



St. Johns River Water Management District

Ocklawaha River Basin Plan

2026





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Introduction

The St. Johns River Water Management District (District) is a science-based organization responsible for managing and protecting water resources in northeast and east-central Florida. The District's mission is to ensure adequate water supplies to meet the needs of current and future users while protecting and restoring water quality and related natural resources.

Water resource opportunities and challenges vary across the District and evolve over time. To focus its resources and efforts more effectively and efficiently, the District is divided into four strategic planning basins: Lower St. Johns River Basin, Ocklawaha River Basin (ORB), Middle St. Johns River Basin, and the Indian River Lagoon/Upper St. Johns River Basin. Within each strategic planning basin, the District identifies regional priorities and works with stakeholders and local government partners to identify and implement solutions that protect our natural resources and support Florida's growth by ensuring the sustainable use of Florida's water for the benefit of the people of the District and the state.

Located in Orange, Lake, Marion, Alachua, and Putnam counties, the Ocklawaha River Basin covers over 2,395 square miles and contains more than



110,000 surface acres of freshwater lakes. The ORB includes parts of the Green Swamp and the Clermont Chain of Lakes; the Upper Ocklawaha River Basin (UORB) Chain of Lakes; the Ocklawaha River; Silver Springs; the Orange Creek Basin lakes, including Paynes Prairie; the Lower Ocklawaha River; and the Rodman Reservoir. The Clermont Chain of Lakes, most of the Orange Lake Basin, Paynes Prairie, and parts of the Ocklawaha River are classified as Outstanding Florida Waters (OFWs). Silver Springs is classified as an Outstanding Florida Spring (OFS).



Executive Summary

The strategic priorities for the ORB are water quality, flood protection, and natural system restoration and management.

Projects focusing on reducing the impacts of external loading and legacy nutrients have improved the water quality in many lakes, springs, and waterways in the ORB. However, several lakes and systems remain nutrient-impaired. Additional nutrient reduction projects are being developed through a nutrient reduction feasibility study funded by the Florida Department of Environmental Protection (DEP), which is currently underway. In addition, the District will continue to reduce legacy nutrient loads in the basin through annual rough fish harvests and the operation of the Lake Apopka Marsh Flow-Way. Reducing nutrients in the basin, mainly phosphorus, decreases the potential for harmful algal blooms (HABs) and increases water column transparency, which encourages native submerged aquatic vegetation (SAV) recruitment and growth. SAV is critical for stabilizing sediments, improving water quality, and providing habitat for the sport fishery.

Flood protection is a core mission of the District and a strategic priority for the ORB. The District is responsible for flood protection and water level regulation throughout the UORB chain of lakes and the Ocklawaha River. To ensure safety, routine inspections are performed to maintain and operate these structures. Several projects addressing structure operation and maintenance are planned, including updating and refurbishing the water control structures in the basin. One such project is the redesign of the lock and dam located in the Apopka-Beauclair Canal. This project will enhance the District's ability to manage water levels and improve recreational access within the basin.

A multi-year project has also begun to assess flood protection performance in the UORB. This project



will evaluate the performance of existing water control infrastructure and identify adaptation strategies and mitigation projects to address flood risks under both current and projected future conditions.

Another strategic priority of the ORB is the continued restoration and enhancement of springs, lakes, and floodplain marshes. The ORB contains more than 50,000 acres of District-purchased, restored, and managed former muck farms. The acquisition and restoration of these floodplain marshes have resulted in phosphorus reductions throughout the basin. In addition to nutrient reductions, the marsh restoration areas provide water storage and recharge, preserve critical wetland habitat, and provide recreational opportunities.

Water quality monitoring, vegetation management, resource mapping, and projects to improve the hydrology of these areas are also ongoing. Central Florida's Lake Apopka has been a priority lake in the basin since the 1980s, when important legislative acts were passed focusing on the restoration of the state's fourth-largest lake. Several restoration projects are ongoing at Lake Apopka, and additional projects are planned for the lake and the Lake Apopka North Shore (LANS) restoration area to further improve this important natural resource.

Ocklawaha River Strategic Planning Basin

Water Quality

Priority:

- Improve the water quality of the springs, lakes, and waterways within the ORB

Objectives:

- Complete the ORB nutrient reduction feasibility study and develop projects to reduce excess phosphorus loads and legacy phosphorus throughout the ORB
- Continue monitoring at key locations throughout the ORB
- Utilize the annual Status and Trends Report to provide insights into the current conditions of water bodies in the ORB
- Continue phosphorus reduction projects to address phosphorus loading and legacy phosphorus within the ORB
- Manage wetland restoration on the District's former muck farms to reduce phosphorus loads to ORB water bodies, improve native wetland communities, and expand recreational access



Highlight:

The District has reduced phosphorus loading to the ORB through the purchase, restoration, and management of more than 50,000 acres of former muck farms, which have reduced phosphorus rich discharges to the ORB lakes and waterways. Reducing phosphorus in freshwater systems increases water-column transparency and encourages the growth of native SAV. This is critical for providing aquatic habitat and stabilizing sediments to promote healthy lakes and waterways.

Although efforts are ongoing to reduce phosphorus in the water column and sediments, projects, including the Marsh Flow-Way and the rough fish harvest at Lake Apopka, are continuing to improve water quality within the lake. Lake Apopka is the headwaters of the UORB, so improvements are also observed in downstream lakes.

Nutrient Reduction Feasibility Study

Ongoing restoration work has reduced phosphorus loading and improved water quality trends in the lakes, springs, and waterways in the ORB. However, some lakes and systems still need additional reductions. Monitoring and calculating phosphorus loading are essential to identifying point and nonpoint sources that can be investigated for further reduction.

The District initiated a basin feasibility study in fiscal year (FY) 2024–25. This feasibility study is funded by DEP and will identify potential nutrient reduction projects. This \$287,137 study is scheduled for completion in October 2026.

Ambient Monitoring

The District maintains ambient monitoring of hydrology, water quality, and biological indicators at key locations within the ORB. Ambient water



quality is monitored at fifty-one surface water and seventy-two groundwater sites in the basin. Water elevation is monitored at 139 surface water sites and 147 groundwater sites. The District also monitors twenty-four discharge sites and vegetation in certain lakes to guide and document the recovery of SAV. The monitoring has allowed the District to target phosphorus “hot spots” within the basin and implement cost-effective projects to reduce the amount of phosphorus in the lakes and, subsequently, reduce the intensity of algal blooms. Intense algal blooms prevent sunlight from reaching the lake bottom, resulting in the loss of SAV.

Status and Trends

A critical part of monitoring efforts is identifying existing challenges, changes, or trends that may emerge in the future and documenting water quality improvement, habitat restoration and enhancement, or land management projects.

The District analyzes and evaluates water quality data in the annual Status and Trends Report. For the 2025 report (Figure 1), the status assessment period was from January 1, 2020, through December 31, 2024. Stations with at least three years of data during the five-year assessment period of record were analyzed for their status.

The fifteen-year trend assessment period was from January 1, 2010, through December 31, 2024. At least ten years of data were required from the fifteen-year period of record to calculate a trend.

Nutrient Management Through Rough Fish Harvesting and the Marsh Flow-Way

One effort to remove legacy phosphorus from the lakes has focused on harvesting rough fish, typically gizzard shad, a native fish that thrives in nutrient-rich waters. The District initiated this program in Lake Apopka in 1993 and expanded it over the years to include lakes Denham, Dora, Griffin, Newnans, and George. However, the 2026 ORB rough fish harvest will include only Lake Apopka. Through 2025, over 33 million pounds of fish have been removed from Lake Apopka, eliminating 272,690 pounds of phosphorus.

Another ongoing phosphorus removal project on Lake Apopka is the Marsh Flow-Way. This 760-acre marsh operates as a recirculating treatment system, which annually filters approximately 30 percent of the lake’s volume by removing algae, suspended solids, and the associated phosphorus from the water before returning it to the lake. Since operation began in 2003, the Marsh Flow-Way has removed over 70,000 tons of suspended solids and

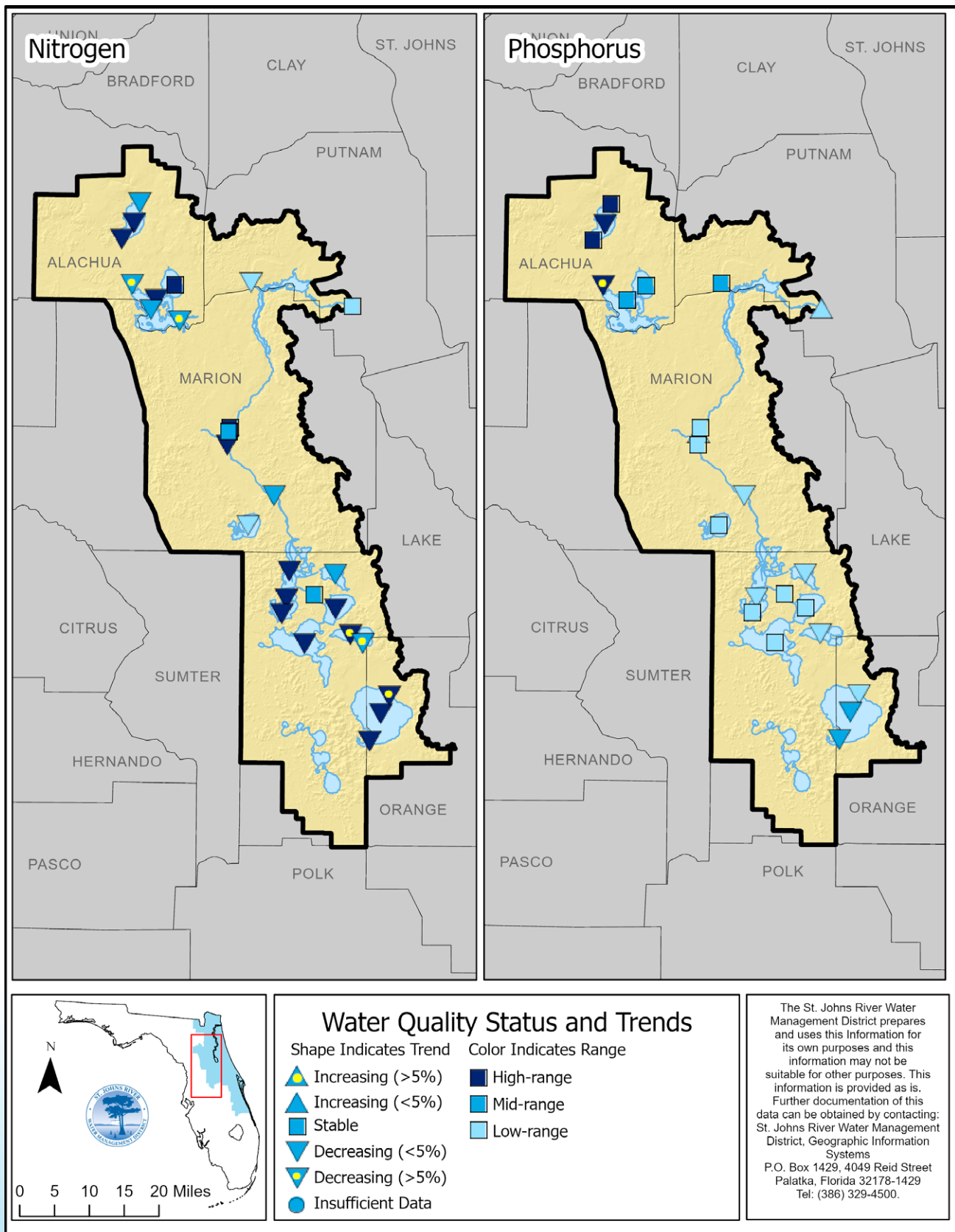


Figure 1. Water quality status and trends in the ORB.

