

The Southern Everglades and Florida Bay

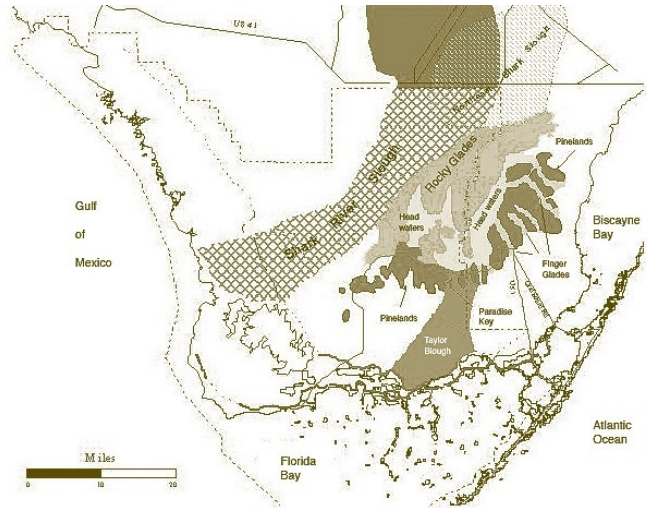
Ecological Benefits Will Define Restoration Success

Blue-winged teals © John Hitchcock



Florida Bay, and the vast mangrove swamps located between the southern Everglades and the bay itself, is only a remnant of what was once an extremely productive ecosystem that provided food and habitat for high densities of wildlife. The freshwater flowing through Taylor Slough and the low salinity lakes and swamps throughout the mangrove zone provided breeding grounds for prey fish species, which in turn supplied food for wading birds. Because of this tremendous productivity, this region once supported much of the abundance and diversity of wildlife that characterized the historical Everglades. However, the southern Everglades and Florida Bay ecosystems have exhibited symptoms of stress for decades as a result of diminished freshwater flows. Fortunately, opportunities exist to implement restoration actions now to achieve early ecological benefits and enable the ecosystem to begin recovery. Sufficiently increasing freshwater flows through the southern wetlands to Florida Bay would allow submerged grasses to rebound, increase prey fish populations, and eventually create the ecological conditions for higher numbers of nesting roseate spoonbills.

HISTORY: As canals were dredged to lower water tables in southern Miami-Dade County, they also drained water out of Taylor Slough, the primary entry point of freshwater into Florida Bay. This caused salinities to increase to abnormally high levels throughout the southern mangrove zone. With freshwater flows from Taylor Slough greatly diminished, submerged grasses, such as widgeon grass, that thrive in freshwater to brackish environments have died off and are now much reduced from their former densities.



Historical sheetflow through the southern Everglades and into Florida Bay.

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.

C-111 Spreader Canal (Phase I) Project

Who: Partnership between the South Florida Water Management District (SFWMD) and the U.S. Army Corps of Engineers

What: C-111 Spreader Canal project (Phase I)

When: Ground-breaking for project features planned for fall 2009

Where: Southern Miami-Dade County

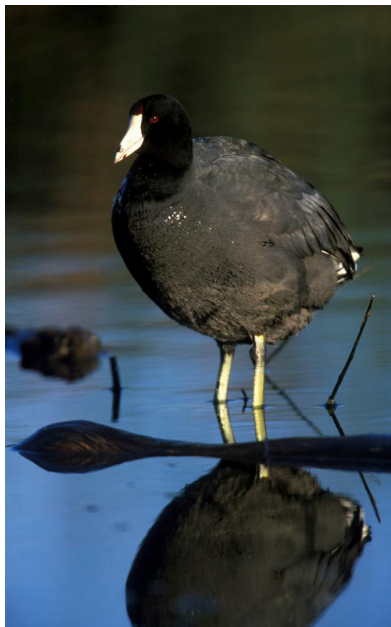
Why: To increase freshwater deliveries to Florida Bay via Taylor Slough

How: SFWMD has allocated \$70 million to expedite project planning and implementation



HOPE: The Comprehensive Everglades Restoration Plan, enacted in large part because of the decline of Florida Bay, created the C-111 Spreader Canal (SC) project, which was designed in part to minimize the damaging drainage effect of the massive C-111 canal. Now split into two smaller pieces, the first phase of the C-111 SC project represents the only opportunity in the foreseeable future to produce the freshwater flows needed to begin to restore Taylor Slough and eastern Florida Bay. 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. Everglades restoration projects are often described in terms of the removal or addition of engineered infrastructure or the generation of numerical measures of water flow. However, 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.

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 responses, which will become more dramatic as those flows



American Coot (Kramer USFWS)

are sustained for longer periods of time. For example, a rebound in submerged grasses should eventually lead to the return of wintering waterfowl to the southern mangrove zone. The listed ecosystem goals can be expected following the delivery of sufficient flows through Taylor Slough (see above):

Short-term Ecosystem Goals (~2 years):

- More frequent periods of freshwater dominance 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

Medium-term Ecosystem Goals (~3 years):

- Increase in the freshwater prey fish community 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

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. Only a bold step for the second C-111 SC project will truly restore more historical conditions to Florida Bay. In the meantime, we must provide the most restoration we can by generating sufficient flows by operation of the first C-111 SC project. Though we may never restore the Everglades to its original condition, we can provide it with the right amount of fresh water, at the right time, to again support the wildlife that once abounded there.

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