

An hourglass-shaped graphic with a globe inside. The top bulb is dark blue, and the bottom bulb is light blue. The globe is centered in the narrow neck of the hourglass. The text is overlaid on the graphic.

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*Phosphorus Mitigation in the Everglades*

Pervaze Sheikh and Barbara Johnson, Resources, Science, and Industry Division

Updated January 13, 2004

**Abstract.** This report discusses the proposed FY2004 appropriations provisions that condition federal funding for Everglades restoration on compliance with water quality standards, provides a side-by-side analysis of pending appropriations legislation, and provides background and a timeline of efforts to address Everglades phosphorus pollution.

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## Phosphorus Mitigation in the Everglades

**Updated January 13, 2004**

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# Phosphorus Mitigation in the Everglades

## Summary

Provisions in the FY2004 Energy and Water Development Appropriations Act (P.L. 108-137) and the FY2004 Interior and Related Agencies Appropriations Act (P.L. 108-108) restrict funding for restoration activities in the Florida Everglades if Florida does not achieve certain phosphorus mitigation and water quality standards in Everglades waters by 2006. The provisions also require several federal agencies to report whether Florida is meeting the deadline. If not, some provisions state that Congress may disapprove funding for some Everglades restoration projects, including some projects in the \$7.8 billion Comprehensive Everglades Restoration Plan (CERP). (For more information, see CRS Report RS20702, *South Florida Ecosystem Restoration and the Comprehensive Everglades Ecosystem Restoration Plan*, by Nicole Carter and Pervaze Sheikh.)

These provisions may represent a turning point in the 10-year federal-state partnership to restore the Everglades. Since 1993, the federal, state, tribal and local governments have generally worked together towards restoration. Congress has not previously conditioned federal Everglades funding on Florida taking specific actions towards restoration, both because of this partnership and because a federal Consent Decree and a state law (the Everglades Forever Act) set a deadline of 2006 for phosphorus mitigation. However, in spring 2003, the Florida legislature amended the Everglades Forever Act to extend the deadline until at least 2016.

Phosphorus pollution has been a concern in the Everglades for many years. Excess phosphorus can cause imbalances in vegetation and habitat and alter native ecosystems. Much of this phosphorus is discharged in water from the Everglades Agricultural Area (EAA), which is located north of the Arthur R. Marshall Loxahatchee National Wildlife Refuge and the Everglades National Park. The EAA has been used intensively for farming, particularly sugar cane, since the 1950s. In 1988, the federal government sued the State of Florida and two of its agencies, alleging that water released onto federal lands from agricultural sources contained elevated levels of phosphorus and other nutrients in violation of state water quality standards. Based on a 1992 Consent Decree settling this lawsuit, Florida enacted the Everglades Forever Act in 1994. This act required the state to establish a numeric limit for phosphorus by December 2003 and required actions to comply with this limit by December 2006. The federal judge overseeing the Consent Decree later adopted the December 2006 deadline. In spring 2003, Florida amended the 1994 Act to create flexibility in meeting deadlines for phosphorus mitigation to 2016 or later, and in July 2003, Florida issued a rule establishing a limit for phosphorus of 10 parts per billion and methods to measure compliance with that limit.

This report discusses the FY2004 appropriations provisions that condition federal funding for Everglades restoration on compliance with water quality standards, provides a side-by-side analysis of pending appropriations legislation, and provides background and a timeline of efforts to address Everglades phosphorus pollution. This report will be updated as events warrant.

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# Phosphorus Mitigation in the Everglades

## Introduction

Pollution from excessive levels of phosphorus and other nutrients has long been recognized as a major contributor to the environmental degradation of the Florida Everglades ecosystem. In 1988, the federal government sued the State of Florida and two of its state agencies, alleging that water released onto federal lands from agricultural sources contained elevated levels of phosphorus and other nutrients in violation of state water quality standards. Based on a 1992 Consent Decree settling this lawsuit, Florida enacted the Everglades Forever Act in 1994. This act required the state to establish a numeric limit for phosphorus by December 2003 (i.e., phosphorus criterion) and required actions to comply with this limit by December 2006. Several Everglades-related lawsuits have since been filed by environmental, agricultural, and tribal stakeholders. In spring 2003, Florida amended the 1994 Act to create significant flexibility in deadlines for phosphorus mitigation, and in July 2003, Florida issued a rule establishing a limit for phosphorus and methods to measure compliance with that limit. These new laws and the rule have generated controversy among several stakeholders in the restoration effort underway in the Everglades and caused concern among some Members of Congress that the state may not meet the 2006 deadline for mitigating phosphorus.

This concern is reflected in the FY2004 Energy and Water Development Appropriations Act (P.L. 108-137, signed into law December 1, 2003) and the FY2004 Interior and Related Agencies Appropriations Act (P.L. 108-108, signed into law November 10, 2003). These laws condition FY2004 Everglades funding based on Florida meeting phosphorus mitigation and water quality standards by the 2006 deadline (as specified in the Consent Decree and the EFA) and require federal agencies to determine whether Florida is meeting the deadline. If not, the laws state that Congress may disapprove FY2004 funding for Everglades restoration projects.

## FY2004 Appropriations Acts

The FY2004 Energy and Water Development Appropriations Act (P.L. 108-137), and FY2004 Interior and Related Agencies Appropriations Act (P.L. 108-108), both include provisions related to phosphorus mitigation and water quality in the Everglades. Both condition funding for Everglades restoration on one or more reports that determine whether certain Everglades waters meet water quality requirements as specified in the legislation. deadline. The provisions require federal agencies to determine whether Florida is meeting the deadline, and if not, the provisions state that Congress may disapprove FY2004 funding for some Everglades restoration projects.