36 tons of phosphorus. For FY 2026–27, \$300,000 has been budgeted for maintenance of Marsh Flow-Way cells on the LANS.

The acquisition of former muck farms and restoration of wetlands on these areas, fish harvesting, and Marsh Flow-Way operation have resulted in significant improvements in water quality. Current conditions (2020–25) compared to 1980–1990s show a 66 percent reduction in phosphorus, a 64 percent reduction in chlorophyll-a (algae), and a 54 percent increase in water clarity. In 2022, the annual mean phosphorus concentration was lower than the total maximum daily load (TMDL) target concentration (0.055 milligrams of phosphorus per liter [mg P/L]) for the first time.

Floodplain Wetland Restoration and Nutrient Discharge Reduction

Major reductions in phosphorus loading to the ORB have occurred following the purchase, restoration, and management of over 50,000 acres of floodplain wetlands. State and federal funding were used to purchase the former muck farms along the LANS. The ongoing management and nutrient reduction methods on these properties are improving water

quality throughout the basin. The largest reduction in phosphorus loading is associated with storing water in the recovering wetlands and reducing the pumping of phosphorus-rich water to the adjacent lakes.

Additional nutrient loading to Lake Apopka and the Apopka-Beauclair Canal will be eliminated by redirecting tributary discharges into the LANS. Two such projects are the McDonald Canal Improvement Project and the Sand Farm Improvement Projects. Each of these projects will route water from adjacent farms and developments away from Lake Apopka and onto the LANS, where phosphorus loads can be reduced. These two projects began in FY 2025–26, use approximately \$700,000 of legislative funding, and are expected to be completed in fall 2026.

To meet the TMDL for Lake Apopka, water discharged from the LANS can be treated with aluminum sulfate (alum), which binds phosphorus and makes it unavailable for algal growth when the water enters Lake Apopka. Annual ad valorem funding of \$175,000 is allocated toward this ongoing project.



Ocklawaha River Strategic Planning Basin Water Management and Flood Protection

Priority:

- Enhance water management, flood protection, and resilience in the ORB

Objectives:

- Refurbish and operate flood protection structures and navigational infrastructure in the ORB
- Conduct a flood protection level-of-service assessment and develop adaptation strategies and mitigation projects to enhance flood resilience in the UORB

Highlight:

The District is responsible for providing flood protection and water regulation throughout the UORB Chain of Lakes and the 74-mile-long Ocklawaha River. The District manages and operates four major water control structures, three navigation locks, and miles of levees in the UORB. Water level regulation and flood protection occur at the Lake Apopka Dam, Burrell Dam, Moss Bluff Dam, and a bypass structure at Lake Harris Bayou. The Rodman Reservoir Dam is operated by DEP.

Navigation is provided through Lake Apopka Lock, Burrell Lock, Moss Bluff Lock, and the Buckman Lock, operated by DEP. These structures, most built in the 1950s and 1960s, are operated daily. All structures are regularly inspected and maintained. Full refurbishment began on the Burrell Lock in FY 2024–25. Construction of the Apopka and Moss Bluff locks is currently planned to commence in FY 2027–28.

While regular preventive maintenance and repairs have been done over the years, some of these lock and dam structures have not been completely refurbished since their original construction over sixty years ago. This refurbishment will improve operations for flood protection and navigation.

C-231 Canal Levee Repair

The C-231 Canal levee was constructed in the early 1970s by the U.S. Army Corps of Engineers (USACE), primarily for flood protection and regulation of water elevations in upstream lakes and streams. The levee provides protection to 5.8 square-miles of public and private lands, including residential areas. Recent inspections of the levee revealed areas of seepage, which are under repair to improve the long-term stability and maintenance of the levee. The estimated total project cost is





\$1.3 million and is funded by ad valorem and legislative funds. The project is expected to be completed by September 2026.

Lock and Dam Refurbishment

While regular preventive maintenance and repairs have been conducted, some structures have not been fully refurbished since their original construction. These structures are approaching their end-of-life cycle and require rehabilitation (Moss Bluff Lock and Burrell Dam) or replacement and expansion (Apopka Lock and Dam).

The Apopka Lock, built in 1957, has experienced increasing demand as Lake Apopka has grown in popularity among recreational and professional anglers. Fishing tournaments are now regularly held, and the existing lock can accommodate only three average-sized boats per lockage. This limited capacity has resulted in longer wait times during peak periods and more frequent lock cycling. The goal of the lock redesign is to triple the lock capacity, reduce wait times, and improve user access.

The Apopka Dam, also built in 1957, is a key component of the District's flood protection system. Maintaining the dam's future reliability

is critical to the District's core mission of flood protection. Planned improvements include structural rehabilitation, gate modifications, and system upgrades to ensure the long-term integrity of the structure. In addition, the District is evaluating alternatives to increase flood protection conveyance capacity and improve flood protection for properties surrounding Lake Apopka before, during, and after major storm events. The estimated cost of the combined Apopka Lock and Dam redesign and replacement is \$24 million, with the completion anticipated in spring 2030 using ad valorem funding.

The Burrell Dam, built in 1967, serves as the primary outlet for the southern half of the UORB and is classified as a high-hazard potential dam. Maintaining its structural integrity is essential to the District's core mission of flood protection. Planned rehabilitation efforts includes electrical system upgrades, gate rehabilitation, and structural repairs to ensure the long-term reliability of this structure. Construction began in February 2026 and is expected to be completed in September 2026 at a cost of \$5.3 million using ad valorem funding.



The Moss Bluff Lock, built in 1960, is the most downstream lock managed by the District and provides important navigational access to the northern (downstream) section of the upper Ocklawaha River, including Rodman Reservoir. The lock was last renovated more than twenty years ago, and additional rehabilitation is needed for continued reliable navigational access through the structure. Expected completion is fall 2028 at an

estimated cost of \$10.5 million using ad valorem funding.

Flood Protection Level-of-Service Assessment

A multi-year flood protection level-of-service assessment is underway for the UORB to evaluate flood protection system performance under both current and projected future conditions. The assessment will evaluate how effectively existing flood control infrastructure performs during significant storm events, such as 10-, 25-, and 100-year storm events. Hydrologic and hydraulic modeling will be used to simulate flows, water levels, and flood inundation along the river mainstem and tributaries, including impacts to major roadways. The results will identify where improvements to the existing flood protection system are needed and recommend practical adaptation strategies and mitigation projects to ensure resilient and effective flood protection throughout the UORB.

The project is funded by a \$1.5 million grant from DEP's Resilient Florida Program. The project began in December 2025 and is scheduled for completion by January 2029.



Ocklawaha River Strategic Planning Basin

Natural Systems Restoration and Management

Priority:

- Restore and enhance springs, lakes, and floodplain marshes in the ORB

Objectives:

- Continue land acquisition efforts and monitoring of ongoing wetland restoration projects to facilitate floodplain restoration in the ORB
- Continue Lake Apopka restoration efforts, including SAV planting and invasive and nuisance species management

Highlight:

Historical alterations to the lakes and tributaries of the ORB are well-documented and present challenges to restoration efforts within the basin. The conversion of the floodplain marshes to muck farms diminished the flood protection role the marshes provided. This conversion also contributed to water quality degradation within the basin in the form of phosphorus loading. Water control structures constructed within the basin have altered the natural water level fluctuations, suppressed spring flows in some cases, and limited the movement and distribution of animal and plant species. In order to provide flood protection and navigation, the range of water level management is now limited. The District follows a regulation schedule that mimics the natural seasonal fluctuation as best as possible while still maintaining flood protection.

Future work includes improving the hydrology of these wetland systems and managing invasive and nuisance plants and animals. Additional monitoring and vegetation mapping of basin springs, spring runs, lakes, rivers, and wetlands are also needed to

evaluate the benefits of restoration projects and provide an assessment of the health of the aquatic habitats in the ORB.

Ongoing Restoration and Monitoring Projects

Sunnyhill Hydrologic Improvement Project

This restoration project is intended to restore the hydrology of the former floodplain marsh and improve wetland habitat. The project will result in a greater diversity of wetland habitats and increase public access opportunities. The project scope and cost are currently being developed.

Springs Discharge Monitoring

The District monitors the discharge of specific spring vents to assess overall spring health. Monitoring spring flow is essential for tracking changes in groundwater discharge that can be affected by rainfall, recharge, consumptive use, and geologic formations. The current Districtwide contract includes flow measurements at Lake Apopka Gourdneck Spring and Silver Springs. This work is ongoing and funded by ad valorem taxes.





LANS Environmental Restoration and Infrastructure Improvements

LANS Infrastructure Maintenance and Improvements

The Bureau of Operations and Maintenance provides annual maintenance on levees and infrastructure throughout the LANS. In FY 2025–26, approximately \$300,000 in Lake Apopka Legislative Funding (LALF) will be used for the stabilization of the Loop Trail. The Loop Trail crosses the LANS along the levee between the lake and the north shore and connects to trail networks in Lake and Orange counties. An additional estimated \$300,000 of LALF will be used to process concrete rubble to stabilize slopes on the north shore of Lake Apopka. A contractor has been secured, and this work is ongoing.

