Rescuing an Endangered Ecosystem: The Plan to Restore America's Everglades

The Central and Southern Florida Project Comprehensive Review Study (The Restudy)

July 1999

Pictured on cover:
top: Florida Panther
right: Alligator
bottom: Great Blue Heron

Contents

This document is a summary of the information contained in the April 1999 Central and Southern Florida Project Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement. For additional and more specific information on any of the topics in this summary, please consult that report. At the end of each section of this summary we refer you to the appropriate section of the final report. Information on obtaining a copy is at the end of this document.

Once the Florida Everglades was a vibrant, free-flowing river of grass that provided clean water from Lake Okeechobee to Florida Bay. It was a vital haven for storks, alligators, panthers and other wildlife. Today this extraordinary ecosystem—unlike any other in the world—is dying.

Over the past half century, as the economy and population of south Florida have grown, the health and size of the Everglades have steadily declined. Fully half the Everglades have been lost to agriculture and development. And the surviving remnants suffer from a severe shortage of clean, reliable water. In our efforts to guard communities against flooding and to ensure adequate water supplies for drinking and irrigation, we have diverted the natural water flows that are the essence of the Everglades—robbing them of their very lifeblood. Wading birds, once so plentiful they darkened the sky, now are in danger of extinction. The magnificent "River of Grass" is indeed dying.

FOREWORD

There is reason for hope. *Thanks to an historic partnership among federal, state, local and tribal leaders, work is now under way to save the Everglades. Critical lands are being preserved, and some endangered species are beginning to recover. But these efforts cannot succeed unless we restore the heart of the ecosystem—the clean, plentiful flows that once sustained the Everglades. On July 1, 1999, the United States government and the state of Florida presented to Congress a Plan to do just that. It is called the Central and Southern Florida Project Comprehensive Plan, and it is outlined in the pages that follow.*

This Comprehensive Plan—a series of environmental improvements over 20 years with an estimated cost of $7.8 billion—will be the most ambitious ecosystem restoration ever undertaken in the United States. Its fundamental goal is to capture most of the fresh water that now flows unused to the ocean and the gulf to deliver it when and where it is needed most. Eighty percent of this "new" water will be devoted to environmental restoration, reviving the ecosystem from the Kissimmee River, through Lake Okeechobee, through Everglades National Park, to Florida Bay and the coral reefs. The remaining 20 percent will benefit cities and farmers, enhancing water supplies and supporting a strong, sustainable economy for south Florida—well into the 21st century. In short, the Comprehensive Plan provides the necessary road map for improving the quantity, quality, timing, and distribution of the water so vital to the Everglades and the people of south Florida

Specifically, implementation of our Plan will:

- ***Improve the health of over 2.4 million acres of the south Florida ecosystem, including Everglades National Park;***
- ***Improve the health of Lake Okeechobee;***
- ***Virtually eliminate damaging freshwater releases to the estuaries;***
- ***Improve water deliveries to Florida and Biscayne bays;***
- ***Improve water quality; and***
- ***Enhance water supply and maintain flood protection.***

Scores of scientists from many agencies have helped develop this Plan, and extensive input has been gathered from interest groups and the general public. We believe the Plan reflects the best possible science and the best interests of all concerned. But there is much we still do not know, and we must be prepared to refine our thinking as we learn more. So the Plan is designed to be flexible, to incorporate and respond to new information as it becomes available. Continuous monitoring and independent scientific review are key components of the Plan. Still, we cannot wait for all the answers to begin. There is too much at stake.

While the U. S. Army Corps of Engineers and the South Florida Water Management District have taken the lead in developing this Plan, many other agencies— from the Everglades National Park to Miami-Dade County—have played a vital role. Over the next year and beyond, they will continue to work together, and with Congress, to authorize this Plan and ensure its success.

By acting now, we can reverse the damage of the past and rescue this unique and remarkable landscape. Implementing this Plan with commitment and vision will allow us to restore the Everglades and leave a legacy for which generations to come will be thankful.

There are no other Everglades in the world.

They are, they have always been, one of the unique regions of the earth, remote, never wholly known. Nothing anywhere else is like them: their vast glittering openness, wider than the enormous visible round of the horizon, the racing free saltness and sweetness of their massive winds, under the dazzling blue heights of space. They are unique also in the simplicity, the diversity, and the related harmony of the forms of life they enclose. The miracle of light pours over the green and brown expanse of saw grass and of water, shining and slow-moving below, the grass and water that is the central fact of the Everglades of Florida. It is a river of grass.

Marjory Stoneman Douglas in The Everglades: River of Grass

America's Everglades are in Serious Peril

"River of Grass" captures the beauty of the Everglades and the rich complexity of its landscapes and seascapes, sawgrass sloughs, cypress swamps and coastal lagoons and bays. The greater Everglades ecosystem, called the south Florida ecosystem, stretches south from Orlando through the Chain of Lakes, the Kissimmee Valley, Lake Okeechobee, the remaining Everglades, and on to the waters of Florida Bay and the coral reefs. This south Florida ecosystem is much larger than what most people see when they visit the "Everglades" — usually just Everglades National Park.

The Everglades of today are not the same place that Mrs. Douglas wrote about in 1947. People in great numbers have encroached upon the ecosystem that once was the domain of panthers, alligators and flocks of birds so vast that they would darken the sky. With the arrival of people came the desire to manage the water, to tame the free flowing River of Grass from Lake Okeechobee to the Florida Keys.

The Central and Southern Florida Project was authorized 50 years ago to provide flood protection and fresh water to south Florida.

What is the Existing Central and Southern Florida Project?

Created through legislation in 1948, south Florida's existing water management system – the Central and Southern Florida Project - encompasses 18,000 square miles. The project covers 16 counties and includes 1,000 miles of canals, 720 miles of levees, and almost 200 water control structures. This project provides water supply, flood protection, water management and other benefits to south Florida. However, it is 50 years old and must be modernized to address its negative consequences on the environment of south Florida.

This project accomplished its intended purpose and allowed people to more easily live on the land. It did so, however, at tremendous ecological cost to the Everglades. While the population of people has risen from 500,000 in the 1950s to more than 6 million today, the numbers of native birds and other wildlife have dwindled and some have vanished. The size of the Everglades has been reduced by half. The splendor that was the Everglades is rapidly being lost.

INTRODUCTION

Water is the lifeblood of the south Florida ecosystem. Compared to the historic Everglades, approximately 70 percent less water flows through the ecosystem today. The quality of the water that does enter the ecosystem has been seriously degraded. It does not follow the timing and duration of the natural Everglades nor can it move freely throughout the entire system. The whole south Florida ecosystem has suffered. The health of Lake Okeechobee, the second largest freshwater lake wholly in the United States and an important home to fish and wildlife, is seriously threatened. A number of plants and animals that live in south Florida and the Everglades are in danger of becoming extinct because their habitat has been damaged, reduced or eliminated. Clean water is not available to the estuaries and bays that are critical nurseries and homes to many fish and wildlife. There is not enough water for the people either. Water shortages and water restrictions are now a way of life in some parts of south Florida.

It is important to remember that this restoration effort does not affect just south Florida, but is of national and international significance

The Water Resources Development Acts of 1992 and 1996 provided the U.S. Army Corps of Engineers with the authority to review the current Central and Southern Florida Project. The Corps was asked to develop a Comprehensive Plan to restore and preserve south Florida's natural ecosystem, while enhancing water supplies and maintaining flood protection. The resulting Central and Southern Florida Project Comprehensive Review Study – commonly called the Restudy – was led by the Army Corps of Engineers and the South Florida Water Management District. The Restudy was accomplished by a team of more than 100 ecologists, hydrologists, engineers and other professionals from more than

Guiding Principles for the Comprehensive Plan

1. The overarching objective of the Comprehensive Plan is the restoration, preservation and protection of the south Florida ecosystem while providing for other water-related needs of the region.
2. The Comprehensive Plan is based on the best available science, and independent scientific review is an integral part of its development and implementation.
3. The Comprehensive Plan was developed through an inclusive and open process that engaged all stakeholders and interest groups.
4. All applicable federal, tribal, state and local agencies were full partners and their views were considered fully.
5. The Comprehensive Plan is a flexible plan that is based on the concept of adaptive assessment — recognizing that modifications will be made in the future based on new information.

30 federal, state, tribal, and local agencies. Unlike most previous studies, the Restudy took a system-wide look at water.

The Central and Southern Florida Project Comprehensive Plan provides the road map for restoring and protecting the south Florida ecosystem. This Plan "gets the water right" by addressing four fundamental issues: the quantity, quality, timing and distribution of water.

As Mrs. Douglas wrote, "There are no other Everglades in the world." The significance of the remaining Everglades to the nation and the world has been affirmed time and again. Congress established Everglades National Park. The Everglades have also been designated an International Biosphere Reserve, a World Heritage Site, and a Wetland of International Significance. Identified as one of the world's major ecosystem types, the Everglades are home to 68 threatened or endangered plant and animal species. The benefits and functions of these plants and animals may never be known if we do not restore and protect their habitat. Saving the Everglades requires us to save the entire south Florida ecosystem.

The ecological and cultural significance of the Everglades is equal to the Grand Canyon, the Rocky Mountains or the Mississippi River. As responsible stewards of our natural and cultural resources, we cannot sit idly by and watch any of these disappear. The Everglades deserves the same recognition and support.

What is the Purpose of the Comprehensive Plan?

