Everglades Restoration: Federal Funding and Implementation Progress

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Summary

The Everglades is a unique network of subtropical wetlands in South Florida that is approximately half of its historical size, due in part to degradation from federal water projects. In 2000, Congress authorized a plan, termed the Comprehensive Everglades Restoration Plan (CERP), for the restoration of the Everglades ecosystem in southern Florida. When originally authorized, it was estimated that CERP would cost a total of $8.2 billion and take approximately 30 years to complete. More recent estimates indicate that the plan would take approximately 50 years to implement, and would cost approximately $1.63 billion more than originally thought, plus additional adjustments for inflation.

Under CERP, the federal government (through the U.S. Army Corps of Engineers and the Department of the Interior) is required to fund half of the costs for restoration, with an array of state, tribal, and local agencies paying the other half. In addition to activities under CERP, a number of ongoing federal and state efforts that pre-date CERP (known collectively as "non-CERP" or "Foundation" activities) also contribute to Everglades restoration. While non-CERP efforts are technically not included in CERP, the two sets of activities are widely viewed as complementary.

Since passage of CERP in 2000, the federal investment in Everglades restoration has increased. As of the end of FY2015, the federal government had provided in excess of $1.2 billion in funding for CERP, with the state providing matching funds for CERP projects, as well as advanced funding for land acquisition and construction for expected future CERP projects. Federal funding for non-CERP activities (most of which pre-date CERP) has also continued over this time period. Together with CERP, all Everglades restoration efforts are estimated to have totaled in excess of $5 billion since FY1993. While estimates of nonfederal (i.e., state) funding contributions to CERP and related restoration efforts vary widely depending on what methodology and assumptions are used, most agree that to date, the state of Florida has spent significantly more on Everglades restoration than has the federal government.

Progress has been made on a number of Everglades restoration projects, although overall progress to date has fallen short of initial goals. As of late 2015, eight CERP projects were authorized, the majority of the land necessary for restoration projects under CERP had been acquired, and significant progress has been made on non-CERP activities (including improved water deliveries to Everglades National Park). Construction had been initiated on four CERP projects, and studies have been completed or were under way for a number of other projects. Despite this progress, some projects have seen setbacks in the form of schedule delays and cost escalations. Additionally, new authorizations will be required for other major CERP projects, such as the Central Everglades Planning Project (CEPP), to go forward. These and other impediments have been noted as possible causes of further delays to restoration benefits in the future.

Reductions to state funding and the enactment of four new CERP project authorizations in the Water Resources Reform and Development Act (WRRDA, P.L. 113-121) in June 2014 (which will require new funding) have brought renewed attention on the congressional role in facilitating Everglades restoration. Debate and resolution of these issues has implications, both for ecosystem restoration in the Everglades and for large-scale restoration initiatives elsewhere. This report provides an overview of the federal role in Everglades restoration, including funding structures and major accomplishments to date.

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Introduction

The Florida Everglades is a unique network of subtropical wetlands that is now half its historical size. The federal government has a long history of involvement in the Everglades, beginning in the 1940s with the U.S. Army Corps of Engineers (the Corps) constructing flood control projects that shunted water away from the Everglades to make way for agricultural and urban development. Additional factors, including nonfederal development efforts, have contributed to shrinking and altering the Everglades ecosystem.

In recognition of the unique ecosystem services provided by the Everglades, federal and state agencies began ecosystem restoration activities in the Everglades in the early 1990s. However, it was not until 2000 that federal and state restoration activities were coordinated under an integrated plan. In the Water Resources Development Act of 2000 (WRDA 2000, P.L. 106-541), Congress approved the Comprehensive Everglades Restoration Plan (CERP) as a framework for Everglades restoration and authorized an initial round of projects by the Corps and the Department of the Interior (DOI). According to the process, additional Everglades projects are to be presented to Congress for authorization as their planning is completed. To date, eight CERP projects have been authorized: one in WRDA 2000, three in WRDA 2007 (P.L. 110-114), and four in the Water Resources Reform and Development Act of 2014 (WRRDA, P.L. 113-121). Pilot projects authorized in WRDA 1999 and WRDA 2000 also have been constructed. Other projects are ongoing in the study phase (including projects that have completed the study phase and are awaiting congressional authorization).

