek watershed lies wholly within Ohio (Figure 1 and Figure 2). The watershed is defined by the eight-digit Hydrologic Unit Code (HUC) 05090202. From its source in northeastern Green County, the stream meanders 33 miles, generally west by southwest, until its confluence with the Little Miami River. Caesar Creek Dam is located approximately three miles upstream of the confluence with the Little Miami River, and therefore controls a majority of the drainage in the Caesar Creek watershed. The watershed is 'T'-shaped, about 25 miles long, ranges from about 5 to 20 miles wide, and drains 237 square miles. The watershed lies in portions of Warren, Clinton, and Greene Counties. Major towns in the watershed are: Jamestown in Greene County and Harveysburg in Warren County.

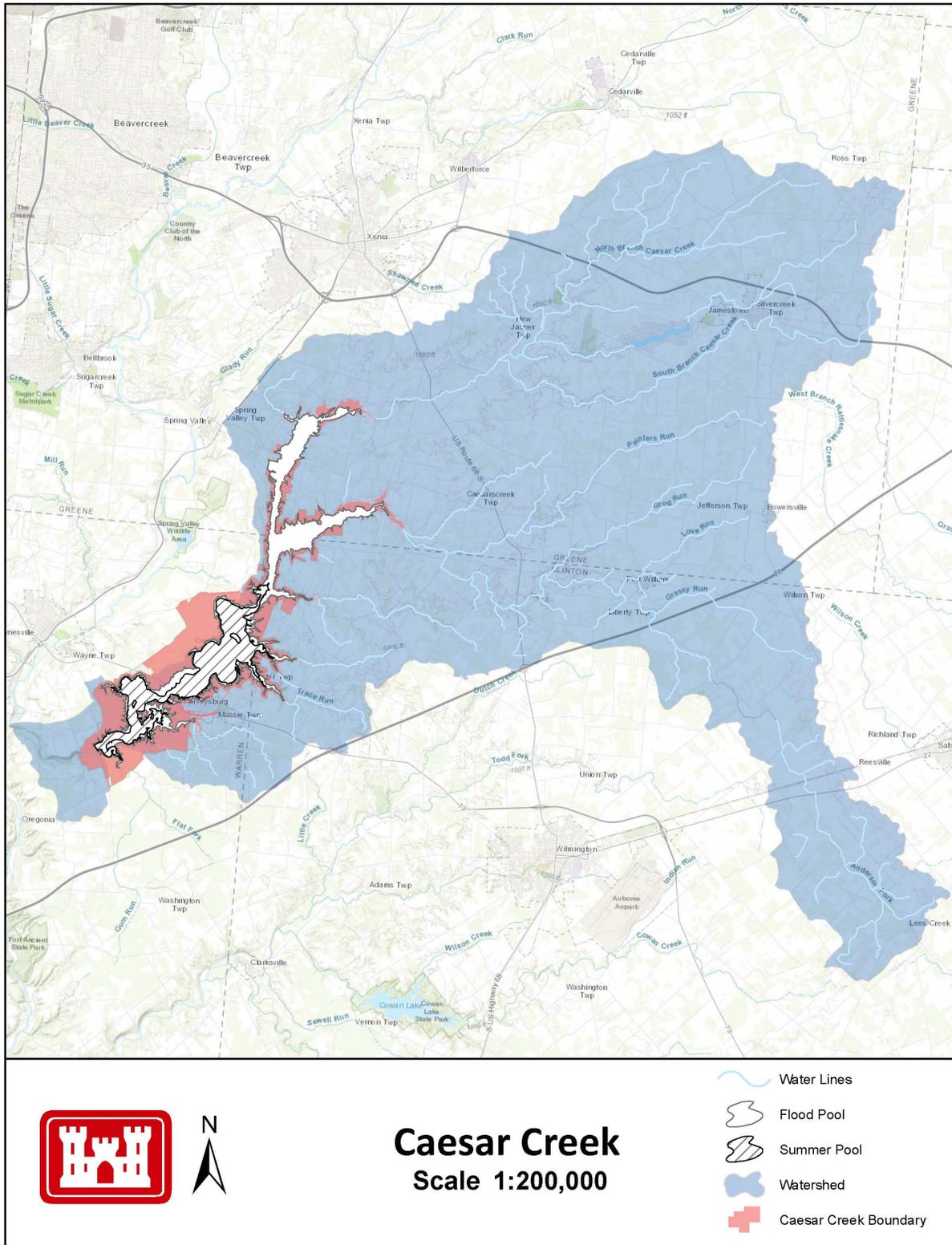


Figure 1: Caesar Creek Watershed

The Caesar Creek Reservoir basin is primarily covered by cultivated crops and deciduous forest, with these two land cover types covering 69 percent and 11 percent of the basin, respectively. Less than 10 percent of the basin is covered with pasture/hay and only six percent is considered developed, with most of the developed land cover being open space. Figure 2 shows land cover characteristics in the Caesar Creek Watershed. Appendix A provides higher detail on land cover within the fee boundary of Caesar Creek Lake. There are no significant hydraulic structures in the Caesar Creek basin upstream of Caesar Creek Reservoir.

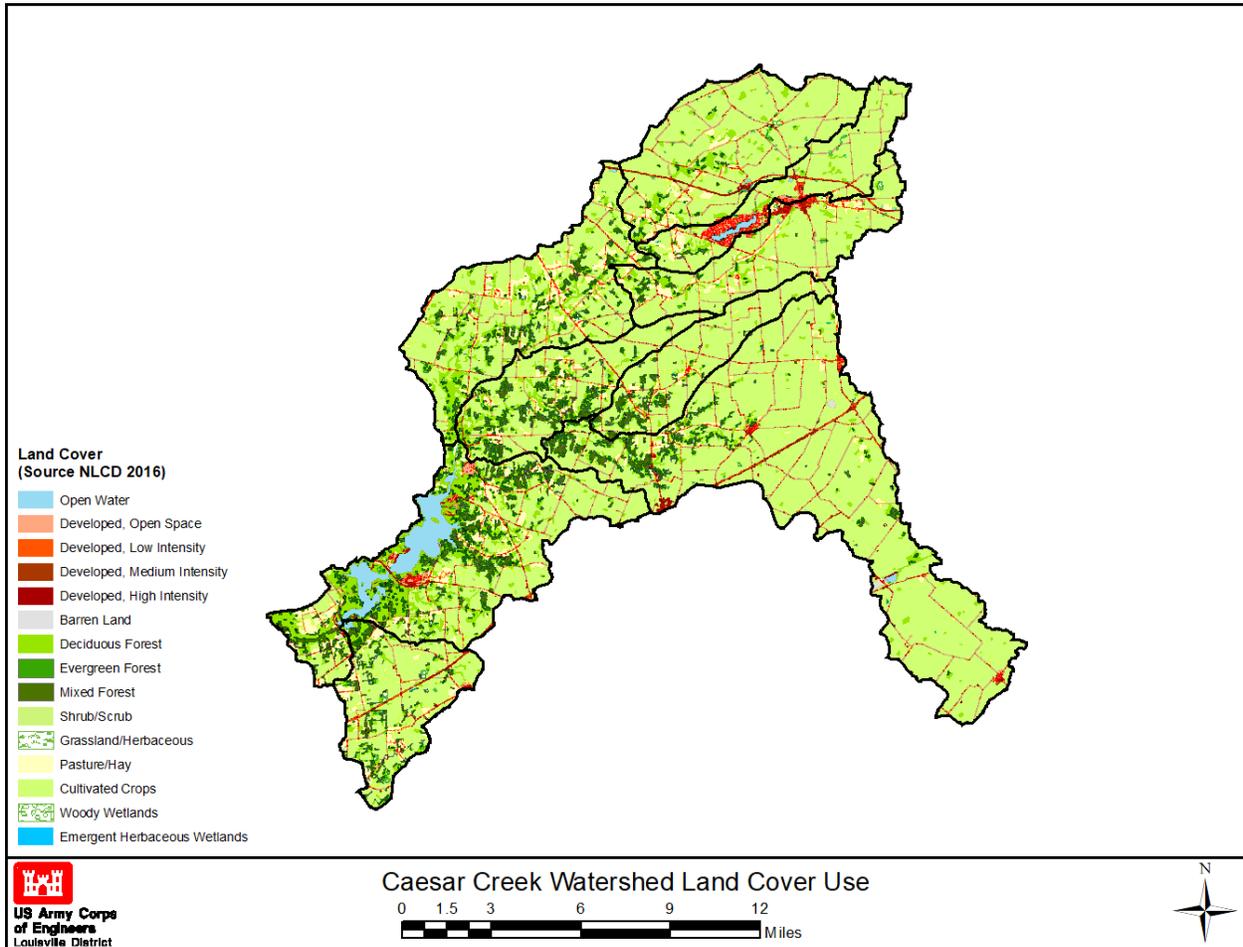


Figure 2: Land Cover in Caesar Creek Watershed

### 1.5 PROJECT LOCATION

Caesar Creek Reservoir is located on Caesar Creek in southwest Ohio approximately 30 air miles northeast of Cincinnati, Ohio and 20 air miles southeast of Dayton, Ohio. The dam site is about three miles above the confluence of Caesar Creek with the Little Miami River. The Project operates as a unit of the comprehensive plan for the Ohio River Basin to effect reduction in flood stages downstream of the dam. Other functions of the reservoir are recreation and low flow augmentation as needed during seasonal regulation periods.

The contributing drainage area upstream of the dam is approximately 237 square miles and includes portions of Warren, Clinton, and Greene Counties in Ohio. Pool elevation and outflow data is available for Caesar Creek Dam in Table 1. There are no known flood risk management structures upstream in the watershed besides the Caesar Creek Lake Project. Shawnee Lake is a 250-acre residential lake located near Jamestown, Ohio on the headwaters of the Caesar Creek. The earthen dam is maintained by the Lake Shawnee Association and dam safety inspections are conducted by the Ohio Department of Natural Resources. William H. Harsha Lake is on the East Fork Little Miami River and is operated in conjunction with Caesar Creek Lake as part of the comprehensive plan for flood control, water supply, water quality, and recreation in the Little Miami River Basin.

### 1.6 PROJECT ACCESS

State Route 380 parallels the reservoir on the east, and U.S. Route 42 parallels on the west. State Route 73, which has an east and west alignment, intersects the reservoir near mid-seasonal pool with a double bridged crossing. Interstate Route 71, a major northeast-southwest highway, passes approximately three miles to the southeast of the Project with an interchange at State Route 73 (Figure 3). Interstate 75 runs north-south approximately 10 miles from the lake. An adequate network of blacktop county roads and paved state highways serve the area. These roads afford easy access to the Project area from every direction.

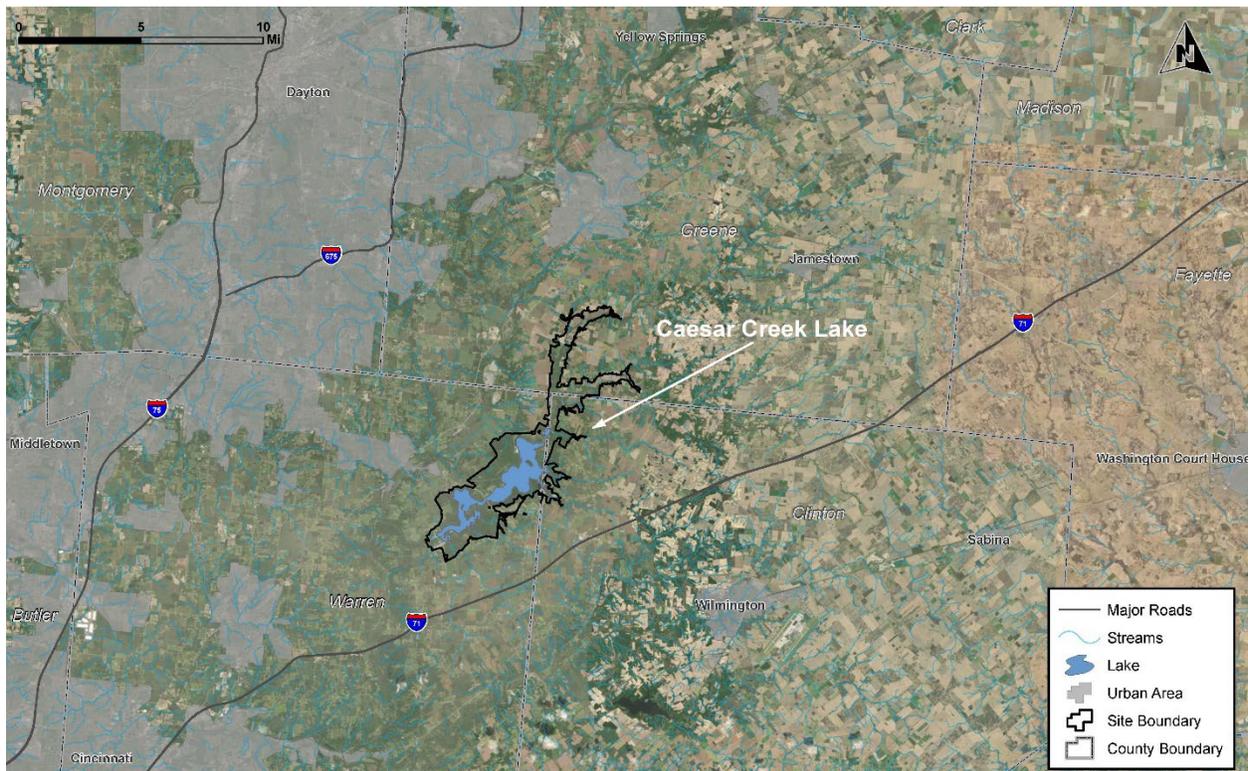


Figure 3: Caesar Creek Lake vicinity map

### 1.7 PERTINENT PROJECT INFORMATION

Construction of the operating tower and outlet works began in August 1972 and completed in July 1976. Construction of the dam and spillway began in July 1973 and was completed late in August 1975. Project filling began on 3 January 1978 with the lake reaching the water supply-water quality level of 845.4 ft-NAVD88 in early July 1978. The Project reached summer pool level of 848.4 ft-NAVD88 the summer of 1979. Table 1 provides characteristics of the Project including physical data, hydrology and operating levels.

Table 1: Pertinent Project Information

Physical Data		
Main Dam:		
Dam Type	Compacted earth and random rockfill	
Maximum Height	179 feet	
Length	2,750 feet	
Top Elevation	902.4 feet NAVD88 used for modeling. However, a 0'-6" low spot may be present based on settlement markers.	
Spillway Type	Uncontrolled open cut	
Spillway Crest Elevation	882.4 feet NAVD88	
Spillway Base Width	500 feet	
Outlet Works	Two 4 x 12 feet slide gates in an 8 x 12 feet oblong concrete conduit. 5 multilevel bypasses: two 6 x 6 feet and three 6 x 4 feet.	
Conduit Inlet Invert Elevation	739.96 feet NAVD88	
Bypass Inlet Invert Elevation	6' x 4' gates at elevations 786.4, 806.4, and 821.4 feet NAVD88 and two 6' x 6' gates at elevation 835.4 feet NAVD88	
Hydrology		
Drainage Area	237 mi <sup>2</sup>	
Basin Average Rainfall from PMP	24.13 inches (CCK WCM 1981)	
Probable Maximum Flood (PMF) Peak Inflow	230,200 cfs (CCK WCM 1981)	
Max. PMF Pool Elevation	899.4 feet NAVD88 (CCK WCM 1981)	
Maximum 6-Hour Inflow	14,409 cfs; 16 April 1998*	
Maximum Period-of-Record Release	3,157 cfs; 18 July 1990*	
Maximum Period-of-Record Pool Elevation	870.73 feet NAVD88; 19 January 2005***	
Average Discharge from Dam site	265 cfs*	
Operating Levels		
Pool	Elevation (feet NAVD88)	Storage** (acre-ft)
Top of Dam	902.4	419,299
Top of Flood Control Pool (spillway crest elevation)	882.4	242,200
Seasonal Pool (April 14 – November 30)	848.4	102,000
Water Quality and Water Supply Pool	845.4	93,700
Minimal Pool	799.4	13,300
Upstream projects, River Mile, and Drainage Area	Not applicable	
*Values from district provided database.		
**Storage above seasonal pool calculated as part of the hydrologic model development using the elevation storage curve developed using the Caesar Creek water control manual (figure 5.1).		
***From most recent Inspection Report		

The primary function of Caesar Creek Reservoir is flood control, and it is operated as a unit in the system of reservoirs in the Ohio River Basin. The spillway flood control regulation as provided in the Caesar Creek Reservoir Regulation Plan is summarized in Table 2. The current maximum allowable release of this Project during normal operation is 2,600 cubic feet per second (cfs), while the minimum release during normal operation is 15 cfs. Mean annual discharge is 265 cfs. The maximum design discharge capacity of the conduit and outlet works is 5,000 cfs. The discharge capacity of the bypass system with the reservoir at seasonal pool is 600 cfs. During flood operation, stages experienced at and forecasts for Milford, Ohio and Spring Valley, Ohio on the Little Miami River and Cincinnati, Ohio on the Ohio River control releases. These controlling stages are observed until the pool reaches spillway crest at elevation 882.4 ft-NAVD88; beyond this point, gate and spillway outflow is regulated up to channel capacity of 2,600 cfs.

Table 2: Spillway Flood Control Regulation Schedule

Pool Elevation (ft-NAVD88)	Pool Conditions	Regulation
Below 882.4.0	Rising	A constant release rate of 100 cfs will be maintained until the top of flood control (spillway crest) is reached.
Above 882.4.0 & Below 884	Rising	Regulate conduit gates to release inflow up to 2,600 cfs (conduit plus spillway).
Above 884	Rising	Open conduit gates until outflow equals inflow.
Below 882.4	Falling	Once the pool falls below the spillway crest elevation (top of flood control), the conduit gates will be adjusted to pass inflows only until outflows return to maximum allowable releases.

## 1.8 PRIOR DESIGN MEMORANDUMS

Design Memorandums were prepared from 1956 through 1970 setting forth design criteria 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 list of the Design Memorandums for Caesar Creek Lake are in Table 3.

Table 3: Prior Caesar Creek Lake Design Memorandums

Previously Issued Design Memorandums	
Design Memorandum No.	Title
1	Report on Economics
2	Reservoir and Spillway
3	General Design Memorandum: Appendix to G.D.M. Lab Test
4	Concrete Aggregate
5	Dam and Spillway
6	Outlet Works
7A	Preliminary Master Plan
8	Warren County Roads
9	Real Estate Segments 1-14 and Roads
9A	Construction Area
9B	Real Estate Segments 15
9C	Real Estate Segments 16-22
10	Relocation - Ohio State Roads, Greene and Clinton Counties
11	Dikes and Rock Test Fills
12	Relocation of Utilities
13	Master Plan (1973)
14	Lake Clearing
15	Master Plan (1991)

### 1.8.1 Recommendation from Previous Master Plans (1973 & 1991)

Two previous master plans (1973 and 1991) were developed for Caesar Creek Lake. Both of these plans reflect changes in outdoor recreation trends, regional land use, population, legislative requirements, and USACE management policy at the time of their creation. Each of the previous master plans outlined specific recommendations at Caesar Creek Lake based on location. Tables 4 -10 describe the recommendation and provides discussion on their implementation. Note that Table 10 describes development of a state lodge or resort in the original 1973 Master Plan. This development recommendation was removed from the 1991 Master Plan update and there continues to be no demand to revisit the recommendation.

Table 4: Prior Master Plan Recommendations - Operations Area

Continuing Development & Management Recommendations			
Operations Area	1973	1991	Implementation Status
Grade and seed borrow area on the left abutment of the dam and tailwater area.	X		Completed
Carry out landscaping screen around central sewage treatment plant.	X		Completed
Repair both of the one lane roads and the bridge in the below dam area to create a one way system	X		Bridge repaired road repaired complete
The portion of O'Neal Road within the property should be connected with the road over the dam.	X		No longer required.
Double size of fishing platform at Flat Fork.		X	Completed
Fishing platform to be handicap accessible at the tailwater area.		X	Completed
Ramps for handicapped at picnic shelter at Flat Fork		X	Sidewalk completed
Facility upgrades, display pavilion (overlooking lake)		X	Completed overlook upgrades / no new upgrades due to slide
Facility Upgrades, display pavilion (near pond)		X	Completed shelter (Red Bud) / playground/ fitness trail
Wildlife Management/Forest Management Demonstration Area, North of Visitor Center		X	In progress (honeysuckle removal)
Demonstration Forest, Woods along Lake shore		X	In progress (honeysuckle removal)
Demonstration Forest, In ravine		X	In progress (honeysuckle removal)
Improve fields for Wildlife Management		X	Prairie / vernal pool added near pond / prairie added between shop and visitor center
Cut/Pile Unproductive species of brush		X	In process (honeysuckle removal)
Improve growing conditions for superior species by release cutting, open grass land, and food plots - maintained by mowing		X	Gorge road, Clarksville Road and spillway prairies added and maintained
Plant evergreen screen and other hardwood seedlings, across Clarksville Rd		X	Completed
Expand grasslands and maintain by mowing, across Clarksville Rd		X	Completed and in progress
Plant food plots, across Clarksville Rd		X	No longer required
Encourage briar patches, across Clarksville Rd		X	No longer required
Harvest select trees to open the cover to enhance wildflowers, Tailwater		X	completed and in progress
Grasslands & Food plots will be maintained through mowing, open areas above the gorge		X	Mowing and controlled burns occur
Small backpacker's camp, east of Flat Fork area		X	Completed and removed.