**Interior and Related Agencies Appropriations.** The FY2004 Interior and Related Agencies Appropriations Act conditions funds for two items related to

restoration in the Everglades: (1) the Modified Water Deliveries Project<sup>1</sup> and (2) Florida land acquisitions near the Everglades. The House Appropriations committee report (H. Rept. 108-195) contained several pages of language stating committee members' strong disapproval of Florida's new legislation and its potential effects on Everglades restoration, including members' concern that the new Florida laws could delay the restoration and protection of LNWR and ENP and hinder implementation of the shared \$7.8 billion federal-state Comprehensive Everglades Restoration Project (CERP).

**Modified Water Deliveries.** P.L. 108-108 states that both FY2004 funds and funds appropriated in prior years for the Modified Water Deliveries project should be available unless an annual report filed by the Secretaries of the Interior and the Army, the Attorney General, and the U.S. Environmental Protection Agency (EPA) finds that Florida is not meeting state water quality standards, and the state numeric phosphorus criteria and water quality requirements set forth in the 1992 Consent Decree in Arthur R. Marshall Loxahatchee National Wildlife Refuge (LNWR) and Everglades National Park (ENP). This report must be submitted to five Congressional committees: The House and Senate Appropriations Committees; the House Transportation and Infrastructure Committee; the House Resources Committee; and the Senate Environment and Public Works Committee. For funding to be disapproved, an unfavorable report must be submitted and both House and Senate Appropriations Committees must disapprove funding for the project in writing. This report is due 90 days after the date of enactment of the bill, which is February 8, 2004, and every year thereafter through 2006.

**Florida Land Acquisitions.** P.L. 108-108 directs the Interior Department to reallocate unused funds originally intended to help Florida purchase lands near the Everglades. These funds are estimated at \$32 million. Funds are to be reallocated to other agencies, including the U.S. Fish and Wildlife Service (FWS) and the U.S. Army Corps of Engineers (Corps), to improve water quality in LWNR.

**Reports by EPA Administrator.** House Report 108-195 has provisions that direct the Administrator of the Environmental Protection Agency to report on three issues: (1) whether Florida's recent amendments to its 1994 Everglades Forever Act (EFA) are consistent with the federal Clean Water Act, (2) whether EPA has approved Florida's numeric phosphorus criterion, and (3) whether the phosphorus criterion will protect LNWR and ENP consistent with the requirements of the 1992 Consent Decree.<sup>2</sup> The House report does not specify a due date for the EPA reports.

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<sup>1</sup> This is an ecological restoration project in south Florida designed to improve water deliveries to Everglades National Park. Appropriations for the Modified Water Deliveries project for FY2004 are \$12.9 million. For more information on the project, see CRS Report RS21331, *Everglades Restoration: Modified Water Deliveries Project*, by Pervaze Sheikh.

<sup>2</sup> The Florida Department of Environmental Protection phosphorus rule of July 18, 2003 sets different standards for state and federal waters. For state waters, the standard is an average of 10 parts per billion (ppb) for three of five years as measured over all data stations, with an annual average over all stations equal to or less than 11 ppb, and annual averages at individual stations less than or equal to 15 ppb. For LNWR and ENP, measurement  
(continued...)

**Energy and Water Appropriations.** The FY2004 Energy and Water Development Appropriations Act provides that \$137 million appropriated for restoring the Everglades (including funding for the Central and Southern Florida project, the Everglades and South Florida Ecosystem Restoration project, and the Kissimmee River Restoration project)<sup>3</sup> will be available unless: (1) the Secretary of the Army files an unfavorable report with the House and Senate Appropriations Committees and the State of Florida on whether Florida is meeting water quality requirements in the 1992 Consent Decree, within 30 days of enactment of the bill (December 31, 2003); (2) Florida fails to submit a plan to comply within 45 days of the report; (3) the Secretary files a report confirming that Florida has not delivered the plan; and (4) either the House or Senate Committee on Appropriations issues a written notice disapproving further expenditure of the funds.

The conference report left intact both House and Senate committee report language regarding the Everglades. House committee report language accompanying the bill states that the Committee may divert the restoration funds to other uses if Florida does not meet its responsibilities under the Consent Decree (H.Rept. 108-212). In addition, S.Rept. 108-105 states that water entering LNWR and ENP must meet state water quality standards and the phosphorus criterion throughout LNWR and ENP, as well as the Consent Decree requirements. This report also directs the EPA Administrator to send a report on these issues to the House and Senate Appropriations Committees, the House Transportation and Infrastructure Committee, and the Senate Environment and Public Works Committee.

**Analysis of Legislation.** Provisions in these acts indicate that Congress has strong concerns about whether the State of Florida will meet the 2006 deadline to reduce phosphorus pollution in the Everglades. These laws may cause some to question the viability of the federal-state partnership which has guided Everglades restoration over the last decade.<sup>4</sup> This view was supported in H.Rept. 108-212, which stated that “The Committee is concerned that recent changes to the State of Florida’s 1994 Everglades Forever Act represent a departure from the commitments and obligations of the State to improve the quality of the water entering the

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<sup>2</sup> (...continued)

methodology and phosphorus limits will be based on the 1992 Consent Decree.

<sup>3</sup> Affected funding levels for individual projects include: Kissimmee River restoration, \$17.7 million; Everglades and South Florida Ecosystem Restoration, \$14.8 million; Central and Southern Florida (C&SF) project (which includes CERP funding), \$104.5 million (the appropriation was \$105 million but \$500,000 of that is for the Upper St. Johns project element, which is not considered part of the Everglades ecosystem).

<sup>4</sup> Since 1993, when a federal interagency task force was created to guide the restoration with participation by state, tribal and local governments as well as interest groups, the Everglades restoration has been viewed as a new model for managing complex, multifaceted ecosystem restoration efforts. The interagency, multi-stakeholder effort was also viewed as a means of precluding litigation by providing a forum to raise and resolve issues before they could be brought to court. Although litigation has continued, since the passage of the CERP in 2000, the federal and state governments have been viewed by some as working hand-in-hand for environmental restoration.