Often described as the world's largest ecosystem restoration effort, the primary and overarching purpose of the Comprehensive Plan is to restore the south Florida ecosystem, which includes the Everglades. This purpose has guided all aspects of the Plan's development and proposed implementation. As required by law, the Plan also provides for the other water-related needs of the region including urban and agricultural water supply and flood protection.

The Everglades of Yesterday were Defined by Water

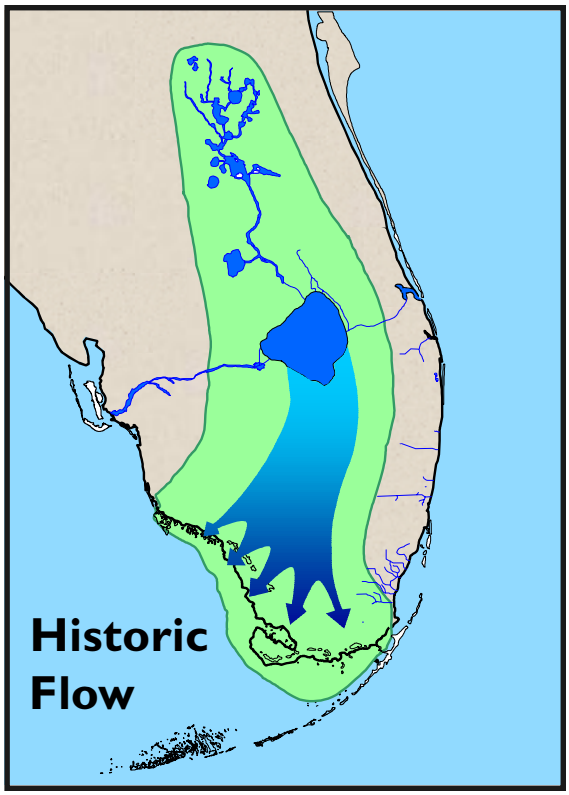
Why do we often talk about the Everglades of a hundred years ago? We need to understand how the Everglades functioned before they were drained and developed, beginning in the late 1800s. Of course, it's impossible to return the Everglades to that condition. But, understanding the form and function of the Everglades before they were significantly modified by people helps us better understand the current problems and possible solutions.

The landscape of the Everglades system was designed by nature to hold water. An eastern coastal ridge and a western inland ridge together formed a broad shallow valley sloping ever so slightly from north to south. South Florida has always been a naturally wet place, and the valley kept most rainfall within the Everglades.

Historically, rainwater from the Kissimmee Valley flowed south to Lake Okeechobee. The lake would periodically overflow its southern shoreline, and water would continue its slow journey through a 60-mile-wide shallow river flowing over the flat and level grasslands of the Everglades, eventually emptying into Florida Bay. Only a few small rivers flowed eastward through the coastal ridge. So, what made the Everglades unique?

We know that the three major characteristics that defined the historic Everglades - the "River of Grass" - were how the water flowed, the area's large size, and the variety of habitats.

Water connected the system, from top to bottom. The pace at which the sheet-like flow of water moved across the historic Everglades varied from months to years. Water that moved down the flat and level landscape flowed so slowly that, in effect, it was stored during one season for use in another. The Everglades' all-important long periods of natural flooding depended more on the ability to store water and its slow movement than on the immediate effects of rainfall. Because of the storage and slow flow in the natural



system, summer rains kept wetlands flooded and maintained fresh water flows to coastal estuaries well into the dry winter season. The enormous amount of storage made wetlands and estuaries less vulnerable to the rainfall that varies dramatically in time and place throughout south Florida.

The large area of the ecosystem provided a variety of wildlife habitats. In the mid-1800s, the wetlands of southern Florida covered an area of almost nine million acres. This was vast enough to support animals that had large feeding ranges or very special habitat needs. It produced an abundance of aquatic life, supported larger animals such as the Florida panther, and was big enough to repeatedly recover from the effects of hurricanes, fires, and other natural disturbances.

The Everglades' plants grew in a diverse mosaic of landscapes and seascapes. The Everglades were a complex system of plant life linked by water, and included expansive areas of sawgrass sloughs,

wet prairies, cypress swamps, mangrove swamps, and coastal lagoons and bays. This mosaic of habitat, in its vast area and with its unique water patterns, supported the continuing survival of animals under a wide range of seasonal and annual conditions.

Water is the key to restoration today. The current Everglades are only about half the size they were 100 years ago. While we cannot restore their historic size, we can restore many of the ways in which water was stored and flowed in the remaining area. Water — in the right place, at the right time, in the right quantity and quality — is a major necessary ingredient in the ecology that supports life in the Everglades.

Ecosystem Problems Center on Water

Some 50 years ago, when the people who lived in south Florida suffered through hurricanes and floods, droughts and fires, and when the region was expanding and growing, Congress authorized the Central and Southern Florida Project. This massive water management project was built to address flood protection and provide water to the people and agricultural lands. When the project was designed in the 1950s only about 500,000 people lived in the region, and it was estimated there might be two million by the year 2000. Today's population of about six million people is three times more than the project was designed to serve. This strains the ability of the built system to perform its intended functions. Also, until fairly recent times, we did not understand or appreciate as much about the natural environment as we do today, and the project has had unforeseen detrimental environmental effects.

Changes in water have caused many harmful changes in the natural environment. Over the past 100 years, excessive drainage of wetlands and changes in the natural variability of water flows have altered the Everglades wetland ecosystem on a regional scale.

Indicators of Ecosystem Problems

- 90-95% reduction in wading bird populations
- 68 plant and animal species are threatened or endangered
- 1.7 billion gallons of water per day on average lost through discharge to the ocean
- 1 million acres of the ecosystem under health advisories for mercury contamination
- Over 1.5 million acres infested with invasive, exotic plants
- Declining population levels of commercially and recreationally important fish species in the St. Lucie and Caloosahatchee estuaries and Biscayne and Florida bays
- Defoliation of seagrasses, fish kills and deformed fish within the St. Lucie estuary
- Continued reduction in number of birds initiating breeding in south Florida
- Repetitive water shortages and salt water intrusion

The remaining Everglades, and indeed the entire south Florida ecosystem, no longer exhibit the functions, richness, and area that historically defined the pre-drainage system. There have been substantial and irreversible reductions in the size of the ecosystem. Most of the negative changes in the ecosystem are a direct result of water management activities to control floods and provide for water supply. Today, discharges to the Everglades are often too much, or too little, and frequently at the wrong times of the year. An over abundance or scarcity of water affects plants and wildlife accustomed to the Everglades' historic range of water flows and levels. In addition, canals and highways that criss-cross the Everglades have interrupted its historic overland sheet flow.

Historically, most rainwater soaked into the ground in the region's vast wetlands. As south Florida developed, the canal system built over the past 100 years worked very effectively and drained water off the land too quickly. As a result, approximately **1.7 billion gallons of water per day** on average are discharged to the ocean and gulf. One conse-

quence is that not enough water is available for the environment.

Water quality throughout south Florida has deteriorated over the past 50 years. More than one-half of the wetlands that act as natural filters and retention areas are gone. Some untreated urban and agricultural storm water is sent directly to natural areas and estuaries. Too much, or too little, water is often sent to estuaries. Too many nutrients are entering the Everglades, with an over abundance of cattails a visible sign of the results.

These natural systems will not recover their defining characteristics under current conditions and cannot be sustained in the future. The health of the ecosystem will continue to decline unless we act.

Urban and agricultural water shortages are expected if the Plan is not implemented. Drainage, water supply and flood protection provided by the Central and Southern Florida Project have allowed the growth of south Florida's population. Local governments in south Florida are predicting that the population will reach 8 million by 2010 and will range from 12-15 million people by 2050, more than twice the current population. Approximately 64 percent of the region's current population is concentrated in the three lower east coast counties of Miami-Dade, Broward, and Palm Beach. This distribution pattern is expected to remain the same in the future. Urban water supply demands could increase from approximately one billion gallons of water per day today to two billion gallons of water per day by 2050.

Future water demands will cause conflict. The growing demand for a reliable and inexpensive supply of water for agriculture, industry, and a burgeoning population will likely exceed the limits of readily accessible sources. As the needs of the region's natural systems are factored in, as they must be, conflicts for water among users will become even more severe. Water shortages will become more frequent and more severe unless changes to the water management system are made.

Scientists, engineers and other specialists working on the Restudy determined that the problems in the Everglades and the entire south Florida ecosystem were primarily the result of water management and related activities.

(For more information, please refer to Section 5, Problems and Opportunities*, in the final report.)*

Getting The Water Right: Addressing Quantity, Quality, Timing, and Distribution Problems

Both the problems with declining ecosystem health and the solutions to Everglades restoration can be framed by four interrelated factors: quantity, quality, timing, and distribution of water. The principal goal of restoration is to deliver the right amount of water, of the right quality, to the right places, and at the right time. The natural environment will respond to these hydrologic improvements, and we will once again see a healthy Everglades ecosystem. The Comprehensive Plan consists of over 60 components that work together to accomplish this.

Quantity

Significantly less water flows through the ecosystem today compared to historical times. In fact, on average, 1.7 billion gallons of water that once flowed through the ecosystem are wasted each day through discharges to the ocean or gulf. The Comprehensive Plan will capture most of this water in surface and underground storage areas where it will be stored until it is needed. Specifically, this water will be stored in more than 217,000 acres of new reservoirs and wetlands-based treatment areas and 300 underground aquifer storage and recovery wells. These features vastly increase the amount of water storage available in south Florida. The Plan will ensure a reliable, adequate supply of fresh water for the environment, as well as urban and agricultural users. Of the "new" water captured by the Plan, 80 percent will go to the environment and 20 percent will be used to enhance urban and agricultural water supplies.

