2007~2008 Update

Comprehensive Everglades Restoration Plan

A journey is under way to restore America's Everglades. This journey includes the largest environmental restoration program in history and is guided by the Comprehensive Everglades Restoration Plan (CERP). This effort will not only enhance the Everglades and associated lakes, rivers and bays in south Florida, but it will also enhance the quality of life for people and wildlife.

The CERP is more than just a collection of projects to capture and store water; it is a program that revitalizes south Florida's natural environment. This report reflects CERP restoration efforts and the status of projects through August 2008 along with estimated costs for the program as of October 1, 2008.

Additional information can be found at the following Web sites:
www.evergladesplan.org and
www.evergladesnow.org

or by contacting:

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the journey to restore America's Everglades

A partnership of the U.S. Army Corps of Engineers, the South Florida Water Management District, and many other federal, state, local and tribal partners.

US Army Corps of Engineers
Jacksonville District

sfwmd.gov

America's Everglades

was once a vibrant, free-flowing "river of grass," extending from central Florida's Kissimmee Chain of Lakes near Orlando to the southernmost tip of the peninsula at Florida Bay. Today, these sub-tropical wetlands still encompass unique habitats and support a rich diversity of plants, fish and other animals, and one of the nation's largest national parks.

Over time, however, significant development took place within the region, allowing for tremendous population and economic growth. The construction of canals and water control structures, along with increased urban and agricultural water needs, changed natural water patterns and contributed to unintended consequences – loss of 50 percent of wetlands, disrupted timing of water flows, deterioration of water quality, fewer wading birds, declining lake and estuary health, and loss of native habitat to non-native species.

Recognizing that a healthy ecosystem is vital to a healthy economy, a number of initiatives are under way to revitalize and protect this national treasure, including restoring the Kissimmee River, improving water flows to Everglades National Park, and creating treatment marshes to improve water quality. A key focus is implementation of the Comprehensive Everglades Restoration Plan (CERP).

The Comprehensive Everglades Restoration Plan

The CERP is the largest environmental restoration program in history. It builds upon, and complements other state and federal initiatives to revitalize south Florida's ecosystem. The plan, submitted to Congress in 1999, is composed of a series of projects designed to address four major characteristics of water flow: quantity, quality, timing, and distribution.

Upon Congressional authorization in 2000, the federal government and the state of Florida entered into a 50/50 partnership to restore, protect and preserve water resources in central and southern Florida, including the Everglades. The U.S. Army Corps of Engineers (USACE) is the lead federal agency and the South Florida Water Management District (SFWMD) is the lead state agency for the effort.

Together, these actions will not only provide significant and lasting environmental benefits, but will also enhance water supplies and maintain flood protection for the region.

Key progress to date:

- More than half (58.5%) of the nearly 400,000 acres needed for restoration are in public ownership.
- Project-specific planning and design are under way, with some components under construction.
- Passage of the 2007 Water Resources Development Act (WRDA) authorized for construction the Picayune Strand Restoration, Indian River Lagoon-South and Site 1 Impoundment (Fran Reich Preserve) projects.
- Interim Goals for environmental improvement were established for this unprecedented undertaking so progress can be evaluated at specific points by federal and state agency managers, along with Congress, throughout the planning and implementation process.
- Interim Targets were also established to evaluate progress toward meeting other water-related needs, such as water supply for the region, provided for in the Plan.
- State rule-making for the first water reservations (associated with the Indian River Lagoon-South and Picayune Strand Restoration projects) has been initiated to ensure that water intended for natural systems is safeguarded from other uses.
- The National Academy of Sciences' two independent reviews of CERP found that regarding the federal portion of the program, funding and progress are lagging behind schedule, but the scientific program is comprehensive and high quality.
- The first biennial System Status Report was completed. The report describes the current conditions of the ecosystem, establishing a baseline that will be used to track changes in ecosystem health.
- Public outreach efforts continue to engage diverse racial, ethnic and economic communities in the region on the importance of the CERP. In addition to traditional publications and newsletters, multi-language information is being provided via the internet, information kiosks, community gatherings, public meetings with elected officials, and ecosystem restoration-related curricula taught in schools.

