Audubon FLORIDA

The Southern Everglades and Florida Bay:

Audubon scientists find progress one year after C-111 Spreader Canal Western Project ribbon-cutting

Introduction

Great colonies of wading birds, including signature species like the Roseate Spoonbill, once congregated on the shores of Florida Bay. The ultimate measurement of restoration success is bringing those colonies back. Increasing freshwater flows to Taylor Slough in the Southern Everglades will restore critical foraging habitat and Florida's birds will respond by building nests and hatching and fledging chicks.

The C-111 Spreader Canal Western Project is a major restoration project designed to improve freshwater flows to Everglades National Park and Florida Bay. The project creates a nine mile hydraulic ridge designed to hold rain water and natural flows into Taylor Slough, a critical flow-path that carries water through the heart of Everglades National Park into Florida Bay. Water is then able to sheet-flow and filter into the ground, rehydrating this historic wetland habitat.

Now just one year after the ribbon-cutting of this important Everglades restoration project, Audubon Florida scientists are already documenting habitat improvements.

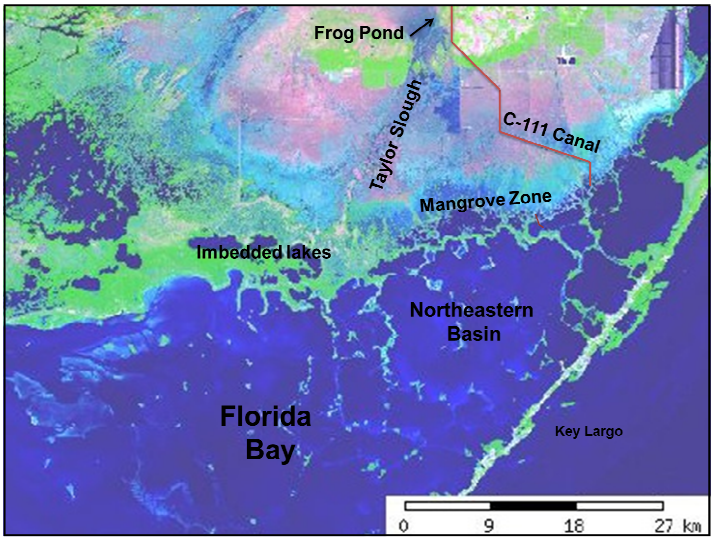

Figure 1. Map of southern tip of Florida, including Taylor Slough, Frog Pond Detention Area, the Mangrove Zone, and Florida Bay.

The C-111 Spreader Canal Project includes two components. The first phase, the C-111 Spreader Canal Western Project (phase one) has been operating for over a year, and the C-111 Spreader Canal Eastern Project (phase two) is still in the planning phase and will be completed in the future.

In the first year of operation, the Western Project has already improved flow and salinity conditions, which have led to improvement in the health and quality of wetland habitats in Florida Bay. This project is the first major constructed operational component of the Comprehensive Everglades Restoration Plan (CERP). CERP was approved by Congress in 2000 to reverse the ecological decline observed in the Everglades and Florida Bay.

Audubon Researchers Find Evidence of Restoration Success

Researchers at Audubon's Everglades Science Center at Tavernier are reporting that the Western Project is already exceeding expectations, just one year into operation. Delivering water from Taylor Slough to Florida Bay has helped re-hydrate wetlands that had suffered for decades from decreased freshwater flows. Over the past year, salinity levels have improved in Florida Bay and as a result, underwater plant communities are thriving.

During 2008-2009 South Florida experienced levels of rainfall that were nearly identical in terms of the timing and amount of rain as in 2012-2013. By comparing these two periods, one prior to and one after construction of the C-111 project, Audubon scientists were able to document changes in the amount of freshwater flow and lower levels of salinity that were not based on differences in rainfall, but were likely caused by increase of freshwater provided by the C-111 Spreader Canal Western Project .

In 2008-2009, average annual salinity levels in the Coastal Mangrove Zone of northeastern Florida Bay were measured at 16 psu (practical salinity units). In 2012-2013, average annual salinity was measured at 3.5 psu, a 78% reduction in average salinity compared to 2008-2009.[1] This

[1] Preliminary results from research conducted in Florida Bay by Audubon's Everglades Science Center. Full report to be released later this year.

represents a positive change for underwater plants and wildlife.

Underwater plants are more productive and benefit from lower salinity levels and are therefore able to provide the habitat that prey fish prefer. As salinity levels have decreased, Audubon scientists have documented a dramatic amount of re-growth of these underwater plants, which now cover almost five times more area than in 2008 -2009 (45% coverage verses 10% in 2008-09).

Figure 2. Spoonbill chicks remain in their nests in Florida Bay for up to a month and a half before they are able to leave. Both parents catch food for their young and are dependent upon the habitat surrounding their nesting area to find food for themselves and their growing chicks.

These lower levels of salinity help create ideal conditions for wading birds like Roseate Spoonbills because it improves the productivity of their primary food source, prey fish.

Prey fish are the primary food source that signature Florida birds like Roseate Spoonbills feed to their young.

Southern Everglades Restoration Goals

Improved water flow and salinity levels are early positive signs that restoration is working. As these increased freshwater flows to Taylor Slough continue, it should create a spillover effect, rehydrating nearby wetlands and embedded lakes that were previously inundated with salt as a result of decades of diminished water flows.

Overall, the health and quality of habitat is expected to improve and have positive benefits on the productivity of the ecosystem, improving its ability to support more wildlife. Researchers at Audubon's Everglades Science Center at Tavernier will continue to monitor ecological health in the area, and expect to see benefits as the C-111 Spreader Canal Western Project continues to operate.

Next Steps

Despite the urgency of Everglades restoration work, many good projects remain unfunded and incomplete. Let your elected officials know that Everglades restoration is important for Florida's economy and environment and that you care about the C-111 Spreader Canal Western Project and other CERP projects.

You can find the contact information for your state and federal officials by visiting: http://www.flsenate.gov/Senators/Find.

Audubon's Southern Everglades Restoration Goals and Recommendations

Short-term Ecosystem Benefits

- Increase in freshwater prey fish populations
- Increased quality of habitat in wetlands surrounding Taylor Slough and in northeast Florida Bay that will allow these areas to support larger populations of wildlife

Long-term Ecosystem Benefits

- Increase in nesting of Roseate Spoonbills in northeast Florida Bay, a critical indicator of overall ecosystem health in the area.
- Increase in wintering waterfowl usage of the lakes imbedded in the southern mangrove zone

Audubon Recommendations

- Begin planning effort for the C-111 Spreader Canal Eastern Project
- Finish all components of the federal C-111 South Dade project including Contract 8
- Fund and construct additional 5.5 miles of authorized Tamiami Trail bridging
- Fund and construct the Central Everglades Planning Project as soon as possible
- Continue authorizing, funding, and constructing the remaining projects in the Comprehensive Everglades Restoration Plan