Lake Griffin

FAST FACTS

Lake Griffin's water quality has improved significantly over just the last couple of years.

More than 6,500 acres of former muck farms have been brought into public ownership.

Location

Located in northwest Lake County, the 9,400-acre Lake Griffin is one of nine lakes that make up the Ocklawaha Chain of Lakes, also known as the Harris Chain. The other lakes within the chain — Apopka, Beauclair, Carlton, Dora, Eustis, Yale, Little Lake Harris and Harris — all drain into Lake Griffin, which flows into the Ocklawaha River. The Ocklawaha River flows into the St. Johns River.

Lake Griffin is fed by rainfall and flow from the eight upstream lakes through a dam on Haines Creek. A dam on the Ocklawaha River downstream of Lake Griffin controls water levels in Lake Griffin.

Problems

Lake Griffin, until recently, was considered one of Florida's most polluted lakes. It was plagued for decades by phosphorus-laden discharges from farms along its northeastern shore, as well as from sewage and industrial outfalls. Farming and sewage discharges into upstream lakes, particularly Lake Apopka, also contributed to Lake Griffin's deterioration.

Great blue heron

With the increase in nutrients and subsequent algal bloom, water clarity deteriorated. The cloudy water prevented sunlight from reaching underwater vegetation critical to fish and wildlife habitat, and the continual settling of dead algae created several feet of soupy sediment on the lake bottom, destroying habitat necessary for fish and wildlife to thrive.

Beginning in 1996, levels of chlorophyll in Lake Griffin noticeably increased, and the lake became greener. Chlorophyll levels in lake water indicate algal growth fed by excess phosphorus. Surveys by the St. Johns River Water Management District of Lake Griffin's algal communities revealed that a new, nonnative species of blue-green algae, *Cylindrospermopsis raciborskii*, made up 95 percent of the algae in the lake.

Restoring Lake Griffin

The restoration of Lake Griffin has focused both on the lake itself and on upstream Lake Apopka. By reducing the pollutants flowing downstream from Lake Apopka into the Ocklawaha Chain, restoration efforts at Lake Griffin will be more successful.

Sewage discharges into lakes within the Ocklawaha Chain ended in the 1980s, and steps are being taken now to control stormwater discharges into the lakes. The District sponsored studies to develop management plans for the Lake Griffin algal blooms. Also, the Florida Department of Environmental Protection in 1997 established the Harmful Algal Bloom Task Force, which is studying ways to manage algae such as *Cylindrospermopsis raciborskii*.

The District spent $12.6 million between 1991 and 1993 to bring more than 6,500 acres of muck farms along the northeastern shore of Lake Griffin into public ownership. By purchasing the farms, discharges of nutrient-laden water into Lake Griffin were substantially decreased. Low-elevation areas are being restored to aquatic and wetland habitat. Uplands are being managed as natural areas.

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The former farming areas, which are now collectively known as the Emeralda Marsh Conservation Area, are providing:

- New recreational opportunities for the public, including wildlife viewing, hiking and hunting
- Wildlife habitat, with the area becoming home to numerous wading birds and waterfowl
- Opportunities to improve Lake Griffin's water quality through the re-creation of natural wetlands on land acquired along the northeastern shore of Lake Griffin

The District is moving forward to restore the entire Ocklawaha Chain of Lakes. In 2002, an interim lake level fluctuation plan was adopted to enhance fluctuation of water levels in Lake Griffin. Plans are also under development to return more natural flows and levels to the lakes. Three dams built within the Harris Chain of Lakes and on the Ocklawaha River to prevent flooding have slowed water flows and stabilized lake levels since the 1960s. More continuous flows and more natural fluctuations in levels are critical to healthy water bodies and marshes in Florida.

The District is implementing plans to re-connect Lake Harris and Lake Griffin via a wetland area called the Harris Bayou. This represents a major step in providing the structure needed to improve water flow between the lakes and allow more desirable fluctuation.

Other efforts have had a significant positive impact on Lake Griffin's overall health. Since 2002, the District has harvested more than 1.25 million pounds of gizzard shad from the lake, reducing the cycling and re-suspension of phosphorus-laden sediments associated with the feeding behavior of these fish. Since the initiation of shad harvesting, water quality on the lake has substantially improved.

In addition to shad harvesting, this sustained improvement is a response to lower external nutrient loading and to recovery from the recent long-term drought that impacted lake levels throughout the basin.

A marsh filtration system was established to filter solids and nutrients from the circulated lake water. The flow-way is not currently operating, but could be re-activated if water quality deteriorates in Lake Griffin.

As water quality in the lake improves, fish and wildlife habitat will also begin to recover. Recent surveys in the lake show establishment of numerous beds of desirable submersed vegetation. This habitat provides primary spawning and nursery area for game fish species. The wetlands already provide diverse habitat for wildlife. Since 1997, numerous wading birds and waterfowl, including more than 1,000 endangered wood storks and more than 500 white pelicans, have fed in the restored marshes.

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