Everglades by December 31, 2006....”<sup>5</sup> Some may also view these provisions as evidence of the federal government establishing oversight mechanisms to monitor state actions related to restoration. This could be interpreted as a departure from the status quo of federal-state cooperation to restore the Everglades. These provisions could also be significant for other large-scale ecosystem restoration projects that use the Everglades as a model, including similar federal-state cooperation, such as the CALFED Bay-Delta Program in California.

***Differences in Funding and Projects Affected.*** The Appropriations Acts passed place conditions on different amounts of funding. The FY2004 Interior Appropriations affects FY2004 funding for the Modified Water Deliveries project as well as unobligated funds for that project, and \$32 million in land acquisition funds. The Energy and Water legislation could affect \$137.5 million in funding for the Central and Southern Florida Project, the Everglades and South Florida Ecosystem Restoration Project (also known as “Critical Projects”), the Kissimmee River Restoration, and CERP.

***Differences in Standards and Water Measured.*** While the Energy and Water legislation requires water entering LNWR and ENP to meet Consent Decree standards, the Interior legislation is broader, requiring water entering *and* water throughout LNWR and ENP to meet Florida water quality standards, Florida phosphorus criterion standards, and Consent Decree requirements. (Although Florida’s phosphorus rule specifies that methodology laid out in the Consent Decree will be used to measure phosphorus in LNWR and ENP, it leaves the decision to Florida as to whether the criterion was violated.) The Interior legislation requires the waters to meet a broader set of standards, as state water quality standards will include limits on several substances besides phosphorus. Where water is measured (e.g., entering the land or throughout the land) may be significant as phosphorus levels can vary greatly depending on the point of measurement. Further, given the uncertainty surrounding nutrient measurements in the Everglades, it is uncertain if all state water quality standards can be measured and reported annually to comply with reporting requirements.

***Potential Project Delays.*** Some stakeholders are concerned that delays or changes to related projects or CERP components may jeopardize CERP’s feasibility. This concern was illustrated when land acquisitions for the Modified Water Deliveries Project were stalled due to litigation and protest over the use of eminent domain. According to the CERP authorization, without the completion of the Modified Water Deliveries Project, portions of CERP could not be funded according to federal law.<sup>6</sup> Similarly, the delay or loss of funding, as provided in these appropriations bills for non-compliance with water quality standards, could also lead to delays in the overall restoration process.

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<sup>5</sup> H. Rept. No. 108-195, p. 39.

<sup>6</sup> Water Resources Development Act of 2000, P.L. 106-541, Title VI, §(b)(2)(D)(4).



## Florida Everglades Forever Act Amendments

This Florida State Law, Chapter 2003-12, as amended (hereafter referred to as the Amended EFA) changes the Everglades Forever Act of 1994 (EFA; Florida Statutes §373.4592) by authorizing a new plan to mitigate phosphorus pollution in the Everglades, known as the “Everglades Protection Area Tributary Basins Conceptual Plan for Achieving Long-Term Water Quality Goals Final Report” or Long-Term Plan.<sup>7</sup> This report provides for a planning process to ensure that discharges of water into the Everglades will comply with state water quality standards and that phosphorus levels in these waters will not alter the native Everglades ecosystem. In contrast to the EFA, the new law contains provisions that appear to create flexibility in this goal. For example, the Long-Term Plan is to be implemented from 2003 to 2016 and is expected to “provide the best available phosphorus reduction technology”(§3(b)). Further, the new law allows the Long-Term Plan to be changed through adaptive management, which may lead to changes in the implementation of phosphorus reduction activities and an extension of any compliance deadlines.<sup>8</sup>

The amended EFA does contain provisions that suggest the December 2006 deadline for meeting the phosphorus criterion is expected to be met. For example, the bill states that “by December 31, 2006, the department and the district shall take such action as may be necessary to implement the pre-2006 projects and strategies of the Long-Term Plan so that water delivered to the Everglades Protection Area achieves in all parts of the Everglades Protection Area state water quality standards, including the phosphorus criterion and moderating provisions” (§3(b)). Note that this provision requires the implementation of projects and strategies by December 2006 to achieve the phosphorus criterion, but does *not require* the phosphorus criterion be met by 2006. The new law does not specify a particular date by which the phosphorus criterion must be met.<sup>9</sup> The Long-Term Plan also specifies that a second 10-year phase (2017-2026) to reduce phosphorus may be necessary to achieve the Plan objective. The objective in the Plan is to obtain, to the maximum extent practicable, a long-term geometric average phosphorus concentration in waters discharged to the Everglades that is within the upper annual concentration limit of the criterion as calculated in the *2003 Everglades Consolidated Report*.<sup>10</sup> This mean has been defined by the Florida Department of Environmental Protection as 10 ppb over a 5-year period, with no single year going beyond 15 ppb.

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<sup>7</sup> Burns and McDowell, Inc., *Final Report, Everglades Protection Area Tributary Basins, Conceptual Plan for Achieving Long-Term Quality Goals* (March 17, 2003).

<sup>8</sup> Adaptive management is incorporating new information from scientific studies and from new or unforeseen circumstances into the plans of a restoration effort, to assure that the restoration goals are achieved most efficiently.

<sup>9</sup> The Amended EFA states that “the Long-Term Plan shall be implemented for an initial 13-year phase (2003-2016) and shall achieve water quality standards relating to the phosphorus criterion in the Everglades protection area as determined by a network of monitoring stations established for this purpose” (§3(e)).

<sup>10</sup> South Florida Water Management District, *2003 Everglades Consolidated Report* (West Palm Beach, FL: Jan. 1, 2003).