Quality

The quality of water in the south Florida ecosystem has been diminished significantly. Excess phosphorus, mercury, and other contaminants harm the region's surface water and groundwater. The water quality of the Everglades Water Conservation Areas, the coastal estuaries, Florida Bay and the Keys show similar signs of significant degradation. The Comprehensive Plan will help improve the quality of water discharged to natural areas by first directing it to surface storage reservoirs and wetlands based stormwater treatment areas. Further opportunities to improve water quality will be incorporated into the design of the Plan's features. The recommended study to develop a comprehensive integrated water quality plan for the region will provide further water quality improvements to the ecosystem.

Timing

Alternating periods of flooding and drying, called hydroperiods, were vital to the historical functioning of the Everglades ecosystem. These natural hydroperiods have been severely altered by human activities. Restoring these variations in water flows and levels is an integral part of the Comprehensive Plan. Specifically, the timing of water held and released into the ecosystem will be modified by the Plan so that it more closely matches natural patterns. The Plan will reduce the harmful water levels that damage Lake Okeechobee and its shoreline. Improved water deliveries to the Caloosahatchee and St. Lucie rivers will reduce damage to the estuaries caused by too much or too little fresh

water. Detrimental high flows to the Lake Worth Lagoon will be reduced. Florida and Biscayne bays will receive improved fresh water flows. In other areas, an operational plan that mimics natural rainfall patterns will enhance the timing of water sent to the Water Conservation Areas, Everglades National Park, and other wildlife management areas.

Distribution

The areal extent and movement of water through the system is the final factor in the water equation. Over 50 percent of the original Everglades have been lost to urban and agricultural development. Further, the remaining ecosystem has been separated, or compartmentalized, by canals and levees. To improve the connectivity of natural areas, and to enhance sheetflow, more than 240 miles of levees and canals will be removed within the Everglades. Most of the Miami Canal in Water Conservation Area 3 will be removed and 20 miles of the Tamiami Trail (U.S. Route 41) will be rebuilt with bridges and culverts, allowing water to flow more naturally into Everglades National Park. In the Big Cypress National Preserve, the levee that separates the Preserve from the Everglades will be removed to restore more natural overland water flow.

In summary, the Comprehensive Plan will store much of the water that is now sent to the sea so there will be enough water for the ecosystem and urban and agricultural users in the future. The Plan includes a number of features to improve the quality of water flowing to the natural environment. It will continue to provide the same level of flood protection for south Florida. Three additional feasibility studies - Florida Bay and the Florida Keys, Southwest Florida, and a Comprehensive Integrated Water Quality Plan - will add information and details to enhance the restoration of the south Florida ecosystem. The Plan is a comprehensive solution for ecosystem restoration, water supply, and protection from flood damages. It is a vital step to a sustainable south Florida.

(For more information, please refer to Section 9, *The Recommended Comprehensive Plan*, in the final report.)

Comprehensive Plan Based on Sound Science

Sound science has always served as the basis for restoration of the south Florida ecosystem. In order to preserve scientific integrity, peer review has been used to provide independent evaluation of the science being applied to restoration efforts and to solicit advice on difficult issues. Specifically:

❖ The basic understanding of the link between hydrologic changes and ecological responses was developed by a group of prominent scientists with many years of experience in the south Florida ecosystem.

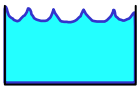
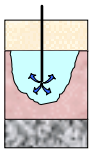
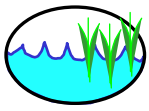
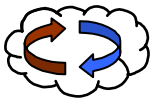
❖ An inter-disciplinary, inter-agency team of biologists, ecologists, and others with extensive experience in the south Florida ecosystem has been working on the Plan since 1993.

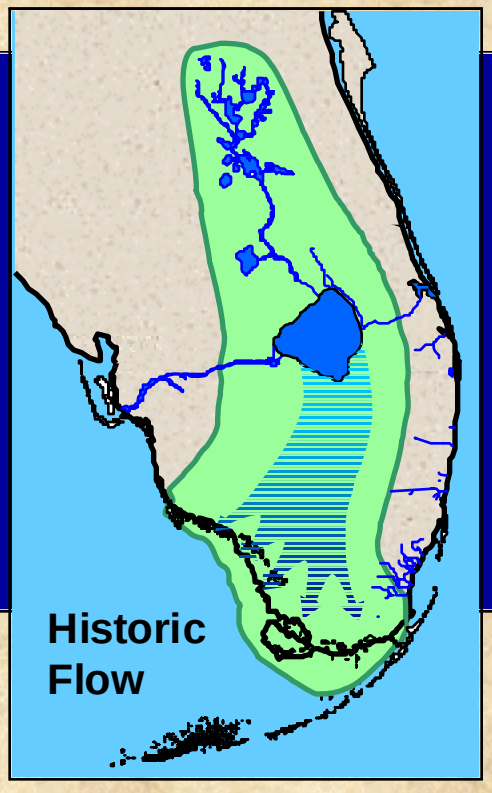
❖ The Alternative Evaluation Team was composed of 80 specialists, mostly ecologists, hydrologists, and planners from the Corps of Engineers; the South Florida Water Management District; other federal, state and local resource and environmental protection agencies; county water utilities; and other entities, representing many years of research in south Florida. The team developed a set of performance measures to evaluate each alternative plan, analyzed how well each alternative met the targets, and identified areas for improvement.

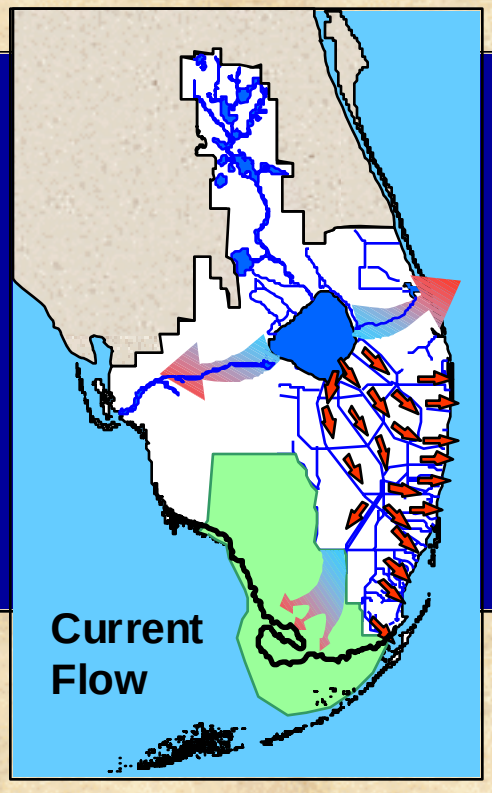
❖ The primary models used in the development of the Plan - the Natural System Model and the South Florida Water Management Model - have undergone technical peer review and represent the best understanding of the hydrology of both the pre-drainage and current system.

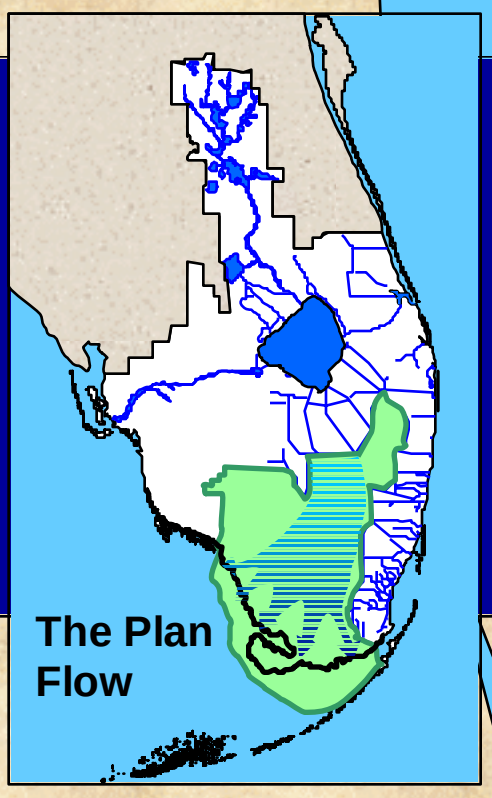
❖ The Across Trophic Level System Simulation, a state-of-the-art model, was developed to predict animal species responses to hydrologic changes.