LANS and Lake Apopka Wetland Vegetation Mapping

This is a recurring project to monitor vegetation changes and use these data to adjust management

decisions, such as hydrologic changes, prescribed fire, and plantings. The most recent maps, created in 2021, are scheduled to be updated in 2027 and will be updated on a five-year rotation. The work is funded by ad valorem taxes.

LANS Habitat Restoration

This work focuses on habitat restoration plantings throughout the LANS to restore native vegetation across various habitats. Funding is provided by the Land Acquisition Trust Fund (LATF), which provides legislative funds to the District through DEP for land management activities. The LANS's recovering wetlands provide abundant wildlife viewing opportunities, making it the District's most visited property. For FY 2026–27, \$40,000 is budgeted for upland restoration work within the LANS.

Lake Apopka Restoration

Lake Apopka has been a priority restoration project since the mid-1980s. Several pieces of important legislation were passed in 1985 and 1996 that assigned restoration responsibility to the District. Lake Apopka has shown significant improvement;

however, restoration is not complete, and multiple projects are underway and planned over the next several years to achieve additional water quality improvements and restore habitat within the lake and the LANS.

Newton Park Dredging Design

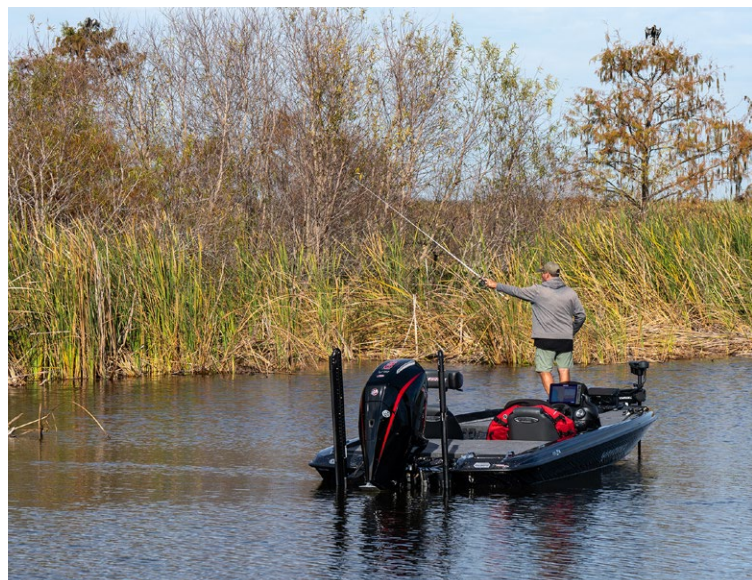
The District is providing up to \$200,000 in cost-share funds to the City of Winter Garden to complete the design of the Newton Park boat channel dredging project. The City of Winter Garden is providing \$100,000. Once constructed, the muck sediment will be dredged and placed in the LANS, where the material will assist with ongoing restoration efforts. This work will improve boat access during low-water periods while removing phosphorus-rich sediments. The design is complete, and permit issuance is expected in fall 2026. Friends of Lake Apopka and Winter Garden will pursue construction funding, and if secured, the project could be completed in fall 2028.

SAV Planting and Recovery

The UORB's improving water quality has driven the ongoing recovery of SAV in the lakes. Lake Apopka, once devoid of SAV, now has native SAV growing around its entire perimeter and into some deeper areas of the lake. With improved water quality, SAV planting efforts have been successful. The return of SAV has restored critical sport fish habitat and has attracted numerous fishing tournaments, including the Bassmaster Elite Series. Plantings generally occur each spring and summer and have been funded through District, legislative, and Florida Fish and Wildlife Conservation Commission (FWC) funds. Planting for FY 2025–26 will include 56 acres of SAV and 16 acres of emergent floating vegetation at an estimated total cost of \$1.1 million.

Lake Apopka Submerged Aquatic Habitat Plant Monitoring

The goal of this project is to annually monitor and assess planted submerged aquatic habitat in Lake Apopka for establishment, expansion, reproduction, and health. Phase I, the initial monitoring phase, has been completed. Phase II of the project will include additional monitoring and



genetic mapping to help direct future plantings. The future budgeted amount is \$120,000 using funds from the LATF with an expected completion date in fall 2028.

Invasive and Nuisance Management

The management of nuisance and invasive plants poses a significant challenge to restoring and enhancing lakes and marshes throughout the basin. The invasive plant hydrilla can rapidly grow, creating numerous problems, including reducing water flow through UORB structures and canals, impairing boat navigation, harming native SAV,

and lowering oxygen levels that threaten sport fish. Dislodged hydrilla mats can also create blockages in canals and at structures.

Blockages are particularly problematic for lakes like Lake Apopka, which has only one canal and water control structure to discharge floodwaters. For these reasons, the District and FWC are collaborating to maintain hydrilla at low areal coverage, ensuring that native species provide critical SAV habitat.

Land Resources staff routinely perform management work in the ORB's floodplain restoration marshes and canals to manage invasive plants, encourage the growth of native vegetation, and maintain the hydraulic capacity of canals. Plants targeted for management include hydrilla and Cuban bulrush, along with many other floating, emergent, and invasive or nuisance species.

LATF and Land Management Revenue Fund resources are typically used for invasive and nuisance species management. In FY 2024–25, nearly \$650,000 was expended on invasive plant management in the ORB. Similar annual expenditures are expected for FY 2025–26 and FY 2026–27.

Wetland Mapping

To ensure that the restored wetland plant communities on District properties are healthy and meet the criteria associated with permits for project construction, detailed wetland mapping is conducted. This is currently done via satellite imagery, with community identification performed using machine learning and verified through field observations. In addition, the abundance of SAV is monitored in the lakes in collaboration with FWC. SAV is also monitored in the Silver River to assess the health of vegetation in this OFS.

Since 2000, District staff have periodically mapped wetland vegetation on District-owned lands in the UORB and monitored the effects of management decisions. The maps depict many different land covers, including shallow marsh, emergent marsh, and areas of aquatic beds that are visible on aerial or satellite images. Submerged aquatic beds that are not visible are not mapped; therefore, these maps provide a very conservative estimate of the spatial extent of the aquatic beds. Recent work has included assisting FWC with mapping using boats equipped with specialized sonar units. This work is ongoing and funded by ad valorem funds.



Basin Overview

Physiography of Basin

To focus its resources and efforts more effectively and efficiently, the District is divided into four strategic planning basins: Lower St. Johns River Basin, ORB, Middle St. Johns River Basin, and the Indian River Lagoon/Upper St. Johns River Basin (Figure 2). Located in Orange, Lake, Marion, Alachua, and Putnam counties, the ORB covers over 2,395 square miles and contains more than 110,000 surface acres of freshwater lakes.

The headwaters for the ORB originate in two areas: the Clermont Chain of Lakes and Lake Apopka. Figure 3 shows the major tributaries of the ORB. The Clermont Chain begins in the Green Swamp, where water flow is split, with the eastern portion draining into Lake Louisa, the first lake in the chain. Water leaving Lake Louisa forms the start of the Palatlakaha River. The 44-mile-long Palatlakaha River flows north through six water control structures managed by the Lake County Water Authority and ten lakes into the western lobe of Lake Harris. The northern 26-mile section of the river is called the Palatlakaha Run. The Palatlakaha River and its lakes are known for their very dark, tea-colored, tannic water.

The entire Clermont Chain of Lakes includes eleven named lakes (Minneola, Minnehaha, Winona, Louisa, Palatlakaha, Hiawatha, Wilson, Susan, Crescent, Cook, and Cherry) with a total surface-water acreage of 8,960 acres. The Clermont Chain is listed as an OFW, resulting in additional protections under state statute.

The second headwater area begins with Lake Apopka, located in the southeast corner of the basin. Lake Apopka has a relatively small watershed and receives drainage from Johns Lake and several minor tributaries originating in the Winter Garden and Ocoee areas. Lake Apopka also receives discharge from a second-magnitude spring, Gourdneck Spring, which flows an average of

20–30 cubic feet per second from the Floridan aquifer into the southwest corner of the lake. Several minor springs are located in Lake Apopka and the adjacent marshes, including Teacup Springs and Wolf Head Springs.

Lake Apopka is the largest lake by surface area within the Ocklawaha Chain and is the fourth-largest lake in the state at 30,800 acres. Lake Apopka historically discharged either through the Double Run Swamp into Little Lake Harris or north through wetlands into Lake Beauclair. The Apopka-Beauclair Canal was dug in 1893, connecting Lake Apopka with Lake Beauclair. After construction of the canal, the water level in Lake Apopka dropped by several feet, exposing the 20,210 acres of floodplain marshes on the LANS. Subsequently, this area was isolated from the lake by a levee



