

Assessing Restoration Efforts in the Lake Okeechobee Watershed Through a Nutrient Load Monitoring Program

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Clyde F. Hopple is a Senior Civil Engineer with the U.S. Army Corps of Engineers, Jacksonville District, with over 14 years of training and experience as an environmental engineer. Originally from the St. Louis District (1972-1990), he has served as the lead district technical expert, since April 1990, on multiple projects in the Defense Environmental Restoration Program at Formerly Used Defense Sites (DERP-FUDS), EPA Region 4 and Region 2 Superfund Programs in Florida, Puerto Rico, and the Caribbean, and the Comprehensive Everglades Restoration Plan in south Florida.

Abstract

Lake Okeechobee is the heart of south Florida's water supply and flood control system and is a major source of water for the Everglades. Agricultural development in the watershed and canal construction during the last century have resulted in excess nutrient inputs and more efficient delivery of stormwater to the lake, causing a decline in ecosystem health. The 2000 Lake Okeechobee Protection Act (Chapter 00-130, Laws of Florida) and the congressionally-authorized Comprehensive Everglades Restoration Plan/Lake Okeechobee Watershed Project (LOWP) have committed the State of Florida and the Federal Government to restoring and protecting Lake Okeechobee through a coordinated effort among the South Florida Water Management District, the State of Florida, and the U.S. Army Corps of Engineers. The U.S. Geological Survey, in cooperation with the U.S. Army Corps of Engineers and South Florida Water Management District, is operating a 10-year water-quality and streamflow monitoring program at the sub-basin scale in the LOWP area. The objectives of the monitoring program are to examine spatial and temporal trends in nutrient loads and to compare pre- and post-restoration activity conditions. The LOWP area is a low-gradient watershed that has numerous flow-control structures and streams which are subject to bi-directional flow and backwater conditions. These factors pose unique challenges to the data collection process.