To date, some progress has been made on Everglades restoration, but much more time and funding will be required to complete restoration as currently contemplated. Previously, some have highlighted what they consider to be the "slow" pace of restoration as an argument for increased and expedited financial support. Conversely, others have argued that restoration activities in the Everglades receive too much funding relative to other priorities, and that the level of support provided for these activities is not appropriate given larger fiscal concerns and the uncertainty of results.

Stakeholders involved with planning other large-scale restoration initiatives look to the Everglades as a model and a test case. Some believe the types of activities funded and the level of funding for the Everglades set a precedent for other restoration initiatives and should thus be a priority. Others assert that Everglades restoration efforts have been disproportionately favored relative to similar projects, and should be subject to the same cost-cutting efforts as other areas of the budget.

This report provides background information on Everglades restoration, with a focus on the federal role in funding, including recent funding totals and issues for Congress. It also provides a brief summary of some of the major accomplishments in Everglades restoration since the enactment of CERP in WRDA 2000, as well as ongoing challenges facing the effort.

Everglades Projects: CERP and Non-CERP

Federal CERP funding was first authorized in WRDA 2000, with a focus on increasing storage and treatment of excess water in the rainy season to provide more water during the dry season for the ecosystem and for urban and agricultural users. As of 2010, it was estimated that CERP will

take more than 50 years and $13.5 billion to complete.[1] The federal government is expected to pay half of CERP's costs, and an array of state, tribal, and local agencies (i.e., nonfederal sponsors) will pay the other half. This same cost share is expected to apply to all project operation and maintenance costs.

WRDA 2000 authorized initial projects (including pilots), established federal/nonfederal cost-sharing ratios for Everglades restoration, and created a process for additional projects to be authorized as part of the CERP framework. WRDA 2007 authorized three additional CERP projects. Four other projects completed the study phase in 2012 and were authorized for construction in WRRDA 2014, while two other CERP projects remained in the study phase when that bill was enacted and were thus not yet authorized. The status of these projects is discussed later in this report.

Federal Everglades restoration activities not authorized under CERP are often referred to as "non-CERP" or "Foundation" activities. Most (but not all) of the authorities for this funding predate the enactment of CERP in 2000. For example, this category includes funding for the Modified Water Deliveries Project that originally was authorized under the Everglades National Park Protection and Expansion Act of 1989 (P.L. 101-229).[2] Depending on how broadly the non-CERP category is defined, it can encompass a wide variety of Everglades restoration activities undertaken by multiple agencies. However, similar to CERP funding, non-CERP activities of the Department of the Interior and the Corps of Engineers typically receive the most attention and are often the focal point of congressional consideration.

Funding for Everglades Restoration

As noted above, federal funding for Everglades restoration is largely provided through DOI and the Corps and is concentrated in two annual appropriations bills—the Interior and Environment appropriations bill (which provides funds to DOI) and the Energy and Water Development appropriations bill (which provides funds to the Corps). Additional funding in other appropriations bills is sometimes noted as contributing to Everglades restoration, but is not formally tracked under the Administration's non-CERP totals.[3]

Although the Administration's budget request identified restoration funding totals for CERP and non-CERP in the budget request, appropriations laws and conference reports typically do not tabulate and specify their recommended appropriations levels for Everglades restoration activities (including CERP and non-CERP totals). Rather, these totals are embedded within project and account-level totals of the Corps and DOI. Actual expenditure information for previous appropriations is tracked by the South Florida Ecosystem Restoration Task Force, with input from

[1] This figure represents the estimated cost to the federal government in October 2009 dollars according to the Corps. See U.S. Army Corps of Engineers, *Comprehensive Everglades Restoration Plan, 2010 Report to Congress*. Available at http://www.sfrestore.org/documents/index.html. Hereinafter *2010 CERP Report to Congress.* More recent estimates are not available. Pursuant to WRDA 2000, the Secretaries of the Army and the Interior jointly submit a progress report on Everglades restoration every five years.

[2] This project is expected to augment flows to Everglades National Park. For more information, see National Park Service, "Modified Water Deliveries (MWD)," http://www.nps.gov/ever/learn/nature/modwater.htm.