Table 5: Prior Master Plan Recommendation - Lake View

Continuing Development & Management Recommendations			
Lake View	1973	1991	Implementation Status
Future development of cabin complex and group camping area	X		Hopewell Day Lodge completed, group camp site completed
Construct boat launching ramps for cabin areas	X		No longer required
Construct boat launching ramps for camping areas	X		No longer required
Nature Education Center	X		Completed at Wellman Meadows
The State has proposed to acquire additional land for buffer area	X		Caesar Creek Gorge, Caesar Creek campground, Warren County Hisey Park
If the State acquires this area, a recreation road can be created to connect the site with Hwy 73 and the Furnas Shores site.	X		No longer required
Development of five (5) group camp units.		X	Completed at various recreation areas
Develop a small area of prairie grasses and forbs in the upland portion of the site, near the group lodge.		X	Completed

Table 6: Prior Master Plan Recommendations - Furnas Shores

Continuing Development & Management Recommendations			
Furnas Shores	1973	1991	Implementation Status
Development of major beach	X		Completed
Development of family camping areas, with electric and water	X		No longer required
Development of picnic facilities	X		At Beach completed
Boat launch ramp near bridge	X		Furnas Shores and North Pool complete, no new ramps to be added
Marina with suitable parking, Boat Ramp area		X	Marina complete 2018, no new ramps
Additional Restrooms, Boat Ramp area		X	Restroom completed at each ramp, no new restrooms to be added
Additional (82) paved parking & (2) turf parking spaces, Boat Ramp area		X	Dry dock boat parking complete / kayak launch and parking complete
Additional (60) car parking spaces, Beach area		X	Beach parking complete
Develop trail in the southern portion, Horsemans area		X	Horse trails complete, no new trails. Maintenance of existing trails continuing.
Upgrade campground, Horsemans area		X	Horseman Camp and group camp completed

Table 7: Prior Master Plan Recommendations - Wildlife Area Access

<b>Continuing Development &amp; Management Recommendations</b>			
<b>Wildlife Area</b>	<b>1973</b>	<b>1991</b>	<b>Implementation Status</b>
Improve wildlife habitats through share cropping, planting useful trees and shrubs, release cutting, mowing, and select location burning		X	Completed/ongoing through ODNR Wildlife

Table 8: Prior Master Plan Recommendations - Mounds Ridge

<b>Continuing Development &amp; Management Recommendations</b>			
<b>Mounds Ridge</b>	<b>1973</b>	<b>1991</b>	<b>Implementation Status</b>
Develop family camping area	X		288 site class A campground with electric, water, and dump station completed
Construct boat launching ramp	X		Completed
Construct parking area	X		Completed
Develop (15) group camping sites, for 10-30 people each		X	No longer needed at this area
Construct additional road for group camping facilities		X	No longer needed at this area
Construct camper's beach		X	Completed
Add (44) cabins along the embayment at the south end of the site (long-term plan)		X	Implemented and then removed

Table 9: Prior Master Plan Recommendations - Wellman Meadows

Continuing Development & Management Recommendations			
Wellman Meadows, Compartment No. 7	1973	1991	Implementation Status
An interior park road can be constructed the length of the site	X		No intent to implement
Development of large marina to be maintained by concessionaire	X		No - Furnas Shores -yes
Development of a large boat launch ramp	X		Completed
Construct an overlook for this site	X		Not planned
Construct many picnic units throughout the site	X		Completed
Relocate historic buildings on set aside land	X		Pioneer Village completed
Develop fishing pier or dock for bank fishing, Fifty Springs Picnic area		X	No intent to implement
Construct (30) car parking space and paved walk connecting the pier to existing parking, Fifty Springs Picnic area		X	No intent to implement
Relocate and existing unused toilet building to the area of the proposed parking lot, Fifty Springs Picnic area		X	No intent to implement
Add additional picnic facilities as required, Fifty Springs Picnic area		X	No intent to implement
Bank fishing area is planned for long-term future development of picnicking facilities, Lukens Road area		X	Lukens road closed no facilities to be added
Selective clearing of undesirable species & planting of desirable forms of wildlife plants, Lukens Road area		X	On-going
Rejuvenate meadows through controlled burning every 5 years, Lukens Road area		X	No intent to implement
Additional launching lanes, Wellman Meadows Boat Ramp		X	No intent to implement
Additional picnicking facilities, Wellman Meadows Boat Ramp		X	1 picnic shelter/ group camping site complete

Table 10: Prior Master Plan Recommendations - State Lodge & Fisherman Access Site

Continuing Development & Management Recommendations			
State Lodge Site & Fisherman Access Site	1973	1991	Implementation Status
Planned major resort with lodge, cabins, convention center, campground and golf course	X		No intent to implement
Fisherman access site planned near the intersection of Route 380 and Roxanna-New Burlington Road	X		No intent to implement

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

### 2.1 HYDROLOGY

The contributing drainage area upstream of the dam is approximately 237 square miles. From Caesar Creek’s headwaters in Greene County, the stream meanders 33 miles until its confluence with the Little Miami River. Caesar Creek Dam is located approximately three miles upstream of the confluence with the Little Miami River and controls a majority of the drainage in the Caesar Creek watershed. See section 1.7 for details of how the Project operates for flood risk management.

The general topography of the area is characterized by broad, relatively flat drainage divides which have been dissected by streams, thus developing a dendritic drainage pattern. Tributary streams are fed from springs high on the drainage divide between Caesar Creek and the Little Miami River and flow along gentle gradients to the mouth of the river. Maximum relief across the watershed is 300 feet. The average bed slope of Caesar Creek is 10 feet per mile.

Groundwater resources are dictated by the geology of the area. The Project area is mostly comprised of end moraine consisting of clay with sand and gravel layers. Depth to rock in this area may range from 100 to 200 feet. Groundwater wells encountering coarse sands and gravels may obtain yields of 10 to 15 gallons per minute from properly developed screened wells. Shale bedrock in the area is a poor groundwater source (Walker, 1986).

### 2.2 SEDIMENTATION AND SHORELINE EROSION

Shoreline erosion at Caesar Creek Lake is caused by a combination of factors; predominately waves created by wind and boat action. Supporting factors include fluctuations in lake level and erodible soil classifications. USACE, including its outgrant facilities, have and shall continue to implement best management practices (BMPs) and Erosion and Sediment Control Plans in an effort to reduce soil erosion and run-off. Such practices have included minimizing soil disturbance activities, utilization of vegetative buffers, and shoreline stabilization using gabion baskets and other structures. These efforts will preserve the maximum water storage capacity of the lake for flood control, maintain water quality, preserve and enhance the lake’s fishery, and support recreational opportunities through good water quality.

Accounting for sedimentation was included in the design and management of the reservoir. It is recommended that an updated sedimentation study be completed to characterize current sedimentation and potential impacts on the Project's authorized purposes.

### 2.3 WATER QUALITY

The water quality management authority of USACE is founded on the Federal Water Pollution Control Act (FWPCA) of 1948 and its amendments including the Clean Water Act of 1977 and the Water Quality Act of 1987. Executive Order 12088, Federal Compliance with Pollution Control Standards (1978), requires Federal facilities to comply with applicable pollution control standards in the same manner as any non-Federal entity. ER 1110-2-8154 stipulates that it is Corps policy to develop and implement a holistic, environmentally sound water quality management strategy for all projects. Furthermore, it is USACE's goal to responsibly manage our projects to maximize environmental compliance. USACE is also mandated to comply with native State regulations and standards including the Ohio Administrative Code (OAC) 3745-1.

Water quality monitoring at the lake is performed by the USACE which is done in coordination with the state of Ohio. USACE Project personnel also conduct water quality monitoring in which biweekly measurements are collected from spring to fall during lake stratification to monitor temperature and dissolved oxygen levels. Data collected via the Louisville District Water Quality Program is assessed annually. Water quality in the tailwater is also assessed by analyzing data for exceedances of water quality standards and criteria. Data is compared and if any exceedances of established water quality criteria occur, the Louisville District Water Quality Team reports this to the Ohio Environmental Protection Agency.

According to OAC 3745-1, the Caesar Creek tailwater is designated for multiple uses that include: exceptional warmwater habitat, agricultural water supply, industrial water supply, and primary contact recreation. Nutrient criteria for total nitrogen, total phosphorus, and turbidity is based on the United States Environmental Protection Agency (USEPA) Ambient Water Quality Criteria Recommendations, Rivers and Streams (2000). In 2019, the Caesar Creek Lake tailwater exceeded the total phosphorus criteria and met criteria for total nitrogen and turbidity.

The trophic state index (TSI) of multiple sites within the lake were calculated from data collected in 2018. The results suggested that the lake is eutrophic (TSI score from 51-69). This means that the lake has a high concentration of nutrients, which can be detrimental to the lake in multiple ways, which includes causing the proliferation of harmful algal blooms (HABs). HABs in Ohio are addressed by the ODNR as they are the lead agency for HAB response. The ODNR works with the Ohio EPA and Ohio Department of Health to sample for cyanobacteria and cyanotoxins at designated swimming beaches and to post recreational advisories. The Louisville District supports the state agencies by reporting any visual HAB indicators and by communicating HAB potential to the visiting public.

### 2.4 CLIMATE

The climate of the Caesar Creek area is temperate continental with hot, humid summers and moderately cold dry winters. Large daily and annual variations in temperature and precipitation are characteristic.

The average annual temperature is approximately 54 degrees, with extreme temperatures of -30 degrees Fahrenheit and 109 degrees Fahrenheit having been recorded.

Weather conditions change every few days from the passing of cold or warm fronts and their associated centers of high and low pressure. Summers are moderately hot and humid with an average of 33 days with temperature of 90 degrees Fahrenheit or higher. Winters are reasonably mild with an average temperature of about 34 degrees Fahrenheit, and only two days with temperatures less than zero. The fall season of the year is very pleasant with an abundance of sunshine and comfortable temperatures.

Normally, rainfall is abundant and well distributed throughout the year, with showers and thunderstorms furnishing much of the growing season precipitation. Thunderstorms occur frequently from April through August. Winters are reasonably cold and cloudy with weather changes occurring frequently due to the passing for cold or warm fronts. Annual snowfall varies widely from year to year but averages between 20 and 25 inches.

Storms having a quasi-stationary front oriented from west-southwest to east-northeast have produced the most serious flooding in the Little Miami River and its tributaries. Storms of this type have historically occurred from late winter to early spring when the ground conditions are conducive to high runoff due to freezing temperatures. The most significant floods on record were January 1937, January 1959, March 1963, and March 1964.

Based on the climate in the region, the probable maximum precipitation event will likely be driven by a significant rainfall event that impacts the entire Caesar Creek Basin and will be preceded by wet conditions.

## 2.5 GEOLOGY AND TOPOGRAPHY

Starting at the dam tailwaters, Caesar Creek has formed a gorge downstream to the confluence with the Little Miami River. Most of the shoreline north of State Highway 73 is gently sloping. South of Highway 73, the valley sides slope steeply into the lake. Caesar Creek lies in a glaciated area of Ohio. At the dam site Caesar Creek marks the southern limit of the Wisconsin deposits. Glacial deposits on the right bank are Wisconsin, and those on the left bank are Illinoian. The adjacent hilltop abutments at each end of the dam, as well as the tailwater area were used as borrow sites for construction of the dam.

Caesar Creek flows over bedrock at the dam site, with a valley width of about 300 feet. Bedrock in the valley is about elevation 724 feet above mean sea level (amsl), and bedrock extends above spillway crest elevation 883 feet amsl in both abutments. Bedrock is the Richmond Formation of interbedded limestone and shale, Ordovician in age. The earth and rock cut to create the spillway was used during construction of the dam.

Approximately 2.5 miles above the dam, Caesar Creek flows in a broad, meandering valley of glacial deposits. The general topography is one of broad, relatively flat drainage divides, which have been dissected by streams such as the Little Miami River, Caesar Creek, and tributaries. A dendritic drainage pattern has developed. Prior to the Illinoian glaciation, the drainage pattern was quite different from that of today.

A southward flowing river, referred to as the "Hamilton River," cut a deep bedrock channel through Greene, Warren, and Clinton Counties. This preglacial river split between New Burlington and Harveysburg. The west arm of the river flowed in a southeast direction toward Ogden until it reached the present Todd Fork Valley, where it turned southwest, following the present Todd Fork Valley. Both arms of the river are now buried valleys. The arm does cross the reservoir about five miles upstream from the dam. Approximate top of bedrock in the buried valley is elevation 750 feet amsl. The drainage divide between Caesar Creek and the Little Miami River is located in the old Hamilton River bedrock channel. The drainage divide is a Wisconsin end moraine that was deposited as hills and ridges at the edges of the glacier. The ridges are more or less well defined belts. The drainage divide is composed of clay till with inter-bedded sand and gravel.

## 2.6 SOILS

The Caesar Creek area is mostly in the Wisconsin High-Lime Till Soil Region, which is gently undulating to rolling glacial till plain. Lower reaches of the creek are located in the Illinoian-age glacial till plain with deeply weathered soils. In general, most soils have severe limitations to the operation of septic tanks, and present low to moderate erosion hazards. The Genesee-Eel-Sloan soil association consists of light colored silty loams developed in active flood plains. The soils have inadequate local drainage.

Soils of the Russell-Xenia-Fincastle association are dark, silty loams developed in loess-covered Wisconsin till in upland areas and have a moderate erosion hazard. The Clermont-Avonburg and Rossmoyne-Edenton associations include silty loam upland soils developed on Illinoian till.

Soils found on steep valley wall slopes include the Russell-Wynn association and Fairmount soils developed on limestone and shale. Soil mapping is located in Appendix A.

## 2.7 RESOURCE ANALYSIS

### 2.7.1 Fish and Wildlife Resources

The Project area is within the contemporary range of about 45 species of mammals. Of these, the following species can be considered as game species in the sense that they are sought for sport or profit - cottontail rabbit, woodchuck, gray squirrel, fox squirrel, red fox, gray fox, raccoon, long-tailed weasel, least weasel, mink, and deer. Also there have been sightings of 13-lined ground squirrels and badgers in the area. The Project area is within the ranges of about 28 species of reptiles and 25 species of amphibians. The Project overlaps with historic ranges of two venomous snakes- the copperhead and the massasauga rattlesnake. The copperhead has not been documented on the Project in over 40 years. The bird life of the Project is categorized in Table 11.

Table 11: Residential Status and Species Abundance of Birds

Status	Approx. # of Species
Permanent Residents	44
Winter Resident or Winter Visitor	28
Summer Resident	64
Migrants	114

The Audubon Society recognized Caesar Creek Lake as an Important Birding Area in 2004. The Lake is surrounded by over 8,300 acres of mature forest, native grassland prairies, and improved wetland areas. Natural Resource Specialists have been actively working on the maintenance and establishment of these lands to help restore them back to their native state. The Project specifically has focused on removing invasive plant species in the understory of forests and constructing/mitigating multiple native prairies and wetlands. All of these changes provide optimal habitats that attracts a variety of different species of birds through-out the year.

Beginning in the late winter and early spring many migrant water birds flock to the area, these species can include Horned and Pied-billed grebes, American Coots, and many species of waterfowl, like the Hooded Merganser and Canvasback. Spring migrations brings a variety of warblers, like the Hooded Warbler and Yellow Warbler to the large un-fragmented woodland forest in the gorge area. The native grassland prairies attract birds such as the Tree Swallows and Eastern Bluebird. The wooded coves around the lake provide summer homes for Prothonotary Warblers and Baltimore Orioles. The large open water of the lake attracts Bald Eagles and Ospreys.

Throughout the Project, priority birds can be spotted which include Northern Harrier, Sharp-shinned Hawk, Buff-breasted Sandpiper, Common Tern, Northern Saw-whet Owl, Purple Martin, Hermit Thrush, Dark-eyed Junco, Bobolink, and Eastern Meadowlark. Caesar Creek Lake is residence to several “Species of High Conservation Priority in Ohio” like the Red-shouldered Hawk, Yellow-billed Cuckoo, Blue-winged Warbler, and Cerulean Warbler.

Prior to lake construction, Caesar Creek was known as a good smallmouth bass and rock bass stream. In addition to those species, other game and panfish present were channel catfish, flathead catfish, spotted bass, bluegill, and crappie. Nongame species included various suckers, minnows, and darters. Many of these stream fish have been extirpated or reduced in population from those inundated reaches of stream. Within the Project, the stream fishery has been replaced by a lake and tailwater fishery managed by the Ohio Division of Wildlife. Largemouth bass, white bass, muskellunge, and saugeye now predominate in the lake and gizzard shad are also present.

#### 2.7.2 Vegetative Resources

The Project area is within the Beech Maple and the Western Mesophytic forest regions. The associations of the first mentioned region are characterized by dominance of the American beech (*Fagus grandiflora*) and sugar maple (*Acer saccharum*). Typical subdominants are various oaks, sassafras, honey locust, black walnut, black cherry, black locust, and tulip tree. The Western Mesophytic Forest Region and the oak-hickory prairie communities of more westerly vegetative locales. Dominance is shared by a number of species and reflected in the existence of various climax communities. Typical dominant species include Beech, hemlock, tuliptree, red oak, and white oak. According to the National Land Cover Database, nearly 50 percent of the land cover of the Project area is deciduous forest (Figure 4).

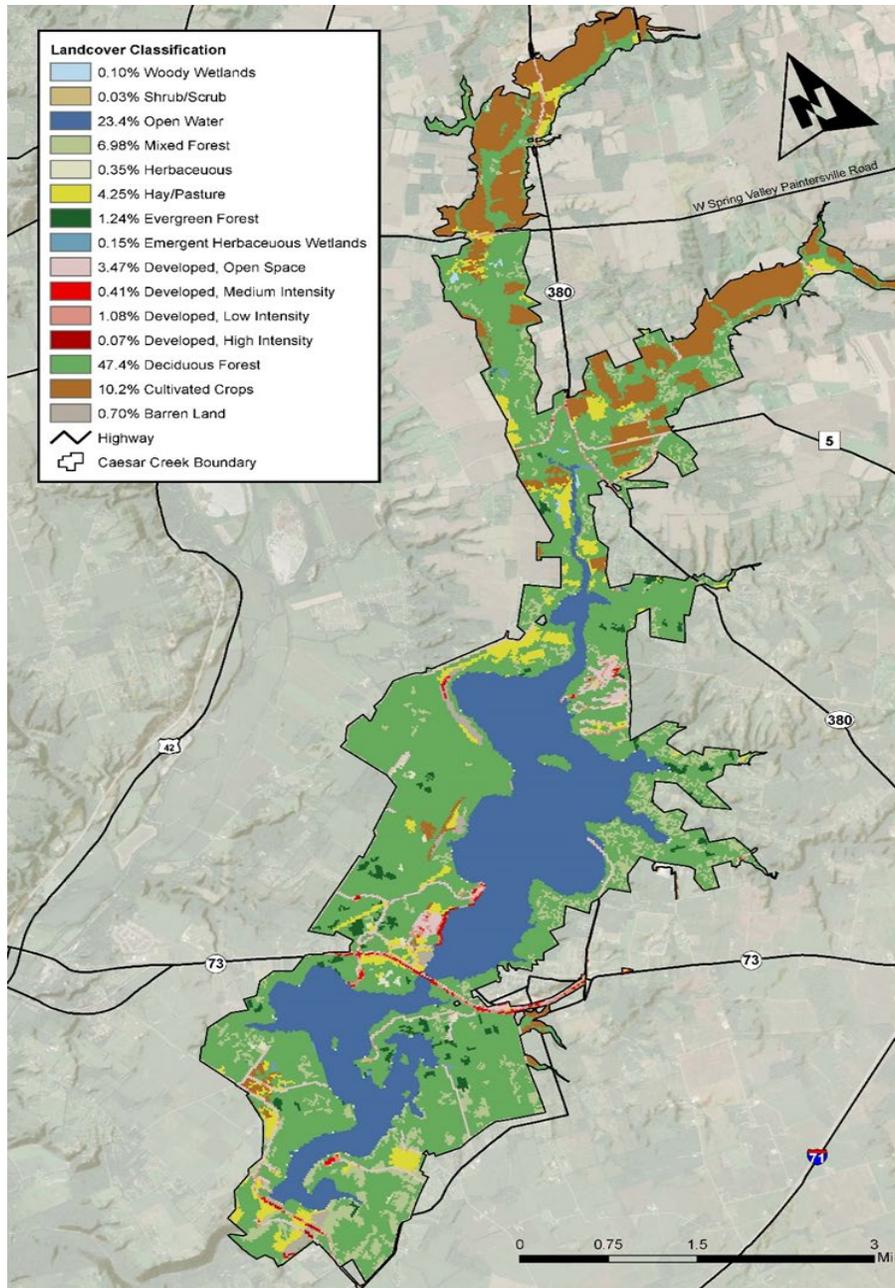


Figure 4: Land cover of the Project according to the National Land Cover Database (2016)

### 2.7.3 Threatened & Endangered Species

Lists of threatened, endangered and species of special concern are maintained by the USFWS and the State of Ohio. Under the Endangered Species Act (ESA) of 1973 (16 U.S.C. §§ 1531-1544), endangered species are defined as any species in danger of extinction throughout all or portions of its range. A threatened species is any species likely to become endangered in the foreseeable future. The ESA defines critical habitat of the above species as a geographic area that contains the physical or biological

features that are essential to the conservation of a particular species and that may need special management or protection.

An official threatened and endangered species list from the USFWS, dated May 21, 2020, for the Project area included seven species: the Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), eastern massasauga rattlesnake (*Sistrurus catenatus*), clubshell mussel (*Pleurobema clava*), rayed bean mussel (*Villosa fabalis*), snuffbox mussel (*Epioblasma triquetra*), and running buffalo clover (*Trifolium stoloniferum*). No critical habitats are known to exist within the boundaries of the Project.