**Criticism of Amendments.** The Amended EFA has generated criticism from some stakeholders in the Everglades restoration effort. Some Members of Congress, environmentalists, the Miccosukee Tribe, and others argue that the bill allows phosphorus mitigation to extend far beyond a compliance deadline of December 2006 set by the EFA and the Consent Decree. Some critics also argue that if phosphorus mitigation is delayed, it may compromise the state and federal governments' efforts to restore the Everglades, as well as jeopardize federal appropriations for CERP. In a joint statement issued by six U.S. Representatives, five criticisms of the Amended EFA were listed: (1) there is an uncertain period for compliance with water quality standards; (2) there is uncertainty over the water quality standard for phosphorus discharge; (3) because of delays in phosphorus mitigation, discharges of phosphorus-polluted water may enter federal lands such as Everglades National Park; (4) this bill provides for discharges of phosphorus-polluted water in unpolluted dry areas; and (5) this bill does not reflect the state's intent to fully fund water quality improvements in the Everglades and may shift some of the cost to the federal government.<sup>11</sup>

**Support of Amendments.** Proponents of the new law, which include the Florida legislature and agricultural interests in the Everglades, claim that it provides a realistic opportunity for mitigating phosphorus pollution in the Everglades. Some claim that lowering the phosphorus concentration in the Everglades by December 2006 to 10 ppb may not be feasible considering the technology and implementation of restoration projects to date. Indeed, they argue that it is more cost-effective and productive to implement a substitute plan for the plan provided in the original EFA, as (1) some of the more expensive projects are aimed at waters which contribute relatively little phosphorus to the Everglades and (2) CERP projects incorporate water quality standards and call for diverting water away from the Everglades anyway. Under this new plan, they argue, CERP and state efforts to lower phosphorus will work together more efficiently, and that the 1994 law did not foresee the creation of CERP. They support a new plan for restoring water quality that incorporates adaptive management and the best technology available to reduce phosphorus. Further, some proponents argue that the new law will lead to fewer lawsuits and will allow restoration projects to proceed without delays from an excessive number of lawsuits.

**Second Set of Amendments.** In response to critics of the amendments, a second set of amendments (Chapter 2003-394) was passed in June 2003 amending the EFA a second time. This second set of amendments deleted phrases that implied that phosphorus pollution was expected to be mitigated to the "maximum extent practicable," and included provisions that emphasized that projects planned for implementation prior to 2006 not be delayed. This amendment did not explicitly set a 2006 deadline, or any deadline, for phosphorus mitigation. Instead, this law provided for flexibility in the plan to mitigate phosphorus through an adaptive management process. The second set of amendments changed relatively few of the

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<sup>11</sup> Joint statement by Representatives C.W. Bill Young, David Hobson, Ralph Regula, Charles Taylor, Clay Shaw, and Porter Goss, released by the House Committee on Appropriations, April 29, 2003.

new provisions, and many of the same arguments criticizing and supporting the law remain.

## Overview of Phosphorus Pollution in the Everglades

**Phosphorus in the Everglades.** Phosphorus is one of the primary water pollutants in the Everglades and is generally thought to be caused by natural leaching, urban runoff, and agricultural runoff from sugar plantations, vegetable farms, and livestock operations (e.g., from animal waste). Some researchers have also attributed phosphorus in the Everglades to atmospheric deposition, but measurement techniques and values for this are highly uncertain. The *2003 Everglades Consolidated Report* documents total phosphorus concentrations as being highest in the northern Everglades (waters flowing into LNWR and Water Conservation Areas; see Figure 1), and lowest in the southern Everglades, where ENP is located. The report states that this is indicative of phosphorus-rich water in the canals that carry water from the Everglades Agricultural Area, although urban runoff has also been identified as contributing phosphorus to the Everglades.

**Effects of Excessive Phosphorus.** In the Everglades, as in other ecosystems, excessive levels of phosphorus and other nutrients lead to *eutrophication*. Eutrophication is a natural process that occurs when bodies of water experience an increase in the inflow of nutrients, including phosphorus, leading to an increase in organic matter (e.g., plants in the case of the Everglades). When plants begin to die and decompose, they consume dissolved oxygen from the water. A rapid inflow of excessive nutrients can speed this process to an unnatural pace. If dissolved oxygen levels fall substantially and rapidly, fish and aquatic plant populations will suffer. Eutrophication also favors plants that can use high levels of nutrients. For example, excessive levels of phosphorus in the Everglades is thought to be the primary factor behind the conversion of native sawgrass marshes and sloughs to vegetation stands dominated by cattails.<sup>12</sup> This shift in vegetation has resulted in less habitat for wading birds and other wildlife and reduced populations of several native plant species. Further, the rapid growth of cattails is partly responsible for clogging waterways and altering the hydrology in parts of the Everglades.

**History of Everglades Phosphorus Pollution.** The beginning of excessive phosphorus input into the Everglades can be traced back to the 1940s, when several thousand acres of land were cleared and converted to agricultural production. This clearing exposed soils, which began to erode and leach phosphorus

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<sup>12</sup> Davis, S. M., 1994. "Phosphorus Inputs and Vegetation Sensitivity in the Everglades" in *Everglades: The Ecosystem and Its Restoration*, S. M. Davis and J. C. Ogden (Eds.), St. Lucie Press, Delray Beach, Florida, Chapter 15, p. 357. The contribution of phosphorus to increasing cattail populations was also recognized by all parties to settlement agreement: "Excess phosphorus accumulates in the peat underlying the water...and disturbs the natural species composition...these disturbed communities deplete the marsh of oxygen, and, ultimately, result in native sawgrass and wet prairie communities being replaced by dense cattail stands or other nutrient-tolerant ecosystems." *United States v. South Florida Water Management District, et al.*, Case No. 88-1886-Civ-Hoeveler, Settlement Agreement, July 26, 1991, p. 7.

into waterways that connected to the Everglades. Production intensified after the Cuban revolution in 1959, as Cuban exiles fled to Florida and established sugar plantations. By the mid-1960s, Florida sugar production had increased four-fold.<sup>13</sup> Today, sugarcane production contributes two-thirds of the economic production of Everglades agriculture, and uses nearly 80% of the crop land in the Everglades Agricultural Area (EAA)<sup>14</sup>. (See Figure 1.) Sugar production contributes phosphorus to the ecosystem primarily through fertilizers and to a lesser extent through decomposition of plants. Fertilizers and plant decomposition are also the main causes of phosphorus leaching from vegetable production.