State Expedited Projects

To help achieve ecosystem-wide benefits early, Florida is fast-tracking various Everglades water quality and restoration projects. As part of that overall initiative, the SFWMD continues to move forward with financing, design and construction aspects of selected projects, or portions of projects, identified in the CERP. More information on the state's expedited effort is highlighted in green in the listing of current CERP projects and their descriptions.

Key progress to date:

- Ninety-nine percent of the land needed for these selected projects is in public ownership.
- Obtained court approval and issued initial Certificates of Participation for accelerated construction. This is the first time in the country that this funding mechanism has been used for environmental restoration.
- Design and/or construction is in progress on all project components.
- Small Business Enterprise and workforce training initiatives helped promote contracting with local businesses and increased the availability of needed skilled workers.

A Better Tomorrow

Water is the lifeblood of the Everglades. With all of the improvements in place to capture, store, treat and deliver more natural flow, the ecosystem will become healthier and more resilient. The improved water management system will provide fresh water, flood risk management, recreation and many other benefits essential to the region's overall quality of life for generations to come.

Roseate spoonbill

Snail kite

Juvenile alligator

Florida panther

Florida white-tailed deer

From Concept to Completion: CERP Project Development

The CERP project development process includes:

Planning -- A Project Implementation Report (PIR) is developed for each project that includes all of the engineering and environmental studies, project alternatives, evaluation and testing results, and summaries of public input. Next, a Recommended Project Plan is identified as the alternative that best meets the goals and objectives of the project and the CERP. The PIR is sent for state and federal approvals, authorizations and funding.

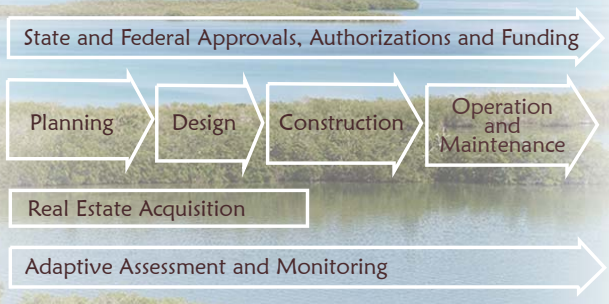
Design -- During design, investigations are conducted to provide the information needed to develop detailed final plans and specifications for building the final project. In some cases, a pilot project (test) is conducted.

Construction -- The construction period extends from the awarding of a construction contract through completion, including supervision and inspection.

Operation and Maintenance -- Each project has an Operations Plan that outlines operating schedules and criteria designed to achieve optimum results. Based on routine review and analyses, operations may be fine-tuned for improved performance.

Real Estate Acquisition -- Many restoration projects require the acquisition of land.

Adaptive Assessment and Monitoring -- This ongoing process measures the effect of restoration efforts on the greater Everglades ecosystem so, if needed, changes can be made to ensure CERP projects meet their intended objectives.