The Indiana bat has a range that intersects with the Project. In the spring, bats emerge from hibernation and migrate to summer roost sites. During the summer months, female Indiana bats establish maternity colonies of up to 100 bats under the loose bark of trees and in tree cavities. Loss and fragmentation of forest habitat are among the major threats to Indiana bat populations. Other threats include white-nose syndrome, winter disturbance, and environmental contaminants (USFWS, 2006).

The northern long-eared bat has a range that intersects with the Project. It was listed as threatened in 2015 due to declines mostly associated with white-nose syndrome. The bats spend winter hibernating in caves and mines. During the summer the bats roost singly or in colonies underneath bark or in cavities of both snags and live trees.

The eastern massasauga rattlesnake was listed as threatened in 2016. Its habitat is primarily open prairie wetlands. Massasaugas also use the adjacent uplands around wetlands for part of the year. In the winter they hibernate in crayfish or small mammal burrows. Loss of wetland habitat as well as invasion of wetland habitat by invasive woody shrubs is a major threat. Mowing and prescribed burning are recommended for the prairies they occur on, however the timing should be prior to their emergence from hibernation (USFWS 2016).

The clubshell mussel prefers clean, loose sand and gravel in medium to small rivers and streams. This mussel will bury itself in the bottom substrate to depths of up to four inches. Reproduction requires a stable, undisturbed habitat and a sufficient population of fish hosts to complete the mussel's larval development. Once found in large portions of the eastern United States, the clubshell occurs today in only 12 streams. Reasons for its decline in the upper Ohio and Wabash watersheds have been principally due to pollution from agricultural run-off and industrial wastes, and extensive impoundments for navigation. The clubshell is thought to be extirpated from the Project area due to the impoundment of Caesar Creek and decline in water quality.

The snuffbox mussel was listed as an endangered species in 2012. The snuffbox is a small- to medium-sized mussel with a triangular shaped shell in females and oblong or ovate in males. Historically the snuffbox was widespread, occurring in 210 streams and lakes, but the population has been reduced to 79 streams, representing a 62 percent decline. Most existing populations are small and geographically isolated from one another, further increasing their risk of extinction. The snuffbox is usually found in small- to medium-sized creeks, inhabiting areas with a swift current. Adults often burrow deep in sand, gravel or cobble substrates, except when they are spawning or the females are attempting to attract

host fish. They are suspension feeders, typically feeding on algae, bacteria, detritus, microscopic animals, and dissolved organic material. The snuffbox has likely been extirpated from the Project area.

The rayed bean is a small (less than 1.5 inches) freshwater mussel that can be found in smaller headwater streams, but may also be found in larger rivers or wave-washed areas of glacial lakes. It prefers gravel or sand substrate, and is often found around roots of aquatic vegetation. The rayed bean is threatened by dams and altered flow regimes, pollution from agricultural and private septic runoff, sedimentation, and invasive species (USFWS 2012).

The running buffalo clover was listed as a federally endangered species in 1987. It is a perennial species with leaves divided into three leaflets. It is called running buffalo clover because it produces runners that extend from the base of erect stems and run along the surface of the ground. These runners are capable of rooting at nodes and expanding the size of small clumps of clover into larger ones. The flower heads are about one inch wide, white, and grow on stems that are 2 to 8 inches long. Each flower head has two large opposite leaves below it on the flowering stem. Running buffalo clover flowers from late spring to early summer and can be found in Indiana, Kentucky, Missouri, Ohio, and West Virginia. It has been extirpated from Arkansas, Illinois, and Kansas. Running buffalo requires periodic disturbance and a somewhat open habitat to successfully flourish, but it cannot tolerate full-sun, full-shade, or severe disturbance. Historically running buffalo clover was found in rich soils in the ecotone between open forest and prairie. Those areas were probably maintained by the disturbance caused by bison. Today, the species is found in partially shaded woodlots, mowed areas (lawns, parks, cemeteries), and along streams and trails. The decline in bison population, increase of habitat loss, competition from non-native plants, and unfavorable land management have all likely contributed to the decline of the species.

#### 2.7.4 Invasive Species

The USFWS defines invasive species as those that are “not native to an ecosystem and which causes or is likely to cause economic or environmental harm or harm to human health.” Invasive species out-compete native plants and wildlife, while degrading, changing or replacing native habitats (USFWS 2012).

Table 12 lists some of the more common invasive species known to occur at the Project. This is not a comprehensive list.

Table 12: Common Invasive Species Present at Caesar Creek Lake

Common Name	Species
Autumn Olive	<i>Elaeagnus umbellata</i>
Canada thistle	<i>Cirsium arvense</i>
Common Reed	<i>Phragmites australis</i>
Emerald ash borer	<i>Agrilus planipennis</i>
Eurasian watermultifoil	<i>Myriophyllum spicatum</i>
Garlic mustard	<i>Alliaria petiolata</i>
Japanese chaff flower	<i>Achyranthus japonica</i>
Japanese honeysuckle	<i>Lonicera japonica</i>
Johnson grass	<i>Sorghum halepense</i>
Multiflora rose	<i>Rosa multiflora</i>
Oriental bittersweet	<i>Celastrus orbiculata</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Japanese honeysuckle	<i>Lonicera japonica</i>
Tree-of-heaven	<i>Ailanthus altissima</i>
Zebra mussel	<i>Dreissena polymorpha</i>

The ODNR and USACE actively manage for invasive species including several invasive plants found in the management units throughout the Project. Invasive species are commonly introduced or spread through periodic disturbance of an area. Awareness of current and local emerging invasive species and their potential impacts can help address and limit their spread. Invasive species have the potential to devastate natural environments, and could influence future management decisions. Future development and maintenance projects conducted by land managers should be aware of and attempt to limit the spread of invasive species found at the Project.

#### 2.7.5 Ecological Setting

The biology of the area may be generally interpreted as a very rich representation of midwestern flora and fauna generated by various current factors. This diversity has been impacted by habitat changes from development around the lake and impoundment of the lake. Since construction of the dam, plant and animal species that have a low tolerance for slack water situations have either disappeared, or persist as a remnant or peripheral populations. There are various stages of vegetative succession present around the Project, however, mature deciduous forest is the dominant stage. This abundance of forested land provides habitat for numerous species of plants and animals

#### 2.7.6 Wetlands

Some isolated, small freshwater emergent wetlands and ponds exist scattered within the Project boundary. The largest of the wetlands are located in the northern vicinity of the Project, near the confluence of Caesar Creek and Anderson Fork, where approximately 23 acres of forested/shrub wetland and 10.5 acres of emergent wetland exist. Figure 5 shows existing wetlands within the Project boundary, according to the USFWS National Wetland Inventory.

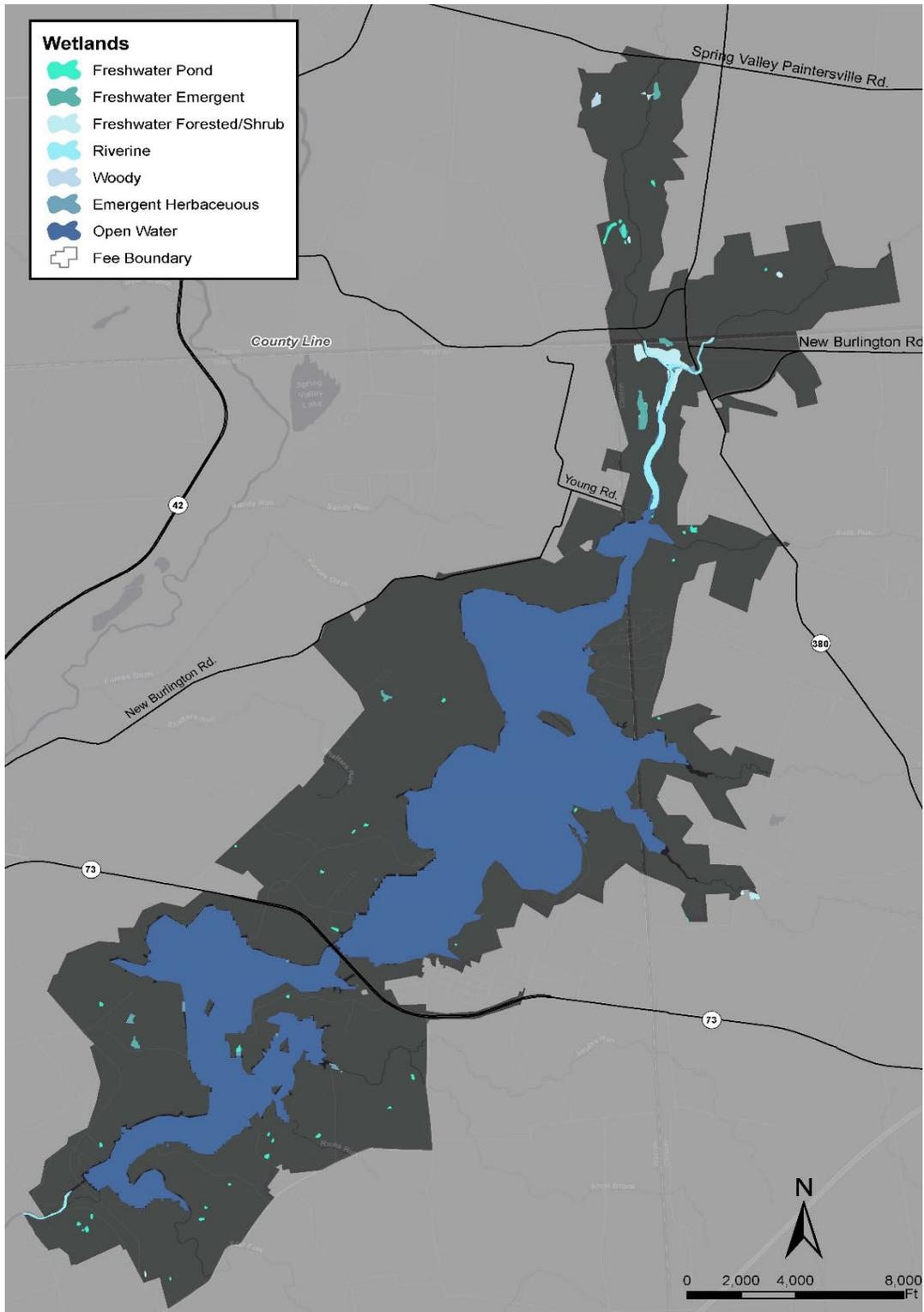


Figure 5: Wetlands within the Project Boundary (USFWS National Wetland Inventory).

## 2.8 CULTURAL RESOURCES

### 2.8.1 Prehistoric Setting

The relative location of Caesar Creek Lake has a spatiotemporal occupation of Native Americans spanning from the Paleoindians around 12,500 years before present (BP) into the early 19th century with Shawnee Indians; with Euro-American contact with Native Americans occurring around AD 1750. An all-inclusive chronology of the eastern United States pertaining to Caesar Creek Lake divides this general chronological sequence into the following periods: Paleoindian (12,000-10,000 BC); Archaic (10,000-3,000 BC); Woodland (3,000 BC to AD 1000); Fort Ancient (AD1000-1750); Hopewell culture (200 B.C.-500 AD) which is known as the Mound-building Indians, and Ethnographic (European contact and settlement, AD 1750-Present).

These periods represent culturally distinct techno-complexes relating to human adaptation in and around the area surrounding Caesar Creek Lake. Because these cultural resources have the potential to be considered Historical Properties—defined by the National Historic Preservation Act (NHPA) as “any historic or prehistoric district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior”—Section 106 of the NHPA requires the Federal agency to consider effects of their undertakings on historic properties.

### 2.8.2 Historic Setting

By the beginning of the 18th Century, increasing settlements on the Eastern seaboard of the North American continent and intertribal warfare in the east caused a general migration westward. As the Iroquois moved westward, Miami Indians moved into the river valley now bearing that name. During this period of Indian migration, four important tribes occupied land which later became the State of Ohio—the Miami’s, the Shawnees, the Wyandots, and the Delawares. Old Chillicothe, near the present Oldtown in Greene County, was the site of a major Shawnee settlement, around which many military campaigns were waged. It is reported that the famous Shawnee Chief, Tecumseh, was born there.

The first reported European entry in the area was by the French explorer, La Salle, whose exploration took him south from Lake Erie to the Ohio River and part of its valley during the latter part of the 17th century. French fur traders entered the area in 1692 but discontinued their work there because of the great distance to the Great Lakes and the presence of the fierce Iroquois tribes. However, British traders from Albany, Philadelphia, and Charleston were undaunted, and developed an extensive fur trade in the area by the 1740's. Because of its geographic location and the network of navigable waterways, the Ohio Valley was considered the key to control of interior America.

The British capitalized on the conflict between the Indians and the colonists during the American Revolution, by enlisting the aid of many Indians. Even so, only minor skirmishes were fought in Ohio. The Battle of Piqua was the only major battle of the Revolution to take place in the Little Miami River Valley.

With the end of the war, the Indians were brought under control, and the State of Ohio was established in 1803. During the first half of the 19th Century, the population grew, and the number of settlements

increased along the entire length of the Little Miami River. The river and other streams provided water power for many mills needed by the early settlers for grinding their grain.

The first permanent settler on Caesar's Creek was reputedly a Negro slave named Cisar, who was captured and adopted by the Shawnee Indians in 1776. Cisar was traveling down the Ohio River with his master and mistress when they were attacked by the Shawnee and the white couple killed. As a prisoner, Cisar was taken to Old Chillicothe, a major Shawnee village on the Little Miami River, where he was adopted into their culture. This area was named for him (with a spelling change), because he used the surrounding area for hunting and fishing, claiming it as his own property.

Much of the Project area was settled by Quakers. One Quaker site, the mid-nineteenth century Caesar Creek Friends Meeting House, has been removed from its site adjoining a cemetery on the northwest shore of the lake to the Caesar Creek Pioneer Village.

It is reported that several residences existing within the Project area were stations on the Underground Railroad during the Civil War. One of these is the McKay House located on New Burlington Road. This house was acquired as part of the Project and was planned to be used as a manager's residence. However, poor structural condition of the house would have required an excessive amount of funds to maintain so it was determined that the house could not be practically used. In order to preserve this historic building, it was excecised and subsequently privately acquired.

During the Project construction, the village of New Burlington was razed, as were a number of other fine old buildings. A number of buildings from the Project area were relocated in the Caesar Creek Pioneer Village in the Wellman Meadows Site.

### 2.8.3 Previous Investigations at Caesar Creek Lake

The earliest archaeological investigation at Caesar Creek Lake was conducted in 1976. In 1976, Fredrick Chapman and Martha Potter Otto conducted an archaeological reconnaissance of Caesar Creek Lake. The reconnaissance was conducted to assess the possible archaeological resources and how those resources could be impacted by the construction of the reservoir. A total of 37 archaeological resources were identified during the survey, including an earth mound, an undetermined prehistoric/historic site and an undetermined historic site. Artifacts collected from these sites consisted of historic ceramics, a flint core, side scraper and a grinding tool. Two of the mound sites (E.L. Anderlee and Shaffer mounds) are eligible for the National Register of Historic Places.

Brose et al (1977) conducted a Phase II archaeological investigation of the Caesar Creek Lake Project. Twenty four sites were identified during the investigation including one Early Archaic site in the current Project area. Artifacts collected from this site consist of shattered flint, flint cores, flint flakes, retouched flakes, utilized flake, bifacial tool, broken ground slate celt, a mussel shell and historic pottery sherds. This site was recommended not eligible for the National Register of Historic Places.

In 1997, Sparenberg et al. conducted a pedestrian survey and literature review of 436 acres of the uplands around Caesar Creek Lake. A total of 22 archaeological sites were documented during the survey. These sites consisted of 11 prehistoric sites, two historic sites, seven complex multi component

sites, and 12 isolated finds. Thirteen of these sites were determined potentially eligible and further work recommended to assess NRHP eligibility.

Donald Ball (1999) conducted a shoreline archaeological reconnaissance of Caesar Creek Lake in 1985. The survey resulted in the identification of 24 previously unrecorded sites and revisited one known site (Ball 1999). Four of the prehistoric sites have the temporal components of the Paleo-Indian, Early to Middle Archaic, Woodland and Fort Ancient periods. The majority of the historic sites are described as light lithic scatters; also homesteads dating of 19th to 20th century sites.

In 2000, Parson Corporation conducted a Section 110 archaeological investigation at the Big Island Site, Caesar Creek Lake (Stevens and Shield 2000). The archaeological investigation was conducted under contract number DACW-27-98-D0010, DO No. 17 to determine the presence or distribution of any intact cultural deposits at the site. Based on the relative integrity of the site deposits and the presence of both diagnostic artifacts and activity areas, the Big Island Site is eligible for the NRHP. Additional Phase II testing is recommended for this site.

Keeney (2003) conducted a cultural resources survey within Pioneer Village at Caesar Creek Lake for the proposed placement of electrical lines and drainage pipes. He identified material from one 19th Century site within two kilometers of the current Project area. These were associated with the Luken Farmstead house and barn that date to the early 1870's and not with Pioneer Village as a whole. Other structures that belong to Pioneer Village were relocated from other areas. Artifacts collected from this site include redware, whiteware, stoneware, porcelain, glass, and metal associated with machine cut nails and wire nails. The portion of the site located within the area to be impacted by the electrical lines and drainage pipe placement were deemed to lack integrity.

Caesar Creek Pioneer Village is owned by Caesar Creek Pioneer Village Association, which is leased by the Army Corps of Engineers Louisville District (US Army Corps of Engineers 2002). Seven structures were built by Quakers in the late 1700's and were relocated to this area. These sites were recommended eligible for the NHRP.

Biehl (2006) conducted a Phase I Archaeological survey of a proposed archery range facility in Caesar Creek State Park. One site was recorded during this survey. The site identified was an unassigned prehistoric isolated find. This site contained only a flint flake. Due to the lack of artifacts and no intact cultural deposits, the site is not eligible for the NRHP.

Additional cultural resources assessments have occurred since 2006. These assessments were conducted with operation and maintenance activities of the Visitor Center, marina's, campgrounds, and other developments.

#### 2.8.4 Recorded Cultural Resources

Currently, there are 130 archeological sites recorded at Caesar Creek Lake. Sixteen properties are considered potentially eligible for listing to the NHRP (Table 13), however they have not being formally evaluated. Three cemeteries are also located within the boundaries of the lake: Spring Valley, Old Pioneer, and Lukens cemeteries.

The Thompson mound site, Smith mound, Bunnell mound are Woodland mounds. The Bunnell mound/Esfer cemetery site is of unknown prehistoric origins. The Big Island Site is a mound/cemetery dating to the Late Archaic. The Watson mound is a Woodland earthen mound. Lastly, the James T. Robinson mound is an Early Woodland mound.

Table 13: Structures and Sites Potentially Eligible for Listing on the NRHP

Property/Site number	Name
WAR0146304	Log House Pioneer Village
WAR0054404	Taylor-Mills House
WAR0054304	Hawkins House
WAR0146504	Log House Pioneer Village
WAR0146104	Log Barn
WAR0054504	Furnas House
WAR0146204	Log House Pioneer Village
WAR0054604	Harris House
WAR0054704	Caesar Creek Friends Meeting Hall
WAR0146404	Log Toll House Pioneer Village
WAR0054004	Lukens House
WAR0054104	Elan House
WAR0054204	Smokehouse
WA0048	E.L. Anderlee Mound
WA0050	Shaffer Mound
WA0695	Big Island Site Cemetery

### 2.8.5 Long-term Cultural Resource Objectives

A Cultural Resources Management Plan (CRMP) shall be developed and incorporated into the Operational Management Plan in accordance with EP 1130-2-540. The purpose of the CRMP is to provide a comprehensive program to direct the historic preservation activities and objectives at Caesar Creek Lake. An inventory of cultural resources at Caesar Creek Lake has been completed in compliance with Section 110 of the National Historic Preservation Act (NHPA). In consultation with the Ohio State Historic Preservation Officer (SHPO), all currently known sites must be evaluated to determine their eligibility for the NRHP. In accordance with Section 106 of the NHPA, any proposed ground-disturbing activities or projects, such as those described in this Master Plan or as may be proposed in the future by others for right-of-way easements, will require coordination with the SHPO to locate and evaluate potential impacts to historic properties. 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 Caesar Creek Lake must be coordinated with the SHPO and federally-recognized Tribes to insure compliance with the NHPA, the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act.

## 2.8.6 Implications of Historic Resources on Development

Prior to the implementation of any ground disturbing activity or federal undertaking, proposed actions shall comply with Section 106 of the NHPA. A federal undertaking, as defined by 36 CFR Part 800.16(y), is "...any project, activity, or program funded in whole or part under the direct or indirect jurisdiction of a Federal Agency, including those carried out by or on behalf of a Federal Agency; those carried out with Federal Assistance; and those requiring a Federal permit, license, or approval." Section 106 compliance shall be conducted by USACE. In the event of historic or prehistoric resources are encountered, all work must cease immediately and the USACE archaeologist shall be contacted before work may resume.

## 2.9 INTERPRETATION / VISUAL QUALITIES

The Caesar Creek Lake dam is located in a narrow meandering stream (Figure 6). The lower five miles of the stream flows through a narrow valley. The portion of this valley immediately below the dam is known as the "Caesar Creek Gorge." This unique natural feature is a narrow wooded gorge of Ordovician limestone and shale formed by glacial diversion, and is preserved as a natural area. Forest cover of this area is in excellent condition and has a high potential for use as a natural sanctuary and study area. The wooded slopes above the stream are of a mixed mesophytic nature, containing beech, sugar maple, basswood, ash, and oak.



Figure 6: Caesar Creek Lake Dam Area

Above the dam the gently rolling topography and general agricultural use creates a less dramatic visual impact. Generally, vegetation exists only on a few of the steeper valley sides and in a few scattered

wood lots. Areas of note include the Sugar Shack area of the Lake View Site, the woodlands north of the Horse Camp in the Furnas Shores Site, and the Pioneer Village and Flat Fork areas of the Wellman Meadows Site. Aside from the gorge area, the main scenic attraction in the Project area is the lake itself.

