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South Florida Ecosystem Restoration and the Comprehensive Everglades Restoration Plan

Nicole T. Carter
Analyst in Environmental Policy
Resources, Science, and Industry Division

Summary

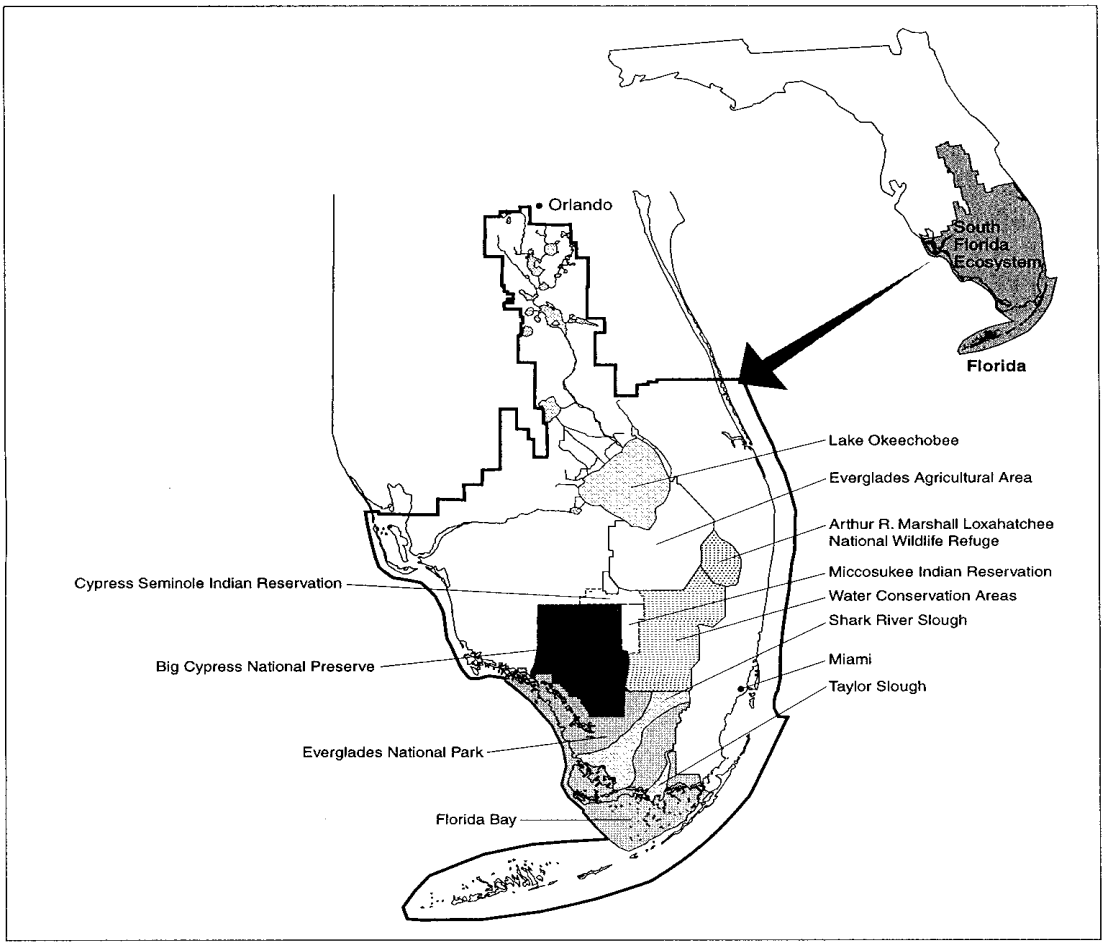
The Everglades, a unique network of subtropical wetlands, is now half its original size. Many factors have contributed to its decline, including flood control projects and agricultural and urban development. As part of a larger restoration program for South Florida, the U.S. Army Corps of Engineers (Corps) 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 36 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: development of programmatic regulations, timely completion, coordination of restoration efforts, effectiveness of restoration efforts, uncertainties in technologies and costs, specifics of water allocation, and effect on the Corps budget. Final programmatic regulations are expected early 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 already undertaken many restoration activities, such as acquiring lands and preparing a multi-species recovery plan. Between FY1993 and FY2002, $1.7 billion in federal funds and $3.6 billion in state funds were appropriated for South Florida restoration. The South Florida Ecosystem Restoration 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. It is estimated that achieving these goals for South Florida would 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 overarching concept behind the plan is to capture and store freshwater currently discharged to the ocean to be used during the dry season; an estimated 80% of the captured water would be used for the natural system, and an estimated 20% for agricultural and urban uses. 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.

Legislation in the 106th Congress. Title VI of the Water Resources Development Act (WRDA) of 2000 approved CERP as contained in the "Final Integrated

Feasibility Report and Programmatic Environmental Impact Statement" as modified by the Act. Passage followed years of delicate negotiations among federal agencies, the State of Florida, Congress, and disparate groups of stakeholders including local and national environmental organizations, sugar growers, utility companies, home builders, the Seminole Tribe of Florida, and the Miccosukee Tribe of Indians.