[3] In addition to the Corps and DOI, the South Florida Ecosystem Restoration Task Force also tracks funding provided to other federal agencies, including the National Oceanic and Atmospheric Administration, the U.S. Environmental Protection Agency, and the U.S. Department of Agriculture, among others. However, in its annual budget request, the Administration typically only cites funding for the Corps and DOI under the designation of "non-CERP" Everglades restoration funding. For additional information, see crosscut budget documents available at http://www.sfrestore.org/documents/index.html.

the relevant agencies.[4] A summary of funding for CERP and non-CERP activities within DOI and the Corps for recent years is provided in **Table 1**.

Table 1. Corps and DOI Funding for Everglades Restoration, FY2010-FY2016

(thousands of dollars)

	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015 Enacted	FY2016 Proposed
DOI	**79,424**	**70,600**	**99,884**	**66,355**	**70,452**	**62,272**	**64,000**
CERP	*8,449*	*8,401*	*8,347*	*7,883*	*8,376*	*8,408*	*8,000*
Non-CERP	*70,975*	*62,199*	*91,537*	*58,472*	*62,076*	*53,864*	*56,000*
Corps	**167,364**	**131,066**	**142,486**	**96,008**	**47,616**	**68,551**	**124,000**
CERP	*119,966*	*79,860*	*57,886*	*76,212*	*38,499*	*61,001*	*86,000*
Non-CERP	*47,398*	*41,108*	*84,600*	*19,796*	*9,117*	*7,550*	*38,000*
Total	**246,788**	**201,666**	**242,370**	**158,683**	**118,068**	**130,823**	**188,000**

Source: FY2015 Congressional Budget Justifications for the U.S. Department of the Interior and the U.S. Army Corps of Engineers, South Florida Ecosystem Restoration Crosscut Budget Report for FY2014.

Note: Unless otherwise indicated, funding levels are final/actual.

DOI Funding

Everglades restoration funding within the Department of the Interior, Environment, and Related Agencies Appropriations bill is generally allotted to four agencies within DOI: the National Park Service (NPS), the Fish and Wildlife Service (FWS), the U.S. Geological Survey (USGS), and the Bureau of Indian Affairs (BIA). Within these agencies, two types of Everglades funding are often highlighted: funding for CERP and funding for the Modified Water Deliveries Project for Everglades National Park (also known as the "Mod Waters" project). The latter is a non-CERP project that has received significant attention from Congress, and that aims to improve water deliveries to Everglades National Park by removing barriers in and around the Tamiami Trail. DOI's CERP funding is typically provided to NPS and FWS, while funding for the Modified Waters project has been provided to NPS in recent years.[5] Although Mod Waters is technically a non-CERP project, it is widely considered to be a keystone project for Everglades restoration, with an important nexus to CERP.

The FY2016 Administration request for Everglades restoration for DOI bureaus was $64 million, including $8 million for CERP projects and $56 million for non-CERP projects. No funding was requested for the Mod Waters project, as the construction of its 1-mile bridge component was complete.[6]

[4] These documents are available at http://www.evergladesrestoration.gov/content/cross-cut_budget.html.

[5] Originally, this funding was provided to the Corps.

[6] Additional funding is expected to be requested for this project in the future. For additional information, see the "Challenges" section at the end of this report.

U.S. Army Corps of Engineers Funding

Corps funding is directed toward planning and construction of projects authorized under CERP and other authorities. Within Corps totals, the amount allocated to CERP projects is widely considered a key benchmark for Everglades restoration commitment and progress. Funding for Corps Everglades restoration projects in the Energy and Water Development Appropriations bill is listed under project-level headings within the Corps Construction and Operations and Maintenance accounts. Currently, these projects include the Central and Southern Florida Project, Kissimmee River Restoration project, and Everglades and South Florida Restoration. Historically, funding also was included for two other areas, Florida Keys Water Quality Improvement and Modified Waters Deliveries Project.[7] The FY2016 request for the Corps includes funding to continue construction on two ongoing CERP projects (Picayune Strand and Indian River Lagoon-South) authorized in WRDA 2007, as well as funding to initiate design and other work necessary prior to proceeding with construction on the four projects authorized in WRRDA 2014.[8]

The FY2016 requested level for Corps Everglades restoration funds was $124 million, including $86 million for CERP activities and $38 million for non-CERP activities. Recent funding levels have been below previous averages due to a number of factors, including the availability of unobligated funds from prior years, the drawdown of needed funding for authorized, ongoing projects, and the lack of new and modified project authorizations prior to the enactment of WRRDA 2014 in June 2014.