## 2.10 DEMOGRAPHICS

In general, the population in Ohio has remained stable over the last 10 years and is projected to remain at approximately 11.5 million. However, the demographics in the state are shifting with increases in the age group 65 years or older. Currently this age group accounts for approximately 16% of the total population and is estimated to increase to 25% by the year 2030. Since 2000, Ohio has also seen a significant increase in diversity. Ohio’s Hispanic American community grew by 70% since 2000 and represents 3% of the state’s population, the Asian American community accounts for 2% of Ohio’s population, increasing 66% since 2000 and the African American community increased by 16% in the same time period, representing 14% of the state’s population. (Ohio SCORP, 2018).

### 2.10.1 Local Population

The 2020 population estimates and projections of the three counties in which the reservoir is located are: Clinton – 42,100; Greene – 164,940; and Warren – 225,770. It can be seen from Table 14, the counties of Greene and Warren have experienced above average population growth.

Table 14: Population Trends - Counties in the Caesar Creek Lake Area

Population							
County	1990	2010	2020	2025	2030	2035	2040
Clinton	35,415	35,604	42,100	42,060	41,590	41,150	40,380
Greene	136,731	130,573	164,940	165,950	165,780	164,830	163,300
Warren	113,909	121,187	225,770	231,230	235,640	239,040	239,060
<b>TOTAL</b>	286,055	287,364	432,810	439,240	443,010	445,020	442,740

The several large urban areas, all within 35 miles of the project area directly influence visitation to Caesar Creek Lake. These metropolitan areas, their 2020 population estimate and straight line distance from the dam site area are displayed in Table 15.

Table 15: Metropolitan Areas within 35 Miles of Caesar Creek Lake

Ohio Cities Population & Distance to Caesar Creek		
City	Population	Distance
Middletown	48,861	18 miles
Dayton	140,638	21 miles
Hamilton	62,174	29 miles
Springfield	59,282	33 miles
Cincinnati	302,605	35 miles
<b>TOTAL</b>	613,560	

A 50-mile market area includes a heavily populated area of northern Kentucky and a lightly populated area of Indiana. Population within a 50-mile radius of the dam as projected to future years is forecasted in Table 16.

Table 16: Population - Market Area of Caesar Creek Lake

<b>Population, Market Area, Caesar Creek Lake</b>			
Population			
County	2020	2030	2040
Franklin (IN)	22,863	23,722	23,540
Union (IN)	6,974	6,896	6,573
Campbell (KY)	92,898	93,473	92,192
Kenton (KY)	169,386	176,039	180,412
Brown (OH)	42,350	40,070	38,700
Butler (OH)	390,110	410,960	430,360
Champaign (OH)	38,090	36,840	35,890
Clark (OH)	133,240	129,900	128,580
Clermont (OH)	208,330	214,090	216,190
Clinton (OH)	42,100	41,590	40,380
Darke (OH)	51,270	48,280	46,280
Fayette (OH)	28,860	28,750	28,880
Greene (OH)	164,940	165,780	163,300
Hamilton (OH)	790,600	785,900	786,090
Highland (OH)	41,840	41,150	41,740
Madison (OH)	45,670	47,420	48,700
Miami (OH)	102,590	103,500	103,990
Montgomery (OH)	513,830	496,650	489,390
Preble (OH)	40,420	37,540	34,140
Warren (OH)	225,770	235,640	239,060
<b>TOTAL</b>	<b>3,152,131</b>	<b>3,164,190</b>	<b>3,174,387</b>
Indiana data: <a href="http://www.stats.indiana.edu/pop_proj/">http://www.stats.indiana.edu/pop_proj/</a>			
Kentucky data: <a href="http://ksdc.louisville.edu/data-downloads/projections/">http://ksdc.louisville.edu/data-downloads/projections/</a>			
Ohio data: <a href="https://development.ohio.gov/reports/reports_pop_proj_map.htm">https://development.ohio.gov/reports/reports_pop_proj_map.htm</a>			

## 2.11 ECONOMIC BENEFITS

USACE recognized the importance of Caesar Creek Lake and the activities on USACE lands and waters as being an important part of the local economy. Besides the economic savings through flood risk management and development advantages through water supply, businesses can see investment opportunities, and people are drawn to the natural areas surrounding USACE lakes, as is evidenced by the growing number of residents adjacent to USACE properties. Nationally, USACE lakes attract about 350 million recreation visits every year, with direct economic benefits on local economies within a 30

mile radius. Table 17 outlines the estimated economic benefits of Caesar Creek Lake for surrounding communities for 2016 and 2019.

Table 17: Caesar Creek Lake - 2019 Estimated Economic Benefits

<b>Economic Benefits</b>	
<b>Economic Data in FY 16</b>	<b>Economic Data in FY 19</b>
<p>Visitation per year resulted in:</p> <ul style="list-style-type: none"> <li>· \$13,528,557 in visitor spending within 30 miles of the Corps lake.</li> <li>· \$8,430,304 in sales within 30 miles of the Corps lake.</li> <li>· 136 jobs within 30 miles of the Corps lake.</li> <li>· \$3,622,895 in labor income within 30 miles of the Corps lake.</li> <li>· \$4,554,174 in value added within 30 miles of the Corps lake.</li> <li>· \$5,335,207 in National Economic Development Benefits.</li> </ul> <p>With multiplier effects, visitor trip spending resulted in:</p> <ul style="list-style-type: none"> <li>· \$14,728,680 in total sales.</li> <li>· 182 jobs.</li> <li>· \$5,649,166 in labor income.</li> <li>· \$8,155,498 in value added (wages &amp; salaries, payroll benefits, profits, rents, and indirect business taxes).</li> </ul>	<p>Visitation per year resulted in:</p> <ul style="list-style-type: none"> <li>· \$28,059,341 in visitor spending within 30 miles of the Corps lake.</li> <li>· \$15,222,809 in sales within 30 miles of the Corps lake.</li> <li>· 231 jobs within 30 miles of the Corps lake.</li> <li>· \$6,378,398 in labor income within 30 miles of the Corps lake.</li> <li>· \$8,580,270 in value added within 30 miles of the Corps lake.</li> <li>· \$7,019,453 in National Economic Development Benefits.</li> </ul> <p>With multiplier effects, visitor trip spending resulted in:</p> <ul style="list-style-type: none"> <li>· \$26,704,739 in total sales.</li> <li>· 313 jobs.</li> <li>· \$10,098,337 in labor income.</li> <li>· \$15,139,825 in value added (wages &amp; salaries, payroll benefits, profits, rents, and indirect business taxes).</li> </ul>
<b>Benefits in Perspective</b>	
<p>The money spent by visitors to Corps lakes on trip expenses adds to the local and national economies by supporting jobs and generating income. Visitor spending represents a sizable component of the economy in many communities around Corps lakes.</p> <p>(USACE Recreation 2016 &amp; 2019 Lake Report, <a href="https://www.iwr.usace.army.mil/Missions/Value-to-the-Nation/">https://www.iwr.usace.army.mil/Missions/Value-to-the-Nation/</a>)</p>	

## 2.12 RECREATION FACILITIES, ACTIVITIES AND NEEDS

Caesar Creek Lake offers a wide variety of facilities including campgrounds, day use and picnic areas, boat ramps, information center, hunting and multi-use trails provided by USACE and partners. The lake provides facilities for water-based recreation, such as boating and kayaking, and for multi-use trail users, such as cyclists and hikers.

### 2.12.1 Zones of Influence

Caesar Creek Lake is located in close proximity to three metropolitan areas in Ohio: Cincinnati, Dayton, and Columbus. The Project area is principally in Warren County with the upper reaches extending into Clinton and Greene Counties. Commercial services are available in the county seat communities of Lebanon and Wilmington. Land use in the Project vicinity is primarily general farming and livestock operations. However, there are many new homes being built in the area around the Project.

Visitation is tracked at the lake, as well as specific recreation areas and amenities. However, a detailed visitation survey has not been completed that identifies locations where visitors travel from to the lake. As a proxy for origination information, campsite reservation data was used to identify primary cities. ODNR tracks location information for visitors that are staying overnight at their campgrounds through their reservation system. Table 18 displays occupant counts at campsites for 2018 and 2019 with the large majority of overnight visitors to Caesar Creek originating from Ohio cities Cincinnati, Dayton, and Lebanon. Figure 7 illustrates that the concentration of most trips to Caesar Creek Lake originate from southwestern Ohio to near Columbus.

Table 18: Occupant counts by home town in 2018 and 2019 at ODNR campgrounds at Caesar Creek Lake

Rank	City	2018 # Occupants	2019 # Occupants
1	Cincinnati	1,902	2,015
2	Dayton	1,687	2,061
3	Lebanon	964	871
4	Beavercreek	762	1,038
5	Waynesville	772	979
6	Xenia	780	891
7	Columbus	651	871
8	Kettering	610	775
9	Middletown	492	661
10	Franklin	419	650
11	Springboro	350	513
12	Mason	395	447
13	Hamilton	350	474
14	Wilmington	491	331
15	Springfield	350	451
16	West Chester	321	427
17	Fairborn	348	397
18	Miamisburg	355	349
19	Centerville	371	318
20	Loveland	263	357

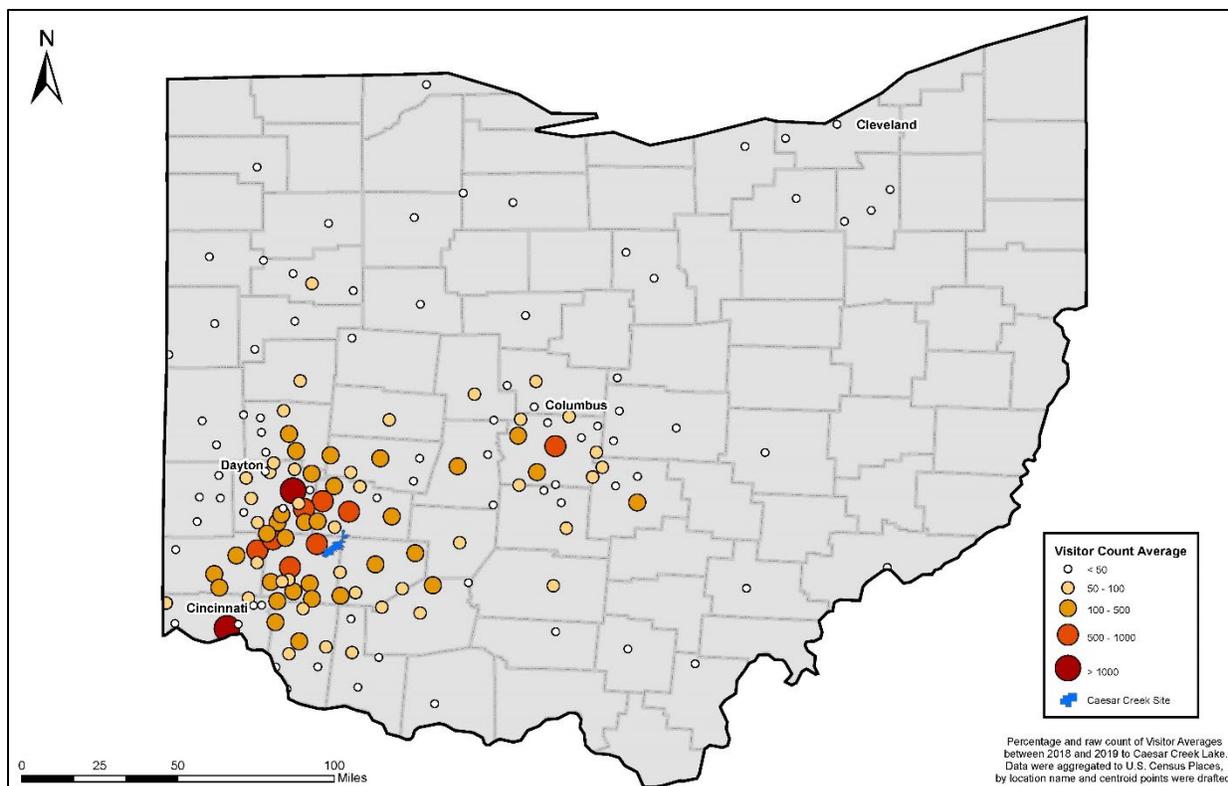


Figure 7: Concentration of Origin Locations to Caesar Creek Lake Campgrounds

While Columbus and its surrounding suburbs are identified as a top ten contributor to overnight visitation, it is expected that the majority of trips made to Caesar Creek Lake are from population centers less than a one hour drive from the Lake. Figure 8 identifies three zones of influence based on drive time to the lake Visitor Center (a full version of the figure is available in Appendix A). The first zone represents a 30 minute drive to the lake and reaches the far northern suburbs of Cincinnati by way of I-71. Both the cities of Xenia and Lebanon also fall within this first zone. A secondary zone was established that represents a 30-45 minute drive and includes the cities of Dayton and Springfield. The third zone of influence represents a 45-60 minute drive and extends south on I-71 into Kentucky and north to the Springfield area.

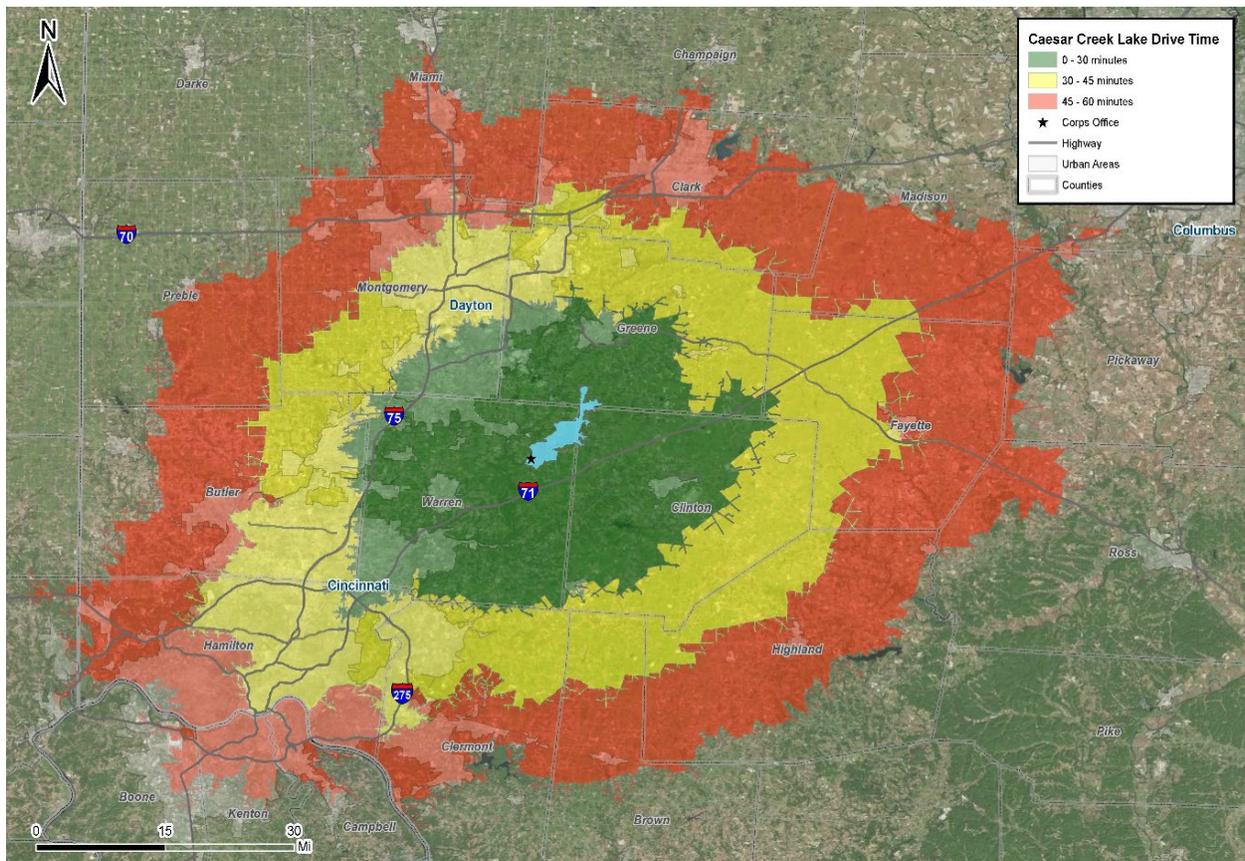


Figure 8: Zones of Influence by Driving Time to Caesar Creek Lake

### 2.12.2 Visitation Profile

The majority of visitors to Caesar Creek Lake are within a 60 minute drive of the reservoir. These visitors are a diverse group of people with a wide variety of interests. Examples of visitors include campers who utilize the campgrounds around the reservoir and in the county and federally operated parks; adjacent residents; hunters and anglers who utilize hunting grounds and participate in fishing tournaments; marina customers who utilize the marina on the reservoir; and day users who picnic, hike, bird watch, bicycle and ride horses. Caesar Creek Lake is the primary location for water-related recreation, providing the public with a location for boating, sailing, canoeing/kayaking, paddle boarding, and swimming in the area. Periodically, USACE estimates visitation to Caesar Creek Lake by activity. Table 19 presents counts from 2016 and 2019 with well over a half million visitors estimated each year. In 2019 swimming was estimated to be the most popular activity at the lake followed by sightseeing, picnicking and boating.

Table 19: Activity Participation by Visitor (2016 & 2019)

Visits (person-trips) in FY 2016	Visits (person-days/nights) in FY 2019
· 570,701 in total	· 699,385 in total
· 53,787 picnickers	· 156,802 picnickers
· 8,743 campers	· 63,444 campers
· 66,110 swimmers	· 212,261 swimmers
· 8,908 water skiers	· 102,259 walkers/hikers/joggers
· 32,734 boaters	· 140,036 boaters
· 292,325 sightseers	· 180,434 sightseers
· 88,347 anglers	· 102,468 anglers
· 5,029 hunters	· 40,297 special event attendees
· 31,325 others	· 33,517 others

### 2.12.3 Recreation Areas and Facilities

The existing recreational opportunities and future potential of Caesar Creek Lake is considered to be of great importance within the Project’s zone of influence. The objective of the Corps park management program is to provide quality outdoor recreation opportunities on Corps lands and waters, to provide a safe and healthy environment for Project visitors and to protect the natural resources to insure their continued availability. The Corps maintains trails, picnic sites, fishing platforms, playgrounds, shelter houses, restrooms and a Visitor Center for the public. The Corps also offers interpretive programming for the public and educational opportunities for local schools.

ODNR, Division of Parks and Recreation maintains a wider variety of amenities over a much larger land area. They manage campgrounds, primitive camping areas, group camping areas, a day lodge, beaches, five boat ramps, horseback riding, mountain biking, hiking and cross-country ski trails, shelter houses, Nature Center and Pioneer Village historic site.

Table 20 lists the various recreational facilities collectively provided at Caesar Creek Lake through governmental agencies as well as commercial concessions. Table 21 displays annual visitor counts for each recreation area in 2019. Appendix A provides additional mapping of recreation amenities available at Caesar Creek Lake. Table 22 describes total facilities across the nine recreation areas that are available at Caesar Creek Lake in 2016 and 2019. Actual counts of picnic sites, playgrounds, trails and trail mileage were refined for 2019 reporting. By providing opportunities for active recreation, USACE lakes help combat one of the most significant of the nation's health problems: lack of physical activity. Recreational programs and activities at USACE lakes also help strengthen family ties and friendships; provide opportunities for children to develop personal skills, social values, and self-esteem; and increase water safety.

Table 20: Available Activities by Recreation Area

Recreation Area	Swim Beach	Drinking Water	Restrooms	Playground	Picnic Facilities	Group Picnic Shelters	Camping - Primitive	Camping - Electric	Showers	Hiking / Nature Trails	Mountain Biking	Horseback Riding	Fishing Dock / Pier	Shoreline Fishing	Boat Ramp	Courtesy Boat Dock	Marina	Observation Platform / Blind	Hunting	Archery Range	Snack Bar / Concessions	Interpretive Signs	Educational Facilities	Operating Agency	
Flat Fork																								USACE	
Furnas Shores																									Ohio
Caesar Creek Gorge																									USACE
Lake View																									Ohio
Mound Ridge																									Ohio
Pioneer Village																									Ohio
Visitor Center																									USACE
Wellman Meadows																									Ohio
Wildlife Area Access																									Ohio

Table 21: Visitor Count by Recreation Area

Recreation Area	Visitor Totals FY19
Flat Fork	60,480
Furnas Shores	179,548
Caesar Creek Gorge	35,196
Lake View	20,846
Mound Ridge	103,014
Pioneer Village	26,901
Visitor Center	39,684
Wellman Meadows	182,620
Wildlife Area Access	20,021

Table 22: Facilities Available Across Recreation Areas

Facilities in FY 2016	Facilities in FY 2019
· 9 recreation areas	· 9 recreation areas
· 115 picnic sites	· 101 picnic sites
· 337 camping sites	· 342 camping sites
· 16 playgrounds	· 18 playgrounds
· 2 swimming areas	· 2 swimming areas
· 28 number of trails	· 48 number of trails
· 79 trail miles	· 65 trail miles
· 1 fishing docks	· 6 fishing docks and piers
· 5 boat ramps	· 5 boat ramps
· 112 marina slips	· 112 marina slips

#### 2.12.4 Recreation Analysis – Trends

Ohio’s 2018 Statewide Comprehensive Outdoor Recreation Plan (SCORP) was developed to assist recreation providers and state funding offices to strategically work towards delivering recreational opportunities and facilities that Ohioans want and that create outdoor recreational experiences that provide personal, social, health, and economic benefits. The planning horizon for this SCORP is 2018 through 2023. The 2018 - 2023 Ohio SCORP presents a summary and analysis of the state’s outdoor recreation resources with five strategic goals:

- Advance the trail network with the focus on completing long-distance trails, filling-in gaps, and building trail connections to community neighborhoods and assets;
- Improve and adapt recreational facilities to enhance existing recreational facilities to stay relevant into the future;
- Emphasize rivers, lakes, and wetlands with an emphasis on providing access and recreational opportunities related to Ohio’s waters and increasing paddling opportunities;
- Improve awareness and access to outdoor recreation opportunities to increase familiarity of close-to-home parks and recreational facilities and increase engagement and participation in outdoor recreation; and
- Protect and sustain the natural environment to continue the legacy of conserving high quality natural resources and providing appropriate outdoor recreation opportunities and experiences in areas that can sustain use.

