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Newnans Lake Improvement Initiative

Little Hatchet Creek Treatment Weirs



Why The Initiative?

The Newnans Lake Improvement Initiative was initiated by Alachua County Environmental Protection Department (EPD) to reduce phosphorous and nitrogen loading which contribute to algal blooms in Newnans Lake. The first construction project includes two **bioreactors** and weirs in Little Hatchet Creek to remove phosphorous from the baseflow of Little Hatchet Creek.

How Does It Work?

The two weirs are located downstream of the Gainesville Regional Airport and were designed to remove phosphorous through filtration and adsorption. The weirs elevate the water level, which uses gravity to direct a portion of the baseflow through the bioreactors. Higher flows during rainstorms will pass over the weir. Once in the bioreactors, the water flows upward through the reactor, where limestone aggregate filters and absorbs phosphate. At the top of the reactor, perforated pipes collect the water and discharge it back to the creek just downstream of the weir.



Outlook for Newnans Lake

Phosphorus concentrations upstream and downstream of the weirs and the discharge from the outfall pipes of the bioreactors are monitored to evaluate the project's effectiveness at removing phosphorus. As of 2022, the results have shown an overall 10-15% reduction of phosphorus in the creek, with the individual reactors exhibiting removal efficiencies of 20%. The lower efficiency of the total system was due to flow passing over the weirs and avoiding treatment. Because the bioreactors work constantly, high treatment efficiency is not needed for a significant reduction in phosphorus. Based on typical flow rates, it is estimated that 68-100 pounds of phosphorous are removed each year EPD will continue to monitor the long-term efficiency of this project.