

Everglades project - Seagrass Ecology

Mandate:

- Minimum Flows and Levels rules development: For determination of minimum amount of freshwater flow required to Florida Bay to avert significant harm to seagrasses.
- Comprehensive Everglades Restoration Plan (CERP) Florida Bay and Keys Feasibility Study: To determine feasibility project design elements and operational parameters to improve Florida Bay seagrass community and habitat quality.

Management Issue:

Water management impacts Florida Bay seagrass communities by changing salinity regimes, altering nutrient loading and transformations, and affecting the transparency of the water column. Seagrasses of various kinds have inhabited Florida Bay for centuries and are an important part of the ecosystem. In recent years, the Florida Bay seagrass community has been declining, and in some cases dying off, possibly due to anthropogenic and water management effects.

Project Overview:

This research focuses on determining how salinity, temperature, light and nutrient loading influence seagrasses in Florida Bay. Experiments on plants are aimed at determining seasonal biomass and productivity and the environmental parameters that influence seagrasses. Impacts of hurricanes and water releases are also monitored. Techniques include in situ incubations of whole plants, and laboratory studies of metabolism of isolated parts of the plant community.

Project Objective:

The primary objective of this project is to determine productivity and biomass of the seagrass community in northern Florida Bay. Patterns in the data are analyzed to measure seasonal changes in seagrass productivity and relate them to effects of freshwater flow. Additionally, this project monitors the nutrient and light requirements of seagrass communities through time to determine if these resources are limiting to production in Florida Bay seagrasses.

Application of Results:

The information from this project has been inserted directly into the simulation model of the seagrass community. Also, experimental results are examined to develop a profile of the optimum conditions for seagrass.