Current CERP Projects

# on map	Region, Project Name and Description	Project Features	Planning	Design	Construction
	Lake Okeechobee Region				
1	**Lake Okeechobee Aquifer Storage and Recovery (ASR) Pilot** Tests the use of large-scale underground water storage and withdrawal in the vicinity of Lake Okeechobee.		Complete	Installation & Testing	Not Applicable
2	**Lake Okeechobee Watershed** Includes areas north of Lake Okeechobee and Taylor Creek/Nubbin Slough Reservoirs, the Lake Okeechobee Watershed Stormwater Treatment facilities, and modifications to the Lake Istokpoga Regulation Schedule (Highlands County tributary).		In Progress		
	Caloosahatchee Region				
3	**Caloosahatchee (C-43) River ASR Pilot** Tests the use of underground water storage and withdrawal near the Caloosahatchee River.		Complete	Installation & Testing	Not Applicable
4	**C-43 West Basin Storage Reservoir** Establishes a large above-ground storage reservoir located along the Caloosahatchee River. This is a state expedited component: Final plans and specifications are complete.		Complete	Complete	Test Cell Complete
	Caloosahatchee Watershed Evaluates the remaining restoration needs in the Caloosahatchee Basin.		In Progress		
	St. Lucie Region				
5	**Indian River Lagoon-South** Several above-ground reservoirs and stormwater treatment areas. Revised since the 1999 plan to now include reduced storage in reservoirs and increased use of constructed wetlands along with the removal of muck to improve surface water management and water quality of several canal basins for habitat improvement in the St. Lucie Estuary and Indian River Lagoon. Includes a state expedited component (see #6 below).		Complete	In Progress	
6	**C-44 Reservoir and Stormwater Treatment Area** Now a component of Indian River Lagoon-South (see #5 above), this large above-ground storage reservoir and stormwater treatment area captures runoff in St. Lucie and Martin counties. A state expedited component: Final design is complete and permits have been obtained for construction of the reservoir and stormwater treatment areas.		Complete	Complete	Test Cell Complete
	Lower East Coast Region				
7	**Hillsboro ASR Pilot** Tests the use of underground water storage and withdrawal near the Hillsboro Canal on Florida's east coast in Palm Beach County, south of the Loxahatchee National Wildlife Refuge.		Complete	Installation & Testing	Not Applicable
8	**North Palm Beach County -- Part 1** Combines several components to increase water supply: Water Preserve Areas/L-8 Basin, C-17 and C-51 Backpumping and Treatment, Pal-Mar and J.W. Corbett Wildlife Management Area Hydropattern Restoration, Lake Worth Lagoon Restoration and the restoration of the Loxahatchee River, a federally designated Wild and Scenic River. Includes a state expedited component: Southern L-8 Reservoir construction complete.		In Progress	Complete	Complete
9	**Broward County Secondary Canal System** A series of water-control structures, pumps and canal improvements located in the C-9, C-12 and C-13 canal basins and east basin of the North New River Canal in central and southern Broward County.		Future		
10	**Broward County Water Preserve Areas** Serves as a seepage control buffer between developed urban areas and the Everglades. Components include: C-9 Impoundment, C-11 Impoundment, and Water Conservation Areas 3A and 3B Levee Seepage Management. Includes a state expedited component: Basis of Design Report complete.		In Progress	In Progress	
11	**Acme Basin B Discharge** Construction of a wetland and a water storage reservoir located adjacent to the Loxahatchee National Wildlife Refuge in Palm Beach County. Includes a state expedited component: Phase 1 for the C-51 pump stations and C-1 canal improvements is complete. Phase 2 is proceeding with design and construction of a 400-acre water-storage and treatment area.		Complete	Phase 2 In Progress	Phase 1 Complete
12	**Site 1 Impoundment** (Fran Reich Preserve) An above-ground reservoir to reduce the water-storage demands on Lake Okeechobee and the Loxahatchee National Wildlife Refuge. Includes a state expedited component: Basis of Design Report complete.		Complete	In Progress	
13	**Strazzulla Wetlands** Water control structures and the acquisition of more than 3,300 acres of pristine wetlands located in Palm Beach County. This expansion of wetland areas will provide connections between vital habitats for species that require large tracts of land for survival.		Future		
14	**Biscayne Bay Coastal Wetlands** Expands and restores wetlands adjacent to Biscayne Bay in Miami-Dade County, enhancing the ecological health of Biscayne Bay National Park. Includes a state expedited component: Final design of Phase 1 is complete.	XXXXXX	In Progress	In Progress Phase 1 Complete	
15	**Winsberg Farm Wetlands Restoration** Adds a 150-acre wetland to the Walcalahatchee site in Palm Beach County near a heavily urbanized area of south Florida. Federal efforts on this project are being discontinued.				
16	**Lake Belt In-Ground Reservoir Technology Pilot** Evaluates the use of reservoirs in areas where limerock mining has occurred in Miami-Dade County.		Future		Not Applicable
17	**Wastewater Reuse Technology Pilot** Investigates water quality issues associated with using treated reuse water to replace and augment freshwater flows to natural areas.		Future		Not Applicable

Cost Estimate Update

The Comprehensive Everglades Restoration Plan (CERP) total cost was estimated at $10.9 billion in October 2004 price levels. Estimates are updated annually to account for inflation adjustments and changes to CERP projects officially recognized during the planning process, via a record of decision. The estimated cost in October 2008 price levels is $12.5 billion. The increase of $1.6 billion includes inflation for projects and adaptive asessment and monitoring.