Funding Trends

The federal government has provided and tracked its funding for restoration of the Everglades since the early 1990s. Overall, from FY1993 to FY2015, the total federal investment in Everglades restoration (i.e., including agencies other than the Corps and DOI) is estimated to have exceeded $5 billion. From FY1993 through FY2000 (i.e., prior to the enactment of CERP), federal appropriations for Everglades restoration activities totaled more than $1.2 billion. More recently, since the enactment of CERP in WRDA 2000 through FY2015, total federal funding from all agencies has exceeded $4 billion, with Corps and DOI accounting for approximately 75% of that total, or $3 billion.[9] CERP projects accounted for approximately $1.1 billion of this funding.

As previously noted, Everglades funding for the Corps and DOI typically receives the most attention from Congress. **Figure 1 Table 1**shows the split of CERP and non-CERP totals between the two agencies since 2001. Although overall funding for Everglades restoration by the Corps and DOI has remained somewhat constant since the enactment of CERP, the distribution between CERP and non-CERP funding has changed over time. CERP projects gradually increased from FY2001 to FY2010 (including significant increases under P.L. 111-5, the American Recovery and Reinvestment Act). Over the same period, funding for non-CERP projects (such as Mod Waters) decreased from earlier levels. Over the last two years, overall spending in both categories has decreased.

In recent years, Congress has for the most part agreed with the Administration's funding request for the Everglades. Fluctuations in requested and enacted funding levels can be attributed to a

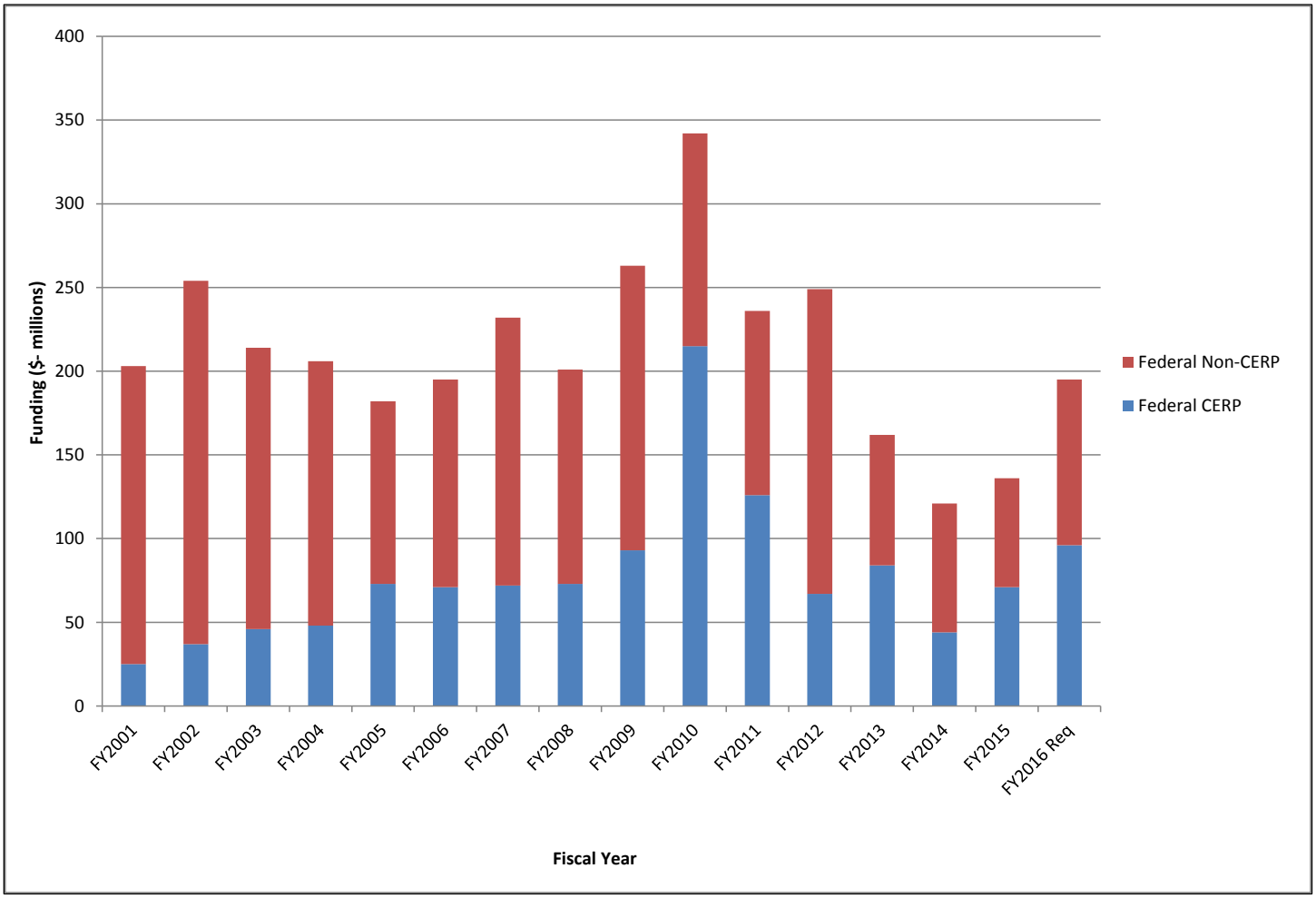
[7] In recent years Mod Waters funding has been provided solely to DOI. Florida Keys Water Quality Improvement was completed in FY2009.