**1988 Lawsuit and 1992 Consent Decree.** By the 1980s, the problem with phosphorus had gained visibility. In 1988, the federal government sued the South Florida Water Management District (SFWMD) and the Florida Department of Environmental Regulation,<sup>15</sup> alleging that these agencies were not enforcing state water quality standards in ENP and the LNWR. State water quality standards at the time included a narrative criterion stating that nutrient concentrations in water should not cause an imbalance in natural populations of aquatic flora and fauna.<sup>16</sup> After nearly three years of litigation, the parties reached a settlement in 1991 acknowledging that water entering LNWR did cause such an imbalance in violation of state water quality standards, and that water entering ENP from the state Water Conservation Areas also contained harmful levels of phosphorus.<sup>17</sup>

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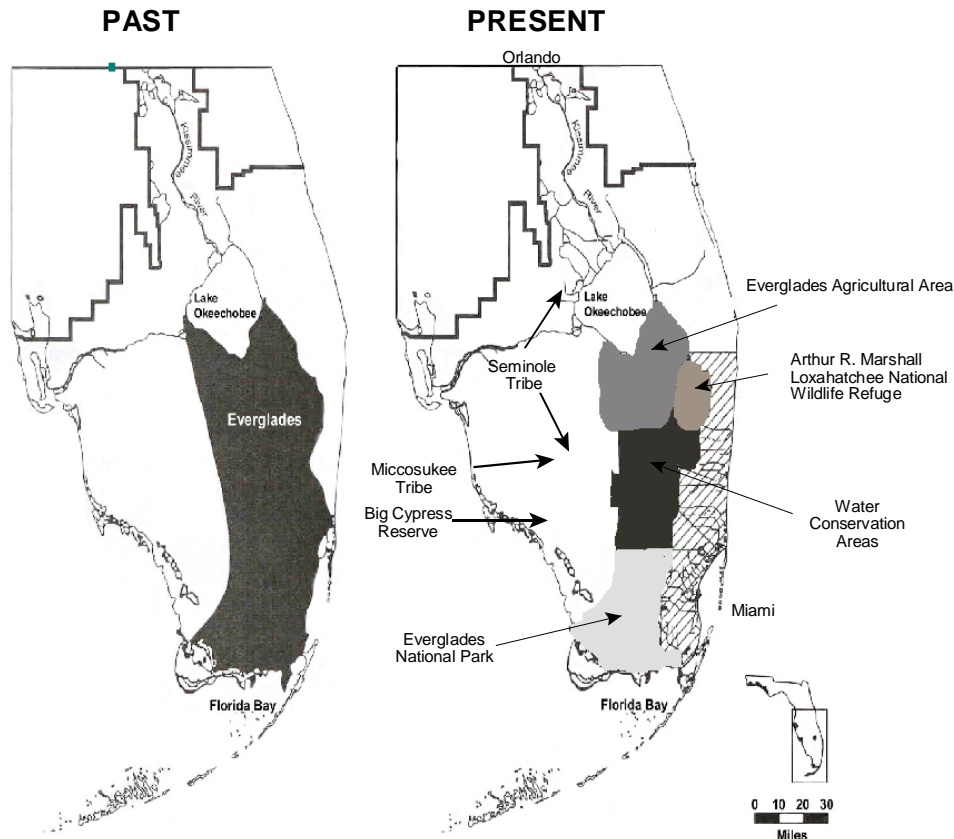
<sup>13</sup> U.S. Dept. of Agriculture, Economic Research Service, *U.S. Sugar Statistical Compendium*, (Washington, DC: August 1991), p. 30.

<sup>14</sup> South Florida Water Management District, *Environmental Conditions Update* (West Palm Beach, FL: April 2001).

<sup>15</sup> This agency was the forerunner of today's Florida Department of Environmental Protection.

<sup>16</sup> *United States v. South Florida Water Management District, et al.*, Case No. 88-1886-Civ-Hoeveler, Settlement Agreement, July 26, 1991, p. 3.

<sup>17</sup> *United States v. South Florida Water Management District, et al.*, Case No. 88-1886-Civ-Hoeveler, Settlement Agreement, July 26, 1991, p. 3.

**Figure 1. South Florida Ecosystem — Past and Present**

**Source:** Adapted from a map created by the South Florida Ecosystem Task Force

The settlement outlined the steps Florida would take to restore and maintain water quality, including:

- achieving specified interim phosphorus limits by 1997 and specified long-term phosphorus limits by 2002 (later extended to 2006) in the ENP and LNWR;
- establishing Stormwater Treatment Areas (STAs), which are large filtration marshes that would filter agricultural runoff from the EAA; and
- establishing a regulatory permit program requiring farmers to use Best Management Practices (BMPs) to reduce agricultural run-off (including phosphorus) from the EAA.<sup>18</sup>

The phosphorus limits established were different for LNWR and ENP. For example, by July 2002, water in the Shark River Slough in eastern ENP was supposed to meet phosphorus limits of less than 8 ppb (in a wet year) to less than 13 ppb (in a dry year). Water in LNWR was expected to meet phosphorus limits of 7 ppb (in a wet

<sup>18</sup> *Id.*, pp. 9-11. Best management practices are voluntary management techniques used by farmers aimed at reducing agricultural run-off, among other things.

year) to 17 ppb (in a dry year) by July 2002.<sup>19</sup> As part of the phosphorus reduction strategy, STAs and BMPs were expected to limit phosphorus in waters flowing from the EAA into LNWR to a long-term average of 50 ppb.<sup>20</sup> This settlement agreement was entered as part of a Consent Decree in *United States v. South Florida Water Management District* (847 F. Supp. 1567) in 1992.