CERP Cost Estimate	October 2004	October 2008
Projects	$ 9.9 billion	$ 11.4 billion
Adaptive Assessment and Monitoring	$ .5 billion	$ .6 billion
Program Coordination	$ .5 billion	$ .5 billion
TOTAL	$ 10.9 billion	$ 12.5 billion

Fiscal Year 2009 Budget

The President's Budget request for Fiscal Year 2009 (FY09), which began October 1, 2008, included $64 million federal dollars for work on CERP implementation. USACE, together with SFWMD and other local sponsors, continue feasibility studies, installation and testing of the Aquifer Storage and Recovery (ASR) Pilot projects, PIR studies, data collection and analyses for Adaptive Assessment and Monitoring, and design work.

For FY07-08, the Florida Legislature approved $100 million for continued support of CERP implementation and an additional $100 million to initiate the state's Northern Everglades and Estuaries Program. The Florida Forever Program, the largest conservation program of its kind in the world, added $36.8 million in FY08. In addition, the SFWMD's FY08 budget included $495 million for the implementation of the CERP and the state expedited projects.

Current CERP Projects

# on map	Region, Project Name and Description	Project Features	Planning	Design	Construction
	Everglades Agricultural Area Region				
18	**Everglades Agricultural Area Storage Reservoirs** Consists of a large above-ground storage reservoir on former farmlands. Includes a state-expedited component: Construction on the A-1 Reservoir was initiated in 2006; temporarily suspended in June 2008 due to litigation.		In Progress	In Progress A-1 Complete	In Progress
	Everglades Natural Areas Region (Water Conservation Areas, Everglades National Park, Big Cypress National Preserve)				
19	**Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement -- Part 1** Construction of new water-control structures and modification or removal of levees, canals and water-control structures in Water Conservation Areas 3A and 3B located in western Broward County for reestablishment of the ecological and hydrologic connection with Everglades National Park (ENP).	XXXXXX	In Progress		
20	**L-31N** (L-30) **Seepage Management Pilot** Evaluates the uncertainty in seepage management technology and constructability to use full-scale for Everglades National Park (see below).		In Progress	In Progress	
21	**Everglades National Park Seepage Management** Evaluates various seepage management technologies of the L-31N Improvements, S-356 Structure Relocation and Bird Drive Recharge Area that may be implemented to reduce seepage losses and improve wetland hydro-periods in the park for restoration.		In Progress		
	Florida Bay/Florida Keys Region				
22	**C-111 Spreader Canal** Enhances freshwater wetlands and improves freshwater flows in the Southern Glades and Model Lands in South Miami-Dade County for a sustainable ecosystem and improves the hydrology of Taylor Slough and the coastal marshes of northeast Florida Bay. Includes a state expedited component: Preliminary design is complete for Frog Pond Impoundment, which will reduce seepage of water from Taylor Slough to the lower C-111 canal system.	XXXXXX	In Progress	In Progress	
23	**Florida Keys Tidal Restoration** Removes impediments and uses bridges and/or culverts to restore the tidal connection between Florida Bay and the Atlantic Ocean in Monroe County blocked during the construction of U.S. Highway 1.		Future		
	Southwest Coast Region				
24	**Lakes Park Restoration** Creates a meandering 40-acre flow way in Lee County with shoreline vegetation and by removing aquatic and upland exotic vegetation. Federal efforts on this project are being discontinued.				
25	**Henderson Creek/Belle Meade Restoration** Includes a marsh filtering system; four culverts under State Road 951; hydrologic restoration around Manatee Basin, ditching, removal of some roadbed; invasive, exotic plant removal; a public-access point and interpretive boardwalk; construction of a swale and spreader system; and removal of the Road-to-Nowhere.	XXXXXX	Future		
26	**Picayune Strand Restoration** Restores wetland function to more than 55,000 acres in Collier County. The revised plan will reduce over-drainage in Southern Golden Gate Estates and adjacent natural and public lands, restore and enhance additional wetlands, and also improve the water quality of coastal estuaries. Includes a state expedited component: Partial canal filling and road removal has resulted in the restoration of 13,000 acres.	XXXXXX	Complete	In Progress	In Progress
	Other Projects/Studies				
	Melaleuca and Other Exotic Plant Eradication Develops innovative methods to reduce the rapid invasion of unwanted non-native plants and trees in the Everglades.		In Progress		
	Aquifer Storage and Recovery (ASR) Regional Study Evaluates the effects of extensive ASR use as proposed in the CERP and reduces uncertainties related to regional-scale implementation of ASR technology.		In Progress		
	Florida Bay/Florida Keys Feasibility Study Evaluates Florida Bay and its connections to the Everglades, the Gulf of Mexico, and the Florida Keys marine ecosystem to determine changes needed to restore the water quality and ecological conditions of the bay adversely impacted by the construction of U.S. Highway 1 to Key West.		Future		
	Southwest Florida Feasibility Study Determines the feasibility of making structural, non-structural, and operational modifications and improvements in the regional water-control system in the interest of environmental quality, water supply, and other purposes by investigating water resource problems and opportunities in all or parts of Lee, Collier, Hendry, Glades, Charlotte and Monroe counties.		In Progress		
	Master Recreation Plan System-wide approach that identifies, evaluates and addresses the impacts of CERP on recreational use of the south Florida ecosystem and to identify and evaluate potential new recreation, public use and educational opportunities.		In Progress		
	Comprehensive Integrated Water Quality Plan Links water quality restoration targets to the hydrologic restoration objective of the CERP to ensure south Florida ecosystem restoration objectives are achieved.		Future		