Principal Features of the Comprehensive Plan

	Quantity Quality Timing	**Surface Water Storage Reservoirs.** A number of water storage facilities are planned north of Lake Okeechobee, in the Caloosahatchee and St.Lucie basins, in the Everglades Agricultural Area, and in Palm Beach, Broward and Miami–Dade counties. These areas will encompass approximately 181,300 acres and will have the capacity to store 1.5 million acre-feet of water. Two rock mining areas in Miami-Dade County will be converted to in-ground storage areas.
	Quantity Timing	**Aquifer Storage and Recovery.** More than 300 wells will be built to store water 1,000 feet underground in the upper Floridan aquifer. The wells will be located around Lake Okeechobee, in Palm Beach County, and in the Caloosahatchee Basin. As much as 1.6 billion gallons a day may be pumped down the wells into underground storage zones. Since water does not evaporate when stored underground and less land is required for storage, aquifer storage and recovery has some advantages over surface storage.
	Quantity Quality Timing	**Stormwater Treatment Areas.** Approximately 35,600 acres of man-made wetlands will be built to treat urban and agricultural runoff water before it is discharged to the natural areas throughout the system. Stormwater treatment areas are to be located in basins draining to Lake Okeechobee, the Caloosahatchee River Basin, the St. Lucie Estuary Basin, the Everglades, and the lower east coast. These are in addition to over 44,000 acres of areas already being constructed under the Everglades Forever Act.
	Quantity Quality Timing	**Reuse Wastewater.** Two advanced wastewater treatment plants are planned in Miami-Dade County. The plants are capable of making more than 220 million gallons a day of the county's treated wastewater clean enough to discharge into wetlands along Biscayne Bay and for recharging the Biscayne aquifer.
	Quantity Distribution	**Seepage Management.** Millions of gallons of groundwater are lost each year as it seeps away from the Everglades towards the east coast. Seepage generally occurs either as underground flow or through levees. The plan includes features to reduce unwanted water loss and redirect this flow westward to the Water Conservation Areas, Everglades National Park, and northeast Shark River Slough. The three features to reduce seepage are: (1) adding impervious barriers to the levees to block loss of water; (2) installing pumps near levees to redirect water back into the Everglades; and (3) holding water levels higher in undeveloped areas between the Everglades and Palm Beach, Broward and Miami-Dade counties.
	Distribution	**Removing Barriers to Sheetflow.** More than 240 miles of project canals and internal levees within the Everglades will be removed to reestablish the natural sheetflow of water through the Everglades.
	Timing	**Operational Changes.** Changes in water delivery schedules will be made in some areas to alleviate extreme fluctuations. Lake Okeechobee water levels will be modified to improve the health of the lake. In other areas, the rainfall driven operational plan will enhance the timing water flows.



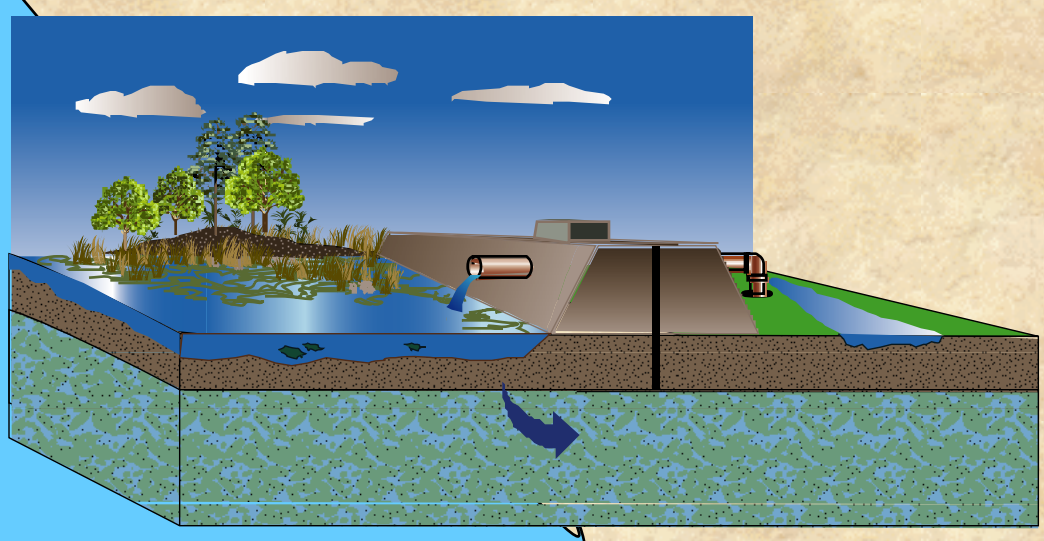




Water once freely flowed from the southern rim of Lake Okeechobee through the Everglades to Florida Bay and the Gulf of Mexico. Today, the free flowing Everglades have been severed by a system of canals and levees. Once implemented, the Comprehensive Plan will return much of the remaining Everglades to a free flowing system.

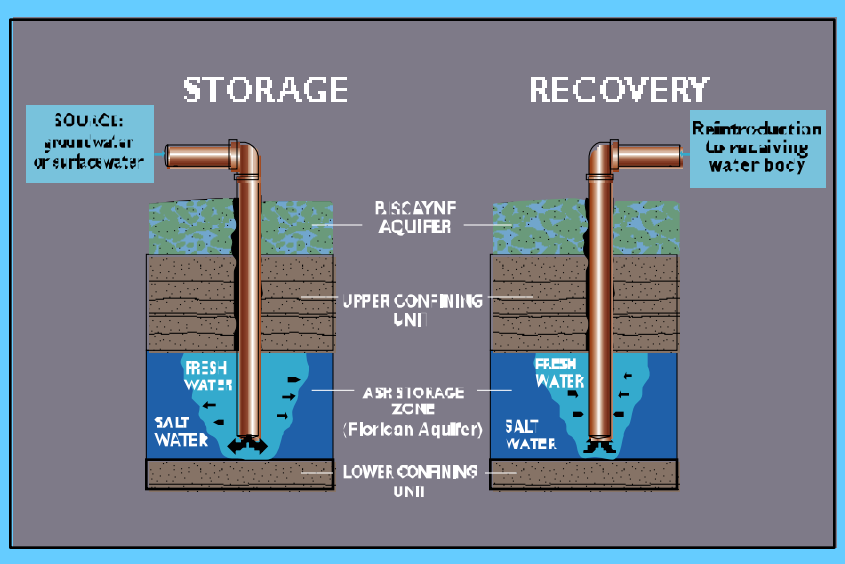
Seepage Management

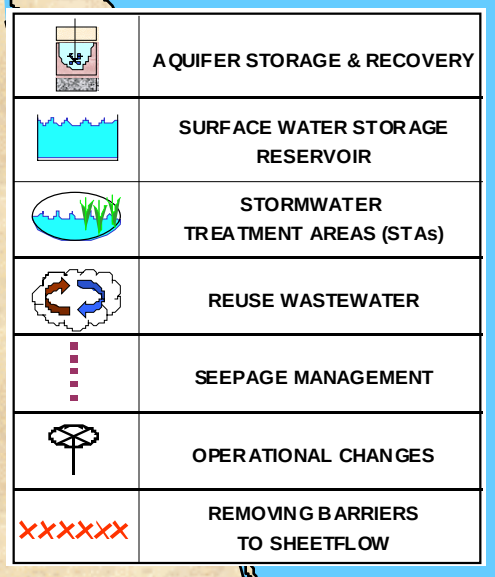
Millions of gallons of groundwater are lost each year as seepage. Two features to reduce seepage are shown here - an impervious barrier in the levee and pumps near the levee to redirect water back into the Everglades.



Aquifer Storage and Recovery

More than 300 wells will be built to store water, as much as 1.6 billion gallons a day, 1,000 feet underground in the Floridan aquifer.





The Comprehensive Plan

Comprehensive Plan Provides for Ecosystem Restoration and Supports a Sustainable South Florida

The benefits of getting the water right are enormous. The entire south Florida ecosystem, including the Everglades, will become healthy, with many of its natural characteristics restored. Urban and agricultural water users will also benefit from enhanced water supplies. Flood protection, so important to hurricane-prone south Florida, will be maintained and, in some cases, improved.

Economic benefits from the implementation of the Comprehensive Plan are wide-ranging and are linked with the availability of clean, abundant water in the ecosystem. Not only is water the key to ecosystem restoration, it is necessary for a sustainable agricultural and urban environment. It is important for recreation, tourism, and navigation. It plays a significant and obvious role in commercial and recreational fishing.

The Comprehensive Plan will provide for ecosystem restoration. First and foremost, the goal of the Comprehensive Plan is to restore, protect, and preserve a natural treasure – the south Florida ecosystem. The focus of the Plan has been to restore the defining ecological features of the original Everglades and other parts of south Florida. In response to this substantial improvement, the characteristic animals will show dramatic and positive responses. The numbers of animals — crayfish, minnows, sunfish, frogs, alligators, herons, ibis, and otters — at virtually all levels in aquatic food chains will markedly increase. Equally important, the distribution of plants and animals will return to more natural patterns as more pre-drainage water flows are restored.

The Plan will support the return of the large nesting "rookeries" of wading birds to Everglades National Park and the recovery of several endangered species to more certain and optimistic futures. Wading birds, such as herons, egrets, ibis and storks, are symbolic of the overall health of the Everglades. As recently as the 1950s and 1960s, large "super colonies" of nesting waders remained in the Park. Today there no such super colonies. Wading birds, perhaps more than any other animal, "assess" the quality of the entire basin of south Florida wetlands before making "decisions" about where and when, or even whether, to nest. The recovery of the super colonies will be a sure sign that the entire ecosystem has made substantial progress. Of the endangered species, the wood stork, snail kite, Cape Sable seaside sparrow, and American crocodile, among others, will benefit and increase. We are confident that implementation of the Comprehensive Plan will once again allow us to witness what is now only a fading memory of the former abundance of wildlife in the Everglades.

Lake Okeechobee will once again become a healthy lake. Both the shallow and open water areas within the lake, essential to its commercial and recreational fishery and other aquatic species, will be greatly enhanced by the improved water levels as a result of the Comprehensive Plan. This will mean more abundant

Implementation of the Comprehensive Plan will….

- Improve the health of over 2.4 million acres of the south Florida ecosystem, including Everglades National Park;
- Improve the health of Lake Okeechobee;
- Virtually eliminate damaging fresh water releases to the estuaries;
- Improve water deliveries to Florida and Biscayne bays;
- Improve water quality; and
- Enhance water supply and maintain flood protection.