**1994 Florida Everglades Forever Act.** Litigation ensued after the Consent Decree was reached. In 1994, Florida passed its EFA in an attempt to end lawsuits and administrative appeals generated from the settlement agreement. This Act provided the current framework for restoration efforts in Florida regarding water quality and phosphorus pollution. It differed from the Consent Decree in two important ways: (1) it covered state Everglades lands in addition to federal Everglades lands, and (2) it established a deadline for meeting state water quality requirements by December 31, 2006.<sup>21</sup> The EFA also acknowledged that waters entering the Everglades contained an excessive level of phosphorus<sup>22</sup> and provided for: (1) implementation of the Everglades Construction Project through the construction of six STAs; (2) monitoring and research programs in the EAA; (3) a mandate for the Florida Department of Environmental Protection (DEP) to propose a numerical phosphorus criterion and adopt a rule by December 31, 2003, with a default criterion of 10 ppb if this is not achieved; (4) creation of an agricultural privilege tax in the C-139 basin (agricultural area) and EAA;<sup>23</sup> (5) the right of the SFWMD, to use funds from Florida's Preservation 2000 program to construct STAs;<sup>24</sup> and (6) by December 31, 2006, the DEP and the SFWMD must take the necessary actions to ensure that water delivered to the EAA achieves state water quality standards and the phosphorus criterion.<sup>25</sup> It also specified that the agricultural sector use BMPs to lower phosphorus runoff.

**Results of 1994 EFA.** Phosphorus mitigation by agriculture in the Everglades seems to be working. Some stakeholders point to this to justify added flexibility in reaching phosphorus mitigation goals. Due to BMPs and STAs, phosphorus loads in the Everglades have been decreasing. *The 2004 Draft Everglades Consolidated Report* by SFWMD states that the BMPs and STAs have

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<sup>19</sup> Id. at pp. 9-10 and at Appendix B pp. 3-4.

<sup>20</sup> Id. at p. 11.

<sup>21</sup> Rizzardi, "Translating Science into Law: Phosphorus Standards in the Everglades," *Journal of Land Use and Environmental Law*, Fall 2001, p.153.

<sup>22</sup> Id.

<sup>23</sup> An agricultural privilege tax is a tax on crop land that is under production and located within the Everglades Agricultural Area. The tax is assessed on a per-acre basis, and some proceeds from the tax are entered into the state's Everglades Trust Fund, which is used to fund restoration activities in the Everglades.

<sup>24</sup> The Preservation 2000 program is a state fund used for the acquisition and protection of nearly 1.25 million acres of land in Florida.

<sup>25</sup> Florida Stat. §373.4592 (2000). Pursuant to the Clean Water Act and corresponding federal regulations, the Miccosukee Tribe established its own water quality standards, including a numeric criterion for phosphorus at 10 ppb.

reduced average total phosphorus discharges from the stormwater treatment areas to about 35 ppb of phosphorus (with a potential range of 25-45 ppb), compared to the interim goal of 50 ppb established by the 1994 Act. The report also states that these practices removed more than 1,400 tons of phosphorus that otherwise would have entered the Everglades.<sup>26</sup>

**2003 Long-Term Plan.** In 2003, the SFWMD Governing Board determined that meeting the deadlines in the original EFA (without integrating CERP projects with SFWMD projects) would require actions in addition to the STAs and BMPs, many of which would be costly — approximately \$700 million — and possibly unnecessary once CERP components are in place.<sup>27</sup> The board decided instead to recommend flexibility in achieving the phosphorus criterion to allow SFWMD projects to be integrated with CERP projects. Based on these concerns and a review of the reduced phosphorus levels in water discharged into the Everglades Protection Area, the board endorsed the *Everglades Protection Area Tributary Basins Conceptual Plan for Achieving Long-Term Water Quality Goals Final Report* or Long-Term Plan. This plan recommends an initial phase from 2003-2016 for achieving the 10 ppb threshold for phosphorus and a second phase of 2017-2023 if needed. The plan has three primary components, including (1) the implementation of structural and operational modifications to projects that aim to lower phosphorus levels in the Everglades (e.g., STAs) by December 2006; (2) optimization of water quality performance and integration with CERP by December 2006; and (3) adaptive management and resulting modifications and improvements to enhance water quality after December 2006.<sup>28</sup> This plan formed the basis for Florida’s amendments to the EFA in May 2003.

**Further Historical Context.** The preceding history provides some context for the FY2004 appropriations provisions that restrict federal funding for Everglades restoration based on compliance with water quality standards. The following appendices provide further context in the form of (1) a historical timeline of efforts to address Everglades phosphorus pollution and (2) a side-by-side analysis of pending appropriations legislation.

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<sup>26</sup> SFWMD, *Draft 2004 Everglades Consolidated Report*, Chapter 8A: Water Quality Goals, p. 8A-1.

<sup>27</sup> *Id.* at 11, “Executive Summary”, p. ES-4.

<sup>28</sup> *Id.*, pp. ES-5 to ES-7.

