

Monitoring Algal and Seagrass Species Diversity Changes in a Freshwater-Flooded, Coastal Wetland by Kevin Montenegro | Christian Fernandez

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The Comprehensive Everglades Restoration Plan (CERP) is a federal effort to restore natural coastal wetlands and to counter rising salinity to historic levels. Deering Estate is conducting a flooding experiment to simulate potential effect of CERP's planned activities. This site was chosen as a pilot study site because it has multiple habitats in small scale, representative of coastal wetland areas in south Florida. The flooding of fresh water through the Deering Estate Flow Way is expected to drive changes in algal community structures through the potential increase of nutrient availability and modification of salinity in the near to shore habitats. The goal of our study is to provide a baseline and detect the first impacts of the flooding project in the close to shore habitats through the analysis of macroalgal diversity spatiotemporal variability and detect nutrient availability through the analysis of nutrient tissue content in macroalgal and seagrass species. Based on our survey of nine sites over a yearlong study, we have seen a shift in algal communities from marine tolerant species to estuarine tolerant species associated to changes in salinity and seasonal variability in all nine sites surveyed. Nutrient content shows that N and ^{15}N are different across sites and species, with high values of ^{15}N found in *Ulva* and seagrasses at the sites near the canals where water is discharged, while lower values were found in the majority of algal species found in other sites. This pilot study provides a baseline for the species diversity and nutrient availability in the region. It is recommended to select species that are present in all sampling sites, and that are sensitive to the level of variability found between sites and seasons.