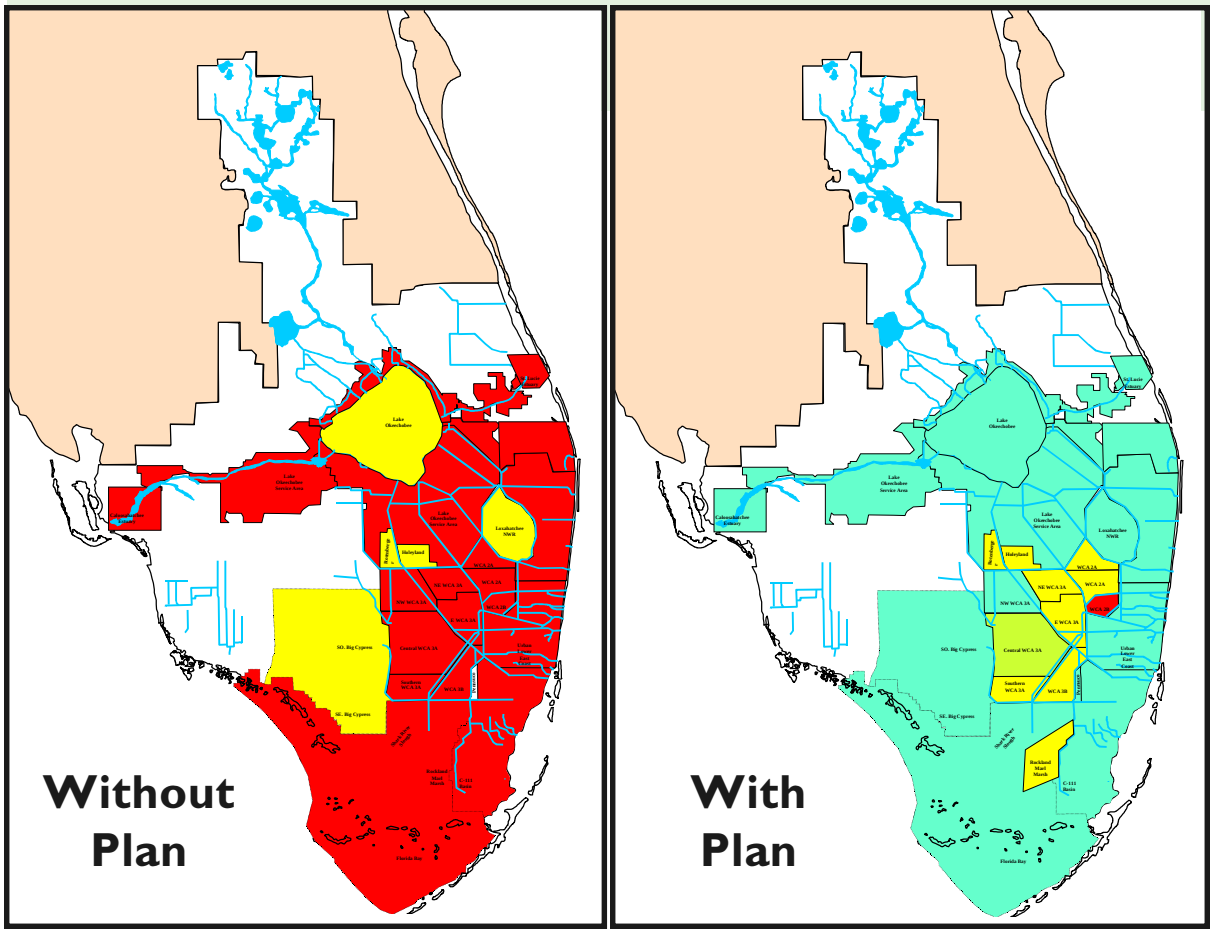
and healthier fish populations. Water quality in the lake will also be improved significantly by reducing the pollutant loading of water flowing into the lake. Lake Okeechobee provides huge regional benefits to wildlife, including waterfowl, other birds, and mammals.

Major benefits will be provided to the Caloosahatchee and St. Lucie estuaries and Lake Worth Lagoon. The Comprehensive Plan eliminates almost all the damaging fresh water releases to the Caloosahatchee and most detrimental releases to the St. Lucie and makes substantial improvements to Lake Worth Lagoon. As a result, abundant favorable habitats will be provided for the many aquatic species that depend on these areas for food, shelter, and breeding grounds, thereby enhancing the productivity and economic viability of estuarine fisheries.

The Plan will also improve fresh water deliveries to Florida and Biscayne bays. Appropriate fresh water regimes will result in substantial improvements in aquatic and semi-aquatic habitats, including, mangroves, coastal marshes, seagrass beds and coral reefs. Interacting together to produce food, shelter, and breeding and nursery grounds, these coastal habitat areas will support more balanced, productive fish, shellfish, and wildlife communities.

Future Ecosystem Conditions

The scientists involved in the Restudy evaluated ecosystem conditions expected in the future. The results of their evaluation are shown on these maps. Green indicates areas where the Plan is likely to be successful. Yellow indicates areas where meeting the targets is uncertain, or the Plan may be marginally successful. Red indicates areas where the targets are not met, and scientists believe that recovery is unlikely. Because of the flexibility inherent in the Plan and its implementation, the scientists also believe the red and yellow areas can be improved.



THE BENEFITS

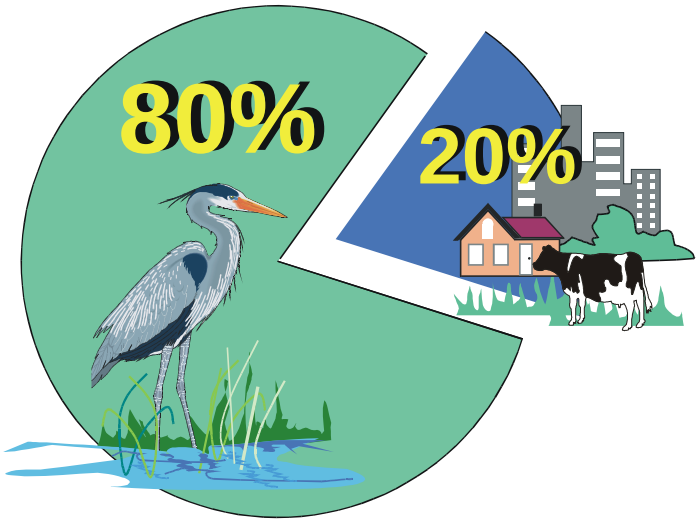
Restoration of the ecosystem key to a long-term sustainable Florida economy. A healthy environment is an integral part of a healthy economy. Clean and abundant water is essential for a prosperous and productive national economy. Plant and animal diversity is important both from an intrinsic and economic standpoint. If we are to have strong and sustainable economic growth, we must invest in the health of our environment**.**

While we know that restoration and protection of the environment is a good investment in the future, quantifying the monetary benefits of ecosystem restoration is often difficult using traditional methods of analysis. However, investments in a healthy environment do have direct and indirect effects on the economy.

The economy of south Florida is based on services, agriculture, and tourism. The total economic output of the region exceeds $200 billion annually. There is a strong linkage among the south Florida ecosystem, the economy and the quality of communities.

The Everglades support a significant amount of outdoor recreation. Over six million people spend approximately $400 million a year visiting just the Everglades-related parks and preserves alone. Visitors to the area come to enjoy the beautiful and diverse plants and animals for which the area is known.

"New" Water Distribution



The Florida Keys are the number one destination for scuba divers in the world. More than four million people visit the Florida Keys and Florida Bay every year primarily to engage in water related activities, including fishing, diving, boating and watching wildlife. Ecological improvements will lead to more and better recreational opportunities throughout south Florida. Visitors to Lake Okeechobee, Everglades National Park, and the Florida Keys come to these areas not only for their beauty but for the recreational opportunities that they provide. Lake Okeechobee supports a diverse community of wading birds, migratory waterfowl, and other wildlife, including the endangered snail kite. These animals are important

to the regional economy, which is dependent on use of the lake for eco-tourism and recreation. Activities include bird and wildlife observation, hiking, camping, hunting, and recreational boating.

South Florida's commercial fisheries generate revenues of about $18 million annually. Improved aquatic conditions in Lake Okeechobee, Florida Bay, and estuaries will result in increased fishing opportunities in these areas that are some of the most valuable commercial marine fisheries in the nation. South Florida's recreational fishing industry has estimated revenues of over $600 million annually.

The Plan increases the availability of water for everyone. The Comprehensive Plan will increase the amount of fresh water available not just for the natural system, but for all water users. Florida is the second ranking state in the production of fresh vegetables, the national leader in citrus fruit production, and the world leader in the production of grapefruit. Agriculture in south Florida generates $3.8 billion per year in economic activity. An adequate supply of water is key to maintaining healthy agriculture in south Florida. Residents and visitors can also expect fewer water restrictions. Without the Plan, water restrictions could be expected every year in some areas, but the Plan will reduce that to as little as once in every ten years. Overall, the Plan will provide an expanded fresh water source to meet south Florida's population needs, which will eliminate the current competition for water with the natural system.

The level of flood protection will be maintained or improved. Florida is a low-lying, flat, wet state, and almost all of south Florida is prone to flooding. Today, the Central and Southern Florida Project, supported by many locally operated canal networks, provides flood protection on a regional basis for south Florida. The Project has prevented costly flood damage throughout the region. The Comprehensive Plan will maintain, and in some situations improve, this important protection from flooding.