## Appendix A: Timeline of Phosphorus Mitigation in Florida

Year	Event
1988	<p><b>Lawsuit:</b> The federal government sues the State of Florida and South Florida Water Management District, alleging that urban and agricultural water entering Everglades National Park (ENP) and Loxahatchee National Wildlife Refuge (LNWR) contain levels of phosphorus that exceed state water quality standards. (<i>United States v. South Florida Water Management District</i>, 922 F.2d 704 (11<sup>th</sup> Cir. 1991).)</p>
1992	<p><b>Consent Decree:</b> Parties to lawsuit settle, agreeing to:</p> <ul style="list-style-type: none"> <li>• establish numeric limits for phosphorus in ENP and LNWR;</li> <li>• construct Stormwater Treatment Areas (STAs) to filter water flowing from the Everglades Agricultural Area (EAA);</li> <li>• require farmers to use Best Management Practices (BMPs) to reduce phosphorus in water leaving the EAA; and</li> <li>• require waters flowing to ENP and LNWR to meet state water quality standards by July 1, 2002.</li> </ul> <p>(<i>United States v. South Florida Water Management District</i>, Case No. 88-1886-Civ-Hoeveler, Memorandum Opinion and Order Entering Settlement Agreement as Consent Decree (Feb. 24, 1992).)</p>
	<p><b>Effort to use SWIM:</b> The South Florida Water Management District attempts to use the “Surface Water Improvement Management” (SWIM) process to implement the Consent Decree. By December 1992 SFWMD faces several Everglades-related lawsuits and seeks a mediated solution.</p>
1993	<p><b>Statement of Principles:</b> Federal, state and agricultural groups reach an agreement called a “statement of principles” and make significant financial commitments to improve water quality. Parties agree to:</p> <ul style="list-style-type: none"> <li>• joint commitment ending litigation;</li> <li>• construct STAs; and</li> <li>• implement agricultural BMPs.</li> </ul>
1994	<p><b>Everglades Construction Project (ECP):</b> Design completed for ECP. Includes six STAs to filter almost 1.4 million acre-feet of water flowing from the EAA before it reaches the Everglades Protection Area.<sup>a</sup> The ECP is expected to reduce phosphorus to an “interim level” of 50 ppb.</p>
	<p><b>Everglades Forever Act:</b> The Florida legislature passes the Everglades Forever Act, covering state and federal waters. It applies to both state and federal Everglades lands and changes the deadline to meet water quality standards to Dec. 31, 2006. It requires implementation of the ECP and the following:</p> <ul style="list-style-type: none"> <li>• by Dec. 31, 2003, Florida DEP must establish a numeric phosphorus criterion for the Everglades; if not, default criterion for phosphorus will be 10 ppb.</li> <li>• by Dec. 31, 2003, SFWMD must seek a permit to modify the ECP, and must ensure compliance with phosphorus and other water quality standards by Dec. 31, 2006; and</li> <li>• by Dec. 31, 2006, waters entering Everglades Protection Area must achieve state standards for phosphorus.</li> </ul>



Year	Event
1996	<u>BMPs</u> : Farmers in the EAA begin implementing Best Management Practices.
1997	<u>Everglades Construction Project</u> : Construction begins on STAs.
2000	<u>Comprehensive Plan</u> : The Water Resources Development Act of 2000 authorizes the Comprehensive Everglades Restoration Plan (“CERP”), with an estimated cost of \$7.8 billion to be shared by the federal and state governments.
2001	<u>New Federal Deadline</u> : Judge William Hoeweler agrees to extend the deadlines in the Consent Decree for meeting water quality standards from July 1, 2002 to Dec. 31, 2006, as specified in the EFA.
2003	<u>Challenges to Meeting 10 ppb by December 2006</u> : The SFWMD determines that: <ul style="list-style-type: none"> <li>• actions in addition to STAs and BMPs are needed to reach 10 ppb by the Dec. 2006 deadline;<sup>b</sup></li> <li>• such actions would be very costly if done independently of CERP; others would be unnecessary once CERP is in place; and</li> <li>• therefore, achieving cost-effective improvements involves integrating SFWMD projects with CERP projects.</li> </ul>
March 2003	<u>Long-Term Plan</u> : SFWMD Governing Board determines need for flexibility in meeting 10 ppb standard. Plan involves: <ul style="list-style-type: none"> <li>• initial phase of 2003-2016 and second phase of 2017-2023;</li> <li>• implement as many pre-2006 improvements to STAs as possible to optimize STA performance; and</li> <li>• plan objective is to obtain phosphorus concentration in water flowing to Everglades that is “within the upper annual concentration limit of the [phosphorus] criterion as calculated by the Department in the 2003 Everglades Consolidated Report.”</li> </ul>
April 2003	<u>STA Status</u> : <sup>c</sup> <ul style="list-style-type: none"> <li>• Four of six STAs operational</li> <li>• STAs reduce phosphorus to about 40 ppb (a 63% reduction)</li> </ul>
	<u>Letter from Members of Congress</u> : Reps. Young (FL), Regula, Hobson, Taylor (NC), Shaw and Goss release a joint statement on the pending Florida legislature bill to amend the 1994 EFA. They call on Florida’s governor to reject the bill because it creates uncertainty over when phosphorus standard will be achieved.
May 2003	<u>First Amendments to EFA</u> : In May 2003, Florida amends the EFA. The amendments: <ul style="list-style-type: none"> <li>• delete requirements to meet phosphorus criterion by 2006;</li> <li>• require implementation of the Long-Term Plan initial phase (2003-2016), including moderating provisions, to achieve phosphorus standards “to the maximum extent practicable;” and</li> <li>• specify that permits issued by Florida DEP be based on best available phosphorus reduction technology (BAPRT) and technology-based effluent limitation.</li> </ul>

Year	Event
June 2003	<p><u>Second Amendment to EFA:</u> Florida amends the EFA again in what is referred to as “the glitch bill.” This bill:</p> <ul style="list-style-type: none"> <li>• specifies moderating provisions shall not extend beyond 2016;</li> <li>• requires pre-2006 projects in Long-Term Plan be implemented without delay; and</li> <li>• eliminates “maximum extent practicable” language.</li> </ul>
July 2003	<p><u>Florida Phosphorus Regulation:</u> Florida’s Environmental Regulation Commission issues phosphorus rule, setting standard at long-term geometric mean of 10 ppb. The rule:</p> <ul style="list-style-type: none"> <li>• specifies that methods in the 1992 Consent Decree shall be used to measure whether the phosphorus criterion has been achieved in LNWR and Everglades NP;</li> <li>• includes “moderating provisions” stating that until Dec. 31, 2016, discharges into or within the Everglades Protection Area (defined as state Water Conservation Areas and ENP) shall be permitted if the applicant is using BAPRT;</li> <li>• recognizes “reflux,” the diffusion of old phosphorus-laden sediments back into the water, as one reason the restoration will be a long-term process; and</li> <li>• states that the rule is intended to achieve phosphorus levels established for LNWR and Everglades NP in the 1991 Settlement Agreement.</li> </ul>

Source: Congressional Research Service.