[8] For more information, see below section, "Generation 3 CERP Projects."

[9] CRS analysis of departmental data for FY1993-FY2014.

number of factors. For instance, after authorization in FY2007, federal funding for "Generation 1" CERP projects (i.e., projects authorized in WRDA 2007) increased as project construction commenced after years of study and pilot projects; these funding levels began to decline in FY2012 as Generation 1 project construction activities wound down, while "Generation 2" projects (i.e., projects with completed project-implementation reports that were proposed and eventually authorized in WRRDA 2014) were awaiting authorizing legislation. For non-CERP funding trends, more recent decreases in funding can be attributed in part to the completion of the initial phases of construction on the Mod Waters project.

Figure 1. Corps/DOI Appropriations for Everglades Restoration



Source: CRS estimates based on the South Florida Ecosystem Restoration Crosscut Budget.

Notes: Does not include agency funding for activities outside of the Corps and DOI. Appropriated funding may differ from actual spending due to transfers, etc. FY2010 includes additional funding under P.L. 111-5 (ARRA).

Comparing Federal and State CERP Funding

Many view the status and amount of federal CERP funding relative to nonfederal funding for restoration activities under CERP as an important indicator of the federal government's commitment to Everglades restoration. While there is widespread agreement that the state has

invested more funding in CERP than has the federal government, comparisons between federal and state funding levels for Everglades restoration are complicated for a number of reasons.

Pursuant to WRDA 2000, CERP funding is to be cost shared equally between the federal government and nonfederal entities in Florida. And pursuant to general Corps policies under Section 101 of WRDA 1986 (P.L. 99-662), local project sponsors must fund the costs for project lands, easements, relocations, right-of-way, and disposal sites. As a result, a considerable amount of nonfederal funding for Everglades restoration has been provided early in the process by the state of Florida for land acquisition related to the expected "footprint" of future CERP projects. Although state CERP funding is widely acknowledged to be considerable, it has in some cases anticipated details of Everglades restoration projects that have yet to be federally approved and designed in detail by the Corps.[10] Thus, assigning a specific value of "state CERP expenditures" can be complicated.

Although some reference large nonfederal contributions toward CERP, the proportion of these expenditures that have been formally credited toward CERP is much smaller. It is possible that, depending on subsequent actions of the Corps and Congress, some of the aforementioned nonfederal funds will never be credited to federal CERP projects. Thus, the size, scope, and relative scheduling priority of new federal CERP projects often receives significant attention, and the state of Florida may disagree with federal agencies on certain restoration project details.

Differences between initial reported state expenditures and the amounts actually credited under CERP result in a wide range of state funding levels being attributed to Everglades restoration. For instance, in its annual crosscut budget the South Florida Ecosystem Restoration Task Force previously estimated that from 2001 to 2011, the state spent approximately $3 billion on CERP, which was considerably more than the federal government spent over that time. However, actual credited state and federal expenditures over the same period (as reported in other documents) were roughly equal.

