

Restoration Benefits Observed from The Biscayne Bay Coastal Wetlands Project

Bahram Charkhian

South Florida Water Management District, West Palm Beach, FL, USA

The Biscayne Bay Coastal Wetlands Phase 1 (BBCW) project is focused on restoring Biscayne Bay and adjacent coastal wetlands as part of the Comprehensive Everglades Restoration Plan (CERP). Objectives include redistribution of freshwater from existing point source canal discharges to coastal wetlands providing for more natural and historic overland flow to remnant tidal creeks. The project will also improve ecological function of saltwater wetlands and the nearshore bay environment by improving salinity conditions and increasing habitat for estuarine organisms.

Phase 1 of the BBCW project is composed of three components: Deering Estate, Cutler Wetlands and L-31E Flow-way. Pump station and culvert construction at each of these sites will allow delivery of freshwater as sheet flow to the coastal wetlands and Biscayne Bay. The South Florida Water Management District (SFWMD) has implemented adaptive management processes to enhance and improve restoration benefits including modified operation of the Deering Estate pump station to create more natural wetland hydroperiods. Another example involves a collaboration with Miami-Dade County to eliminate runoff of polluted surface water from land fill facilities by constructing an earthen plug within the eastern end of Goulds Canal.

Comparison of baseline and ecological monitoring data from the last ten years indicates there has been substantial progress towards achieving project goals. Nearshore water quality and salinity levels have improved as more freshwater is redirected from canals to wetlands and the bay. Vegetation in the vicinity of the Deering Estate is responding to improved hydrology as demonstrated by replacement of upland vegetation with wetland species, and surface and groundwater salinities in the historic remnant wetlands have decreased in response to increased pumping of freshwater from the newly constructed pump station. SFWMD initiated construction of the Cutler Wetlands Flow way in Spring 2023 and is currently collecting baseline data for this component of the project.

Contact Information: Bahram Charkhian, South Florida Water Management District, Water Resources, 3301 Gun Club Road, West Palm Beach, FL 33406, USA, Phone: 561-682-2284, Email: bcharkh@sfwmd.gov