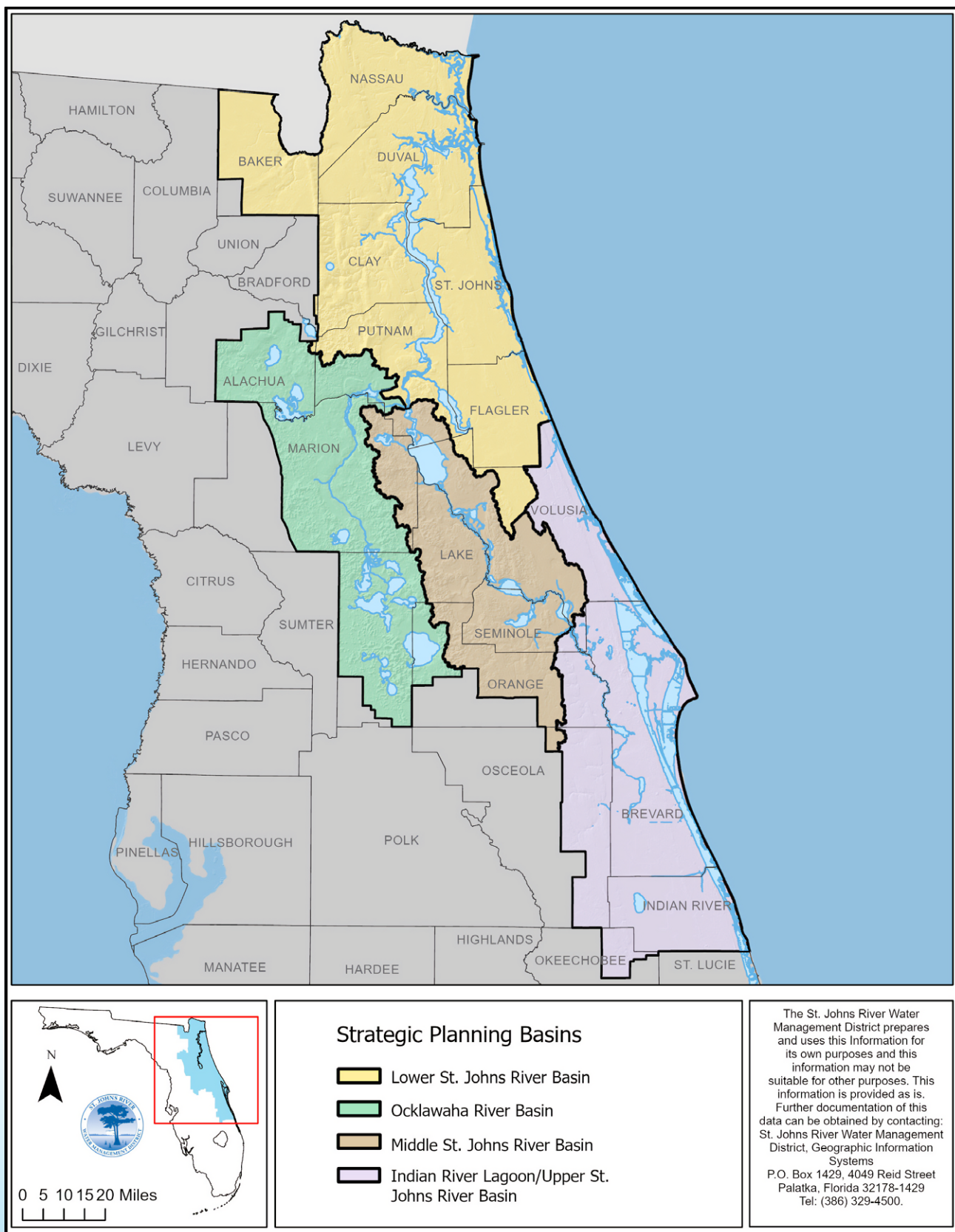


Figure 2. Strategic Planning Basins of the St. Johns River Water Management District

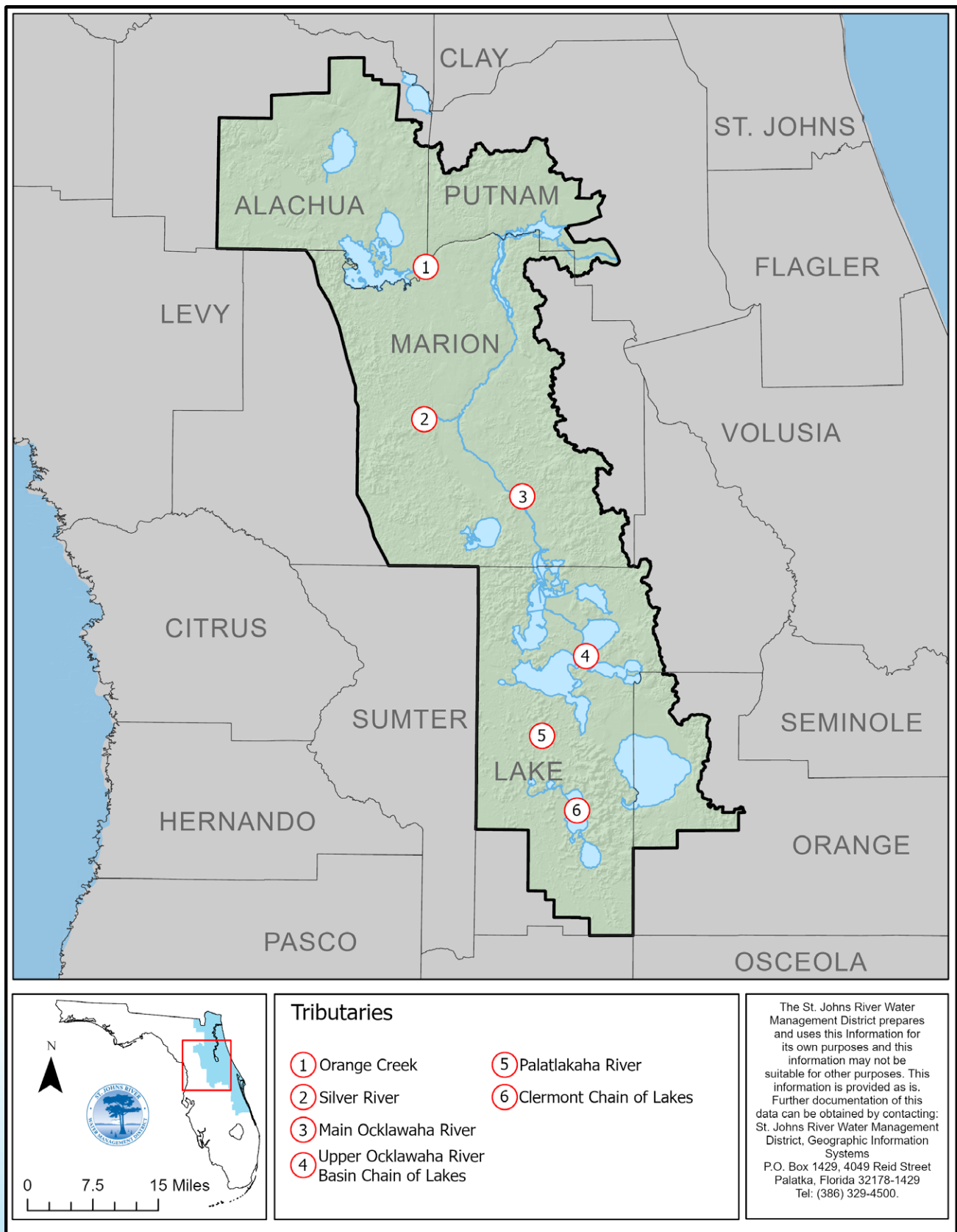


Figure 3. Major tributaries of the ORB.



in the 1940s, mined for peat, and farmed until it was taken out of production in the late 1990s. A permanent lock and dam was constructed midway within the 6-mile Apopka-Beauclair Canal in 1956 to regulate the water levels in Lake Apopka and provide navigation access.

Lake Beauclair is the next lake downstream on the Ocklawaha Chain. The lake receives most of its water from Lake Apopka but also receives drainage from lakes Carlton, Ola, Horseshoe, Victoria, and Jem. Lake Beauclair drains into Lake Dora. Lake Dora contains three lobes, with the western lobe draining the aforementioned lakes through the Dora Canal.

The Dora Canal drains into Lake Eustis. Pine Meadows, a 770 acre former muck farm, also drains into Lake Eustis through the Hicks Ditch and Trout Lake. The District purchased Pine Meadows and restored the wetlands to reduce phosphorus runoff, then transferred ownership to Lake County in 2014. Situated to the southwest, Lake Harris drains into Lake Eustis through the 1.7-mile-long Dead River. Lake Harris receives flow from the Palatlakaha River and the 2.9-mile-long Helena Run, which drains Lake Denham and Bugg Spring. Lake Harris also receives flow from Little Lake Harris, which receives

flow from Double Run Spring. Several additional minor springs flow into Lake Harris along the south shoreline.

Lake Eustis drains north and west through the 5.9-mile-long Haines Creek into Lake Griffin, the last lake in the UORB. Haines Creek contains the second lock and dam of the UORB, the Burrell Lock and Dam, which was built in 1957. Lake Griffin has several small tributaries along the southwest side of the lake and is connected to the 6,578-acre Emerald Marsh Conservation Area, another former muck farm that was acquired, restored, and is managed by the District.

Situated between Lake Harris and Lake Griffin is the Lake Harris Conservation Area (LHCA). The LHCA is a 517-acre former muck farm that has been restored to wetlands and includes a spillway used as an additional flood conveyance between lakes Harris and Griffin. Lake Griffin also receives drainage from Lake Yale via the Yale-Griffin Canal, which is no longer navigable. The total surface-water acreage of the entire Ocklawaha Chain of Lakes is approximately 75,000 acres and contains eight major lakes. The Ocklawaha River starts at the north end of Lake Griffin, flowing downstream for 12 miles to the Moss Bluff Lock and Dam. The Moss

Bluff Lock and Dam was originally built in 1925 but was rebuilt and enlarged to its current size in 1960.

The channelized Ocklawaha River (C-231) flows past two former muck farms acquired and managed by the District, the Sunnyhill Restoration Area and the Ocklawaha Prairie Restoration Area. The Ocklawaha River, downstream of the Moss Bluff structure, is designated as an OFW. The Silver River meets the Ocklawaha River downstream of the Ocklawaha Prairie Restoration Area, 13 miles north of the Moss Bluff Dam.

The Silver River's flow is the result of many springs that make up the first-magnitude Silver Springs group. The main spring boil area of Silver Springs is rich with history as an early tourist destination. From this source, the Silver River flows five miles to meet the Ocklawaha River. The main Silver Springs vent is called Mammoth vent, but dozens of separate vents contribute to the river's flow. At the confluence with the Ocklawaha River, the Silver River more than doubles the flow of the Ocklawaha River. The Ocklawaha River continues north and then enters the Rodman Reservoir, a remnant of the Cross Florida Barge Canal Project, which was abandoned in 1971, with the area now managed by DEP.

Orange Creek also flows into the Rodman Reservoir area and drains the Orange Creek Basin. The Orange Creek Basin is the fourth subbasin for the ORB and includes three main lakes: Newnans, Lochloosa, and Orange lakes totaling 25,461 surface acres.

Newnans Lake, which forms the headwaters of the Orange Creek Basin, is considered one of the most impaired lakes in the state based on elevated phosphorus concentrations. Prairie Creek flows out of Newnans Lake and is captured by the Camps Canal and routed to Orange Lake. Prairie Creek's historical drainage into Paynes Prairie Preserve State Park is regulated by a DEP water control structure, which routes some water to Paynes Prairie, with the remainder continuing to Orange Lake via the Camps Canal. The 20,000-acre Paynes Prairie also contains the Alachua Sink, a geologic feature that recharges the Floridan aquifer.

