

LAKE OKEECHOBEE TROPHIC LEVEL STUDY

Client Name: *South Florida Water Management District / Malcolm Pirnie, Inc. (Prime)*
Type of Service: *Biological & Ecological Monitoring & Assessment*



Lake Okeechobee contains over 400 km² of littoral marsh. The lakeward edge of this emergent marsh consists primarily of bulrush, cattail and giant reed. The near shore areas adjacent to the lakeward edge of the marsh recently supported greater than 20,000 ha of submerged aquatic vegetation (SAV) that included Hydrilla, eelgrass and pondweed.

Lake Okeechobee's trophic level dynamics are being studied by examining the role of macro-invertebrates in nutrient cycling, productivity, and decomposition. Macro-invertebrates are a critical food source for large fish, birds and other wildlife. Lake Okeechobee's excessive organic and nutrient load has opened a niche in the macro-invertebrate community to pollution tolerant species. The increase is due to several factors: elevated phosphorus concentration, algal bloom, influx of organic matter, and unnatural changes in water levels. This has created a reduction in taxonomic diversity in the macro-invertebrate community.

Milian, Swain & Associates, Inc. (MSA) collected data to characterize the abundance and distribution of fish and macro-invertebrates, with regard to vegetation type, density, seasonality and water column depth, in emergent and submersed plant communities along the pelagic-littoral interface zone of Lake Okeechobee. The subsequent analysis will be used to identify the system's annual stats. Annual reports will be used by the Adaptive Assessment Team (ATT) to develop a technical report at five-year intervals, as pursuant to the regulations [Section 385.31 (b) (4)]. This technical report will identify system wide needs and support the development of regional ecological management guidelines for Lake Okeechobee.