Order Code RS20702
Updated June 5, 2003

South Florida Ecosystem Restoration and the Comprehensive Everglades Restoration Plan

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Summary

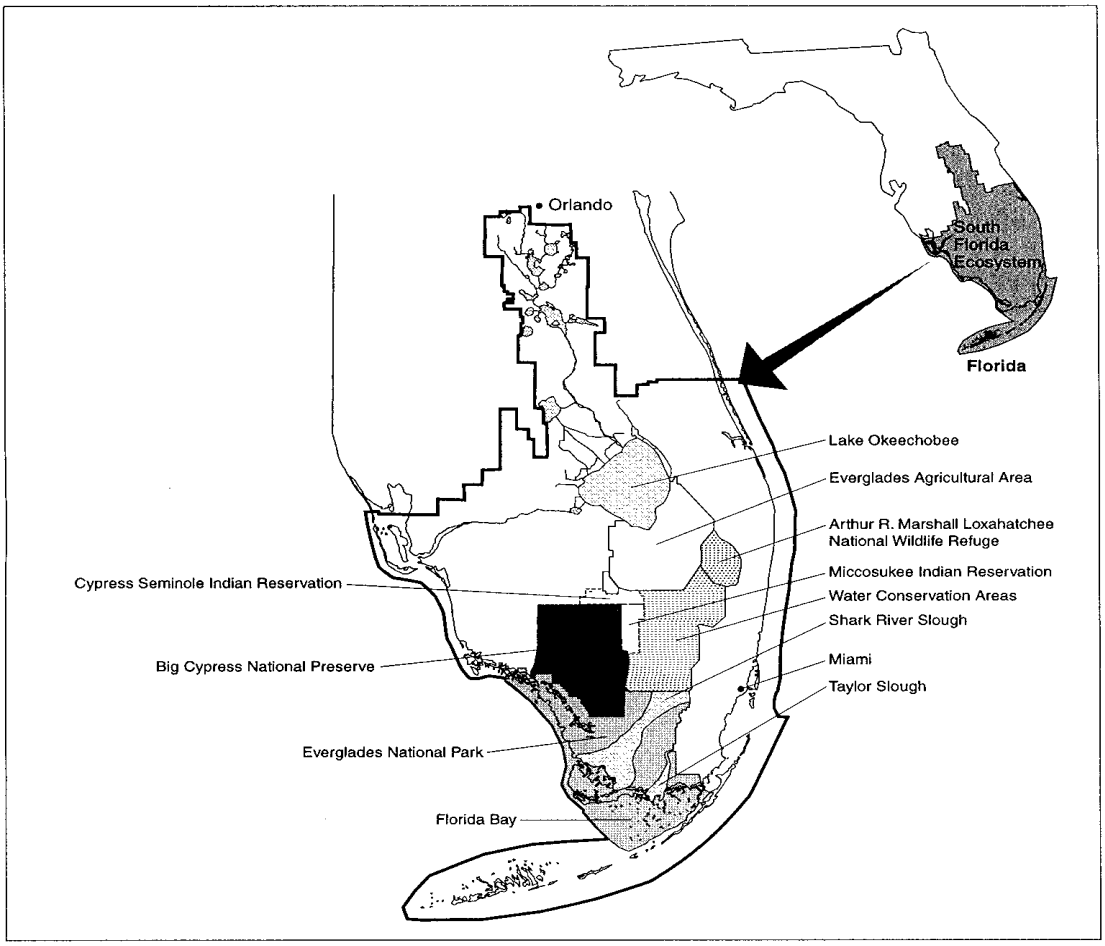
The Everglades, a unique network of subtropical wetlands, is now half its original size. Many factors have contributed to its decline, including flood control projects and agricultural and urban development. As part of a larger restoration program for South Florida, the U.S. Army Corps of Engineers (Corps) and other federal, state, tribal, and local agencies collaborated to develop a Comprehensive Everglades Restoration Plan (CERP or the plan). CERP focuses on increasing storage of wet season waters to provide more water during the dry season for the natural system and urban and agricultural users. The plan consists of 68 projects estimated to take more than 30 years and $7.8 billion to complete. The Water Resources Development Act of 2000 (P.L.106-541) authorizes appropriations for initial construction projects and their operation and maintenance. The federal government will pay half the plan's costs and an array of state, tribal, and local agencies the other half. Major issues associated with the plan include timely completion of restoration, development of programmatic regulations, effectiveness of restoration efforts, coordination of restoration efforts, uncertainties in technologies and costs, specifics of water allocation, and effect on the Corps budget. Final programmatic regulations are expected in 2003. This report outlines the history and current conditions of the Everglades, CERP legislation and funding, and associated issues. It will be updated as events warrant.