Multiple benefits will make south Florida sustainable. With no change, the region will soon experience more frequent water shortages, flooding, and continued degradation of the Everglades, coastal estuaries, and other natural resources. In turn, this will have an adverse effect on the economy of south Florida, which is so important to the nation. Implementation of the Plan will result in the recovery of a healthy, sustainable ecosystem in south Florida for the people and wildlife that depend on this natural system for their survival and well being.

(For more information, please refer to the **Summary** *in the final report.)*

Indicators of a Restored Ecosystem

Wetland functions that mimic pre-drainage conditions
Significant increases in animal populations at all levels in the aquatic food chain
Return of large nesting "rookeries" of wading birds to Everglades National Park
Recovery of a number of endangered species
Quality of water discharged to natural areas meets non-degradation standards
Improved health of Lake Okeechobee fishery
Increased freshwater flows to bays and estuaries
Improved health of seagrasses and other submerged aquatic vegetation
Greatly reduced frequency of water restrictions

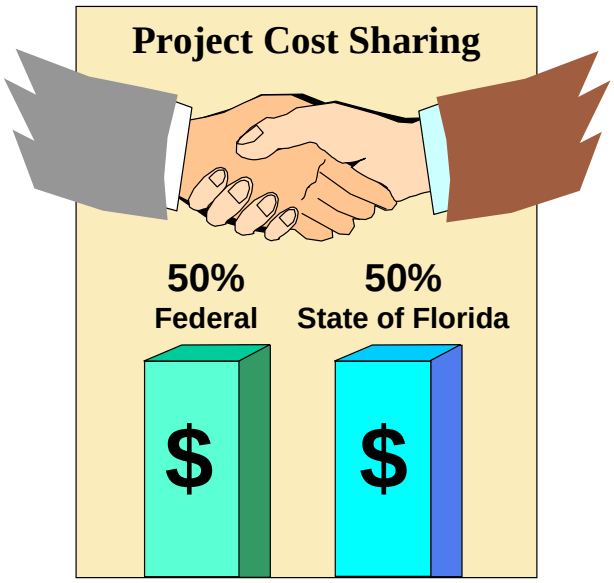
Implementation Cost is Investment in the Nation's Future

The costs to implement the Comprehensive Plan are substantial, but they will be spread out over many years and shared by the federal government and the state of Florida. Like many other public works projects costing billions of dollars, implementing the Plan is an investment in the nation's future. With this investment, we can restore this unique ecosystem and leave a legacy for future generations. If we do not make the investment now, we will suffer the irretrievable loss of the Everglades.

The estimated cost to implement the Comprehensive Plan is $7.8 billion. It will also cost approximately $182 million each year to operate, maintain, and monitor the Plan. Taken together over the more than 20 years needed to implement the Plan, the Plan's annual costs amount to just over $400 million. In general, the federal government will pay half the cost, and the state of Florida and the South Florida Water Management District will pay the other half.

During the design phase, we will seek opportunities to reduce the cost of the Plan. For instance, we will minimize the number of control structures such as pumps and spillways. We will also use passive control structures such as weirs wherever feasible. This is likely to reduce construction and operational costs for the Plan.

While implementing the Comprehensive Plan is a large investment, the overall cost of inaction is enormous. The Everglades will continue to die. Increased water shortages, diminished agricultural production, and reduced tourism will have real and substantial effects on Florida's economy. The survival of federal public lands, including national parks, wildlife refuges, and marine sanctuary and tribal trust lands, is an issue of national interest. Most importantly, the overall long-term beneficial effects of the Comprehensive Plan far exceed its costs. In the final analysis, we believe that implementing the Comprehensive Plan is an important and necessary investment for the nation.



(For more information, please refer to Section 9, The Recommended Comprehensive Plan, *in the final report.)*

What Do Other Major Public Investments Cost?

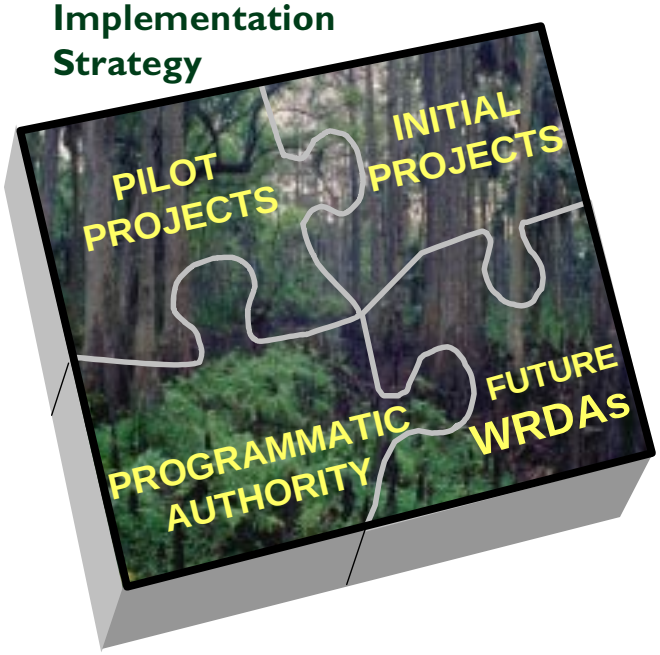
$1.8 billion	Woodrow Wilson Bridge Replacement
$4.2 billion	Denver International Airport
$8.5 billion	New York City Water Project
$9-10.5 billion	CALFED (California) Bay-Delta Program
$10.8 billion	Boston Artery and Tunnel

Implementation of the Plan Recognizes Ecosystem Restoration as the Overarching Objective.

The ultimate success of the Comprehensive Plan will be a reflection of its implementation over more than 20 years. Simply stated, the hard work lies ahead in terms of restoring this important ecosystem. Successful implementation will require a well-coordinated strategy that, like the Plan itself, recognizes that first and foremost, ecosystem restoration is the overarching objective. This objective is the principal driving force behind the sequence and pace at which specific project features are undertaken.

This Plan will begin to reverse, in a relatively short time, the pattern of ecological degradation that has been occurring in the natural system for many decades. If we start now, the natural wetlands system of south Florida will be healthier by the year 2010.

Implementation Strategy



The Restoration Effort Begins with Authorization in Water Resources Development Act of 2000

Through a Water Resources Development Act (WRDA) of 2000, the Administration will ask Congress to authorize an initial $1.2 billion package of projects that will begin implementation of the Comprehensive Plan. The initial authorization request will include 1) six pilot projects, 2) ten specific project features, and 3) a programmatic authority through which smaller projects can be more quickly implemented. Authorization for the remaining features of the Plan will be requested in subsequent Water Resources Development Act proposals beginning in 2002.

Pilot projects will address technical uncertainties. Prior to full-scale implementation, six pilot projects, costing about $97 million, will be built to address uncertainties with some of the features in the Comprehensive Plan. These projects include aquifer storage and recovery in each geographic region that the technology is proposed; in-ground reservoir technology in the lake belt region of Miami-Dade County; levee seepage management technology adjacent to Everglades National Park; and advanced wastewater treatment technology to determine the feasibility of using reuse water for ecological restoration.

Initial set of construction features will provide immediate system-wide water quality and flow distribution benefits and use already purchased land. Ten projects and the adaptive assessment program, totaling $1.1 billion, are recommended for initial authorization. These projects were selected because they can provide system-wide water quality and flow distribution benefits to the ecosystem as well as opportunities to integrate these features with other ongoing federal and state restoration programs. For example, if part of the initial authorization, modifications to Tamiami

Trail to improve flow distribution could be accomplished more quickly under the ongoing Modified Water Deliveries Project. In addition, the South Florida Water Management District and the U.S. Department of the Interior have already purchased lands, such as the Talisman lands, for a number of Plan components. Authorization of projects that use lands already purchased will ensure that these lands are utilized for restoration as soon as possible.

Programmatic authority will expedite implementation. An authorization will be sought similar to the authorization received in 1996 for Everglades Ecosystem Restoration Projects (Critical Projects). These projects would "produce independent, immediate, and substantial restoration, preservation and protection benefits," and expedite some components of the Plan. The programmatic authority would be limited to those individual components of the Comprehensive Plan that have a total project cost of $70 million or less, with a maximum federal share of $35 million per project. A total of 27 components of the Plan, with a total combined federal and non-federal cost of $490 million, could be implemented in an efficient and expedited manner. Components such as the Arthur R. Marshall Loxahatchee National Wildlife Refuge internal canal structures, the Lake Okeechobee watershed water quality treatment facilities, and the Florida Keys Tidal Restoration Project could be accomplished under this programmatic authority.

The remainder of the Plan's features to be included in future Water Resources Development Acts. Congress will be asked to authorize the remaining components of the Comprehensive Plan as more detailed planning is completed. At a cost of approximately $6.2 billion, the 26 remaining features will undergo additional studies and analysis before authorization is sought from Congress. Many of these project components are dependent on the results of the proposed pilot projects such as aquifer storage and recovery features and the in-ground reservoirs in Miami-Dade County. Based on the implementation schedule, project reports will be submitted to Congress periodically through the year 2014.

Congressional Authorization Not Needed for Some Components

Not all components of the Comprehensive Plan require additional authorization. The three recommended feasibility studies (Florida Bay and Florida Keys, Southwest Florida and the Comprehensive Integrated Water Quality Plan) will be conducted under the authority of the Water Resources Development Act of 1996 that allows for the continuation of studies and analyses that are necessary to further the Comprehensive Plan. Some components of the Plan will be constructed or implemented under existing State processes. Operational changes associated with these features do not require action by Congress. For example, changes to the state's Holey Land Wildlife Management Area operational plan fall under this category.