Lochloosa Lake and its large watershed drain through historic Cross Creek into Orange Lake. Cross Creek is a historic stream and area made famous by novels written by Marjorie Kinnan Rawlings. The Rawlings homestead remains and is now a historic state park. Orange Lake, like Paynes Prairie, has sinkholes that recharge the Floridan



aquifer and contribute to discharge at Silver Springs. Lochloosa Lake, Orange Lake, and Paynes Prairie are designated as an OFW.

As a result of modifications to its drainage and multiple sinkholes, Orange Lake's water levels fluctuate. These fluctuating water levels, large floodplain areas, and hydrilla create vegetation management challenges on the lake. Orange Lake's water levels are regulated by a weir at the Orange Creek discharge, and flow toward the District's Orange Creek Restoration Area, another former muck farm restored to wetlands. Orange Creek continues past Orange Springs (privately owned) where it flows an additional 20 miles into the Rodman Reservoir. ORB restoration areas are shown in Figure 4.

Rodman Reservoir drains through the Rodman Dam, which was constructed as part of the Cross Florida Barge Canal built in 1968, creating the Rodman Reservoir. The Ocklawaha River is designed to flow through the Rodman Dam's gates and into the St. Johns River near Welaka. Under normal operating conditions, boat traffic moves east, down the Cross Florida Barge Canal, and through the Buckman Lock to the St. Johns River. Rodman Dam and Buckman Lock are managed by DEP's Office of Greenways and Trails.

Major Springs of the Basin

One of the state's most iconic OFS, Silver Springs is a first-magnitude spring complex that forms the headwaters of the Silver River. The spring is composed of dozens of large and small vents at the river's headwaters. There are also smaller springs within the ORB in addition to Silver Springs.

Lake Harris has several third-magnitude springs in or near the lake (KES 2017, SJ2017-FS2). Lake Apopka contains the Gourdneck Spring, a second-magnitude spring, as well as other third-magnitude springs. Orange Spring flows through Orange Creek, which flows into the Rodman Reservoir. In addition, there are several third-magnitude springs within the Rodman Reservoir. These springs are suppressed when the reservoir levels are high but flow during a drawdown (KES 2017, SJ2017-FS2). Figure 5 shows the locations and magnitudes of the major springs in the ORB.

The basin also includes Bugg Spring, a very deep and uniquely shaped second-magnitude spring located near Okahumpka in Lake County. Bugg Spring and the surrounding property were purchased by the United States Navy and are used for sonic array testing and calibration. The spring flow and surrounding land use are critical to testing at the spring.



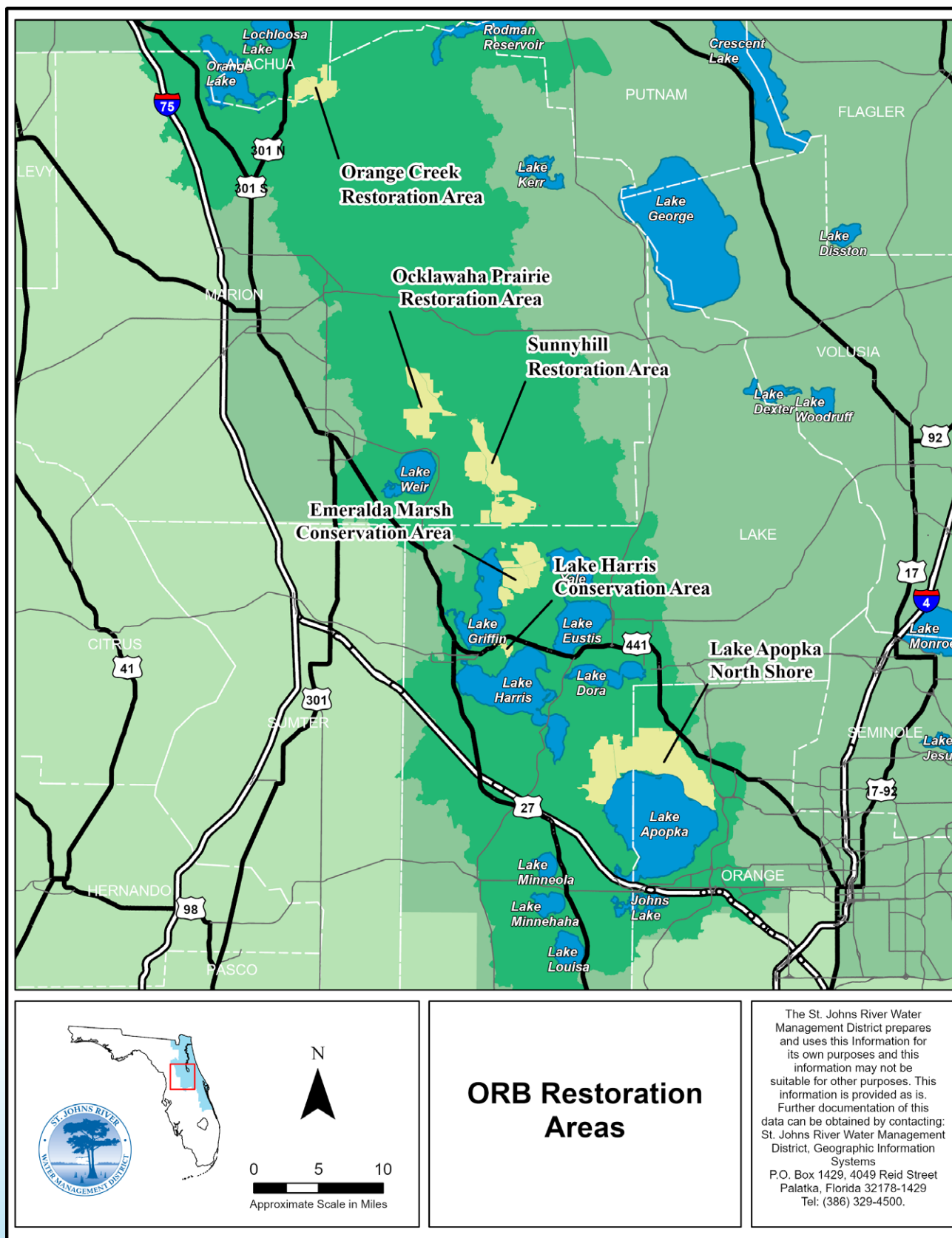


Figure 4. ORB restoration areas

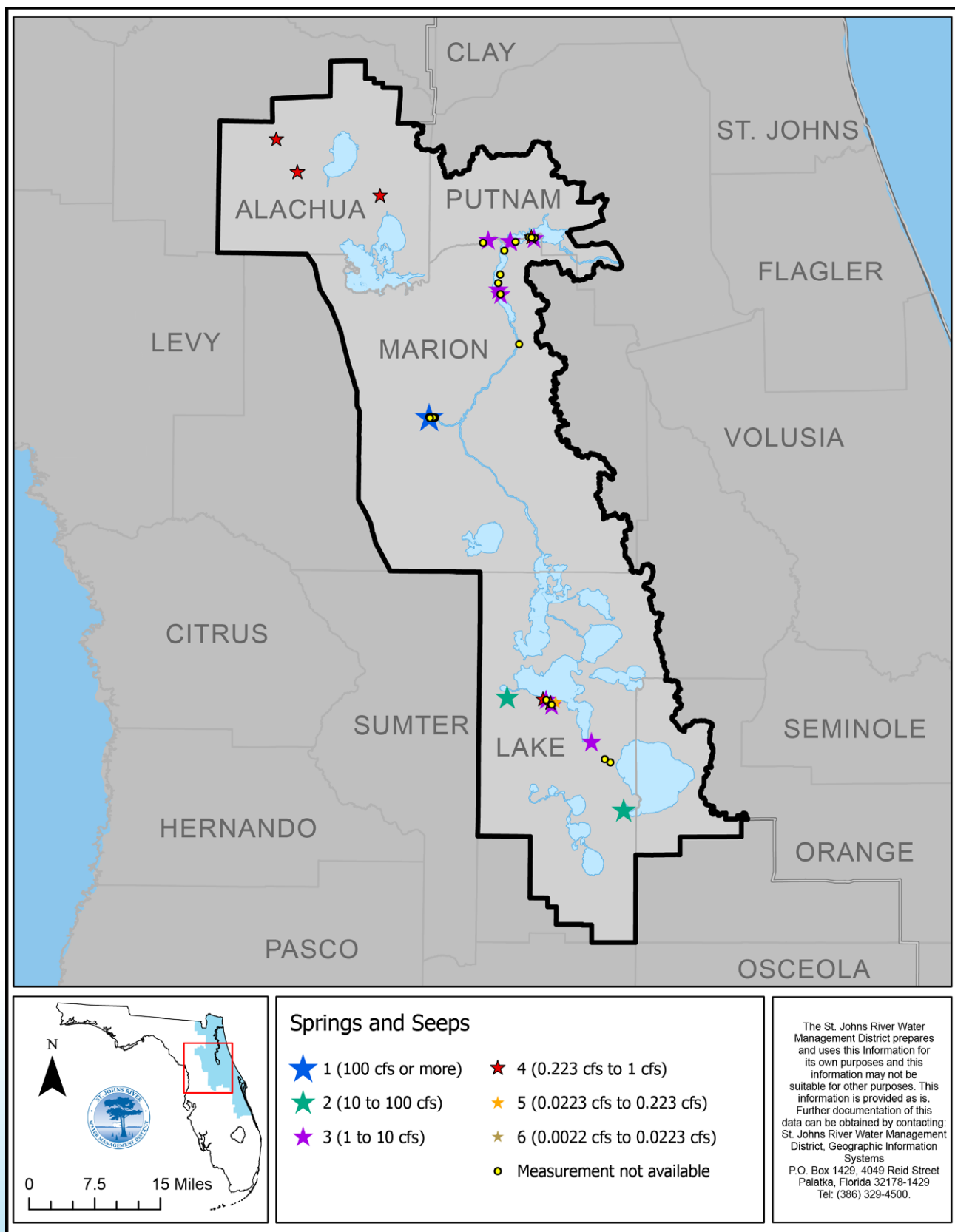


Figure 5. Springs and seeps in the ORB.

Water Quality

Monitoring provides a wealth of information that enables the District to make resource decisions based on accurate and timely information and documents the condition of the ORB lakes and waterways. These efforts are closely coordinated with many partners, including DEP's TMDL and BMAP programs.

DEP assesses all the major watersheds, or basins, in Florida every two years. Water bodies that have been assessed and do not meet the standards set for them are determined to be impaired. The [2022–2024 Biennial Assessment](#) was adopted on August 16, 2024.