Introduction

The Water Resources Development Act of 2000 (Title VI, P.L. 106-541) authorized involvement of the U.S. Army Corps of Engineers (Corps) in a plan to restore the Everglades. Programmatic regulations are being developed to define the processes and procedures that will guide the 35-year implementation of the Comprehensive Everglades Restoration Plan (CERP or the plan). The Everglades is the defining component of the South Florida ecosystem (see **Figure 1**), which incorporates 16 national wildlife refuges and four national park units. South Florida is also home to more than six million people and a large agricultural economy. There is wide agreement that major changes in water quantity, quality, timing, and distribution since the 1950s have significantly degraded the

region's ecological health. During the dry season, the current water regime in South Florida is unable to provide sufficient freshwater supplies to meet the needs of the natural system and urban and agricultural consumers. Water shortages are expected to become more frequent as demand by urban and agricultural consumers increases.

Figure 1. Principal Components of the South Florida Ecosystem
Source: Adapted from an illustration prepared by the South Florida Ecosystem Restoration Task Force.



Everglades History

The Everglades is a network of subtropical wetland landscapes that once stretched 220 miles from Orlando to Florida Bay. Several hundred lakes fed slow-moving creeks, called sloughs, that joined the Kissimmee River. Depending on rainfall, water flowed south down the river or topped the river's banks and flowed through 40,000 acres of marsh to Lake Okeechobee. During the summer rainy season, the lake would overflow its southern shore, spilling water into the Everglades. Due to flat topography, this water moved slowly south to Florida Bay through a shallow 40-mile wide, 100-mile long sawgrass marsh. These wetlands acted as natural filters and retention areas that recharged underlying aquifers. The unique habitat resulting from the Everglades' combination of abundant moisture, rich soils, and subtropical temperatures supported a vast array of species. However, by the mid-1800s, many in South Florida viewed the Everglades as an

unproductive swamp. Flood control and reclamation efforts that manipulated the Everglades hydrology promoted development of the East Coast of Florida and permitted agriculture on reclaimed marshland. Principal among the human interventions affecting the Everglades is the Corps' Central and Southern Florida (C&SF) project, which was first authorized by Congress in 1948 to control floods and to satisfy other water management needs of South Florida. Water flows in South Florida are now directed by 1,000 miles of canals, 720 miles of levees, and almost 200 water control structures.

Current Conditions and Recent Restoration Efforts

Management and development activities have markedly changed the Everglades' water regime. The C&SF project redirects water that once flowed from Lake Okeechobee across the Everglades in a slow-moving sheet into canals and rivers discharging directly to the ocean. Experts now believe that the Everglades receives too little water during the dry season and too much during the rainy season. The altered water regime combined with urban and agricultural development have reduced the Everglades to half its original size. Habitat loss has threatened or endangered numerous plant and animal species.

The Everglades is also affected by degraded water quality. Pollutants from urban areas and agricultural runoff, including excess nutrients (such as phosphorous and nitrogen), metals, and pesticides, have harmed plant and animal populations. Nutrients entering the Everglades have caused a decline in native vegetation and an overabundance of invasive exotic species. Changes in the quantity, quality, and timing of freshwater flows have also disrupted the equilibrium of coastal estuaries and reef systems.

The federal government and the State of Florida have undertaken many restoration activities, such as acquiring lands and preparing a multi-species recovery plan. The South Florida Ecosystem Restoration Task Force (Task Force), which was formalized by the Water Resources Development Act of 1996 (P.L. 104-303), coordinates the numerous restoration activities. The Task Force facilitates restoration using the following goals: (1) "get the water right," (2) restore, preserve, and protect natural habitats and species, and (3) foster compatibility of built and natural systems. Achieving these goals for South Florida is estimated to cost $14.8 billion, of which $7.8 billion would be spent under CERP. This plan is the principal mechanism under the broader restoration program for "getting the water right," *i.e.*, restoring natural hydrologic functions and water quality, and providing water supplies.