Implementation of the Plan provides flexibility to adapt to new information. No plan can anticipate exactly how a complex ecosystem will respond during restoration efforts. For example, the remaining Everglades are only one-half as large as their original size, and current boundaries often do not follow natural ground elevations or habitat patterns. For these and many other reasons, the ways in which this ecosystem will respond to the recovery of more natural water patterns could include some unforeseen outcomes. The Comprehensive Plan anticipates such outcomes. The Plan is designed to allow project modifications that take advantage of what is learned from system responses, both expected and unexpected. Called adaptive assessment, and using a well-focused regional monitoring program, this approach will allow us to maximize environmental benefits while ensuring that restoration dollars are used wisely. The monitoring program measures how well each component of the plan accomplishes its objectives, and, this, in turn, sets up opportunities for refinement of succeeding components. Independent scientific review is an integral part of this process.

Pilot Projects

Project	Cost
Lake Okeechobee Aquifer Storage and Recovery (ASR)	$19,000,000
Caloosahatchee River (C-43) Basin ASR	$6,000,000
Site 1 Impoundment and ASR	$9,000,000
Lake Belt In-Ground Reservoir Technology	$23,000,000
L-31N Seepage Management	$10,000,000
Wastewater Reuse Technology	$30,000,000
TOTAL	$97,000,000

Project Implementation Reports bridge the gap between the Comprehensive Plan and detailed design. To continue project implementation, more technical information is needed. Additional plan formulation and engineering and design will be required. Additional analysis of the impacts of the various projects on the environment, flood protection, water quality, economics and real estate will be required as will supplemental National Environmental Policy Act (NEPA) documents. Evaluation of component contributions to Comprehensive Plan performance will also provide more information toward the overall process and provide opportunities for the overall refinement or modification to the Plan as needed. The results of these efforts will be documented in a series of Project Implementation Reports. These Project Implementation Reports are designed to bridge the gap between the conceptual level of the Comprehensive Plan and the detailed design necessary to proceed with construction.

(For more information, please refer to Section 10, Implementation Plan, in the final report.)

Projects for Initial Authorization

C-44 Basin Storage Reservoir	$112,562,000
Everglades Agricultural Area Storage Reservoirs - Phase 1	$233,408,000
Site 1 Impoundment	$38,535,000
Water Conservation Areas 3A /3B Levee Seepage Management	$100,335,000
C-11 Impoundment & Stormwater Treatment Area	$124,837,000
C-9 Impoundment and Stormwater Treatment Area	$89,146,000
Taylor Creek / Nubbin Slough Storage and Treatment Area	$104,027,000
Raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within WCA 3	$26,946,000
North New River Improvements	$77,087,000
C-111 N Spreader Canal	$94,035,000
Adaptive Assessment and Monitoring Program	$100,000,000
TOTAL	**$1,100,918,000**

Implementation of the Comprehensive Plan Guided by a Set of Principles

Implementation of the Comprehensive Plan will take place over more than 20 years. The implementation principles will ensure that the Plan is carried out in a manner consistent with the goals and objectives of the Restudy effort.

Expedite ecosystem restoration benefits. We recognize that this is an ecosystem in peril, and time is of the essence. Implementation of the restoration as scheduled will provide substantial hydrologic, water quality, and ecological benefits to the ecosystem by the year 2010. Throughout the implementation phase we will improve and expedite projects whenever possible.

Use a flexible approach to implementation. The Comprehensive Plan's flexibility allows for further improvements as we refine individual projects and obtain new information. The Plan does not provide all the answers – no plan could. It does, however, contain an aggressive adaptive assessment strategy that includes independent scientific peer review and a process for identifying and resolving uncertainties. This approach provides an efficient way to allow restoration to move forward now and for the agencies to make necessary mid-course corrections. Periodic updates of both the Comprehensive Plan and the Implementation Plan will allow us to achieve the highest levels of restoration as rapidly as possible. We will ensure that the implementation process provides the flexibility needed for restoration success.

Integrate Comprehensive Plan features with ongoing projects. Ongoing restoration projects, such as the Modified Water Deliveries Project and the C-111 Project, are integrally linked with the Comprehensive Plan. These ongoing projects will provide a substantial down payment towards restoration of the Everglades. The Comprehensive Plan includes a number of components that can be efficiently and quickly implemented as part of these ongoing projects. We will integrate implementation of the Comprehensive Plan with ongoing restoration projects.

Maintain ecosystem focus. The Comprehensive Plan was developed and evaluated based on its contribution to restoration of the south Florida ecosystem. As individual components or groups of components are further planned and designed, we will conduct analyses and evaluations to measure the overall contribution to system-wide goals. We will ensure that project components are developed to provide the maximum contribution to restoration of the entire south Florida ecosystem.

Ensure responsible use of fiscal resources. Because of the large size of the area, the Plan is "conceptual" in nature. More detailed technical studies and designs must be accomplished to ensure that each project has the best design to achieve its intended purpose and that the project is shown to be a sound investment. Implementation of the Comprehensive Plan represents a substantial financial investment by all levels of government. We will ensure that fiscal resources are used efficiently and effectively.

Provide assurances to beneficiaries. Water links the natural system with the urban and agricultural sectors in south Florida. To a great extent, the ability to sustain the region's natural resources, economy, and quality of life

Science Advisory Review Panel

Independent scientific peer review is an important part of the overall restoration process. The Administration, led by the Secretary of Interior, is committed to establishing a Science Advisory Review Panel under the auspices of the South Florida Ecosystem Restoration Task Force. The Task Force is working with the National Research Council to establish this panel. Once established, the panel will work with the Task Force, in concert with the Restudy Team, other scientists, and the public to determine which scientific issues should be addressed by the panel.

depends on the achievement of the Plan's goals to enhance, protect, and better manage the region's water resources. New storage facilities will eventually lessen urban and agricultural user's dependence on the natural system for water supply. As components are completed, more water will become available for the ecosystem. We are committed to ensuring that the environmental benefits continue to flow to the ecosystem. As we implement the Plan, we are also mindful of our commitment to continue providing urban and agricultural users with needed water while new facilities are under construction.

Design for water quality improvement. The Comprehensive Plan includes a number of features to protect and improve the quality of water in natural areas. There are also opportunities to improve water quality further as part of the design process for the components of the Comprehensive Plan. During implementation, we will ensure that the components of the Plan are located, designed, and operated consistently with existing and future water quality protection criteria and restoration targets. The recommended study to develop a comprehensive integrated water quality plan will examine remaining water quality needs for the entire ecosystem.

Continue the inter-agency, inter-disciplinary approach. The effort to develop the Comprehensive Plan has been an open, collaborative process involving federal and state agencies, local governments and tribal participation. This inter-agency, inter-disciplinary process ensured that the Plan evolved from a healthy diversity of backgrounds, interests, and agency missions. The flexibility and openness of this process will continue during implementation to allow for continual dialogue and improvements to the Plan.

Continue to involve stakeholders and the public. Outreach and public involvement have been an integral part of the development of the Comprehensive Plan. The public and stakeholders have played a key role in getting to a plan that supports a sustainable south Florida. Through the process afforded by the National Environmental Policy Act, we will continue to seek this input during the implementation phase of each feature.

Develop contingency plans as appropriate. We recognize that there are technical and cost uncertainties associated with some of the major components included in the Comprehensive Plan such as aquifer storage and recovery. As each component proceeds towards actual implementation, technical uncertainties will be addressed through pilot projects and more detailed analyses. We will develop contingency plans as necessary during the implementation phase for appropriate components and technologies to ensure that the benefits of the plan are obtained.

Why Can't We Restore the Ecosystem Faster?

Perhaps first and foremost, ecosystems do not always respond immediately after specific hydrologic changes are implemented. Just like it took the ecosystem many years to respond to the negative changes made 50 years ago, ecological responses to our improvements will also take time. Second, time is needed to plan and design the specific features in more detail before they can be built. Pilot projects must be implemented and monitored in order to reduce the uncertainty associated with some of the elements of the Plan. Finally, an incremental approach to implementation provides opportunities to assess performance and refine plans to more effectively meet overall restoration objectives.

How Long will it Take to Restore the Everglades?

Actually, a relatively short time. Environmental improvements will follow hydrologic changes. We will see improvements in the ecosystem during the first ten years of the Plan's implementation. In fact, coupled with the restoration projects currently under way in the Kissimmee River and other areas, we should see gradual, but very important, improvements over the next few years. It will take many years to obtain all of the benefits that the Plan will provide.

The Comprehensive Plan Provides the Cornerstone for the Entire South Florida Ecosystem Restoration Effort

Getting the water right is the critical part of restoring the south Florida ecosystem. The Comprehensive Plan will do this, and its benefits are not dependent on other efforts. But the Comprehensive Plan is also part of a larger effort to restore the ecosystem and provide for a sustainable south Florida. A strategic plan for this larger effort is being developed under the direction of the South Florida Ecosystem Task Force by federal, state, local and tribal leaders. It will focus on bringing together other restoration efforts under one framework. Over 200 projects will be tied together under the strategic plan.

Getting the water right. The Comprehensive Plan is the cornerstone of getting the water right because it addresses the problem on a regional basis. There are, however, other Corps projects of a more limited scope that work toward restoring and enhancing the natural system. The Corps recently began the restoration of the Kissimmee River that will return the natural areas of the river and improve wildlife habitat in the northern part of the greater Everglades system. Two other projects are underway to return water flows to Everglades National Park through Shark River and Taylor Sloughs, two historically important water "channels" for the River of Grass.