A public participation survey was completed in 2017 in support of the development of the 2018 Ohio SCORP. The Participation Survey identified the following outdoor recreation activities that Ohio residents currently participate in with trail activities being the most popular with 97.5% of households utilizing Ohio’s trails. Other popular activities were scenic driving, bicycling, touring historic/heritage sites and farms, and swimming. More passive outdoor activities including picnicking, birdwatching, nature photography, night sky viewing, and attending outdoor festivals, concerts and plays also ranked in the top 15 of the 87 surveyed activities. These are listed below in order of most popular to least popular.

1. Walking/Hiking - Natural Surface Trail
2. Walking/Hiking -Paved Trail
3. Walking/Hiking - Finely Ground Pebble
4. Scenic Driving
5. Wildlife Viewing
6. Touring Historic /Heritage Sites & Farms
7. Picnicking- No Shelter
8. Picnicking- Shelter
9. Bicycling - Paved Trail
10. Outdoor Festival/Concert/Play
11. Swimming - Lake/Pond/River
12. Birdwatching
13. Nature Photography
14. Night Sky Viewing
15. Swimming - Outdoor Pool

The survey also identified residents' perspective of the supply of existing recreation areas and facilities on public lands in their communities. The survey asked if specific outdoor recreational facilities were adequate in number, adequate in number but needed rehabilitated, or there was a need for more facilities. Natural surface trails and water trails topped the list of identified public needs. Below are the top ten facilities identified for increases:

1. Natural Surface Trails
2. Canoe & Kayak Access, Facilities & Water Trails
3. Wildlife Viewing & Birding Areas
4. Paved, Multi-Use Trails
5. Primitive, Undeveloped Campgrounds
6. Finely Crushed Stone Trails
7. Mountain Biking Trails
8. Developed Campgrounds
9. Equestrian Trails
10. Outdoor Pools

In addition to public surveys, focus groups were held throughout the state in support of the 2018 Ohio SCORP. Overall the focus group responses correlated to the SCORP survey. The focus groups discussed observed trends in their areas and developed the following five priorities for outdoor recreation funding:

- Develop more trails, complete existing trails, and connect trails to build long-distance trails.
- Improve trail access, information, awareness, signage, lighting, parking areas, trailheads, restrooms, and safety features.
- Provide more facilities and access for paddle sports.
- Rehabilitate, update, and improve existing outdoor recreation facilities and integrate technology and safety enhancements.
- Acquire land for habitat preservation, nature enjoyment, and passive recreational activities such as birdwatching and hiking.

### 2.12.5 Recreational Analysis – Needs

Caesar Creek Lake offers an array of recreational opportunities. Public comments received during the master planning process would indicate that there is a desire to have more recreational facilities to enhance the current outdoor recreation experience, such as extensions of the trail network within the Project, connections to other trail networks outside the Project (i.e. Little Miami Trail), and to maintain and update existing facilities. Public feedback also supported increasing access to canoe and kayak opportunities at the lake. The Ohio SCORP supports the need for hiking, biking, and in general more water-based outdoor activities. USACE relies on partnerships for recreational amenities, and as time, partnerships, and budget allows, will integrate more facilities to accommodate the public. These activities are balanced with the primary missions of the lake, namely flood risk management, water supply, and the inherent mission of environmental stewardship.

### 2.12.6 Recreational Carrying Capacity

Recreational carrying capacity is considered by USACE to ensure that visitors have a high quality and safe recreational experience, and that natural resources are not irreparably damaged. An example of a carrying capacity consideration at Caesar Creek Lake is the management of public hunting on USACE lands wherein hunting activity may be restricted by species or by area, depending on population and/or habitat conditions.

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. 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 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.

## 2.13 RELATED RECREATIONAL, HISTORICAL AND CULTURAL AREAS

There are a number of USACE lake projects within the 50-mile zone of influence of Caesar Creek Lake. These projects include Brookville Lake (Indiana), and William H. Harsha Dam and Lake, Clarence J. Brown Dam and Reservoir, Paint Creek Lake, Deer Creek Lake, West Fork of Mill Creek Lake located in Ohio.

There are also 13 state parks within 50 miles of the Project, along with several other smaller areas of historical and cultural interest that are administered by the State of Ohio (Table 25). Following is a list of the state parks and other points of interest that are located within a radius of 50 miles from the dam.

Table 23: Recreation Areas and Points of Interest within 50 Miles

RECREATION AREAS AND POINTS OF INTEREST				
State Park and Recreational Area	Total Area (acres)	County	Water Area (acres)	Distance from Caesar Creek Dam
Cowan State Park	1,700	Clinton	700	12 miles
Stonelick State Park	1,956	Clermont	200	19 miles
John Bryan State Park	789	Greene	0	24 miles
Hueston Woods State Park	3,524	Butler	625	38 miles
Rocky Fork State Park	3,584	Highland	2,080	39 miles
Madison State Park	180	Madison	100	46 miles
Kiser Lake State Park	736	Champaign	385	49 miles
Pike Lake State Park	500	Pike	13	49 miles
Sycamore State Park	2,295	Montgomery	5	42 miles
Little Miami Scenic Park	360	Warren, Hamilton, & Clermont	3	45 miles
Paint Creek Lake State Park	8,428	Highland	1,190	44 miles
East Fork Lake State Park	10,550	Clermont	2,160	42 miles
Buck Creek State Park	4,184	Clark	2,120	35 miles
Points of Interest		Distance from Caesar Creek Dam		
Wright Brothers National Memorial		21 miles		
George Rogers Clark Park		36 miles		
Fort St. Clair State Park		37 miles		
Gen. Grant's Birthplace		43 miles		
Serpent Mound Historical Site		47 miles		
Ft. Ancient St. Memorial		15 miles		

## 2.14 REAL ESTATE

### 2.14.1 Acquisition Authority

The Caesar Creek Lake Reservoir is a part of the flood protection system for the White River, Miami River and Ohio River watersheds, adopted by the Flood Control Act approved 28 June 1938 (Public Law 761, 75th Congress, Chapter 795, 3rd Session (H.R. 10618)).

### 2.14.2 Land Acquisition Policy

Land for the Caesar Creek Project was obtained under the Joint Department of Interior- Department of Army Acquisition Policy, as administered from 1962 to 1971. The policy specified acquisition in fee with 5 feet of freeboard above the flood pool or 300 feet horizontally above the full pool elevation, whichever resulted in procurement of more land. This acquisition policy was designed to guard against

damage from wave action to the shoreline. The fee-taking guide was established at elevation 888 feet asml and in general was set to follow property lines or other boundaries rather than the contour line of the reservoir.

#### 2.14.3 Fee Lands

Current fee acreage totals 10,640.08 acres consisting of 1,754.84 acres in Clinton County, Ohio, 1,264.58 acres in Greene County, Ohio and of 7,620.66 acres in Warren County, Ohio.

#### 2.14.4 Easement Lands

Perpetual easements were also acquired to support Project requirements. There are currently 1,292.47 acres of easement at Caesar Creek Lake comprising of 34.22 acres located in Clinton County, Ohio, 1,208.95 acres located in Greene County, Ohio and 49.3 acres located in Warren County, Ohio. These easements were acquired for different purposes including roads, flood protection levees, and occasional and permanent flooding.

**Roadway Easement.** Generally, roadway easements allow the government to construct, operate and maintain roads to access Corps-managed lands. There are 10.13 acres of road easements at Caesar Creek Lake to include 2.85 acres in Clinton County and 7.28 acres in Warren County.

**Flowage Easement.** Flowage easements grant the Government the right to occasionally or permanently flood private land in conjunction with operation of the Project. The easements also prohibit the construction of habitable structures. There are 1,280.43 acres of occasional flowage easement at Caesar Creek Lake to include 31.37 acres in Clinton County, 1,208.95 acres in Greene County and 40.11 acres in Warren County. The upper guide for flowage easement acquisition is elevation 888 feet amsl.

**Utility/Pipeline Easement.** Utility/Pipeline easements allow the government to construct, operate and maintain utilities and pipeline to service Corps-owned facilities. There are 1.91 acres of utility easements in Warren County, Ohio for purposes of water supply. See Appendix A for mapping of major utilities and pipelines.

**Channel Improvement Easement.** Channel Improvement easements allow the government to construct, operate and maintain channel improvement works as well as the right to clear, cut, fell, remove and dispose any and all timber, trees, underbrush, buildings, improvements and/or other obstructions and to excavate, dredge, cut away, remove from the land for the purpose of placing dredge or spoil material thereon. There are 6.03 acres in Greene County, Ohio for channel improvement purposes at Caesar Creek Lake.

#### 2.14.5 Disposals

The following real property interests have been disposed:

- 0.95 acres, fee conveyed to Massie Township by quitclaim deed dated October 15, 1974 (Tract No. 108). This disposal was in accordance with a Cemetery Relocation Plan approved July 11, 1974.
- 6.87 acres, easement conveyed to Board of Commissioners of Greene County, Ohio by quitclaim deed dated July 26, 1983 (Tract Nos. 2003E-2, 2008E-1, 2009E-1, 2010E, 2011E, 2012E, 2013E).

This disposal was in accordance with Relocation Contract No. DACW27-73-C-0096. The United States reserved the right to flood the rights-of-way as may be necessary for the operation of the Project.

- 4.84 acres, fee conveyed to Paul and Nancy Purcell and James D. and Peggy Schidecker by quitclaim deed dated June 29, 1984 (Tract No. 1202). This property was known as the Moses McKay House.
- 66.55 acres, easement conveyed to the State of Ohio, Ohio Department of Transportation by quitclaim deed dated August 12, 1994 (Tract Nos. 422E, 423E, 424E-1, 424E-2, 425E-1, 425E-2, 426E, 534E, 537E, 538E, 539E, 628E, 1317E, 1581E, 1593E, 1594E, 1595E, 1609E, 1911E-1, 1911E-2, 2101E-2, 2101E, 2101E-4, 2108E-3, 2108E-4, 2108E-5, 2110E, 2200E-2, 2201E-2, 2201E-3 and part of Tract Nos. 2108E-2, 2102E, 2200E and 2201E). This disposal was in accordance with Relocation Contract No. DACW27-73-C-0075. The United States reserved a perpetual flowage easement below elevation 886 feet amsl.

#### 2.14.6 Outgrants

Outgrants allow use of federally-owned land by state and local agencies as well as private corporations and individuals. Outgrants specify what types of activities are allowed on Federal lands and that all Federal regulations still apply. See Appendix A for mapping of major outgrants.

#### **Leases**

Lease outgrants typically provide additional recreational opportunities to the general public. The USACE leases 9,472.73 acres at Caesar Creek Lake to the State of Ohio, Department of Natural Resources, under Lease No. DACW27-1-76-043 for public park, recreational, fish and wildlife and forest management purposes. The original term of the lease is fifty (50) years, beginning July 1, 1975 and ending June 30, 2025. The lease was amended to extend the term an additional thirteen (13) years through June 30, 2038. The State of Ohio provides the following services: day lodge, marina, campground, group camp sites, shelter houses, five boat ramps, hiking, mountain bike, and horse trails, and a nature center.

#### **The State of Ohio subleases to the following third party:**

Caesar Creek Pioneer Village, Inc. subleases 25.34 acres for the development, preservation and maintenance of property for historic purposes and the demonstration of primitive farming techniques. The term of the sublease is from June 17, 1982 through June 30, 2025.

#### **Easements**

Numerous easement outgrants are issued to various entities for the construction, operation, and maintenance of water, sewer, electric, telephone, and cable lines. Other easements grant various entities the right to construct, operate and maintain roads and bridges. See Appendix A for mapping of easements. See Table 24 for existing easements at Caesar Creek Lake.

Table 24: Listing of Easements at Caesar Creek Lake

<b>Outgrant Number</b>	<b>Grantee</b>	<b>Purpose</b>	<b>Term</b>
DACW27-2-80-008	United Telephone Company of Ohio	telephone lines	perpetual
DACW27-2-80-099	General Telephone Company of Ohio	telephone lines	perpetual
DACW27-2-81-088	Pentecostal Ministerial Association of America	road	perpetual
DACW27-2-83-233	Board of Commissioners of Greene County, Ohio	road	perpetual
DACW27-2-84-070	Trustees of Massie Township, Harveysburg, Warren County, Ohio	road	perpetual
DACW27-2-86-102	Texas Eastern Transmission Corporation	oil, gas, petroleum pipeline	perpetual
DACW27-2-87-055	Dayton Power and Light Company	electric lines	perpetual
DACW27-2-87-169	Village of Harveysburg	master meter pit, waterline main	2/8/1988 – 2/7/2038
DACW27-2-88-297	MCI Telecommunications Corporation	telephone lines	12/27/1988 – 12/26/1928
DACW27-2-89-194	Wayne Township Trustees, Waynesville, Ohio	road (turnaround)	9/1/1989 – 8/31/2029
DACW27-2-90-081	Ohio Department Natural Resources, Division of Parks	waterline, metering pit	7/1/1975 – 6/30/2038
DACW27-2-90-214	City of Wilmington, Inc.	water control building, waterlines	3/15/1991 – 3/14/2041
DACW27-2-91-004	The Dayton Power and Light Company	electric lines	5/31/1991 – 5/30/2021
DACW27-2-91-005	The Dayton Power and Light Company	electric lines	6/3/1991 – 6/2/2021
DACW27-2-92-005	TE Products Pipeline Company, L.P.	8" oil, gas, petroleum pipeline	perpetual
DACW27-2-93-010	AT&T Communications of Ohio, Inc.	fiber-optic lines	2/24/1993 – 2/23/2023
DACW27-2-93-012	United Telephone Company, Inc.	plant module	2/4/1993 – 2/3/2023
DACW27-2-93-020	The Dayton Power and Light Company	electric lines	2/11/1993 – 2/10/2043
DACW27-2-95-002	Massie Township Trustees, Warren County, Ohio	school bus turnaround	2/28/1995 – 2/27/2025
DACW27-2-95-031	Warren County Board of Commissioners	sanitary sewer line	1/15/1995 – 1/14/2045

DACW27-2-01-046	Warren County Telecommunications Department	radio tower, support building	11/1/2001 – 10/31/2021
DACW27-2-03-060	United Telephone Company of Ohio	fiber communication cables	perpetual
W912QRC204001066	Warren County Board of Commissioners	water tower	perpetual
DACW27-2-08-479	Rockies Express Pipeline, LLC	42" natural gas pipeline	2/17/2009 – 2/16/2039
DACW27-2-13-226	Enterprise Liquid Pipeline, LLC	20" natural gas pipeline	10/24/2013 – 10/23/2043
DACW27-2-17-241	Dayton Power and Light Company	electric lines	perpetual

### Licenses

License outgrants are issued to various entities to perform a specified act on Government fee owned property without acquiring an estate therein. It essentially authorizes an act which would otherwise constitute as a trespass. See Table 25 for existing licenses at Caesar Creek Lake.

Table 25: Listing of Licenses at Caesar Creek Lake

<u>Outgrant Number</u>	<u>Grantee</u>	<u>Purpose</u>	<u>Term</u>
DACW27-3-91-228	Texas Eastern Gas Pipeline Company	place riprap to stabilize an access	8/20/1991 - 8/18/2036
W912QRC304001050	Ohio Department of Natural Resources	install a supervisory control data acquisition system to Corps radio tower	1/19/2004 – 1/18/2029
DACW27-3-14-028	Spryex Communications, Inc.	use of radio tower, communication building	10/25/2013 – 10/24/2038

### Consent to Easement

The following is a consent to structures located on a Government-owned easement. See Table 26 for existing Consent to Easements at Caesar Creek Lake.

Table 26: Listing of Consent to Easement at Caesar Creek Lake

<u>Contract Number</u>	<u>Grantee</u>	<u>Purpose</u>	<u>Term</u>
DACW27-9-94-067	Roger E. Beam	stream stabilization	perpetual

## 2.15 PERTINENT PUBLIC LAWS

Numerous public laws apply directly or indirectly to the management of Federal land at Caesar Creek Lake. Listed below are several key public laws that are most frequently referenced in planning and operational documents. Refer to Appendix D for a more comprehensive listing.

- 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.
- 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.
- PL 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 Federal agencies to take into account the effects of their undertakings on historic properties and to provide the Advisory Council on Historic Preservation (ACHP) with a reasonable opportunity to comment. In addition, Federal agencies are required to consult on the Section 106 process with State Historic Preservation Offices (SHPO), Tribal Historic Preservation Offices (THPO), Indian Tribes.
- Public Law 101-601, Native American Graves Protection and Repatriation Act (16 November 1990), requires Federal agencies to return Native American human remains and cultural items, including funerary objects and sacred objects, to their respective peoples
- Public Law 86-717, Forest Conservation - This act provides for the protection of forest and other vegetative cover for reservoir areas under this jurisdiction of the Secretary of the Army and the Chief of Engineers.
- 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 HQUSACE/OMB implementation policy made these provisions applicable to projects completed prior to 1965.
- 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. It is Section 102 that requires consideration of environmental impacts associated with Federal actions. Section 101 of NEPA requires the federal government to use all practicable means to create and maintain conditions under which man and nature can exist in productive harmony. Specifically, Section 101 of the National Environmental Policy Act declares:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- Attain the widest range of beneficial uses of the environment without degradation risk to health or safety or other undesirable and unintended consequences;
- Preserve important historic, cultural, and natural aspects of our national heritage and maintain wherever possible an environment which supports diversity and variety of individual choice;
- Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

## CHAPTER 3 - RESOURCE OBJECTIVES

### 3.1 INTRODUCTION

This chapter sets forth goals and objectives necessary to achieve the USACE vision for the future of Caesar Creek Lake. In the context of this Master Plan, “goals” express the overall desired end state of the Master Plan whereas resource “objectives” are specific task-oriented actions necessary to achieve the overall Master Plan goals. The Master Plan resource objectives will be used as the basis for a future update of the OMP, which is the Master Plan strategic implementation plan.

### 3.2 RESOURCE GOALS

The following statements, paraphrased from EP 1130-2-550, Chapter 3, express the goals for the Caesar Creek 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 (EOPs) 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 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 Louisville District, Caesar Creek Lake Project Office. The objectives stated in this Master Plan support the goals of the Master Plan, USACE EOPs, and applicable national performance measures. They are consistent with authorized Project purposes, Federal laws and directives, regional needs, resource capabilities, and they consider public input. Recreational and natural resource carrying capacities are also accounted for during development of the objectives found in this Master Plan. Regional and State planning documents including 2018 Ohio SCORP were also considered when developing objectives.

The objectives in this Master Plan provide Project benefits, meet public needs, and foster environmental sustainability for Caesar Creek Lake to the greatest extent possible. They include recreational objectives; natural resource management objectives; visitor information; education and outreach objectives; general management objectives; and cultural resource management objectives. Tables 27-31 list the objectives along with the associated goal (s) each addresses.

