

## **Developing a HAB Management Plan Using the Lake Loading Response Model**

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### **Abstract**

Willow Lake is a small shallow lake located in North East Florida. In recent years, the lake started to experience a decline in water quality and persistent harmful algal blooms (HABs). Traditional management approaches such as algaecides, aeration, and alum provided little improvement in addressing the water quality and HAB issues. A more detailed investigation into the route cause(s) of water quality degradation was undertaken. A low-cost nutrient budget was constructed, followed by water quality modeling using the lake loading response model (LLRM). The primary source(s) of nutrient loading, causing the poor water quality and HAB issues, were identified, and a HAB management plan was developed to restore the lake both short and long-term. This presentation covers the details of the HAB management plan and demonstrates the utility of water quality modeling in the decision-making process.