DEP identified over twenty water bodies in the ORB that were impaired and did not meet their designated uses. TMDLs were adopted for these water bodies, including eighteen lakes, one river (Palatlakaha River), and one spring (Silver Springs). TMDLs are developed for water bodies verified as not meeting their water quality standards. [TMDL documents](#) are available on DEP's website.

BMAPs contain a comprehensive set of solutions designed to achieve nutrient reductions established by a TMDL. BMAPs have been adopted for the Palatlakaha River, Silver Springs, and many of the lakes in the UORB. BMAP documents are available at [Basin Management Action Plans \(BMAPs\) | Florida Department of Environmental Protection](#).

Current Status and Trends, District Reporting

Water quality and trends are evaluated through the District's Status and Trends Report. The status assessment period was from January 1, 2020, through December 31, 2024. Stations with at least three years of data during the five-year assessment period of record were analyzed for their status.

The fifteen-year trend assessment period was from January 1, 2010, through December 31, 2024. At least ten years of data were required from the fifteen-year period of record to calculate a trend.

The report provides insights into the condition and health of the water bodies in the ORB. Table 1 shows the phosphorus and nitrogen status concentrations within the basin water bodies.



Long-term phosphorus analysis based on loading to each lake in the Ocklawaha Chain of Lakes and output through Moss Bluff during 1991–2022 indicates that more than 80 percent of the incoming load was retained in the lakes. Annual phosphorus inputs to the lakes declined from about 220,000 pounds per year in the 1990s to about 110,000 pounds per year since 2009, representing approximately a 50 percent load reduction to the lakes.

The District’s acquisition, restoration, and management of wetlands on former muck farms has been a major contributor to these water quality and habitat improvements. Annual average phosphorus output from Moss Bluff declined from about 32,400 pounds per year in the 1990s to about 13,000 pounds per year in the most recent ten years, representing approximately a 60 percent reduction (Figure 6).

HAB Assessments

The ORB receives nutrient loading from many sources within its boundaries. This has led to HABs, which block light from reaching the lake bottom and reduces the abundance of native SAV. The large, shallow lakes within the basin have regularly supported HABs, leading to health concerns when algal toxins are present. In the UORB lakes, blooms have been documented in most lakes sampled; however, toxin concentrations often remain low and below the World Health Organization guidelines. The District’s focus has been on reducing the frequency, duration, and intensity of HABs to increase light availability and support the recolonization of native SAV.

District-sponsored projects, as well as local government initiatives, will continue to target not only nutrient loading but also the reduction of legacy loads in these water bodies. The feasibility study currently underway in the ORB will build upon these data.



Phosphorus and Nitrogen Status and Trends for Lakes in the ORB

Lake	Phosphorus Status	Phosphorus Trend	Nitrogen Status	Nitrogen Trend
Apopka	Medium	Decline	High	Decline
Beauclair	Medium	Decline	Medium	Decline
Dora	Low	Decline	High	Decline
Eustis	Low	Stable	High	Decline
Griffin	Low	Decline	High	Decline
Harris	Low	Stable	High	Decline
Lochloosa	Medium	Stable	High	Stable
Newnans	High	Decline	High	Decline
Orange	Medium	Decline	Medium	Decline
Weir	Low	Stable	Low	Decline
Yale	Low	Decline	Medium	Decline

Based on the 2025 Status and Trends Report, all of the major water bodies in the UORB showed decreasing or stable nitrogen and phosphorus trends.

Table 1. Phosphorus and Nitrogen Status and Trends for Lakes in the ORB

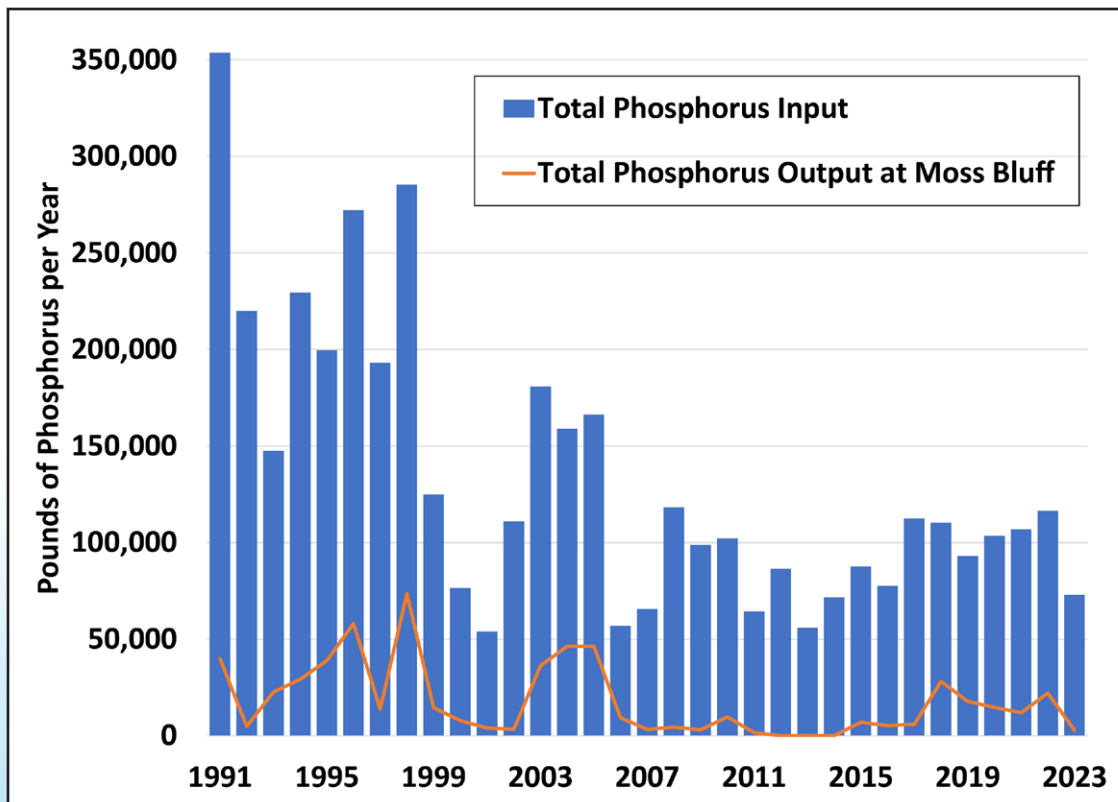


Figure 6. Annual total phosphorus loading to the major lakes in the Upper Ocklawaha River and annual output at Moss Bluff.

Natural Systems

Wetland Community Mapping

The District has periodically mapped wetland plant communities on District lands in the UORB since 2000. These efforts document the restoration of floodplain wetlands on the 50,000 acres of acquired former muck farms and facilitate management decisions regarding hydrology, prescribed fire, and invasive species management, while also serving as an indicator of water quality trends resulting from nutrient reduction projects.

More recently, the District has developed new, faster methods to automate the wetland plant community mapping process using satellite imagery and machine learning. The LANS was mapped using this technique in 2021, with plans for remapping in 2027. Wetlands at Emerald Marsh Conservation Area, Ocklawaha Prairie Restoration Area, and Sunnyhill Restoration Area are also scheduled to be remapped using this technique in 2027.

Freshwater Emergent and SAV Restoration Work

Lake Apopka was originally characterized by clear water and dense SAV, consisting of mostly pondweed and eelgrass. In the 1940s, continued high nutrient loading and algal blooms resulted in the total loss of the SAV. Following legislative direction in 1996, the District purchased farms on the north shore of the lake and restored wetlands in the area, reducing the high phosphorus loading to the lake. Improved water quality in Lake Apopka allowed native SAV to begin to naturally repopulate the lake, and the District's planting efforts have accelerated SAV recovery.

Several hundred acres of emergent plants and native lilies have been planted in Lake Apopka since the early 1990s. A primary goal of restoring Lake Apopka is to establish dense, expansive native SAV beds that will stabilize sediments, improve water quality and clarity, and provide habitat for



fish, turtles, and small benthic organisms that are critical to the food chain. Improved water quality, increased light penetration, and extensive SAV plantings have supported the expansion of native SAV into deeper areas of the lake in recent years. The LANS is a 20,000-acre property that was acquired over more than a decade to help reduce phosphorus loading to Lake Apopka. Wetland plantings include native emergent and submersed plants, as well as thousands of wetland trees. Invasive and nuisance vegetation management is conducted through a combination of mechanical, biocontrol, prescribed fire, and chemical treatments. District staff and local native plant society volunteers have also planted upland areas with rare and rescued plants.

The Emerald Marsh Conservation Area (EMCA) was once part of a large expanse of sawgrass marsh along the eastern shore of Lake Griffin. The natural marsh was diked and drained by large pump stations and farmed for several decades. In the early 1990s, the District began purchasing these farms to improve the water quality in Lake Griffin and established seven different areas of the EMCA, corresponding to the former farm sections. Pumping of phosphorus-rich water from EMCA ceased, and water was retained inside the seven areas, resulting in rapid improvements in Lake Griffin's water quality.

As legacy phosphorus levels declined, the property areas were reconnected directly or indirectly to Lake Griffin. Many reconnection projects were co-funded and coordinated with the FWC to provide recreational boat access to EMCA. The application of aluminum sulfate (alum) and the establishment of emergent vegetation and SAV have addressed many of the legacy phosphorus issues. The addition of alum binds phosphorus to the sediments, preventing its release into the water column, where it would make its way to Lake Griffin and downstream water bodies. More than 75 percent of the property has been reconnected to Lake Griffin; only Area 5 remains closed.

The Ocklawaha Prairie Restoration Area (OPRA) was historically part of the river channel and floodplain



for the Ocklawaha River. In the 1920s, the river was diverted into a canal, and the floodplain was diked and drained for farming. The new canal was improved by the USACE and named the C-231 Canal following construction of the Moss Bluff Lock and Dam in 1925. The C-231 Canal is now considered the Ocklawaha River proper.

OPRA, located downstream of the Moss Bluff Lock and Dam, was farmed from the 1940s until its purchase by the District in the 1990s. While there are no plans to restore the river's historic channel and floodplain to its original condition, the goal is to reduce phosphorus runoff and create a more natural hydrologic regime by allowing water to flow through the floodplain during times of high water in the adjacent Ocklawaha River. Many efforts have been made to reduce invasive species using chemical and mechanical treatments, as well as prescribed fire.