In recent years, the state of Florida's funding of CERP has decreased due to a number of factors, including a decline in state tax revenues and a focus on other aspects of Everglades restoration. For instance, the state has increased its funding for projects under its Restoration Strategies Regional Water Quality Plan, which is intended to address EPA narrative and numeric nutrient criteria in the Everglades.[11] It is unclear whether state funding for CERP will return to previous levels at some point in the future. Previous estimates indicated that approximately $584 million in previous state expenditures would become "available" for crediting when "Generation 2" projects were authorized by Congress (as occurred in June 2014). Assuming no major influx of new funding by the state of Florida in the near future, the status of federal authorizing legislation for subsequent Everglades restoration projects may receive added attention.

[10] Funding is not formally "credited" by the Corps toward CERP project cost shares until a number of requirements have been met. These requirements include completion of a project implementation report (PIR) and authorization for construction of the project by Congress, as well as signing of a project partnership agreement.

[11] These efforts, which began in 2012, are being undertaken in response to a court-ordered Amended Determination by the EPA.

Implementation Progress/Challenges

Reporting

Congress has mandated several reports that regularly evaluate Everglades restoration. Pursuant to congressional direction, the National Research Council (NRC) publishes reviews of Everglades restoration biennially. The most recent report was published in 2014.[12] Separately, a report to Congress focusing specifically on CERP is published every five years, with the most recent report completed in 2010.[13] Both reports outline accomplishments and challenges related to CERP and non-CERP projects. Additionally, another report, this one by the South Florida Ecosystem Restoration Task Force, publishes a strategy and report on accomplishments biennially and is based on reporting requirements in WRDA 1996, among other things.[14]

Status and Accomplishments

Since passage of CERP in 2000, progress has been made on Everglades restoration for both CERP and non-CERP projects. Significant actions have included the construction of a number of pilot projects, the completion of studies, and the initiation of several construction projects (including completion of the initial phases of some projects). As discussed below, some non-CERP projects are nearing completion, and some Generation 1 CERP projects are expected to be completed in the near future. In addition to progress on construction, baseline information and processes have also been established, and the scientific understanding of many of the issues associated with Everglades restoration has improved. To date there have not been significant ecosystem benefits as a result of these projects. Supporters expect that most benefits will lag several years behind project construction and restoration of hydrologic conditions. Furthermore, maximizing these benefits is expected to require extensive monitoring and adaptive management, which would further confirm and refine approaches to restoration.

Selected CERP and non-CERP accomplishments as of 2014 are discussed below.

Land Acquisition and Pilot Efforts, and Non-CERP Projects

As noted above, as of 2014, Everglades restoration had achieved several milestones. Major achievements included accomplishment of several of the early steps that will be critical to the eventual completion of larger restoration projects. This includes the purchase by nonfederal project sponsors of most of the land expected to be required for CERP projects (a necessary first step in project construction by the Corps).[15] As discussed previously, many of these projects are expected to be credited toward the nonfederal cost share for individual projects.

Early pilot projects that will influence the eventual prioritization and construction of larger CERP projects also have been completed. Specifically, design and installation of six pilot projects authorized in WRDA 1999 and WRDA 2000 have taken place in recent years. Examples include

[12] Committee on Independent Scientific Review of Everglades Restoration, National Research Council, *Progress Toward Restoring the Everglades: The Fifth Biennial Review*, Washington, DC, 2014.

[13] *2010 CERP Report to Congress.*

[14] These reports are available at http://www.evergladesrestoration.gov/content/Strategic_Plan_Biennial_Report.html.

[15] The state estimated that as of 2014, it had acquired nearly 63% of lands needed for CERP. See South Florida Water Management District, "Quick Facts on Everglades Restoration Progress," January 2015, at http://www.sfwmd.gov/portal/page/portal/xrepository/sfwmd_repository_pdf/spl_everglades_progress.pdf.

Aquifer Storage and Recovery (ASR) pilot projects authorized in WRDA 1999 and WRDA 2000. These pilots assessed the feasibility of ASR technology at specific sites as they applied to Everglades restoration. Based on the findings from these projects (published in 2013), ASR is expected to be among the options considered for future water storage projects in South Florida. Other pilot projects have been completed and are achieving benefits, and they may be added to in future years. For example, a pilot groundwater seepage barrier to the southeast of the Mod Waters project was completed and has been found to be successful in blocking subsurface migration of groundwater. This pilot project may be expanded in the future.