- a. *2003 Everglades Consolidated Report*, p. 4.
- b. *2003 Everglades Consolidated Report*, p. 26.
- c. *2003 Everglades Consolidated Report*, p. 13.

### Appendix B: Comparison of Pending Legislation

<b>P.L. 108-137 (Energy and Water Development Appropriations) Army Corps Construction General Account</b>	<b>P.L. 108-108 (Interior and Related Agencies Appropriations) National Park Service Construction Account</b>	<b>Comments</b>
<p>Funds for “preservation and restoration of the Florida Everglades” shall be available unless all four conditions apply:</p> <p>(1) The Secretary of the Army finds that waters entering Loxahatchee NWR and Everglades do not meet water quality requirements in 1992 Consent Decree;</p> <p>(2) State fails to submit plan for compliance within 45 days of Army report;</p> <p>(3) Army sends second report saying state has not submitted plan; and</p> <p>(4) Either House or Senate Appropriations Committee disapproves of spending</p>	<p>Funds for Modified Waters Delivery Project “appropriated in this Act and in any prior Acts” shall be available unless the Secretary of the Interior, Secretary of the Army, EPA Administrator and Attorney General jointly find that waters entering Loxahatchee NWR and Everglades NP and waters throughout those areas</p> <p>(1) do not meet state water quality standards, numeric phosphorus criteria, and 1992 Consent Decree water quality requirements and</p> <p>(2) House and Senate Appropriations disapprove of spending</p> <p>P.L. 108-108 specifies in the National Park Service Land Acquisition and State Assistance account that the Department of the Interior should redirect funds previously appropriated (estimated at \$32 million) to assist Florida in buying lands near the Everglades. Funds should be used to benefit LNWR. Any remaining funds should be used to benefit lands managed by the Department of the Interior in South Florida.</p>	<p>–P.L. 108-137 could be interpreted to cover all funding in bill that is relevant to restoring the Everglades, estimated at \$104.5 million. The default is that funds are available unless water quality and phosphorus standards are not met.</p> <p>–P.L. 108-108 refers to FY2004 and prior year funds for the Modified Waters Delivery project, as well as prior year land acquisition funds. If report determines waters do not meet standards, funds are not available.</p> <p>– P.L. 108-108 covers water <i>in</i> ENP and LNWR as well as water entering those areas; whereas P.L. 108-137 (House) refers to waters entering ENP and LNWR.</p>
<p>Report required not later than 30 days after enactment (Dec. 31, 2003).</p>	<p>Report required by 90 days after bill enactment (February 8, 2004) and annually until December 2006.</p>	<p>Both laws include requirements to meet 1992 Consent Decree. P.L. 108-108 also requires water to meet state standards and the numeric phosphorus criteria.</p>

<p><b>P.L. 108-137 (Energy and Water Development Appropriations) Army Corps Construction General Account</b></p>	<p><b>P.L. 108-108 (Interior and Related Agencies Appropriations) National Park Service Construction Account</b></p>	<p><b>Comments</b></p>
<p>(H. Rpt. 108-212) Committee has included language to divert Everglades funds to other uses if state does not meet Consent Decree responsibilities.</p> <p>(S. Rpt. 108-105) Committee directs EPA Administrator to certify by Sept. 30, 2003 and annually through 2006 to House and Senate Committees on Appropriations, House Committee on Transportation and Infrastructure and Senate Environment and Public Works Committee that water entering LNWR and ENP meets state water quality standards, state phosphorus criteria and Consent Decree requirements. House and Senate Appropriations Committees must respond in writing that funds are available for expenditure.</p>	<p>(H. Rept. 108-195) House Committee concerned that changes to state’s Everglades Forever Act (EFA) “represent a departure from the commitments to improve quality of water entering the Everglades by December 31, 2006...The Committee made its position ...very clear: clean water by December 2006, no mixing zones, no relief from achieving the 10 ppb standard. There must be an open, transparent process with all stakeholders participating...Future efforts to restore the Everglades are now at risk. Given the uncertainty of when the State will actually achieve the planned water quality improvements, the Committee believes that future Federal funding for Everglades restoration should be tied to specific progress to improve water quality.”</p> <p>H. Rpt. 108-195 Directs EPA Administrator to submit two reports: (1) whether EPA approved amendments to EFA in accordance with Clean Water Act; (2) whether EPA approved Florida rule on numeric phosphorus criterion and (3) whether criterion will protect federal resources consistent with Consent Decree requirements.</p> <p>Land acquisition: report notes recent changes to the Everglades Forever Act may mean that “acquisition of additional lands for CERP [the joint federal-state restoration] may not be the highest priority for expenditure...”</p>	<p>The House Committee report for Interior Appropriations contains additional requirements for reports to be submitted by the EPA. This report contains several pages of Committee concerns about Florida’s new amendments to the EFA, noting that the Committee has funded over \$1 billion for Everglades Restoration and that funds will not be available unless the report required by the bill finds Florida is meeting its obligations to improve water entering LNWR and ENP consistent with the 1992 Consent Decree.</p> <p>The House Report for Interior Appropriations also states the Committee is pleased Gov. Bush said that Florida intends to comply with the Consent Decree.</p>

<b>P.L. 108-137 (Energy and Water Development Appropriations) Army Corps Construction General Account</b>	<b>P.L. 108-108 (Interior and Related Agencies Appropriations) National Park Service Construction Account</b>	<b>Comments</b>
<p><a href="http://wikileaks.org/wiki/CRS-RL32131">http://wikileaks.org/wiki/CRS-RL32131</a></p>	<p>No deadline specified for EPA reports, and no funding conditioned on EPA report findings. (H. Rept. 108-195)</p> <p>The conference report, H. Rept. 108-330, states that the managers have included language contained in the House bill regarding release of Modified Water Deliveries funds and use of unobligated land acquisition funds.</p>	