The Sunnyhill Restoration Area (SRA) was also part of the historical Ocklawaha River and floodplain. SRA shares similar restoration goals with OPRA:

reducing phosphorus runoff and restoring natural hydrology. However, lower elevations in the southern end of the property, caused by soil subsidence, result in water pooling in the southern fields and limited drainage except during high-water conditions.

The Ocklawaha River from the Moss Bluff Dam to Eureka and Silver River has been studied extensively, including minimum flows and levels (MFLs) for Silver Springs and Silver River and the Collaborative Research Initiative on Sustainability and Protection of Springs (CRISPS) Study (2017).

Silver Springs and Silver River were mapped as part of the CRISPS Study. SAV distribution in springs and spring runs varies over time due to factors such as flow rates, changes in channel morphology, or debris that can affect flow, water depth and color, grazing pressure, algal smothering, and other factors.



The Orange Creek Basin consists of a variety of aquatic habitats, including SAV, shallow marsh, floating islands, cypress swamps, and hardwood swamp. However, there is limited documentation of SAV in this subbasin. Recent mechanical vegetation management has focused on reducing invasive plants that form floating islands.

Orange Lake is designated by FWC as a Fish Management Area and receives increased vegetation management for sport fishing. The lake receives inflow from Newnans Lake through River Styx and from Lochloosa Lake through Cross Creek. Orange Lake supports an extensive aquatic vegetation community dominated by spatterdock (lily pads) and periodically hydrilla.

Rodman Reservoir (Eureka to Buckman Lock/Rodman Dam) historically supported diverse emergent and submergent plants (Hestand and Carter 1974). The riverine portion of this area, from Eureka to Rodman Reservoir, was also prolific in eelgrass and hydrilla. Recently, SAV has declined in the main lake/reservoir due to high tannic water events, sediment resuspension from hurricanes and tropical storms, and periodic drawdowns for invasive vegetation control and sediment maintenance. Small areas of SAV remain, and DEP's Office of Greenways and Trails and the District continue monitoring these areas as potential seed sources for increased native expansion of eelgrass.

Water Levels and Availability in UORB Lakes

Since 2000, there have been three multi-year droughts that reduced water depths (Figure 7). Water quality is impacted during these periods, as sediments are more easily resuspended in shallow lakes, especially Lake Apopka. Increased turbidity reduces light penetration, limiting SAV colonization and growth, as well as elevating nutrient levels in the water body.

Manatee Awareness and Protection in the UORB

The District coordinates with multiple agencies involved in manatee protection, including FWC, U.S. Fish and Wildlife Service, and the Clearwater Marine Aquarium Research Institute. Recent measures to improve manatee protection include increasing public awareness, updating lock procedures to prioritize manatee safety, documenting manatee sightings and direction of movement, installing sonar units to monitor presence in the locks, and installing metal barriers at water control gates and dam structures.

Fisheries

The ORB lakes have a diverse native fish community typical of most lakes and streams in peninsular Florida. These communities are well adapted to persist in the subtropical conditions of central and north-central Florida.

Important game fish include largemouth bass, black crappie, bluegill, redear sunfish, spotted sunfish, and warmouth. Other common large fish include Florida gar, longnose gar, bowfin, white catfish, channel catfish, lake chubsuckers, and

gizzard shad. Important smaller forage fish include threadfin shad, mosquitofish, sailfin molly, bluefin killifish, golden shiner, brook silverside, and dollar sunfish (Table 2).

One protected and endemic fish of the UORB Chain of Lakes is the Eustis pupfish. This species is listed on federal and state imperiled lists and is protected from take by Florida's Endangered and Threatened Species Rule.

Invasive Species

Species listed on the U.S. Department of Agriculture's Noxious Weed List (APHIS USDA 2010) and the Florida Prohibited Aquatic Plant List (FISC 2023, F.A.C. 5B-64.011) are managed on District properties by invasive plant management staff. This work is conducted to maintain water conveyance, support flood protection, and reduce plant infestation in areas downstream and nearby areas, including private properties. To protect native environments and infrastructure, hydrilla, water hyacinth, Cuban bulrush, cogon grass, and water lettuce, as well as feral hogs, are being closely monitored and managed.



Upper Ocklawaha Basin Lakes Mean Daily Elevation and Regulation Schedules

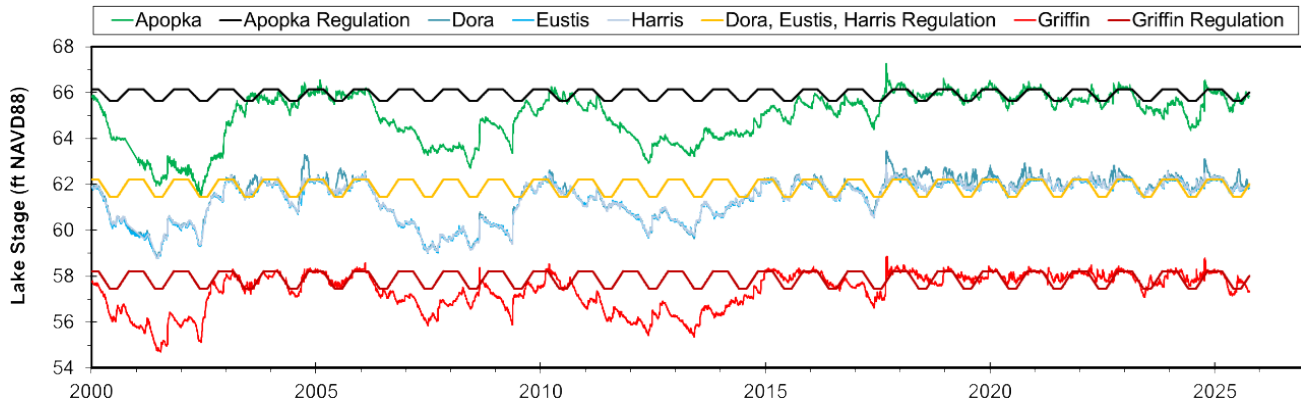


Figure 7

Lake Apopka Fish Species (Common Name)

Atlantic needlefish	black crappie	blue tilapia
bluefin killifish	bluegill	bowfin
brook silverside	brown bullhead	brown hoplo
channel catfish	dollar sunfish	eastern mosquitofish
Florida gar	gizzard shad	golden shiner
golden topminnow	inland silverside	lake chubsucker
largemouth bass	least killifish	longnose gar
pugnose minnow	redbreast sunfish	redeer sunfish
sailfin catfish	sailfin molly	Seminole killifish
spotted sunfish	striped bass hybrid	sunfish
sunshine bass	swamp darter	taillight shiner
threadfin shad	warmouth	white catfish
yellow bullhead		

Table 2. Fish species list for Lake Apopka Community Sampling Florida (source FWC) via electrofishing various years 2006–2023.

District Lands

Land Management

The District owns approximately 78,747 acres in the ORB. Fifteen properties, encompassing 74,102 acres, are managed directly by the District, with the remainder managed by cooperating partners (Table 3).

The District's future acquisition strategy for the ORB will focus on lands identified on the List of Critical Wetlands or the Five-Year Land Acquisition Plan Map, as well as additional properties as needed. Consideration will be given to suitable lands for water resource protection, natural systems enhancement or restoration, floodplain connectivity, and optimal land management boundaries.

The List of Critical Wetlands and Land Acquisition Plan Map are part of the District's [Strategic Plan](#).

The management of the District's conservation lands is guided by land management plans, which prescribe specific management goals for each property. These plans are updated approximately every ten years. Management Review Teams, composed of land management experts from agencies, nonprofit organizations, and adjacent landowners, periodically review these plans. These reviews assess overall management and evaluate how well specific goals have been met.

For additional information, consult the [land management plan](#) for each conservation area on the District's website.



District Conservation Lands Within the ORB

Managed Area	Lead Land Manager	County	Acres
Black Sink Prairie	SJRWMD	Marion	397
Burrell Lock and Dam	SJRWMD	Lake	7
Emeralda Marsh Conservation Area	SJRWMD	Lake Marion	6,578
Lake Apopka North Shore	SJRWMD	Orange and Lake	19,731
Lake Harris Conservation Area	SJRWMD	Lake	474
Lochloosa Wildlife Conservation Area	SJRWMD	Alachua	10,815
Longleaf Flatwoods Reserve	SJRWMD	Alachua	2,814
Moss Bluff Lock and Dam	SJRWMD	Marion	23
Newnans Lake Conservation Area	SJRWMD	Alachua	6,968
Ocklawaha Prairie Restoration Area	SJRWMD	Marion	6,301
Orange Creek Restoration Area	SJRWMD	Alachua and Marion	3,552
Silver Springs Forest Conservation Area	SJRWMD	Marion	5,618
SJRWMD Campus Parcels	SJRWMD	Orange	5
Sunnyhill Restoration Area	SJRWMD	Marion	10,575
West Region Mitigation Archipelago	SJRWMD	Lake	244
Marjorie Harris Carr Cross Florida Greenway*	DEP - State Parks	Putnam	20
Paynes Prairie Preserve State Park	DEP - State Parks	Alachua	203
Indian Lake State Forest	Florida Forest Service	Marion	101
Withlacoochee State Forest	Florida Forest Service	Lake	29
Caravelle Ranch Wildlife Management Area*	FWC	Putnam	3,725
Austin Cary Forest	University of Florida SFRC	Alachua	567

*Conservation lands within the ORB and LSJRB

Table 3. District conservation lands within the ORB.

Detailed Descriptions of Major Capital Projects

Harris Chain of Lakes Flood Protection and Navigational Structures Modernization

Description:

The UORB extends from Lake Apopka north to Silver Springs (Figure 8). The District manages and operates four major water control structures, three navigation locks, and miles of levees within the UORB. The regulation schedules associated with the structures were historically developed to provide navigation access from the UORB to the St. Johns River; they now also support flood protection.

Significant investment is required to maintain and operate these structures, some of which must comply with USACE standards. As water quality and habitat have improved, public use of UORB lakes, rivers, and canals has increased, requiring additional maintenance. The Burrell Lock alone can require over 100 lock-through cycles per day during peak season. Planned projects include

the redesign, replacement, and expansion of the Apopka Lock and Dam, located three miles north of Lake Apopka in the Apopka-Beauclair Canal, at an estimated cost of \$24 million. The Burrell Dam will be rehabilitated at an estimated cost of \$5.3 million, and the Moss Bluff Lock, located on the Ocklawaha River north of Lake Griffin, will be rehabilitated at an estimated cost of \$10.5 million. The Burrell Lock was refurbished in FY 2025–26, and the Moss Bluff Dam in 2017 and do not require additional maintenance or rehabilitation work at this time.