Many non-CERP projects predate CERP and are therefore largely more established than CERP projects. Some non-CERP accomplishments as of 2015 included the completion of the Florida Keys Water Quality Improvement Project, as well as the National Park Service (NPS)-constructed 1-mile bridge component of the Modified Water Deliveries project, which may be expanded in the future.[16] Another major restoration project that pre-dated CERP, the Kissimmee River Project (authorized in 1992 and initiated in 1999), was nearing completion. Some outside observers have noted that this project has already resulted in significant benefits that demonstrate the potential for planned CERP projects.[17]

Generation 1 CERP Projects

Among the "Generation 1" CERP projects authorized in WRDA 2007 (Picayune Strand Restoration, Site 1 Impoundment, Indian River Lagoon-South or IRL-South, and the programmatic authority for Melaleuca Eradication that was authorized by Congress in WRDA 2000), as of 2014 planning/design was complete and construction was under way to some extent for all four projects. However, none of these projects is fully operational, and two of them (Picayune Strand and Site 1 Impoundment) may require additional congressional authorization to allow for alterations to the projects.

Generation 2 CERP Projects

As previously noted, WRRDA 2014 (P.L. 113-121) authorized four additional "Generation 2" CERP projects with completed project implementation reports at that time: the C-111 Spreader Canal, Biscayne Bay Coastal Wetlands, C-43 West Basin Storage Reservoir, and Broward County Water Preserve Areas (WPAs). Congressional authorization of WRRDA will allow construction to be initiated on two new projects (C-43 Reservoir and Broward County WPAs) and will allow federal funding to flow toward two other projects (the C-111 Spreader Canal and Biscayne Bay Coastal Wetlands) whose construction was previously initiated by the state. At the time of their authorization, these four projects were expected to have a total cost of approximately $1.9 billion.

Generation 3 CERP Projects

Two other CERP projects, the Central Everglades Planning Project (CEPP) and the Loxahatchee River Watershed Project, were still in the study process when WRRDA 2014 was enacted and were thus not authorized for federal construction. These "Generation 3" projects are currently expected to be among the next CERP projects proposed to be authorized for construction. CEPP

[16] Another planning project, known as the Next Steps project, is being directed by the National Park Service and may eventually lead to the bridging of up to an additional 5.5 miles of the roadway.

[17] Committee on Independent Scientific Review of Everglades Restoration, National Research Council, *Progress Toward Restoring the Everglades, the Fourth Biennial Review*, Washington, DC, 2014, p 102. Hereinafter referred to as the Fourth Biennial Review.

in particular is widely considered to be a high-priority project for Everglades restoration, and its status has received considerable attention (see box below).

The exact path to authorization for Generation 3 projects remains uncertain. Notably, pursuant to a new process established in WRRDA 2014, these projects could potentially be approved outside of the traditional authorization process for water resources projects.[18] However, if this process is not available in the future, federal work on these projects could not take place until they receive full federal authorization.

Central Everglades Planning Project

The Central Everglades Planning Project (or CEPP) is an Everglades restoration study under the CERP framework that was initiated in 2011 by the Corps and the Department of the Interior, with the state of Florida. It is expected to recommend a suite of restoration projects in the central Everglades that would be a part of the broader CERP program aiming to address problems associated with the timing and distribution of freshwater flows in the central Everglades.

CEPP was initiated due to a perceived need to prioritize restoration projects in the central portion of the Everglades ecosystem and enhance the prospects for Everglades restoration overall. To date, most restoration projects in the Everglades have focused on the periphery of the historic Everglades (rather than flows to the Central Everglades). CEPP would incorporate multiple CERP projects that were envisioned in the original 1999 plan, at a preliminary estimated cost of approximately $1.9 billion.

Due to the interest in expediting CEPP's authorization and construction, the Corps included this study among those investigations being undertaken as part of its National Planning Pilot Program. The aim of this effort is to complete feasibility studies in less time than is traditional for Corps investigations. Among other goals, studies initiated under the pilot are expected to adhere to a "3x3x3" rule, which means that feasibility studies will be completed with no more than $3 million in federal costs, in three years or less, and with the involvement of the three levels of Corps review (districts, divisions, and headquarters). Initially, final approval of CEPP was envisioned for December 2013. However, the Chief's Report was delayed and the project was not authorized with the other Generation 2 Everglades projects in WRRDA 2014. The final Chief's Report was released on December 23, 2014. The status of CEPP moving forward will depend on how (and when) Congress approaches future water resources project authorizations.