Funding. Under Title VI, CERP construction as well as operation and maintenance costs are equally shared by Florida and the federal government.[1] Title VI authorizes four pilot projects at a total cost of $69 million ($34.5 million federal share), 10 construction projects and a monitoring program at a total cost of $1.1 billion ($550.5 million federal share), and modifications to the C&SF Project not to exceed $206 million ($103 million federal share). In total, the plan requires an estimated $7.8 billion—$5.5 billion for construction and $2.3 billion for necessary lands, easements, water rights, relocation expenses, and disposal areas. The Corps expects to request congressional authorization for additional projects every two years through 2014. In May 2000, Florida passed legislation approving CERP and committing $2 billion in state resources.

For CERP in FY2003, the Administration requested $37 million for Corps activities and $9 million for Department of Interior agencies.[2] The House and Senate versions of the Interior Appropriations bill provided the requested $9 million. The Corps' appropriations are included as part of the Central and Southern Florida line item in the Energy and Water Development Appropriations Act; that line item in the budget request totaled $108 million. The House and Senate Appropriations Committees (H.R. 5431, H.Rept. 107-681; S. 2784, S.Rept. 107-220) and the Stevens Amendment (in the nature of a substitute to the FY2003 Omnibus Appropriations Resolution H.J.Res. 2) recommended $96 million, $98 million, and $90 million, respectively. The Senate report and Stevens Amendment explained that the reduction resulted from questions raised about the implementation of the restoration project, specifically that it was too heavily weighted in favor of commercial development of water supplies rather than the restoration of the Everglades. Neither the Energy and Water Development Appropriations bill nor the Interior Appropriations bill for FY2003 has been enacted.

Current CERP Issues

While support for CERP has been rather broad, some reservations remain over the specifics of implementation. In particular, concerns have been raised regarding the allocation of water under the programmatic regulations that will guide CERP's implementation. Other issues include: coordination of activities; timely completion of CERP components; effectiveness of restoration efforts; uncertainties in technologies and their costs; and the Plan's effect on the Corps budget.

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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] More information on Corps funding is available in CRS Report RL31307, *Appropriations for FY2003: Energy and Water Development*. More information on Interior funding is available in CRS Report RL31306, *Appropriations for FY2003: Interior and Related Agencies*.

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 early 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.[3]

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 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.

Coordination. As evidenced by the concerns raised about the programmatic regulations regarding the status of the Department of the Interior, a significant challenge for CERP implementation will be coordination. The Corps leads CERP implementation with cooperation from local sponsors and several federal agencies: Department of the Interior (U.S. Fish and Wildlife Service, National Park Service, and U.S. Geological Survey), Department of Agriculture, and U.S. Environmental Protection Agency. Cooperating state entities are the South Florida Water Management District, the Florida Game and Fresh Water Fish Commission, and the Florida Department of Environmental Protection. The South Florida Ecosystem Restoration Task Force coordinates CERP's implementation with ongoing restoration efforts.[4] As CERP project details and operational policies (especially those related to the timing and delivery of water) are developed, support may shift and conflicts arise, testing the effectiveness of the coordination framework of CERP and the Task Force.

Timely Completion. 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 is such an example (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.

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

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

[4] See U.S. General Accounting Office, *An Overall Strategic Plan and a Decision-Making Process Are Needed to Keep the Effort on Track,* RCED-99-121 (Washington, DC: April 1999).

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.

Technological and Cost Uncertainties. Because not all the scientific data and technologies to restore the South Florida ecosystem are available, CERP manages uncertainties using "adaptive assessment," which combines the implementation of initial project features with data collection for use in later project designs. The current state of knowledge and this adaptive assessment means that CERP is not as detailed as typical Corps feasibility proposals. Title VI authorizes 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 in these geologic conditions. ASR uses underground aquifers as reservoirs to store freshwater which will be withdrawn later during dry periods. A report by the National Research Council concluded that regional modeling efforts should precede implementation of ASR as proposed by CERP.[5] The report also noted the need to assess water quality standards of ASR water. A General Accounting Office (GAO) report identified uncertainties that could lead to changes in project designs and their costs.[6] These uncertainties included: (1) treatments required for water stored in aquifer storage and recovery wells, (2) adequacy of water quantity for Everglades National Park, and (3) phosphorous removal by storm water treatment areas.

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.

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[5] National Research Council, *Aquifer Storage and Recovery in the Comprehensive Everglades Restoration Plan*, (Washington, DC: February 2001).

[6] U.S. General Accounting Office. *Comprehensive Everglades Restoration Plan: Additional Water Quality Projects May Be Needed and Could Increase Costs*, RCED-00-235 (Washington, DC: September 2000).