

The Southern Everglades and Florida Bay

Ecological Benefits Will Define Restoration Success



Everglades restoration efforts have suffered from delays that have paralyzed numerous projects, thus allowing serious ecological decline to continue. Audubon of Florida has long advocated for the expedition of restoration, particularly to benefit the southern portion of the ecosystem, which contained the historical abundance of wading birds emblematic of the Everglades. Now, the first phase of the C-111 Spreader Canal (SC) project is ready for construction and poised to un-do some of the damage caused by the re-plumbing of the Everglades and provide much-needed momentum to restoration efforts.

The construction of seepage barriers near the Everglades National Park border and raising water levels at certain structures will create a hydraulic ridge and push water back towards Taylor Slough, the intended freshwater entry point to Florida Bay. Increasing freshwater flow volumes to Florida Bay via Taylor Slough will rehydrate wetlands that have long suffered from too little freshwater, and thus, a decrease in productivity of prey species which support wading bird populations.

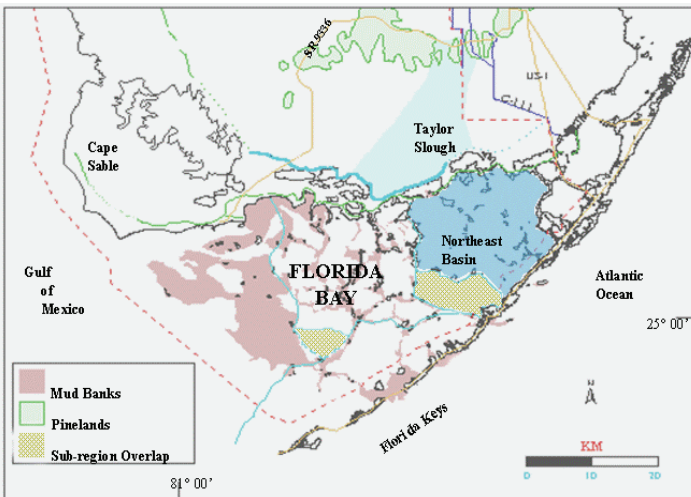


Figure 1. Located at the southern terminus of the Everglades ecosystem, Florida Bay has long suffered from far too little fresh water. What little water makes it to the southern glades is diverted by the massive C-111 and delivered to the wrong place. Because the bay is divided into basins by mud-banks, freshwater delivered through the C-111 canal does not effectively circulate to the Northeast Basin and beyond, which historically benefited from greater freshwater flows through Taylor Slough.

Ecological Benefits Equal Success

The goal of the first C-111 SC project should not be to merely increase freshwater flows to Taylor Slough by a numerical measure, but to achieve interim restoration and prevent the southern Everglades and northeastern Florida Bay from experiencing further decline. Sufficient flows through Taylor Slough will create a spillover effect, rehydrating nearby wetlands and imbedded lakes that are now inundated with salt as a result of decades of diminished freshwater flows. The success of the first C-111 SC project will be determined by one simple metric: whether the project features are operated so that the ecosystem responds in the following ways:

C-111 Spreader Canal Phase I (Western) Project

Short-term Ecosystem Goals (~2 years):

- Increased freshwater conditions across the southern mangrove zone
- Lower salinities in lakes such as Seven Palm and Little Madeira and Joe Bays
- Increase in coverage of brackish to freshwater submerged grass species in the southern mangrove zone

Mid-term Ecosystem Goals (~3 years):

- Increase in freshwater prey fish populations in the southern mangrove zone
- Increase in the overall productivity of the southern mangrove zone and northeastern Florida Bay, i.e. increase in the ability of the region to support more wildlife

Long-term Ecosystem Goals (~5+ Years):

- Increase in the rate and success of nesting roseate spoonbills in northeastern Florida Bay
- Return of wintering waterfowl to the lakes imbedded in southern mangrove zone

If adequate freshwater flows are generated by the first C-111 SC project infrastructure and operations, the southern mangrove zone and northeastern Florida Bay will begin to exhibit such responses, which will become more dramatic as those flows are sustained for longer periods of time. For example, a rebound in submerged grasses should eventually lead to a greater food base allowing increased nesting efforts by roseate spoonbills.

Besides providing shelter for small fish, these once-abundant grasses also provided food for thousands of waterfowl such as American coots and blue-winged teals that spent their winters in the lakes imbedded in the southern Everglades. Large numbers of waterfowl are no longer found wintering in these protected lakes near Taylor Slough, but could be expected again if more historical conditions are returned to the wetlands in the southern mangrove zone.

The Way Forward

The Comprehensive Everglades Restoration Plan (CERP), enacted in large part because of the decline of Florida Bay, has a suite of projects intended to help reconnect and re-hydrate the Everglades ecosystem. Groundbreaking on the C-111 SC project and other long-awaited projects make progress towards reversing the ecological decline that has been accelerating through decades of inaction.

Sufficient operation of the C-111 SC projects will begin restoration in the southern end of the system, while completing the Mod Waters and Decomp projects, as well as other bridging efforts, will open up the system so that more freshwater can finally reach its intended destination: Florida Bay. Lessons learned from the first phase of the C-111 SC project will guide planning efforts for Phase II of this project, which will further restore freshwater flow patterns in the southern Everglades and Florida Bay.

Despite the trend of overall spoonbill population decline in Florida Bay, recent data analysis by Audubon scientists reveals that spoonbills have exhibited a positive response to water management changes in the lower C-111 canal system.

This response illustrates that restoration of wildlife abundances in the Everglades is still possible. The time for restoration in the southern Everglades and Florida Bay is now, beginning with the following steps:

Audubon Recommendations

- Implement and operate Phase I (Western) C-111 Spreader Canal project to achieve ecosystem benefits
- Begin planning for Phase II (Eastern) C-111 Spreader Canal project immediately
- Finish all components of the federal portion of the C-111 project
- Construct and operate Modified Water Deliveries project
- Construct additional Tamiami Trail bridging
- Build and operate Decompartmentalization (Decomp) Physical Model
- Expedite Decomp project to achieve ecosystem benefits as soon as possible



Blue-winged teal © D. Roach

A return of more freshwater conditions in the southern imbedded lakes will bring back submerged grass species favored by some species of waterfowl, such as blue-winged teals, which used to winter in this region in flocks of thousands.