Challenges

Despite the achievement of some milestones, outside reviewers have frequently noted the relatively slow overall pace of Everglades restoration compared to the ambitious timetables laid out in the original program documents in 1999 and, more recently, in 2011. These observers have pointed out that while there has been some progress toward restoring the Everglades, project implementation has been considerably slower than expected due to a number of factors, such as inadequate appropriations and delayed project authorization.[19] Costs are another challenge: The total estimated cost of restoring the Everglades has gone up significantly over time. While CERP was originally estimated to cost a total of $8.2 billion, the 2010 update to these estimates indicated that it would take 50 years to complete, at a cost of $13.5 billion. According to the report, approximately $1.63 billion of the increased costs since the initial estimates could be attributed to price/scope changes (i.e., costs other than inflation).[20]

[18] For more information, see CRS Report R43298, *Water Resources Reform and Development Act of 2014: Comparison of Select Provisions*, by (name redacted) et al.

[19] The lack of project authorizations in a WRDA appears to have occurred mostly during the 2012-2014 time period, since PIRs for three projects were completed and awaiting congressional authorization beginning in 2012.

[20] According to the Corps, the increased cost estimates since 2000 are attributed to (1) $3.63 billion in inflation adjustments; and (2) $1.63 billion in scope/price changes.

Individually, some CERP projects have been implemented more slowly than anticipated. As of 2015, no major CERP project receiving federal funds had been completed, and many of the projects and schedules envisioned in earlier program documents have proven to be inaccurate.[21] Only a fraction of the project implementation reports originally envisioned under CERP have been finalized. Further, of these, eight projects have been authorized by Congress and four have had federal construction initiated.[22]

Reviewers have noted that funding has been a challenge for Everglades restoration projects, and this challenge could grow in future years. Recently authorized Generation 2 CERP projects will in several cases compete with ongoing Generation 1 and non-CERP projects for funding, and all of these projects must compete with other water resource projects and appropriations priorities. Even if funding were to stay at current levels, project implementation could slow if funding is spread out among multiple projects as they are authorized. In light of decreased funding by the state of Florida and its shift toward other restoration priorities in recent years, attaining new state funding where required for project cost shares may also be challenging.

Another challenge for Everglades restoration may be the status of potential new project authorizations under water resources development acts (WRDAs). CERP originally anticipated regular enactment of WRDAs and related Everglades restoration projects as they were studied and recommended to Congress. However, since 2000, only two WRDAs have been enacted, in 2007 and 2014. With enactment of WRRDA 2014, attention has shifted to the status of a large CERP project in the Central Everglades, the Central Everglades Planning Project, whose current path to authorization is unclear.[23] Absent new authorizations, federal work on Everglades restoration could slow considerably if ongoing projects wind down and the Corps is not authorized to expend funds to match prior state expenditures for some projects (as was the case in recent years). Such a scenario would likely delay CERP further relative to expected timelines.

Once construction projects are complete, ecological benefits associated with restoration are not expected immediately and will be dependent on a number of factors. While preliminary benefits in the early stages of project operations are possible, most note that it will take time for projects to individually and collectively refine their operations and demonstrate significant positive effects on species and the environment. In many cases, benefits may depend on the successful completion of one or more other projects, further highlighting the interconnected nature of the overall restoration effort. Thus, completion of project construction represents only one hurdle for Everglades restoration, with operations and monitoring of performance representing challenges in their own right.

Other challenges to Everglades restoration that may be of interest to Congress have been widely noted. These challenges include ongoing issues associated with water quality in central and south Florida that are being addressed by the state; the adequacy of some restoration efforts in recreating historical hydrologic conditions; and ongoing degradation of species and ecosystems in south Florida due to invasive species and other factors (which in some cases appears to have accelerated in recent years). The interaction of one or more of these factors has the potential to impact the operational status of federal restoration projects. For instance, although construction has been completed on the 1-mile bridge portion of the Mod Waters project, a number of other

[21] While WRDA 2000 conditionally authorized 10 projects, many of these projects will need to have their authorizations amended due to substantive changes in project scope.

[22] In several other cases, CERP projects have yet to be authorized by Congress, but nonfederal construction work has begun.

[23] See previous section, "Generation 3 CERP Projects."

hurdles related to water quality, land easements, and operational planning must be overcome before the project can be operated to achieve the flows and benefits that are expected to generate a positive ecological response. Similar variables and complications could impact the implementation of other Everglades restoration projects in the future.

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