Table 27: Caesar Creek Lake Recreational Objectives

Recreational Objectives	Goals				
	A	B	C	D	E
Maintain existing recreational facilities, including the infrastructure of the boat ramps. Caesar Creek Lake is regional boating destination with access to swimming, fishing, water skiing and paddle sports. Caesar Creek Lake has five boat ramps, two hand launch areas, and a 105-slip Marina with 17 day use slips.	o		o		o
Evaluate shoreline erosion and sedimentation and develop alternatives to mitigate.	o	o			o
Evaluate the demand for improved recreation facilities (i.e. campsites, picnic facilities, overlooks, all types of trails, boat ramps, courtesy docks, interpretive signs/exhibits, and parking lots), including universal access, and additional public access on USACE-managed public lands and water for recreational activities (i.e., walking, hiking, biking, boating, hunting, fishing, wildlife viewing, etc.). Identify potential development nodes to address these demands.	o	o	o	o	o
Maintain the three no wake zones will be marked with buoys and maintained to accommodate non-motorized paddle vessels: Headwaters, Fifty Springs Cove and Flat Fork Cove. Two Boat swimming areas will be marked with buoys and enforced at Campground Cove and Fifty Springs Cove. Maintaining no wake zones, and enforcing Ohio boating laws all contribute to the safety, esthetics and enjoyment at Caesar Creek and will be a continued emphasis.	o	o	o	o	o
Monitor water quality in an on-going manner and reduce <i>E. coli</i> and harmful algal blooms (HAB) to ensure health of aquatic system and for public health concerns. Park Staff will continue coordination, reporting and collecting data for the Louisville District Water Quality Team (CELRL-ED-E), the Ohio EPA and ODNR.	o	o	o	o	o
Maintain and balance public use with aesthetics and scenic views while maintaining public opportunities to recreate and for wildlife and natural systems to thrive.	o	o	o	o	
Improve interpretation and sight lines from Scenic Overlooks: Visitor Center; Flat Fork Ridge Picnic Area; Fifty Springs Picnic Area; Caesar Creek Main Beach and Marina.	o		o	o	
Provide hunting and fishing opportunities with planting food plots, prairie enhancement, and wetland restoration in addition to selective stocking and monitoring populations of game species.	o	o	o	o	o
Maintain existing trails for horses, bikes, runners and hikers, as well as look for opportunities to reduce conflict over trail use to enhance visitor experience.	o	o	o	o	o
Continue to work with and cooperate with the Buckeye Trail Association to maintain trail. Caesar Creek Lake has a long segment of the statewide Buckeye Trail that runs along the western shore of the Lake.	o		o	o	o

Identify and engage other trail user groups (i.e. Audubon society and trail running community). Caesar Creek State Park has a robust volunteer staff that provides upkeep and materials to maintain the trail system. Key partners are the Ohio Horse Council – Warren County Chapter, Mountain Bike volunteer group, and ODNR trail volunteer group.	o		o		o
Formulate a long term plan for the renovation of aging facilities and infrastructure.	o				
Ensure consistency in achieving recreation goals with the USACE Recreation Strategic Plan and the Ohio SCORP.	o				o

Table 28: Caesar Creek Lake Natural Resource Management Objectives

Natural Resource Management Objectives	Goals				
	A	B	C	D	E
Minimize fragmentation of habitats and edge effects, and continue to work towards connecting fragmented woodlots and prairies.	o	o		o	o
Continue to expand, connect and manage the tallgrass prairies. Management includes removal of shrubby growth, invasive control and controlled burns. Controlled burns help maintain a healthy vigorous grassland by encouraging fire adapted grasses and wildflowers, improves seedbed conditions, enhances wildlife habitat, controls undesirable brush, and reduces damage from uncontrollable wildfire.	o	o		o	o
Improve timber stands as required for endangered species considerations. Emphasize linking larger tracts of forested areas and improving composition of trees with effort to produce mast producing trees. Actively monitor invasive species and remove of damaged and infested trees, invasive control, and public safety considerations.	o	o		o	o
Implement shoreline seeding & mechanical control to reduce erosion as funding allows.	o	o		o	o
Continue to provide active wildlife management program which includes erecting wildlife nesting boxes, planting food plots, monitoring threatened and endangered species, removal of non-native species, selective stocking and conduct inventory of species and evaluation of habitat.	o	o		o	o
Continue to work with the Cardinal Land Trust and Warren County Park Districts to identify adjacent land that can be utilized as additional green space, act as wildlife corridor, and improve water quality. Continue joint partnership with Hisey Park – Warren County Park district – adjacent to Caesar Creek Nature Preserve.	o		o	o	o
Continue to foster the on-going partnership between the Ohio Department of Transportation (ODOT), the Ohio Department of Natural Resources and the USACE. ODOT provides heavy equipment and operators to perform back-logged maintenance jobs each summer as a means of certifying equipment operators.	o		o	o	o

Table 29: Caesar Creek Lake Visitor Education, Information and Outreach Objectives

Visitor Education, Information and Outreach Objectives	Goals				
	A	B	C	D	E
Continue to seek ways to serve visitors, update facility and reach new visitors with public outreach and social media presence. Each year the Visitor Center hosts over 75,000 visitors with 30,000 of those visits part of a school field trip. Most of the people who utilize our programs come from surrounding counties but groups come from as far away as Cleveland, Indianapolis, and Columbus.	o		o		o
Maintain and enhance relationship with Friends of Caesar Creek (FOCC). FOCC is a 501(c)(3) non-profit independent organization dedicated to preserving our natural resources through educational and historical programs and activities. Currently the FOCC maintains an educational book-cart at the Regional Visitor Center and supports special events and educational programs while assisting with fund raising and financial support of Recreation and Natural Resource programs.	o		o		o
Collaborate with local school district to increase field trips to Caesar Creek Lake, as well as outreach programs hosted at schools. Programs teach children about the USACE mission, wildlife & habitat, restoration efforts, water safety, and fossil hunting.	o		o		o
Manage emergency spillway to allow for shared and compatible usage as a flood control component and recreation site. The Caesar Creek Lake Emergency Spillway is a world class fossil collecting area that situated within the Cincinnati Arch. Children love to travel back in time and explore the fossilized remains from the Ordovician Sea. Coral, trilobites, shells and various marine creatures litter the floor of the emergency spillway and tell us about a time when a warm, shallow ocean dominated the landscape of southwest Ohio.	o	o	o	o	o
Maintain existing facilities and provide additional educational, fun, family oriented opportunities. ODNR operates a Marina which offers maps & information, food, gasoline, fishing supplies and safety equipment. The Caesar Creek Campground has a Check-in Station which provides camping supplies, information, and assists campers. The ODNR Nature Center shares with visitors the beauty and splendor of the natural surroundings at the park. The Nature Center operates a robust volunteer program and is a natural partner with the USACE Visitor Center to conduct educational classes, programs and special events. Sitting beside the Nature Center is the Pioneer Village a 501(c)(3) organization that maintains and restores historically buildings from 19th century Ohio. Pioneer Village brings history to life with living history events that recreate life on the frontier in the early days of Ohio statehood.	o		o	o	o

Table 30: Caesar Creek Lake Cultural Resource Objectives

Cultural Resources Objectives	Goals				
	A	B	C	D	E
Protect and manage Project natural and cultural resources through sustainable environmental stewardship programs.	o	o		o	o
Ensure that cultural and historical preservation is integrated into all undertakings at Caesar Creek Lake in compliance with applicable laws (Section 106 and 110 of the National Historic Preservation Act; the Archeological Resources Protection Act and Native American Graves Protection and Repatriations Act).	o	o		o	o
Complete a comprehensive inventory of cultural resources at Caesar Creek Lake.	o	o		o	o
Actively maintain compliance with Public Law 101-601, Native American Graves Protection and Repatriation Act (16 November 1990) requires Federal Agencies to return Native American human remains and cultural items, including funerary objects and sacred objects, to their respective peoples.	o	o		o	o

Table 31: Caesar Creek Lake General Management Objectives

General Management Objectives	Goals				
	A	B	C	D	E
Identify, evaluate, and provide to the extent possible increased opportunities for education and outreach on the missions of the Caesar Creek Lake Project.	o	o		o	o
Foster community and public involvement through partnerships to assist in the development and implementation of recreation and environmental stewardship planning.	o	o	o	o	o
Preserve the unique scenic beauty and aesthetics of the Project by controlling development and maintaining the undisturbed natural buffer between the shoreline and all future development.	o			o	o
Foster community and public involvement through partnerships to assist in the development and implementation of recreation and environmental stewardship planning.	o			o	o
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.	o	o			o
Complete mapping of all active real estate outgrants at Caesar Creek Lake as part of Phase 2 of the Civil Works Land Data Migration (CWLDM) project. A Phase 2 directive is expected to be received from HQ in FY20 and will be funded by Operations Division through Real Estate's regular O&M funding process.	o				o

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

This Master Plan is to guide the comprehensive management and development of recreation, natural, and cultural resources at the Lakes and define the Corps' responsibilities pursuant to Federal laws to preserve, conserve, restore, maintain, manage, and develop lands, waters, and resources. An important aspect in managing these goals is properly defining the appropriate use for lands and water surface consistent with their congressionally authorized purpose.

### 4.1 LAND ALLOCATION

All lands at USACE water resource development projects are allocated by USACE into one of four categories in accordance with the congressionally authorized purpose for which the project lands were acquired. In accordance with Engineer Pamphlet (EP) 1130-2-550 land allocations identify the authorized purposes for which Corps lands were acquired. There are four possible categories of allocation identified in USACE regulations including Operations, Recreation, Fish and Wildlife, and Mitigation (see Appendix A for Land Allocation mapping).

There are a total of 10,640 acres of land and water at the Project. Of this, approximately 7,720 acres are above the seasonal pool. Project operation, including flood storage, uses about 5,580 acres which are allocated to operations, and 2,140 acres are used and allocated for public recreation. The lands for specific recreation were reduced in the 1971 Master Plan from the originally proposed amount, 2,394 acres, shown in the Preliminary Master Plan, D.M. No. 7A. The difference, of 250 acres, between these amounts is part of the land retained by USACE for Project operations around two large dikes in the Furnas Shores site on the western shore of the lake, and the areas of some public rights-of-way within recreation areas. Most borrow areas used for the construction of the dikes at the Project are located below the seasonal pool elevation in the reservoir bottom. Also, some additional land from the Lake View Site was retained by the Corps to provide the best possible entrance to the Caesar Creek Visitor Center and the Project facilities along Clarksville Road.

### 4.2 LAND CLASSIFICATION

The objective of classifying Project lands and waters is to identify the primary use for which Project lands are managed. Land and water 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. Project lands are zoned for development and resource management consistent with authorized Project purposes, NEPA, and other federal laws.

Current USACE guidance further defines land classifications to provide for development and resource management consistent with authorized purposes and other Federal laws. The previous Master Plan uses an obsolete classification scheme that has been rectified in this document to meet current standards. Currently, there are six categories of classification identified in USACE regulations:

- Project Operations
- High Density Recreation

- Mitigation
- Environmentally Sensitive Areas
- Multiple Resource Managed Lands
  - Low Density Recreation
  - Wildlife Management
  - Vegetative Management
  - Future/inactive Recreation
- Water Surface

The classification process refines the land allocations to fully utilize Project lands and considers public desires, legislative authority, regional and Project specific resource requirements, and suitability. Land classification indicates the primary use for which Project lands are managed. The lands at the Lakes are managed according to five of the above six classifications. There have been no changes to land management activities, however, the system for classification has been realigned to meet current standards. A summary of acreage changes from prior land classifications to the current classifications is provided in Table 32.

Table 32: Changes in Land Classification from 1991 to 2020 Master Plan

Classification	2020 Master Plan Acres	1991 Master Plan Acres
Project Operations	340	1,070
Recreation*	-	1,500
High Density Recreation	814	-
Mitigation	-	-
Environmentally Sensitive Areas	458	210
Multiple Resource Management Lands*	-	2,810
Multiple Resource Management Lands: Low Density Recreation	2,775	-
Multiple Resource Management Lands: Wildlife Management	3,418	-
Multiple Resource Management Lands: Vegetative Management	179	-
Multiple Resource Management Lands: Future/Inactive Recreation	-	-
Water Surface: Restricted**	70	-
Water Surface: Designated No-Wake**	596	-
Water Surface: Fish and Wildlife Sanctuary**	-	-
Water Surface: Open Recreation**	1,956	-

\*Classifications are now obsolete based ER 1130-2-550 and EP 1130-2 550

\*\*Water zoning was established in 1991 Master Plan, but acreages were not calculated

A standardized process was developed to ensure that all acres of both land and water surface were evaluated using the same criteria. The land and water surface classifications for Caesar Creek Lake were established after taking into account a multitude of factors including public comments, input

from stakeholders, including elected officials, municipal and county governments, and analysis of management plans and scientific studies. Additionally, classification determinations, and therefore subsequent management of Project lands and waters, were evaluated for incorporation of regional and ecosystem needs.

Land and water surface classifications were defined at summer pool elevation (849 feet NGVD). Additionally, the land and water classification acreages were derived using geographic information system (GIS) technology that was not available during the 1991 Master Plan classifications. These totals do not reflect the official land acquisition records, no additional acres have been acquired. Therefore, acreages represented as land classification and the resulting totals will differ from official land acquisition and allocation (See Appendix A for Land Allocations as described in the 1991 Master Plan). A Map delineating Project lands and waters into each of the categories is provided in Figure 9, as well as Appendix A. Acreages for each classification are located in Table 33 and Figure 10 presents the distribution of the land classifications (lands only).

Table 33: Caesar Creek Lake Land Classification Acreage

<b>Classification</b>	<b>Acres</b>
Project Operations	340
High Density Recreation	814
Mitigation	0
Environmentally Sensitive Areas	458
Multiple Resource Management Lands: Low Density Recreation	2,775
Multiple Resource Management Lands: Wildlife Management	3,418
Multiple Resource Management Lands: Vegetative Management	179
Multiple Resource Management Lands: Future/Inactive Recreation	0
Water Surface: Restricted	70
Water Surface: Designated No-Wake	596
Water Surface: Fish and Wildlife Sanctuary	0
Water Surface: Open Recreation	1,956



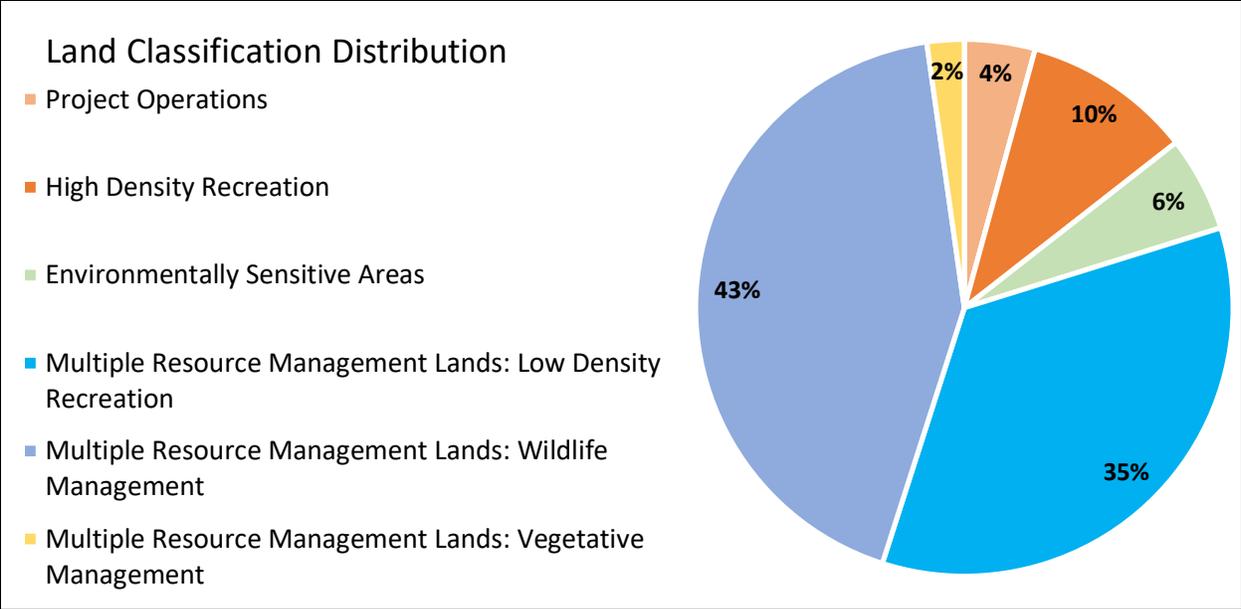


Figure 10: Land Classification Distribution

4.2.1 Project Operations

This classification includes lands required for the dam and associated structures, powerhouse, operations center, administrative offices, maintenance compounds, and other areas that are used to operate and maintain the Caesar Creek Lake. Where compatible with operational requirements, Project Operations lands may be used for wildlife habitat management and recreational use. Licenses, permits, easements, or other outgrants are issued only for uses that do not conflict with operational requirements. Regardless of any limited recreation use allowed on these lands, the primary classification of Project Operations will take precedence over other uses.

There are 340 acres specifically classified as Project Operations at Caesar Creek Lake.

4.2.2 High Density Recreation

These lands are designated for intensive levels of recreational use to accommodate and support the recreational needs and desires of visitors. They include lands on which existing or planned major recreational facilities are located and allow for developed public recreation facilities, concession development, and high-density or high-impact recreational use. In general, any uses of these lands that interfere with public enjoyment of recreation opportunities are prohibited. Low-density recreation and wildlife management activities compatible with intensive recreation use are acceptable, especially on an interim basis. No agricultural uses are permitted on those lands except on an interim basis for maintenance of scenic or open space values. Permits, licenses, and easements are not issued for non-compatible manmade intrusions such as pipelines; overhead transmission lines; and non-Project roads, except where warranted by the public interest and where no viable alternative area or route is available.

There are 814 acres specifically classified as High Density Recreation at Caesar Creek Lake.

#### 4.2.3 Mitigation

This classification is used only for lands allocated for mitigation for the purpose of offsetting losses associated with the development of the Project.

There are no lands at Caesar Creek Lake with this classification.

#### 4.2.4 Environmentally Sensitive Areas

This classification category includes 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 statutes. These areas must be considered by management to ensure they are not adversely impacted. Typically, limited or no development or public use is allowed on these lands. These areas are typically distinct parcels located within another land classification area.

There are 458 acres specifically classified as Environmentally Sensitive Areas (ESAs) at Caesar Creek Lake.

#### 4.2.5 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 primary sub classification that reflects the dominant use of the land must be designated, understanding that other compatible uses may also occur on these lands (i.e. a trail through an area designated as Wildlife Management). Typically, Multiple Resource Management Lands support only passive, non-intrusive uses with very limited facilities or infrastructure.

There are 6,372 acres specifically classified as Multiple Resource Management Lands at Caesar Creek Lake.

- **Low Density Recreation** (2,775 acres). These lands are designated for dispersed and/or low-impact recreation use. Development of facilities on these lands is limited. Emphasis is on providing opportunities for non-motorized activities such as walking, fishing, hunting, or nature study. Site-specific, low-impact activities such as primitive camping and picnicking are allowed. Facilities may include boat ramps, boat docks, trails, parking areas and vehicle controls, vault toilets, picnic tables, and fire rings. Manmade intrusions, including power lines, non-Project roads, and water and sewer pipelines, may be permitted under conditions that minimize adverse effects on the natural environment. Vegetation management, including agricultural activities that do not greatly alter the natural character of the environment, are permitted for a variety of purposes, including erosion control, retention and improvement of scenic qualities, and wildlife management. Hunting and fishing are allowed pursuant to tribal or state fish and

wildlife management regulations where these activities are not in conflict with the safety of visitors and Project personnel.

- **Wildlife Management** (3,418 acres). 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.
- **Vegetative Management** (179 acres). These are lands designated specifically for the stewardship of forest, prairie, and other native vegetative cover. Passive recreation activities previously described may be allowed in these areas.
- **Future or Inactive Recreation** (0 acres). 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 are no acres of land included in this classification at Caesar Creek Lake.

#### 4.2.6 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 Water Surface Classification map can be found in Appendix A of this Master Plan. A total of 2,622 acres are identified as water surface. The four sub-categories of water surface classification are:

- **Restricted** (70 acres) - Restricted water surface includes those areas where recreational boating is prohibited or restricted for Project operations, safety, and security purposes.
- **Designated No-Wake** (596 acres) - Water areas are designated for operation at a no-wake speed to protect environmentally sensitive shoreline areas, recreational water access areas from disturbance, and for public safety.
- **Fish and Wildlife Sanctuary** (0 acres) - Water areas that have annual or seasonal restrictions to protect fish and wildlife species during periods of migrations, resting, feeding, nesting, and/or spawning. There are no acres identified as fish and wildlife sanctuary.
- **Open Recreation** (1,956 acres) - Open Recreation includes all water surface areas available for year-round or seasonal water-based recreational use. This classification encompasses the majority of the lake water surface (Figure 11) and is open to general recreational boating. 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.

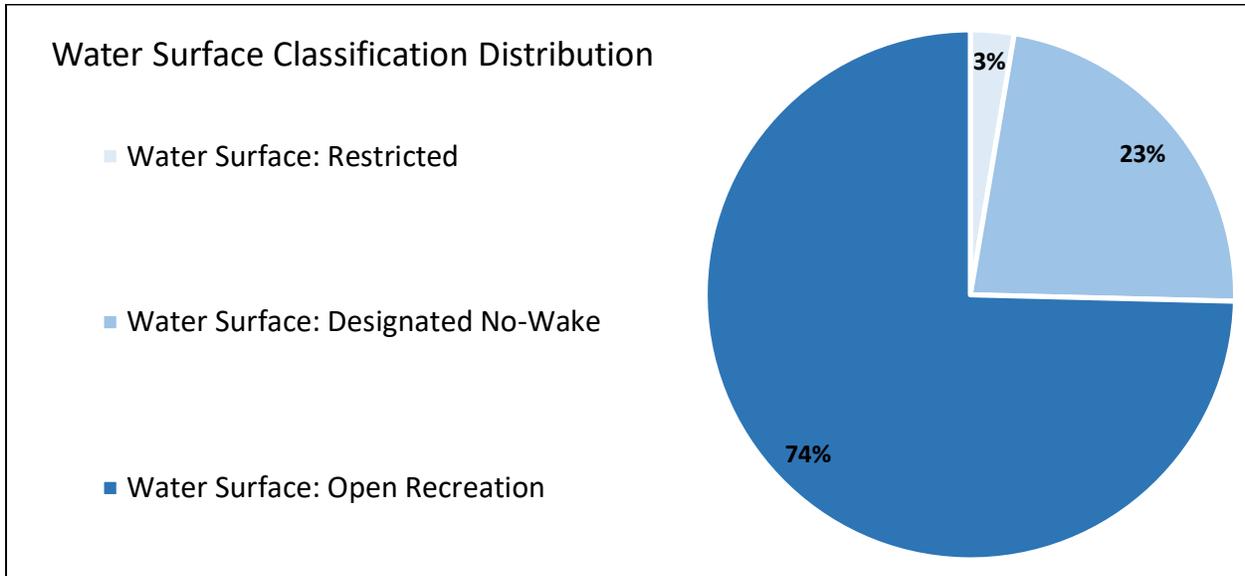


Figure 11: Water Surface Classification Distribution

## CHAPTER 5 - RESOURCE PLAN

The resource plan describes, in broad terms, how Project lands will be managed according to the established land classifications. Each classification is discussed in terms of anticipated public use and resource stewardship needs.