Current CERP Projects


St. Lucie


Lake Okeechobee


Southwest Coast


Florida Bay

The CERP projects described in the adjacent tables, and numbered above, are those where restoration activities have begun. More than 50 projects of all sizes, many with multiple components such as reservoirs and stormwater treatment areas (see below), make up the CERP effort. An integrated sequencing plan coordinates project implementation and timing to ensure maximum benefits are achieved from the total mix of projects. As additional projects begin, their status will be included in future reports.

Project Features

The CERP "gets the water right" in south Florida by addressing quantity, quality, timing, and distribution (the right amount of water of the right quality delivered to the right places at the right times). Projects will capture, store, treat, and redistribute water through the natural ecosystem to restore and revitalize the Everglades. Each CERP project is comprised of one or more of the following features:

Surface Water Storage Reservoirs
More than 181,000 acres of above- and in-ground reservoirs are planned to store billions of gallons of water.

Aquifer Storage and Recovery (ASR)
More than 300 underground water storage wells are proposed to store up to 1.6 billion gallons of treated water a day in confined aquifers and provide long-term water storage.

Stormwater Treatment Areas
Almost 36,000 acres of manmade wetlands will be constructed to remove pollutants from water before it is discharged to the Everglades.

Operational Changes
Changes will be made in the way the regional water management system is operated to benefit the greater Everglades ecosystem.

Seepage Management
Barriers, in combination with groundwater wells or water level control areas, will be built to slow and redirect the rapid underground seepage of water, which today results in the loss of millions of gallons of water from the Everglades each year to tide.

Removing Barriers to Sheetflow
More than 240 miles of canals and levees may be removed to restore the historic overland flow through the Everglades wetlands. For example, the Picayune Strand Restoration project helps restore natural overland flows by removing roads and partially filling canals.

Other
This category includes invasive plant eradication, wetlands restoration and creation (including flow ways), and other project elements intended to increase the spatial extent of wetlands.

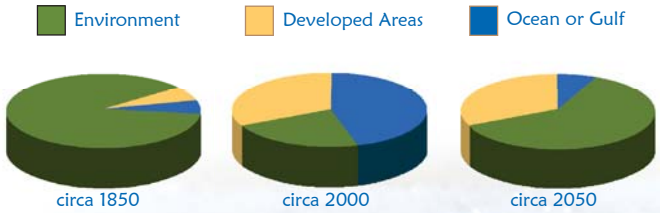
Determining a CERP Water Budget
Distributing Water in South Florida