Background:

While regular preventive maintenance and repairs have been conducted, some structures have not been fully refurbished since their original construction. These structures are approaching the end of their service life and require rehabilitation (Moss Bluff Lock and Burrell Dam) or replacement and expansion (Apopka Lock and Dam). These structures were built in the 1950s and 1960s and no major upgrades or improvements have been completed since that time. Improvements to these systems are discussed below.

Apopka Lock (built in 1957): Since the District began restoring water quality and SAV, sport fish populations in Lake Apopka have begun to recover. Recently, Lake Apopka has become increasingly popular with recreational and professional anglers, and fishing tournaments are now regularly held. This increased use has created greater demand for the Apopka Lock, which can accommodate no more than three bass boats per lockage, resulting in longer wait times during peak periods and increased cycling. As ecosystem conditions continue to improve and the surrounding population grows, expanding the lock is necessary to increase the lock capacity, reduce wait times, and improve user access.



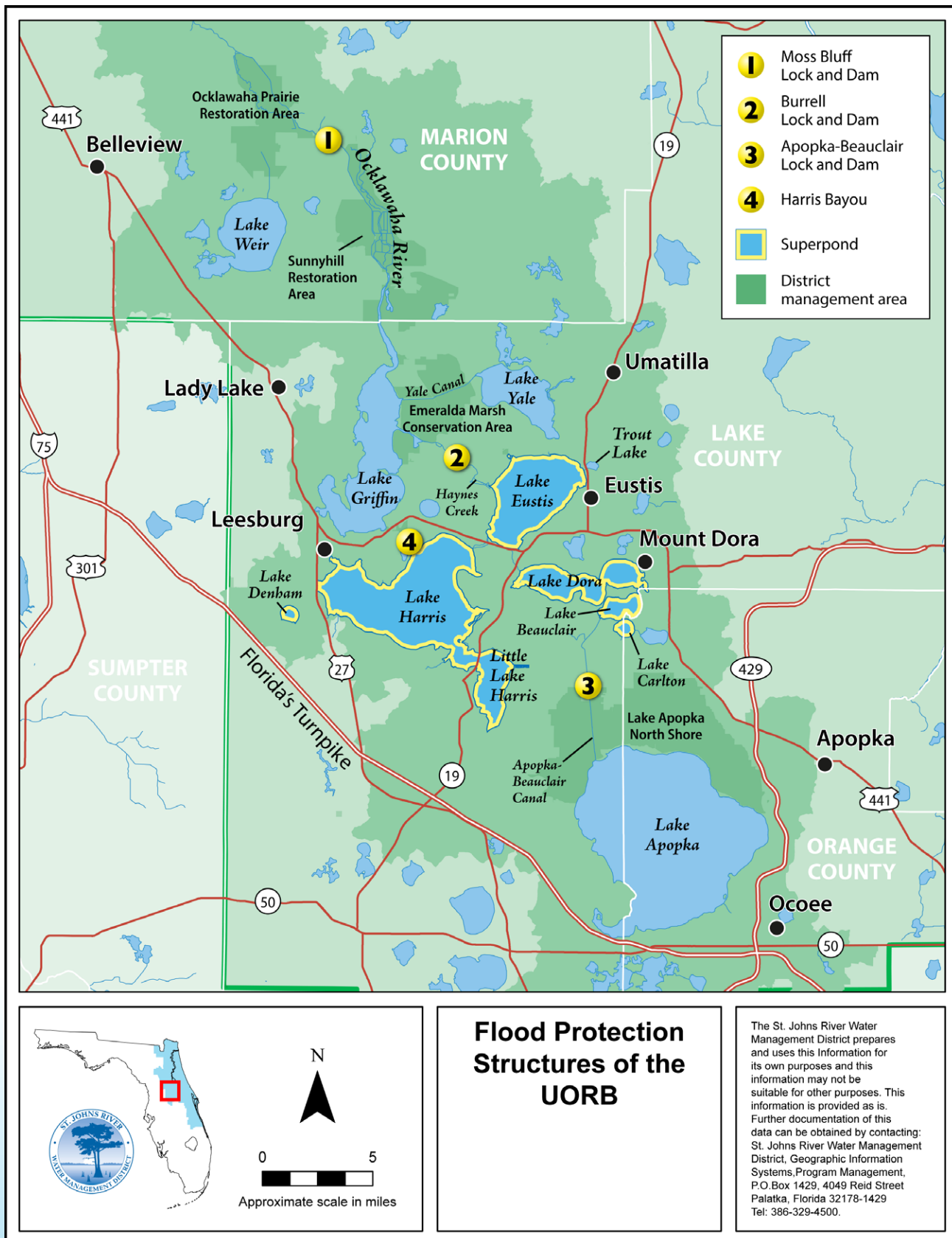


Figure 8. Flood protection structures of the UORB.

Moss Bluff Lock (built in 1960): The Moss Bluff Lock is the most downstream lock managed by the District and provides important navigational access to the northern (downstream) section of the upper Ocklawaha River, including Rodman Reservoir. The lock was last renovated more than twenty years ago, and additional rehabilitation is needed for continued reliable navigational access through the Moss Bluff structure.

Apopka Dam (built in 1957): The Apopka Dam is a key component of the flood protection system, and maintaining its future reliability is critical to the District's core mission of flood protection. Rehabilitation, gate modifications, and system upgrades are needed to ensure the long-term integrity of the structure. Proposed improvements will also provide enhanced downstream water quality and flood protection. Additionally, the District is considering alternatives which will enhance flood protection conveyance capacity and improve protection for properties surrounding Lake Apopka before, during, and after major storm

events. The total cost estimate for the Apopka Lock and Dam redesign and replacement is \$24 million.

Burrell Dam (built in 1967): Due to its role as the primary outlet for the southern half of the UORB and its classification as a high-hazard potential dam, maintaining the integrity of the Burrell Dam is vital to the District's core mission of flood protection. Rehabilitation efforts, including upgrading the electrical system, gate rehabilitation, and structural repairs, will ensure the long-term reliability of this structure. The Burrell Lock refurbishment began in February 2026. Completion is expected in September 2026 at a cost of \$5.3 million.

Benefit and/or Impact:

The primary benefit of modernizing these locks and dams in the UORB is to enhance public safety through improved flood protection and navigational access. In addition, these improvements will support ecotourism in Marion, Lake, and Orange counties, including fishing, waterfowl hunting, and wildlife observation.



Glossary

aquifer: A geologic formation, group of formations, or part of a formation that contains sufficient saturated, permeable material to yield significant quantities of water to wells and springs.

basin (groundwater): A hydrologic unit containing one large aquifer or several connecting and interconnecting aquifers.

basin (surface water): A tract of land drained by a surface water body or its tributaries.

basin management action plan (BMAP): A BMAP is a framework for water quality restoration that contains a comprehensive set of solutions to achieve the pollutant reductions established by a Total Maximum Daily Load (TMDL). Examples include permit limits on regulated facilities, urban and agricultural best management practices, wastewater and stormwater infrastructure, regional projects, and conservation programs designed to achieve pollutant reductions established by a TMDL. BMAPs are adopted by Secretarial Order and are legally enforceable.

classification of surface waters: Florida has six surface water classifications reflecting designated uses, which are arranged in order of degree of protection required: Class I–Potable Water Supplies, Class II–Shellfish Propagation or Harvesting, Class III–Fish Consumption; Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife, Class III–Limited–Fish Consumption; Recreation or Limited Recreation; and/or Propagation and Maintenance of a Limited Population of Fish and Wildlife, Class IV–Agricultural Water Supplies, and Class V–Navigation, Utility and Industrial Use. For a more detailed description of classes and specific waterbody designations, see 62-302.400, Florida Administrative Code (F.A.C.).

ecosystem: Biological communities together with their environment, functioning as a unit.

fiscal year (FY): The fiscal year for water management districts begins on October 1 and ends on September 30 the following year.

groundwater: Water beneath the surface of the ground, whether or not flowing through known and definite channels. Specifically, that part of the subsurface water in the saturated zone, where the water is under pressure greater than the atmosphere.

hydrology: The scientific study of the properties, distribution, and effects of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere.

invasive species: An invasive species is an organism that begins to spread or expand its range from the site of its original introduction and that has the potential to cause harm to the environment, the economy, or to human health.

million gallons per day (mgd): A rate of flow of water equal to 133,680.56 cubic feet (cf) per day, or 1.5472 cubic feet per second (cfs), or 3.0689 acre-feet per day. A flow of 1 million gallons per day for 1 year equals 1,120 acre-feet (365 million gallons).

natural system enhancement: Activities conducted to improve the habitat value of wetlands or surface waters for fish and wildlife by eliminating harmful drainage, improving water quality, preventing erosion, stabilizing eroding shorelines, planting wetland vegetation, removing spoil, removing invasive or nuisance vegetation, providing structural habitat, and restoring dredged holes to elevations before they were dredged.

nuisance species: An animal or animals exhibiting behavior that: causes (or is about to cause) property damage, presents a threat to public safety, or causes an annoyance within, under, or upon a building.

stormwater: Water that does not infiltrate but accumulates on land as a result of storm runoff, irrigation runoff, or drainage from areas, such as roads and roofs.

surface water: Water above the soil or substrate surface, whether contained in bounds, created naturally or artificially, or diffused. Water from natural springs is classified as surface water when it exits from the spring onto the earth's surface.

total maximum daily load (TMDL): A TMDL is a scientific determination of the maximum amount of a given pollutant that a surface water can absorb and still meet the water quality standards that protect human health and aquatic life. Water bodies that do not meet water quality standards are identified as "impaired" for the particular pollutants of concern—nutrients, bacteria, mercury, etc.—and TMDLs must be developed, adopted, and implemented to reduce those pollutants and clean up the waterbody.

watershed: A region or area bounded peripherally by a water parting and draining ultimately to a particular watercourse or body of water. Watersheds conform to federal hydrologic unit code standards and can be divided into sub watersheds and further divided into catchments, the smallest water management unit recognized by water management operations.

wetland: An area that is inundated or saturated by surface or groundwater with vegetation adapted for life under those soil conditions (e.g., swamps and marshes).

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