

Lake Jesup

FAST FACT

Years of effluent discharges and man-made changes to the flow of water into Lake Jesup have caused the health of the water body to decline.

History

Located in Seminole County, Lake Jesup and its floodplain cover about 16,000 acres. Changes began occurring to the lake in the early 1900s when a channel was cut from Palatka to Sanford and a smaller, parallel side channel was cut from Enterprise to Lake Harney.

Over the years, two canals and the State Road 46 causeway restricted water flow between the lake and the St. Johns River. Currently, the lake is connected to the St. Johns River by a single outlet channel.

The problems

Lake Jesup was slowly degraded by years of stormwater and agricultural runoff and wastewater discharges. Scientists theorize that because the lake's water exchange with the St. Johns River was constricted, the water quality declined.

Degradative nutrients in the lake come from effluent, or a discharge of liquid waste, dumped for decades, along with stormwater discharges, into the lake's tributaries. Though the discharge of effluent ended in 1983, man-made influences continue to contribute to the lake's decline. Muck on the lake bottom holds nutrients from fertilizers, wastewater treatment plant effluent, domestic animal wastes and naturally decayed vegetation.

All of these factors continue to degrade sport fish populations, fuel algal blooms and lower oxygen levels, leading to declining fish populations.

Actions being taken

Legislatively mandated restoration of Lake Jesup began in 1994. Many scientific studies have been completed, and a variety of implementation projects are under way.

The St. Johns River Water Management District conducts monthly water quality sampling at eight sites and coordinates with Seminole County to monitor lake levels and water quality during storm events. A study of the characteristics of the water body, such as lake bottom depths, is complete, along with an assessment of the flow and mixing patterns of the lake. Studies on lake circulation patterns, nutrients in the water and bottom-dwelling invertebrates were completed in 2000. These studies will help resource managers make future plans for Lake Jesup.

Several miles of berms, or raised banks, were removed in 2001. An overall total of 3,682 acres of floodplain wetlands has been reconnected with the lake since passage of the Lake Jesup Act.

The needs

One way to improve the health of Lake Jesup is to increase the flow of water between the lake and the St. Johns River. Scientists and engineers have developed several options for improving water exchange. These options consider methods such as reopening canals, reconstructing the SR 46 bridge and removing more of the highway's underlying causeways.

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The St. Johns River (foreground) flows into Lake Jesup through a single channel.



A likely option, reconstructing the bridge to extend across the channel “from tree line to tree line,” was suggested by the U.S. Army Corps of Engineers (Corps) in 2003, after the completion of a feasibility study. The study focused on whether the existing SR 46 bridge and causeway over the wetlands adjacent to Lake Jesup is having an adverse effect on the hydrological connection between the St. Johns River and Lake Jesup. The Corps found that the removal of as much of the SR 46 causeway as practicable would improve the ecology of the river and lake ecosystem.

The project would be modeled after the Interstate 4 bridge over the St. Johns River and would allow for the removal of a large amount of the causeway. The work would begin in 2007.

Which option, or combination of options, is ultimately chosen will depend on several factors. The effect of a restoration plan on the water’s circulation and biological health, wildlife habitat, sediment transport and impacts to residents and businesses in the area are major concerns. The support of area leaders and adequate funding are fundamental to the success of restoring, enhancing and managing Lake Jesup.