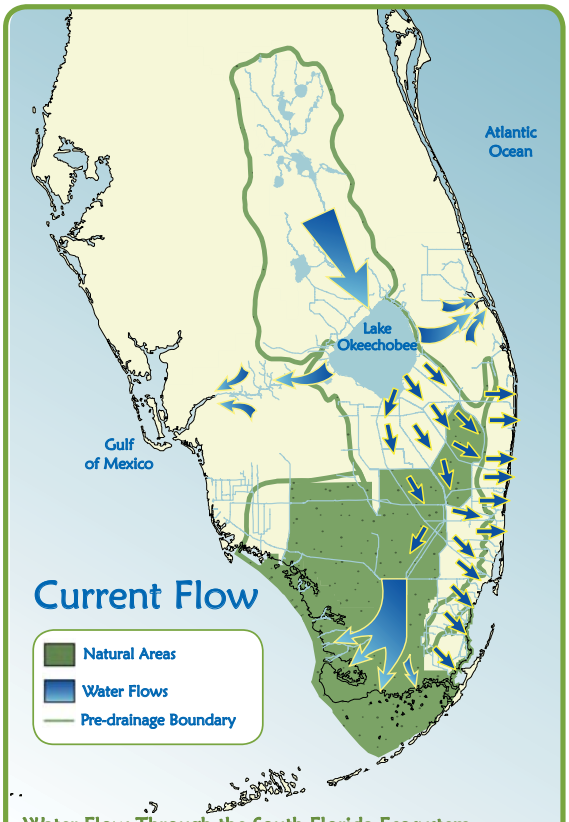
Once fully implemented, the CERP will allow water deliveries and overland flow to follow patterns that are more natural throughout the south Florida ecosystem. Water managers will be better able to convey water through canals and to store water for later use. CERP reservoirs will store excess water from Lake Okeechobee, receive flood control releases that would otherwise go to the estuaries, and collect stormwater runoff from developed areas. The stored water can then be used to help manage high and low water levels in Lake Okeechobee; help meet environmental targets in the estuaries, in the Everglades and other natural areas; and supplement urban and agricultural water supply. These benefits collectively achieve the goals of restoration for the CERP.

The water flow shown in the map to the right illustrates the volume and direction of water that enters and leaves various regions within south Florida. Flow is based on an average rainfall year using the prior 36-year rainfall record and results from a regional scale simulation model of the south Florida ecosystem.

In developing a water budget, the volumes and flows of water are calculated for various water control categories that include: flood control discharges from Lake Okeechobee and developed areas to the Atlantic Ocean and the Gulf of Mexico, overland flow, water supply, groundwater flow and others.

The charts below represent estimates of fresh water going to the environment, to developed areas, and to the ocean and gulf for three different periods of time.





Water Flow Through the South Florida Ecosystem

The objective of the CERP is to find the correct balance of water throughout all regions to ensure a healthy and sustainable natural and human environment. For example, a certain level of freshwater flow to the estuaries and bays maintains favorable conditions for oysters, shrimp and seagrasses. Too much freshwater to these areas, however, causes damage to native organisms.

The maps below depict how freshwater flowed historically through the south Florida ecosystem and how water will flow in the future after the CERP projects have been completed.

Photo by Jon Sund

Protecting Water for the Environment

Prior to initiating construction of a CERP project, the state of Florida must use its water reservation or allocation authority to ensure that water identified in the Project Implementation Report (PIR) will be protected and available for the natural system once the project is completed. This identification involves technical evaluation of water necessary for the protection of fish and wildlife, in addition to changes resulting from the project operations that ultimately result in quantification of water to be conveyed to the natural system.

To date, individual PIRs are complete for the Indian River Lagoon-South, Picayune Strand Restoration, Broward County Water Preserve Areas, Site 1 Impoundment (Fran Reich Preserve), and Caloosahatchee River (C-43) West Basin Storage Reservoir projects. Congress authorized three of these projects for construction in the latest Water Resources Development Act (WRDA 2007): Indian River Lagoon-South, Picayune Strand Restoration, and Site 1 Impoundment. The South Florida Water Management District has initiated water reservation rule development for the Indian River Lagoon-South and Picayune Strand Restoration projects and will initiate rule development to protect natural system water for the Site 1 Impoundment when approval is received from its Governing Board.

For further information, visit www.evergladesplan.org or www.evergladesnow.org