Comprehensive Everglades Restoration Plan

CERP focuses on water quantity, quality, timing, and distribution. The plan is designed to capture and store freshwater, which is currently discharged to the ocean, for use during the dry season; an estimated 80% of the captured water would be directed to the natural system, and the remaining 20% would be for agricultural and urban consumption. CERP calls for removing 240 miles of levees and canals, and building a network of reservoirs, underground storage wells, and pumping stations that would capture water and redistribute it to replicate natural flow.

Authorizations and Appropriations. Title VI of the Water Resources Development Act (WRDA) of 2000 authorized CERP as contained in the *Final Integrated*

Feasibility Report and Programmatic Environmental Impact Statement, as modified by the Act. It also authorized $0.7 billion in federal funds for an initial set of CERP projects. As other CERP projects are prepared, they will be proposed for authorization in WRDAs.

Title VI also established that construction as well as operation and maintenance costs of CERP projects will be equally shared by Floridian stakeholders and the federal government.[1] CERP authorization was achieved after years of delicate negotiations among federal, state, local, and tribal stakeholders. Federal agencies responsible for components of CERP receive appropriations for these activities through their annual appropriations bills. Information on the status of appropriations for CERP activities performed by the Corps is available in CRS Report RL31807, *Appropriations for FY2004: Energy and Water Development*. Appropriations status for CERP activities performed by Department of the Interior agencies is available in CRS Report RL31806, *Appropriations for FY2004: Interior and Related Agencies*.

Current CERP Issues

While support for CERP has been rather broad, some reservations remain over the specifics of implementation. For example, concerns have been raised recently regarding the ability of the federal and state agencies to complete CERP according to the original timeline. Another unresolved concern for some stakeholders is how the water made available through CERP will be allocated. Other issues include effectiveness of restoration efforts; coordination of CERP activities; uncertainties in technologies and their costs; and the plan's effect on the Corps budget.

Timely Completion of Restoration. There exists serious concern that delays or changes to related projects or CERP components may jeopardize the plan's feasibility. Current problems with acquiring land for the related Modified Water Deliveries Project are an example of this issue (see CRS Report RS21331, *Everglades Restoration: Modified Water Deliveries Project*). Without this land, the water flows needed to undertake CERP components on the eastern side of the Everglades National Park cannot be met. WRDA 2000 established that no funds for parts of CERP can be appropriated until the modified waters project is complete.

Another area of controversy that is related to potential delays in restoration stems from a Florida state law (Chapter 2003-12) enacted on May 20, 2003.[2] The law authorizes a new plan to mitigate phosphorus pollution reaching the Everglades. Some critics of the law argue that the plan extends previously established phosphorus mitigation

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[1] Operation and maintenance costs are estimated at $172 million annually (1999 price levels) for the completed plan. Title VI departs from Section 528 of the Water Resources Development Act of 1996, which prohibits federal funding of operation and maintenance. Proponents of the exception argued that a federal project damaged the Everglades and much of the restoration will benefit federally-owned land.

[2] This law amends the Everglades Forever Act of 1994 (Florida Statutes §373.4592). Phosphorus is one of the primary water pollutants in the Everglades and is generally attributed to agricultural runoff. Excessive levels of phosphorus and other nutrients stimulate the conversion of native sawgrass marshes and sloughs to vegetation stands dominated by cattails. This conversion has resulted in less habitat for wading birds and other wildlife.

deadlines and may compromise restoration efforts.[3] The law's proponents argue that the plan represents a realistic strategy for curbing phosphorus. Some Members of Congress have expressed concern that the Florida law could lead to lower federal appropriations for Everglades restoration because Congress could perceive Florida's commitment to the restoration effort as waning.[4]

