

In-Lake Strategies – Low-stage Muck Scraping and Tilling



Location:	-
Subwatershed:	Lake Okeechobee
Basin:	-
Purpose:	<p>Muck Scraping: Remove P-laden sediments from the marsh and expose the native lake bottom to improve the flora and fauna habitat.</p> <p>Tilling: Evaluate the effectiveness of tilling the surface organic layer into the underlying sand substrate as a mechanism for reducing the surficial total and extractable phosphorus (P) levels and reducing internal P loading.</p>
Project Operation Start:	TBD
Considerations/Update:	<p>It was estimated that tilling the soils had similar reductions in soil, water exchange of phosphorus, at a reduced cost from scraping. However, such action would likely only be applicable one time, and would complicate results from future tilling, or muck removal projects in the same location. Further, earlier studies in Lake Tohopekaliga found tiling to be unsuccessful at altering dominant plant communities for even 1-2 years, while scraping led to prolonged effects (>10 years with follow-up management). Other scraping projects on Lake Okeechobee have been performed by Florida Fish and Wildlife Conservation Commission (FWC) in the years following this initial study, including on Eagle Bay Island and in the northern Indian Prairie Marshes.</p> <p>The SFWMD recently completed a comprehensive tilling project of Cell 6 within Stormwater Treatment Area (STA) 1 West Expansion project to reduce phosphorus loading. The effectiveness of this tilling would need to be assessed during the operation of the STA1W Expansion. In lake soil scarping and tilling can be an effective measure for reducing total phosphorus loading but the measure requires specific site conditions, primarily, low water levels, sediments with elevated phosphorus concentrations and ability to access the areas with equipment. Soil tilling has an added advantage compared to soil scraping when cost is considered and the need for the disposal of material generated.</p>