### 5.1 MANAGEMENT BY CLASSIFICATION

This chapter describes the management plans for each land use classification within the Master Plan. The classifications that exist at Caesar Creek Lake are Project Operations, High Density Recreation, Environmentally Sensitive Areas, and Multiple Resource Management Lands, which consist of Low Density Recreation, Vegetative Management and Wildlife Management. The Water Surface is divided into classifications of Restricted, No-Wake, and Open Recreation. The Resource Plan describes how areas under these various classifications will be managed in broad terms. There are also nine distinct recreation areas identified at Caesar Creek Lake, which extend across multiple land classifications. These recreation areas are listed under the dominant land classification (Table 34) and include management recommendations specific to that area.

Table 34: Land Classification of Recreation Areas

Recreation Area	Land Class	Acreage	Total Acres	Primary Land Class
<b>Caesar Creek Gorge</b>	Low Density Recreation	150	<b>164</b>	Low Density Recreation
	Vegetative Management	1		
	Operations	13		
<b>Flat Fork</b>	Low Density Recreation	1	<b>56</b>	Operations
	High Density Recreation	16		
	Operations	40		
<b>Furnas Shores</b>	Low Density Recreation	518	<b>662</b>	Low Density Recreation
	High Density Recreation	141		
	Operations	3		
	Environmentally Sensitive	1		
<b>Lake View</b>	Low Density Recreation	198	<b>307</b>	Low Density Recreation
	Wildlife Management	68		
	Environmentally Sensitive	41		
<b>Mound Ridge</b>	Low Density Recreation	19	<b>299</b>	High Density Recreation
	High Density Recreation	268		
	Wildlife Management	1		
	Environmentally Sensitive	12		
<b>Pioneer Village</b>	Low Density Recreation	41	<b>107</b>	Low Density Recreation
	High Density Recreation	4		
	Wildlife Management	39		
	Environmentally Sensitive	23		
<b>Visitor Center Day Use Rec Site</b>	High Density Recreation	39	<b>39</b>	High Density Recreation
<b>Wellman Meadows</b>	Low Density Recreation	107	<b>407</b>	High Density Recreation
	High Density Recreation	293		
	Wildlife Management	2		
	Environmentally Sensitive	5		
<b>Wildlife Area</b>	Low Density Recreation	14	<b>24</b>	Low Density Recreation
	Wildlife Management	10		

Further details for managing these lands will be included in the Operational Management Plans (OMP) for each project, as revised. Management tasks described in the OMP will support the resource objectives, land classifications, and resource plan set forth in this Master Plan. While the following sections address broad plans for the land classifications listed above, at all Project lands the Corps will strive to meet universal Project goals which include taking proactive measures to enhance universal access to lands and facilities, improvement of safety for visitors, and identification and elimination of encroachments and trespassing. In addition, USACE will seek to identify important “unofficial” recreation activities and sites such as undeveloped shoreline fishing areas, swimming areas outside of

developed beaches, or other preferred areas used by recreationists into the future. As development occurs in the future, USACE will seek to protect these areas and may require mitigation for development actions that would negatively impact these sites. As these sites are identified, they will be included in future updates to the joint Master Plan and may also be included in OMPs.

## 5.2 PROJECT OPERATIONS

Project Operations includes those lands required for operation of the dam, spillway, and outlet works at the Lake. The management plan for these areas is to continue providing physical security necessary to insure continued operations of the dam and related facilities. Public access to these areas is often restricted. Mooring private vessels and/or modification of land and vegetation within this area is prohibited without explicit permission. These areas may at times be used for compatible recreation activities and wildlife management as long as the proposed activities do not negatively impact Project operations. Requests for a permit for a compatible use within an area designated for Project operations will be evaluated on a case-by-case basis and a decision will be made as to whether or not the proposed activity will be permitted based on the potential impacts to operations.

Sufficient facilities have been developed in the Operations area which includes the Dam, Spillway, Visitor Center, Tailwater, and the Flat Fork area to provide for public use.

### **Flat Fork Recreation Area**

The Flat Fork Recreation Area (Figure 12) features a number of shoreline fishing spots (including a pier), picnic sites, and hiking. This recreation area is located near the Caesar Creek Dam with a scenic overlook of the lake. Anglers appreciate the great access to the lake offering plenty of shoreline fishing and a fishing pier along the dam. There are two large reservable shelters with a large playground area and a volleyball net. Exposed bedrock in the emergency spillway is a popular attraction for professional and amateur paleontologists from around the world, and visitors can obtain a permit from the Visitor Center to collect fossils smaller than the palm of their hand out of the spillway (Photo 1). Caesar Creek Lake is located near the crest of the Cincinnati Arch, which means that a majority of the bedrock is Ordovician in age and consists mostly of fossiliferous shale with numerous thin limestone layers. The unique geology of the spillway serves as a great interpretive tool for public programming and educational tool for local schools. Restrooms are available seasonally. This small area is presently fully developed with facilities and is managed by USACE.



Photo 1: Fossils collected in the Emergency Spillway.



Figure 12: Flat Fork Recreation Area

### 5.3 HIGH DENSITY RECREATION

Caesar Creek Lake has 1,468 acres classified as High Density Recreation. These lands are developed for intensive recreational activities for the visiting public including day-use areas and campgrounds. National USACE policy set forth in ER 1130-2-550, Chapter 16, limits recreation development on USACE lands to those activities that are dependent on a Project’s natural resources and typically include water-based activities, overnight use, and day use such as marinas, campgrounds, picnic areas, trails, swimming beaches, boat launching ramps and comprehensive resorts. Examples of activities that are not dependent on a Project’s natural resources include, theme parks or ride-type attractions, sports or concert stadiums, and stand-alone facilities such as restaurants, bars, motels, hotels, and golf courses.

USACE manages one area designated as High Density Recreation and ODNR manages two areas under this land classification. In recreation areas, which are leased to other organizations for operation and management, USACE does not provide any maintenance within any of these locations but there are times when we provide support to the managing agency. USACE has to provide review of requests and ensure accordance with applicable laws and regulations for proposed activities within high density recreation zoning areas. The goal is to work with USACE partners to assure recreation areas are being managed in accordance with resource objectives identified in Chapter 3. The following is a description of each recreation areas.

#### **Visitor Center Day Use Recreation Site**

The Visitor Center and Area Office is located west of the operations area and southeast of the Lake View site (Figure 13). The site served as the construction overlook. Because of the proximity to the metropolitan areas of Dayton and Cincinnati and its central location within the Corps' Great Lakes and Ohio River Division, this area was chosen for the Regional Visitor Center for the Division and is a Class A facility. The Miami River Area Office was combined with the facility to more efficiently use Project resources and to help in staffing the center. The conceptual design of the Visitor Center and its exhibits was made by the Promontory Partnership and the plans and specifications for both the building and its interior activities by Design Enterprise Limited. Photo 2 shows a USACE exhibit in the Visitor Center. The visitor center building has 7,247 square feet, of which 6,000 are used for the Visitor Center, and the rest for the Area Office. A large aerial photograph of the lake is the focal point of the lobby. To the right of the front doors is an information desk, where a staff member greets and assists visitors. Interpretive displays, thematic galleries, a theater, and restrooms adjoin the lobby. The visitors can view several multi-media orientation films in the theater or enter the galleries. The multipurpose room is available for temporary displays and programs. The Visitor Center Day-Use Area also offers two large reservable shelters with accompanying playgrounds. This area is loaded with recreational opportunities including hiking, fishing and boating.



Photo 2: Exhibit in the Regional Visitor Center at Caesar Creek Lake.

The orientation program portrays the Corps' history as it relates to the development of the Ohio River Basin and Caesar Creek Lake. The theater has 32 seats and is used for other types of interpretive programs as well. The seating can be augmented with 15 movable chairs, bringing the total to 47 seats. After the show, the visitor is then encouraged to view the three interpretive galleries, the Community Gallery, the Natural History Gallery, and the Corps Gallery.

Upon leaving the building, visitors may proceed to the overlook. The large wooden deck provides a scenic view of the dam, control tower, spillway, and the south end of the lake. There are four interpretive signs that explain: 1) why the dam was built, 2) how it operates, 3) orientation to the entire lake and facilities, and 4) the history of the lake. In back of the building is an informal amphitheater for programs during the summer.

Two trails adjoin the overlook. A paved trail, accessible to the handicapped, leads back to the main parking lot. A longer wood-chipped trail passes through several habitats, including a pond, prairie, and

forest. Along this self-guided trail are five interpretive signs explaining succession. From this trail, the continuation of the 13-Mile Trail leads to the Lake View Site.

In the recreation season, temporary park rangers are hired at the Project and volunteers are recruited to help manage the increase in visitation.

In the area north of the visitor center and on the opposite side of Clarksville Road an extensive program of wildlife management provides a demonstration area to extend the program of the visitor center. The woods along the lake shore and in the ravine at the extreme end of the area will be continue to be managed as a demonstration forest. The old fields near the visitor center will continue to be improved for wildlife management. Unproductive species of brush will be cut and piled. Growing conditions for superior species will be improved by release cutting and open grassland will be maintained by mowing. Across Clarksville Road, an evergreen screen has been planted along the property line, and areas of hardwood seedlings has been planted. In part of the area wildflower plots has been expanded.



Figure 13: Visitor Center Day-Use Recreation Site

### **Mound Ridge Recreation Area**

Mound Ridge Recreation Area contains the campground at Caesar Creek State Park operated and maintained by ODNR (Figure 14). The area is well suited to development for camping because of the gently rolling topography and the close proximity to the shore of much of the campground. The Mound Ridge Campground offers 287 class A campsites, each with a paved pad, 20- or 30-amp electric hookups, picnic tables and a campfire grill. Mountain biking is a popular recreational activity at the Mound Ridge Recreation Area, the starting point for one of the four main mountain bike trails.

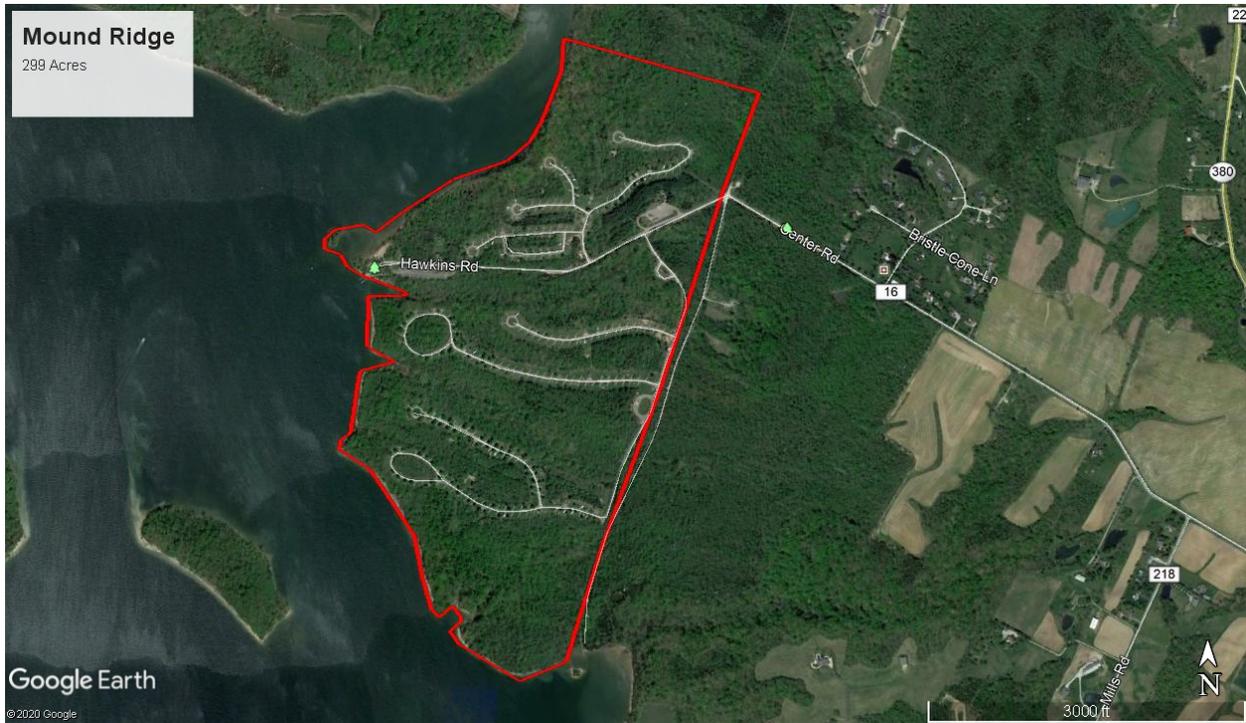


Figure 14: Mound Ridge Recreation Area

**Wellman Meadows Recreation Area**

Wellman Meadows Recreation Area (Figure 15) is presently developed in two distinct areas: Fifty Springs picnic area (entered from Highway 73) and Wellman Meadows Boat Ramp (entered from Oregonia Road). The recreation area is operated and managed by ODNR. The Wellman Recreation Area features one of the most popular boat ramps on the lake (Photo 3). Wellman Boat ramp is the southern-most ramp and the ease it provides for getting in and out of the lake makes Wellman a popular launching point for motorized and man-powered



Photo 3: Wellman Meadows Boat Ramp

watercraft alike. The area is also a popular destination due to large group campsites and easy access to many different trail heads in the area. On the southern border of the site is an area of exceptional environmental quality along the gorge cut by Flat Fork. Trails run through the Flat Fork area.

The Fifty Springs portion of the site is a peninsula which contains a large picnic area. Four areas, each with parking and sanitary facilities, are located along the road. The western edge of this site has a steep

bluff overlooking the lake. On the east, the land descends to the lake with a gentle slope. See Appendix A for estimated slope grades at Caesar Creek Lake.

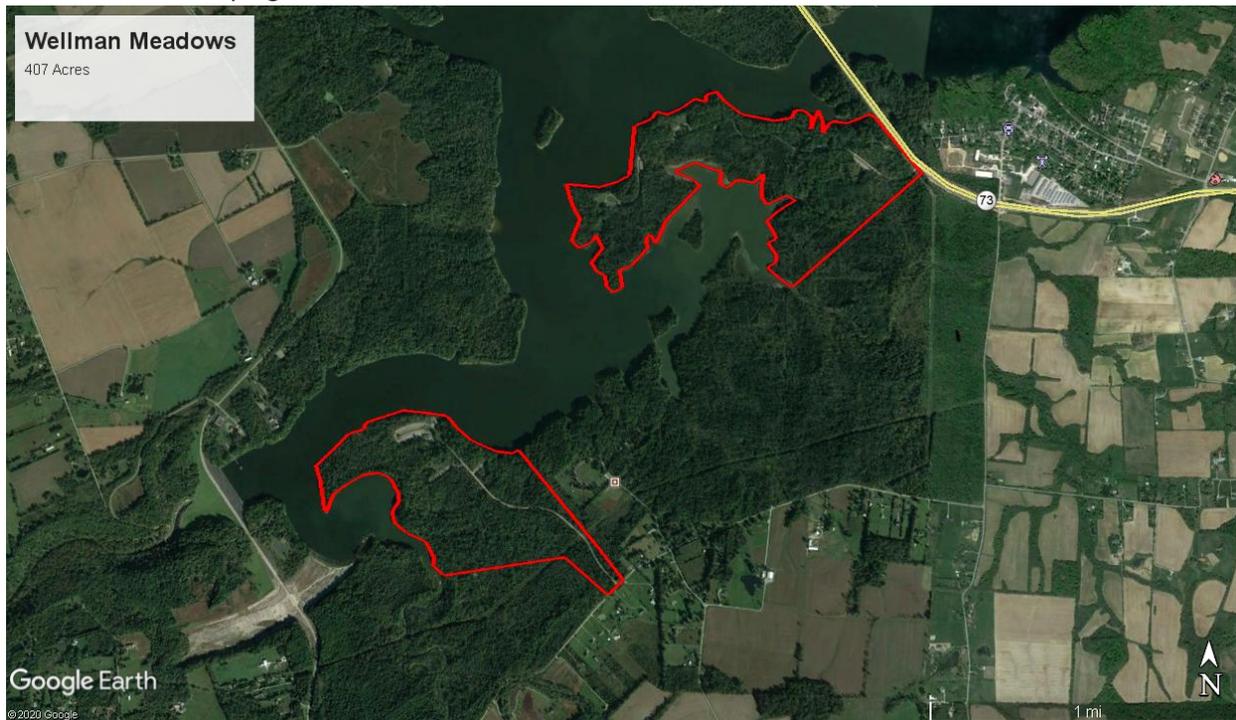


Figure 15: Wellman Meadows Recreation Area

#### 5.4 MITIGATION

This Mitigation classification is used for lands that were acquired specifically for the purpose of offsetting losses associated with development of the Project. There are no lands at Caesar Creek Lake under this classification.

#### 5.5 ENVIRONMENTALLY SENSITIVE AREAS

Defining sensitive areas as part of the Master Plan process assists in the protection of valuable resources. Many factors contribute to identifying sensitive areas. These sites are mapped and managed by the Corps. Data includes locations of threatened and endangered species and cultural sites not available to the public. Many species of greatest conservation need are found on Corps lands and are identified in various conservation plans by ODNR and other partners. Degree of sensitivity varies by location and by contributing factors to sensitivity. An area may be available to construct a properly designed hiking trail, or may be actively managed by forest practices like timber stand improvement without negatively impacting the site's sensitivity. Other sites can be very sensitive to human disturbance and need adequate protection from development. Examples of this degree of sensitivity would involve eagle nests, osprey nests and heron rookeries. These animals are threatened by human activities especially during active breeding seasons.

Buffering of sensitive locations is necessary for resource protection. Size of the buffer is tied to the ecology of the location. On occasion, multiple sensitive areas may exist within proximity to one another. These are often combined into one larger sensitive area.

Fragmentation threatens sensitive species and large block habitats have been identified as sensitive. Many wildlife species that are identified as having significant conservation need are often associated with large habitats. Fragmentation through construction of a utility corridor, road or other fragmenting disturbance is prohibited.

The following occurrences on the landscape can contribute to areas being classified as sensitive. Oftentimes, multiple contributors to sensitivity exist on one area.

- Known or discovered cultural sites
- Reforestations
- Remnant prairies
- Larger planted prairies
- Wetlands identified in the National Wetlands Inventory
- Lands possessing unique wildlife value by diversity or conservative species
- Aesthetic quality or aesthetic views (scenic)
- Corridors between habitats that protect connectivity

Areas designated as sensitive can change over time and continued monitoring through programs like Multiple Species Inventory and Monitoring program (MSIM) provide valuable information to keep identified sensitive areas current. Through the use of Geographic Information System (GIS) databases maintained with separated layers, the dynamic nature of sensitivity can be managed in an up-to-date program. Some areas may be highly sensitive to change; other areas need prescribed management to remain viable. Management practices include invasive species control, prescribed fire or plantings. The goal of sensitive area management is to protect and preserve known areas that contribute to the diversity and health of Caesar Creek Lake. The program should be beneficial to plants, animals and the people that enjoy the resource.

## 5.6 MULTIPLE RESOURCE MANAGEMENT LANDS

Multiple Resource Management Lands are classified as such because resources are predominately utilized in various ways. However, there are other compatible uses which may occur on these lands without impacting the predominant use. These lands can be divided into four sub-categories for the purposes of this Master Plan. These categories are; Low Density Recreation, Wildlife Management, Vegetative Management, and Future/Inactive Recreation Areas. The following is a description of the resource objectives, acreages, and description of use pertaining to each sub-category.

### 5.6.1 Low Density Recreation

Low density refers to lands with minimal development or infrastructure that support passive public recreational use (e.g. primitive camping, fishing, hunting, trails, wildlife viewing, etc.). Natural conditions preclude intensive public use development because extensive alteration of natural systems would be required. Difficult access also is a factor indicating low-density use as most appropriate for these lands.

This classification may be appropriate when a conflict exists between public use and wildlife habitat.

Private or long-term exclusive group use of these lands will not be permitted. Management practices leading to habitat improvements for the benefit of wildlife are encouraged. No licenses, permits, or easements will be issued for such non-compatible manmade intrusion, such as underground or exposed pipelines, cables, overhead transmission lines, or non-Project roads. Exceptions to this restriction may be made where necessary to serve a demonstrated public need only in those instances where no reasonable alternative is available. Hunting uses are permitted under this land classification.

### **Caesar Creek Gorge**

Most of the 2.5 miles of Caesar Creek between the dam and the Little Miami River is a steep-sided gorge known for its woods and wildflowers (Figure 16). The gorge area outside the Project boundaries has been acquired by the Ohio Department of Natural Resources and is managed as a natural area. Access from the Project to the tailwater is provided by the Project road which runs from the Project Office to the old O'Neal Road, which descends into the gorge. At the bottom of the gorge, a parking area has been built. Fishing platforms have been constructed along the retreat channel, and these are connected to the parking area by paths. The old highway bridge has been retained as a foot bridge. The state-wide Buckeye Trail enters the Project from O'Neal Road and follows the old road to the Flat Fork Area and over the dam to the Project Office and Visitor Center area. This area is not suitable for more intensive public use because of the unstable soil conditions of the valley sides. The main attractions of this recreation area are the 1.25 mile Gorge Loop Trail and the fishing opportunities the creek offers (Photo 4). The Gorge has one large shelter available for reservation, a number of picnic areas and plenty of natural and rustic scenic sites. Restrooms are available seasonally.



Photo 4: Horseshoe Falls - Caesar Creek Gorge

The tailwater will be managed to enhance the unusually fine woodlands of the Caesar Creek Gorge. Selected trees will be harvested to open the cover to enhance wildflowers. In the open areas above the gorge, grass lands and food plots will be maintained.

