LAKE OKEECHOBEE SUBMERGED AQUATIC VEGETATION ASSESSMENT PROJECT

Mandate:

Comprehensive Everglades Restoration Plan (CERP),
Lake Okeechobee Watershed Protection Program (LOWPP)

Background:

The submerged aquatic vegetation (SAV) in Lake Okeechobee provides critical habitat for fish and wildlife, stabilizes shoreline sediments, and supports attached algae that help to remove phosphorus from the water. The spatial extent of SAV varies in response to changing water level. Because SAV is a keystone component of the ecosystem, affecting both critical fauna and water quality, it is one of the priority performance measures for evaluating the success of CERP. Because SAV responds to water clarity, which is affected by the amount of nutrients and algae present in the water, it also is an important performance measure for evaluating success of the LOPP.

Project Overview:

The District carries out a comprehensive program to monitor the health of both submerged (plants growing underwater) and emergent (plants extending above the water surface) aquatic vegetation in Lake Okeechobee. This program supports both the Comprehensive Everglades Restoration Program (CERP) and the Lake Okeechobee Protection Program (LOPP). Healthy submerged and emergent plant communities translate into good haitat for fish and wading birds, and good water quality in near-shore regions of the lake that are most used by wildlife and society.

In addition to the quantitative sampling of aquatic vegetation that occurs each quarter, the District also conducts a qualitative assessment of submerged aquatic vegetation (SAV) on a monthly basis. Since fall 2002, District scientists have been documenting the abundance and distribution of submerged aquatic vegetation (SAV) in the Lake by conducting monthly surveys of seven stations considered representative of the lake's shoreline area: three sites in South Bay, one site to the west of Ritta Island, one site in Fisheating Bay, one site to the west of King's Bar, and one site near Eagle Bay, at the lake's north end. The sampling includes measurements of plant biomass, water chemistry, clarity of the water, and underwater light penetration.

On a yearly basis, the entire submerged plant community of the Lake is mapped with an intensive program that includes over 300 sites around the shoreline. These maps allow us to determine the total number of acres of each dominant plant species (eelgrass, peppergrass,

hydrilla, and chara), and how this acerage changes from year-to-year with variations in lake stage and other conditions.

Staff also is carrying out controlled experiments to identify an optimal range of water depths in the Lake to support healthy submerged aquatic vegetation communities as well as the role the plants play in removing nutrients from the water, and supporting the near-shore food web.

Application of Results:

Results of the SAV sampling in Lake Okeechobee are used to generate scores for a key performance measure of CERP - - in this case the total spatial extent of SAV in the lake. The long-term restoration goals are to consistently have over 40,000 acres of submerged vegetation in order to provide abundant habitat for fish and wildlife that use the lake, and to help maintain good water quality in the shoreline area.