Programmatic Regulations. The final programmatic regulations will define the processes and procedures that guide CERP implementation and operations. Section VI of WRDA 2000 required the promulgation of these regulations by December 2002. The Corps announced in December 2002 that it anticipates the final regulations in 2003. The Corps presented draft versions in December 2001 and August 2002, which received comments from interested parties and the public. A few Members of the House and Senate submitted written comments on the 2002 draft.[5]

A major concern was the lack of a clearly stated proportion of the water generated by CERP that will benefit natural areas. Many want the often-discussed 80% allocation to restoration to be explicit in the programmatic regulations, while others feel that there are too many uncertainties to be that specific. Another issue was that some viewed the role of the Department of the Interior as being unfairly relegated to one of consultation rather than concurring authority. Other expressed concerns were that interim goals should be adopted as part of the regulations when available and that the public outreach activities during implementation (particularly related to minorities) needed further development.

Restoration Effectiveness. Some environmental groups question the extent to which CERP contributes to Everglades restoration and whether so complicated and costly a plan is necessary. There is also concern that the plan does not include enough measures to improve water quality in the Everglades. Some groups and federal agencies have expressed concern that CERP does not explicitly give natural systems precedence in water allocation, and that it is focused first on water supply rather than ecological restoration. To address this point, the Corps revised the project implementation sequencing to include restoration activities in earlier phases. These changes have not satisfied some groups and scientists who continue to oppose CERP. Some environmental groups, which support CERP and Florida's financial participation in the effort, have expressed concern about the source of Florida's contribution. They argue against using funds designated for the purchase of land needed for restoration to finance other types of CERP projects. These groups contend that land acquisition is essential for successful Everglades restoration.

Coordination. Many view coordination as a significant challenge for CERP implementation. As CERP project details and operational policies (especially those related to the timing and delivery of water) are developed, support for the restoration

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[3] A bill that passed the Florida State Legislature on May 27, 2003 (S 00054-A) and awaits the signature of the Governor may address some of these concerns.

[4] On April 29, 2003, six Members of the U.S. House, including Chairman of the Appropriations Committee C.W. Bill Young, released a joint statement that encouraged the Governor to veto the bill before it became law. The letter is available at: [http://www.house.gov/appropriations/news/108_1/04everglades.htm], accessed May 21, 2003.

[5] For written comments by Members of Congress and other stakeholders, see: [http://www.evergladesplan.org/pm/progr_regs_proposed_rule_comments.cfm].

effort may shift, resulting in conflicts that may test the effectiveness of the coordination framework. While the Task Force coordinates the overarching South Florida restoration effort, the Corps leads CERP implementation. Individual CERP components are undertaken by not only the Corps but also numerous other federal agencies — the Department of the Interior (U.S. Fish and Wildlife Service, National Park Service, and U.S. Geological Survey), the Department of Agriculture, and the U.S. Environmental Protection Agency. Cooperating state entities are also responsible for some components; these agencies include the South Florida Water Management District, the Florida Game and Fresh Water Fish Commission, and the Florida Department of Environmental Protection.

Technological and Cost Uncertainties. Ecosystem restoration is a relatively young science, and, in many cases, the technologies and scientific data to support it are still being developed. As a tool to manage the resulting uncertainty, CERP is being implemented using *adaptive management* — a flexible learning-based approach to implementation that integrates new information into the restoration effort as it proceeds. Consequently, CERP is not as detailed as a typical Corps feasibility proposal. Another mechanism for coping with uncertainty is the use of pilot projects. Title VI authorized funding of four pilot projects, including projects to test aquifer storage and recovery (ASR), a technology that has never been used on such a large scale as proposed under CERP. ASR uses underground aquifers as reservoirs to store freshwater that will be withdrawn later during dry periods.

Corps Budget. The substantial commitment of federal funds to CERP might limit federal construction funds and the operation and maintenance funds available for other projects. The Corps' budget is of particular concern because of its backlog of construction projects and maintenance activities as well as its increased spending on security. Title VI requires that the annual federal budget include under the heading *Everglades Restoration* all proposed funding for the plan. Title VI also requires that the Corps budget show the total proposed funding for the plan and an assessment of the plan's impact on the budget year and long-term funding levels. Tracking these funds proves difficult because funding is included in both Interior and Energy and Water Appropriations bills.