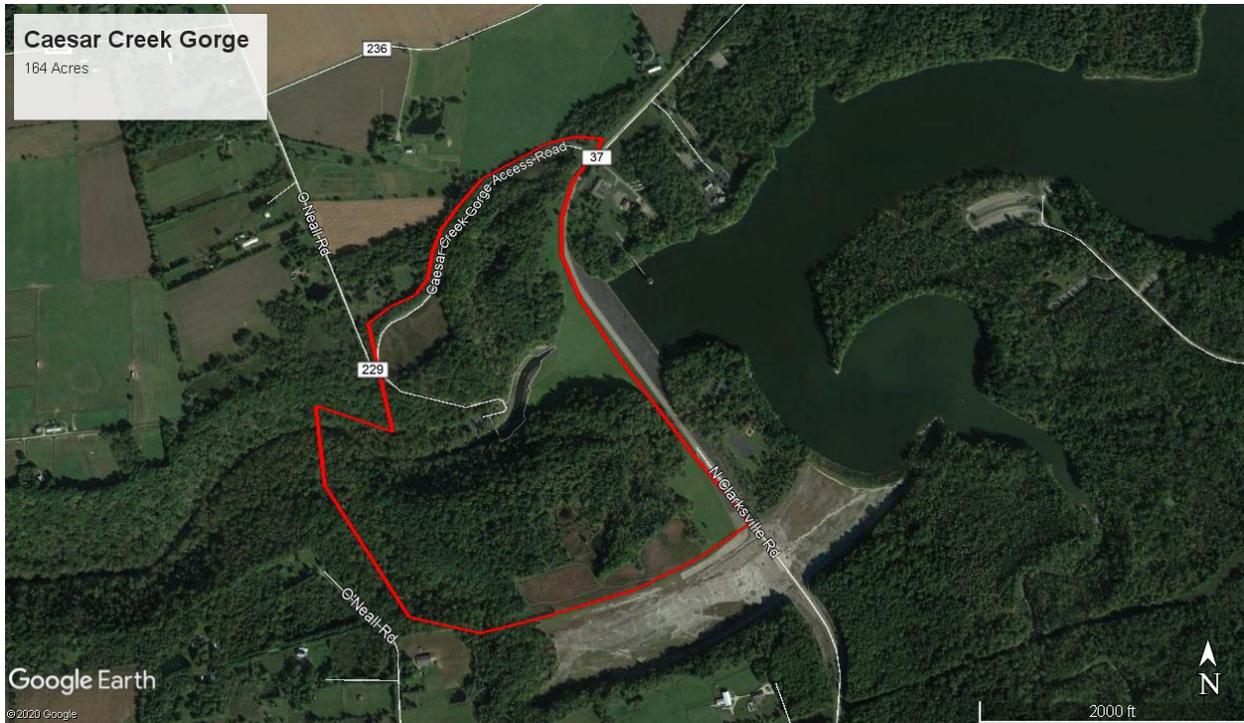


Figure 16: Caesar Creek Gorge Recreation Area

**Furnas Shores**

This is the largest recreation site at Caesar Creek Lake (Figure 17). The site is divided into three zones - the horse trail and the camping area in the northern part of the site; the beach, administrative, and boat ramp (Photo 5) in the central portion of the site north of Highway 73; and the boat ramp area south of Highway 73. The Buckeye Trail traverses this site, entering from the Lake View Site, crossing under the Highway 73 bridge to the beach area, along the shore to the dikes, and then along old roads and horse trails into the wildlife area.



Photo 5: Furnas Shores Boat Ramp



Figure 17: Furnas Shores Recreation Area

**Furnas Shores: Horse-Camp Area**

This area is located in the northwest part of this site. Much of this area is quite flat with many old fields. In contrast with this open land are drainage ways with steep sides and large timber. Since these creeks drain toward the Little Miami River, dikes have been constructed to prevent the lake from ever draining in that direction. The Horse-Camp area (Photo 6) has been designed for horsemen and contains 30 family campsites with hitching posts. There is also a group camp area. Approximately 29 miles of bridle trails have been developed in surrounding areas. Some of the trails which run through the wooded valleys have caused erosion and are now closed; in the future, they will be moved to less erodible ground. When the wooded area has been rehabilitated it will be managed as a natural area to preserve its unusually fine collection of plant species.



Photo 6: Furnas Shores Horse-Camp Area

### **Furnas Shores: Caesar Creek Beach**

The beach area (Photo 7) is the most heavily used area on the lake. When recreation facilities were constructed, 2,900 linear feet of beach was graded, but only 1,200 feet was finished with sand. A change house and concession were constructed approximately in the middle of the sanded area. Parking for 738 cars was supplied - 408 paved, and 330 on graded turf overflow areas. In addition to the beach and its related facilities, a small boat ramp is located in this portion of the site and can accommodate approximately 20 vehicles.



Photo 7: Aerial view of beach at Caesar Creek Lake

This portion of the site is also the site of the park office and park maintenance center of the Ohio Department of Natural Resources. The office is located close to the entrance of the site. This building has a reception area for the public and contains 1,695 square feet. The maintenance center is located near the western edge of the area with an entrance off Furnas Road and one off of North Pool Road. There is a shop and a small pole barn for covered storage. Near the maintenance center, Wright State University has received a one-acre outgrant to provide a research and educational facility. A gravel road connects the maintenance center to the area of the beach and sailboat facility. There are also 16 picnic sites in this area and about 1 mile of trails. Several pressure gas pipelines traverse this site from their pumping station on the lakeshore about 1,600 feet north of the sailboat facility west to the Project boundary.

### **Furnas Shores: Furnas Shores and North Pool Ramp**

Furnas Shores Boat Ramp and North Pool Boat Ramp are two of the lake's five boat ramps. Ohio State Parks added a marina to the area in 2016, making it the first, and only, marina at Caesar Creek Lake. The marina offers 105 boat slips, 17 transient slips, a small convenience store and a gas station for boats out on the water.

### Lake View Recreation Area

Lake View Recreation Area (Figure 18) is a large natural area of Caesar Creek Lake. This site is leased to ODNR and is located between Clarksville Road and the lake, just north of the USACE Operations area. The upland portions of the site are relatively flat with open fields. The rest is wooded with very steep erodible banks descending to the lake. This site does not lend itself to development of lake access facilities. The southern portion of the site has been developed with foot trails leading from the Visitor Center. This area is often used as part of nature study programs. The northern portion of the site also has a scenic woodland known as the Sugar Shack area. The Buckeye Trail connects these areas and continues on to the Furnas Shores Site. Although little development has taken place on this site, it receives significant use by groups for both picnicking and camping. The reservable Hopewell Day Lodge (Photo 8) is located here, under the operation of the Ohio State Parks. Also located in the Lake View Area is a primitive group campsite, an archery range and a trail. There are hiking opportunities and watchable areas to enjoy the wildlife of southwest Ohio. Two large native grass prairie systems with a large viewing platform give wildlife watchers a coveted view of the area's prairies and the wetlands.



Photo 8: Hopewell Day Lodge

The woodlands in ravines at both the northern and southern ends of the site are exceptional and will be maintained in their natural condition. The prairie restoration in the upland portion of the site near the group lodge should be maintained. Other kinds of wildlife management in these flat, old field areas may also be employed including mowing, selective cutting of brush, and building brush piles.

The woodlands in ravines at both the northern and southern ends of the site are exceptional and will be maintained in their natural condition. The prairie restoration in the upland portion of the site near the group lodge should be maintained. Other kinds of wildlife management in these flat, old field areas may also be employed including mowing, selective cutting of brush, and building brush piles.



Figure 18: Lake View Recreation Area

### Pioneer Village

The area contains several log homes (Photo 9) and other structures moved to the site by the volunteers working for Caesar Creek Pioneer Village (Figure 19). The organization is a nonprofit corporation and it holds a third-party license agreement with the Ohio Department of Natural Resources. Since the majority of these structures were originally located on lands used in the construction of the lake, it is felt that these structures have a direct relationship to the Project. The objective of the village is to preserve examples of early Ohio culture. They are open on a regular basis in the recreation season and several times during the fall and winter. There are a number of popular community events held in the Village. This area is also the home of the Caesar Creek Nature Center, a wildlife and lake information center operated by Ohio State Parks.



Photo 9: Log homes at Caesar Creek Pioneer Village

The management emphasis at this location will be on maintenance and improvement of present facilities.



Figure 19: Pioneer Village Recreation Area

### **Wildlife Area Access Point**

The Wildlife Area Access Point (Figure 20) is one of Caesar Creek Lake's largest wildlife areas. Hunters can access many different hunting areas and pursue many species, including deer and squirrel in the forested areas, while dove and pheasant can be found in some of the larger native grass prairies. The northern-most boat ramp (Haines/Young Ramp) is also located here, but typically only available to anglers when the lake is at summer pool level. The Wildlife Area Access also features a broad range of bridle trails traversing the northern Caesar Creek Lake property.



Figure 20: Wildlife Area Access Point

### 5.6.2 Wildlife Management

These are lands designated for the stewardship of fish and wildlife resources and are managed by USACE. There are currently 3,418 acres of land under this classification at Caesar Creek Lake, however, areas of low density recreation, ESA's and vegetative management all support wildlife. Management efforts focus on producing native wildlife food and habitat.

The broad objective of fish and wildlife management is to conserve, maintain and improve the fish and wildlife habitat to produce the greatest dividend for the benefit of the general public. Implementation of a fish and wildlife management plan is the first step toward achieving the goals of the Fish and Wildlife Coordination Act (Public Law 85-624). ODNR shares responsibility with USACE for managing fish and wildlife, primarily through enforcement of laws and regulations and establishing seasons and bag limits for game species. Future management plans for wildlife areas include continued cooperation with partners and managing and improving wildlife management areas under this land classification.

Priority in all lands under this classification will be provided to special status species including those federally and state listed, those identified as species of concern, and those afforded special protections in other federal regulations such as the Bald and Golden Eagle Act and the Migratory Bird Act.

Wildlife activities conducted by ODNR in these areas include maintenance and upgrading of existing facilities, improving wildlife habitat, and providing recreational opportunities. Approximately 731 acres were leased to sharecroppers for crop planting to provide food, cover, and successional control of vegetation on lands managed for wildlife. Approximately 10% of the crop is left un-harvested in the field for wildlife. These areas are also stocked by ODNR with game birds and fingerlings (i.e. muskellunge and saugeye). Creel and hunter bag surveys are performed in conjunction with the stocking program.

Techniques such as prescription burning, planting native grasses and forbs beneficial to pollinators, and artificial nest boxes to encourage continued use by raptors, including osprey and bald eagles, will also be utilized. Such lands are available to the public for sightseeing, nature study, hiking, hunting and other activities that enhance environmental awareness and promote environmental stewardship. At this time, five recreation areas include this land classification:

- Lake View (68 acres)
- Mound Ridge (1 acre)
- Pioneer Village (39 acres)
- Wellman Meadows (2 acres)
- Wildlife Area (10 acres)

### 5.6.3 Vegetative Management

These lands are designated for stewardship of forest, prairie, and other native vegetative cover. The vegetation at Caesar Creek Lake is a result of the geologic history of the area as well as human activity. A majority of the climax forest lands, including oak-hickory, beech-maple and northern flood plain forest, have been transformed into subclimax forest by human habitation. The Corps objectives concerning vegetation and forest management are to apply wise resource management principles that provide for habitat diversity and demonstrate good stewardship in the management of these resources. The management of woodlands is focused on the establishment and maintenance of the natural diversity of native plant species. Management of forest resources focuses on the establishment and maintenance of riparian zones and connection of fragmented upland woodlots. Efforts have been made by the USACE to restore and expand wetland and prairie habitat. These activities should continue with identification of opportunities to expand these habitat types.

Invasive species pose a significant threat to the Caesar Creek landscape. Vegetative threats include lesser celandine, autumn olive, reed canary grass, *Sericea lespedeza*, emerald crown vetch, garlic mustard, and honeysuckle. All of these species have the ability to significantly alter native ecosystems. Trees are also very susceptible to invasive species, as evidenced by the emerald ash borer. Diligent monitoring and swift reaction are key to successful invasive species management. Eradication is rarely attainable, but control is critical to managing invasive species.

At this time, one recreation areas include this land classification:

- Caesar Creek Gorge (1 acre)

#### 5.6.4 Future / Inactive Recreation Areas

These areas have site characteristics compatible either with future recreational development or recreation areas that are closed. Until there is an opportunity to develop or reopen these areas, they will be managed for multiple resources. There are no locations at Caesar Creek Lake that match this description.

### 5.7 WATER SURFACE

There are three Water Surface categories at Caesar Creek Lake: Restricted, Designated No-Wake, and Open Recreation. As part of managing the water surface areas at the Project, the Corps will seek to maintain and, if possible, improve water quality and fisheries habitat structure to support a productive sport fishery and maintain healthy populations of native fish species. Water quality monitoring at established stations should continue throughout the Lakes' property and watershed, as the data gathered aids in conservation of the Project's aquatic resources. A related issue is sedimentation within the reservoir. The Corps will evaluate all plans and proposals to ensure that planned or permitted activities are not contributing to the sedimentation problem and ensure that BMPs are adhered to in order to prevent excessive erosion. In the future, sustainable reservoir sediment management plans should be developed to address long-term efforts to address sedimentation

#### 5.7.1 Restricted

Restricted areas include those portions of the reservoir pool where public access is prohibited due to Project operations, security concerns or to promote public safety. This includes the areas between the restricted area buoys and the upstream portion of the dam, the area immediately downstream of the dam, and shoaling areas that are shallow and may cause boats to run aground.

#### 5.7.2 Designated No-Wake

Designated No-Wake zones are marked with buoys to protect environmentally sensitive shoreline areas, recreational areas (such as boat ramps and docks), and for public safety. Boats are required to slow down in these areas to prevent waves from impacting these areas.

#### 5.7.3 Fish and Wildlife Sanctuary

These areas 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 water surface acres under this classification at Caesar Creek Lake.

#### 5.7.4 Open Recreation

The remaining lake area not in the above classifications is open to recreational use. No specific zoning exists for these areas, but there is a buoy system in place to help aid in public safety. Future management of the water surface includes the maintenance of warning, information, and regulatory buoys as well as routine water safety patrols during peak use periods.

## CHAPTER 6 - SPECIAL TOPICS / ISSUES / CONSIDERATIONS

### 6.1 REGIONAL RECREATIONAL TRAILS

The Buckeye Trail is an approximately 1,444 mile trail that circumnavigates Ohio. Approximately 20 miles of the trail are within the fee boundary of Caesar Creek Lake. The trail is a dedicated, recognized and protected route developed and maintained by the Buckeye Trail Association who works in close partnership with communities, organizations and agencies around Ohio. The trail enters the Project in the tailwater area, runs along Clarksville Road from the Flat Fork Picnic Area to the Caesar Creek Visitor Center, and then follows the 13 Mile Trail (Photo 10) through the Lake View Site, through the beach area, and up to the northern most portion of the Project.

The Little Miami Scenic Trail is a rail-to-trails in Ohio and spans approximately 78 miles from the northern suburbs of Cincinnati to Springfield, Ohio. The trail is part of a network of more than 340 miles of off-road trails that travel throughout Ohio's Miami River Valley. It is also a significant section of the cross-state Ohio to Erie Trail, which travels from the Ohio River in Cincinnati to Lake Erie in Cleveland on more than 270 miles of off-road trails.

Identifying opportunities to provide bike and pedestrian connections to the Little Miami Trail, which passes less than one mile to the west of Corps property, as well as maintaining current partnerships and facilities that support the Buckeye trail should be fully considered in future management decisions.



Photo 10: Swinging Bridge on 13 Mile Trail

### 6.2 HARMFUL ALGAL BLOOMS

Over the past few years, USACE has had to caution recreational users of its reservoirs about the potential for hazards caused by HABs in the lakes' waters. These algal blooms are comprised largely of cyanobacteria- a photosynthetic form of prokaryotic life also known, as blue-green algae. These organisms are capable of producing toxins that can be harmful to small children, people with stressed or compromised immune systems, livestock, pets and wildlife. These algal blooms are also relatively common in nutrient rich farm ponds where they can produce scums that are often confused with paint, especially when winds concentrate the plants along the shoreline. Pets and livestock entering these waters regularly develop skin lesions often confused with the mange. However, these maladies are likely caused by toxins produced by the cyanobacteria.

Harmful algal blooms are usually dominated by rapidly reproducing cyanobacteria. Actual blooms, consist of many taxa in many different divisions of algae but are usually only a very small proportion of the cell numbers after the bloom initiates. In addition to producing toxins, cyanobacteria can pose other treatment challenges for public water systems including taste and odor issues or clogged filters.

There are thousands of cyanobacteria species, most of which do not produce toxins that are harmful to people or animals. However, some types of cyanobacteria produce toxins within their cells which are released when the cells die off or are ruptured. The following are recommendations that should be considered in future management decisions and in collaboration with Caesar Creek Lake partners:

- The health of a watershed is related to many factors: environmental, human, global conditions, etc. Through natural processes, organic elements will break down over time entering watersheds. It is critical that agencies work together to employ and educate stakeholders and generate interagency partnerships. Equally critical to understanding the natural processes are establishing and teaching about buffer boundaries, erosion, farm ponding, and conservationist policies.
- It will take a cooperative interagency effort to develop and implement best watershed management strategies to address this problem. Improvement in water quality will require a rather extensive time period for system stabilization once strategies are in place. Strategy development with participation on the part of all parties involved (farmers, developers, cities, towns, municipalities, economic offices, and the general public) will also take time.
- Modifications to the releases at reservoirs in the watershed may assist to lessen the occurrence of HABs. Additional investigation should determine the feasibility of epilimnetic releases from the reservoirs to decrease in-lake temperatures.

## CHAPTER 7 - PUBLIC AND AGENCY COORDINATION

### 7.1 PUBLIC AND AGENCY COORDINATION OVERVIEW

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

The USACE began planning to revise the Caesar Creek Lake Master Plan in July 2019. The objectives for the Master Plan revision were to (1) update land classifications to reflect changes in USACE land management policies since 1991 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 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. The public scoping meeting was held on July 31, 2019 at the Caesar Creek Lake Visitor Center. The Louisville District placed advertisements on the USACE webpage, social media and print publications two weeks prior to the public scoping meeting.

USACE employees 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 for a presentation by USACE for the Master Plan Revision Project Delivery Team (PDT) to convey information about the following topics:

- Public involvement process;
- Project overview;
- Overview of the NEPA process;
- Master Plan and current land classifications; and
- 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; and
- Submitting a comment and mailing it in on letterhead or choice of paper.

Table 35 presents a summary of public comments received in-person or electronically.

Table 35: Summary of Public Comments on the Master Plan

Nature of Comment	Number of Comments
Water quality associated with drinking water supply and recreational contact. Specific concern with Harmful Algal Blooms.	1
Provide better accommodations to non-motorized watercraft (i.e. kayaks, canoes and stand-up paddle boards) including enforcement of no-wake zones, carry-down launches, rental opportunities and general education to broader boating community.	2
Trail erosion caused by horseback riding diminishes experiences for other users and contributes to impaired water quality. Identify trail segments that should be rerouted for horseback riding in erosion prone areas.	1
Expansion of mountain bike and multi-use trails to circumnavigate the lake. Identify additional opportunities for ADA accessible trails.	2
Provide connectivity to the Little Miami Bike Trail.	1

Increase buffers and engage other partners and agencies to increase protection of lake headwaters.	2
Maintain existing trails and visitor facilities.	2
Maintain prairie and wetland restoration efforts.	2

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

The final draft Master Plan and Environmental Assessment was made available for public and agency review on [TBD]. The process of announcing the availability of the draft final Master Plan and the requirements for submitting comments was identical to the process described above for the initial public scoping workshops held in 2019. Public and agency comments for the draft final Master Plan were accepted through [TBD]. A total of [TBD] individuals submitted comments. At the end of the comment period a total of [TBD] written comments were received, [TBD] from the general public and [TBD] from agency or organization. A summary of comments received and the USACE response to the comments is provided below (Table [TBD]) Copies of letters received from governmental entities are included in the EA (Appendix B). Upon incorporation of public comment into the draft Master Plan, and EA and FONSI, final versions will be prepared and signed by the District Engineer for implementation. The final version will be posted on the District website.

## CHAPTER 8 - SUMMARY OF RECOMMENDATIONS

### 8.1 SUMMARY OVERVIEW

The preparation of the Caesar Creek Lake Master Plan followed the new USACE Master Planning guidance in ER 1130-2-550 and EP 1130-2-550, both dated 13 January 2013. Three major requirements set forth in the new guidance include (1) preparation of contemporary Resource Objectives, (2) Classification of Project lands using the newly approved classification standards, and (3) 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 staff levels at Caesar Creek Lake. Factors considered in the Plan were identified through public involvement and review of statewide planning documents including the 2018 Ohio SCORP. This Master Plan will ensure the long-term sustainability of the USACE managed recreation program and natural resources associated with Caesar Creek Lake.

### 8.2 LAND CLASSIFICATION PROPOSALS

A key component in preparing this Master Plan was examining prior land classifications and addressing the needed transition to the new land classification standards. During the public involvement process USACE sought public input into whether, besides the simple change in nomenclature, a shift in land classification was desired (for example, should lands with a recreation classification be reclassified to a

wildlife classification or vice versa.). While no comments were received that specifically requested changes in land classifications, many advocated for improved recreational opportunities and restoration and/or protection of habitats. The proposed recreation classifications and increased acreage of environmentally sensitive areas should allow the Corps to better meet the desires of the public. Chapter 7 of the Plan describes the public input process.

The land classifications presented in the Plan were formulated based on these public comments and the USACE Caesar Creek Lake Project staff, Operations Division Staff and ODNR to the Master Plan PDT based on first-hand experience, professional training, and best management practices.

There were 6,754 acres reclassified or updated to the new land classification name. All changes reflect historic and projected public use and new guidance from ER 1130-2-550 and EP 1130-2-550. A summary of acreage changes from prior land classifications to the current classifications is provided in Table 32.

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