State and local efforts also address water. Water quality problems are being addressed by the state through the multi-step Everglades Construction Project that uses wetlands for stormwater treatment areas and encourages best management practices to reduce pollutants in runoff from cities and farms. The South Florida Water Management

Pumping facility under construction adjacent to Everglades National Park

District is also developing regional and sub-regional water supply plans to provide for better water resources management.

Restoring and enhancing the natural system. Efforts to restore and enhance the natural environment are also taking place at the region-wide level as well as on a smaller scope. These efforts focus on two primary components: species diversity and habitat protection. For example, the Multi-Species Recovery Plan, developed by the U. S. Fish and Wildlife Service, provides a comprehensive strategy to address habitat needs of the 68 endangered species in the area. Another example, the Corps' Environmental Impact Statement for Southwest Florida, will provide a comprehensive framework for evaluating future requests for development permits.

Transforming the built environment is another goal of the overall restoration effort. Growth issues are being addressed at the state and local level. Efforts to balance growth and resource protection, as well as efforts to enhance the quality of life in urban areas are all important to the overall ecosystem. The Florida initiative Eastward Ho! will redirect future development into the historical eastern corridor, revitalizing older urban areas. The broad effort by Miami-Dade County to address land use and water management will determine the future economic, social, and environmental sustainability for most of urban and rural Miami-Dade County. The joint State and Corps effort under the Florida Keys Carrying Capacity Study will provide an information base for managers to made decisions about balancing economic and environmental needs.

Efforts by federal, state, local and tribal entities represent the commitment of all to have a comprehensive and integrated strategic plan to achieve restoration and sustainability. The Comprehensive Plan complements these efforts.

South Florida Ecosystem at a Crossroad --- the Time to Act is Now

If we are to rescue the south Florida ecosystem and its Everglades, perhaps the first question we must answer is why. The answers to this question are overwhelming. The Everglades are to south Florida as the Rockies are to the western states, the old growth forests are to the Pacific northwest, the Adirondack, White and Green Mountains are to the northeast, and the Mississippi River is to the nation's heartland. The Everglades epitomize the region's sense of definition and place, both substantially by providing clean water and recreation, and spiritually by providing a sense of hope for the quality of the region's future. The Everglades are unlike any other place in the world. They attract the eyes of the world.

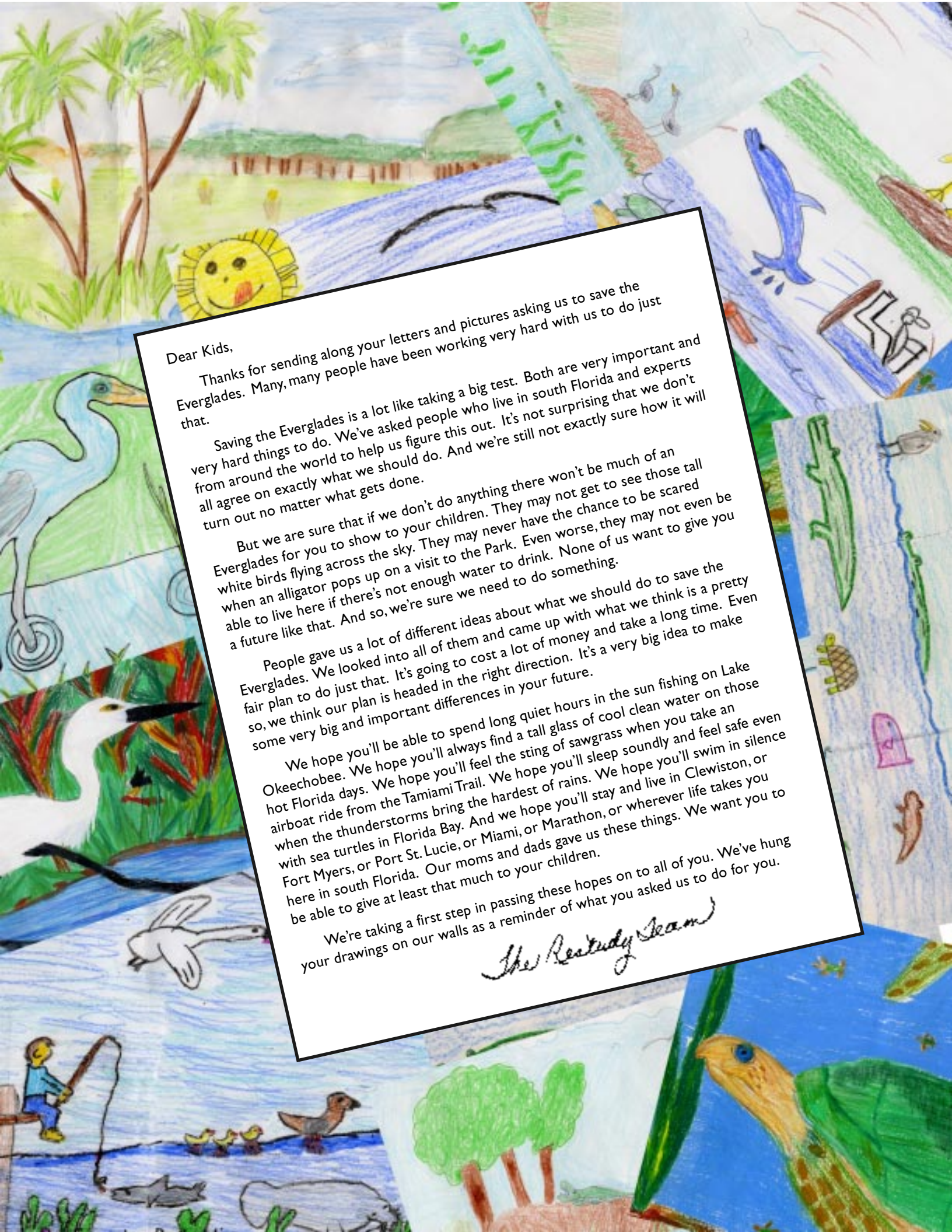
At the end of Marjory Stoneman Douglas' book, The Everglades: River of Grass, she eloquently charges us with our responsibility for the Everglades.

> *It is an article of faith in Florida, in the emerging urban giant carved from wild dunes and inaccessible swamps, that events can be propelled fast enough to keep ahead of consequences. A century after man first started to dominate the Everglades, that progress has stumbled. Consequences have started to catch up. It is, perhaps, an opportunity. The great wet wilderness of South Florida need not be degraded to a permanent state of mediocrity. If the people will it, if they enforce their will on the managers of Florida's future, the Everglades can be restored to nature's design.*

Unfortunately, 50 years after Mrs. Douglas wrote that the consequences of our actions have started to catch up with the Everglades, we have failed to act in a comprehensive fashion to reverse this trend. No longer "fast enough to keep ahead of consequences," the Everglades and the south Florida ecosystem must be restored now or the future of south Florida will be irrevocably hurt. A national treasure will be lost.

We are indeed at an important crossroad in our efforts to restore this internationally important ecosystem. The solution is there for the taking. The Comprehensive Plan is a bold roadmap for success. If we act now with courage and vision to implement this technically sound plan, we will be successful and we will leave a proud Everglades legacy. If we fail to act, our legacy will be one of lost opportunities for all future generations. The world is indeed watching as we make this choice.

> Perhaps, even in this last hour, in a new relation of usefulness and beauty, the vast, magnificent, subtle and unique region of the Everglades may not be utterly lost.
>
> Marjory Stoneman Douglas,
> The Everglades: River of Grass



Dear Kids,

Thanks for sending along your letters and pictures asking us to save the Everglades. Many, many people have been working very hard with us to do just that.

Saving the Everglades is a lot like taking a big test. Both are very important and very hard things to do. We've asked people who live in south Florida and experts from around the world to help us figure this out. It's not surprising that we don't all agree on exactly what we should do. And we're still not exactly sure how it will turn out no matter what gets done.

But we are sure that if we don't do anything there won't be much of an Everglades for you to show to your children. They may not get to see those tall white birds flying across the sky. They may never have the chance to be scared when an alligator pops up on a visit to the Park. Even worse, they may not even be able to live here if there's not enough water to drink. None of us want to give you a future like that. And so, we're sure we need to do something.

People gave us a lot of different ideas about what we should do to save the Everglades. We looked into all of them and came up with what we think is a pretty fair plan to do just that. It's going to cost a lot of money and take a long time. Even so, we think our plan is headed in the right direction. It's a very big idea to make some very big and important differences in your future.

We hope you'll be able to spend long quiet hours in the sun fishing on Lake Okeechobee. We hope you'll always find a tall glass of cool clean water on those hot Florida days. We hope you'll feel the sting of sawgrass when you take an airboat ride from the Tamiami Trail. We hope you'll sleep soundly and feel safe even when the thunderstorms bring the hardest of rains. We hope you'll swim in silence with sea turtles in Florida Bay. And we hope you'll stay and live in Clewiston, or Fort Myers, or Port St. Lucie, or Miami, or Marathon, or wherever life takes you here in south Florida. Our moms and dads gave us these things. We want you to be able to give at least that much to your children.

We're taking a first step in passing these hopes on to all of you. We've hung your drawings on our walls as a reminder of what you asked us to do for you.

The Restudy Team

Acknowledgements

Much of the information in this document was drawn from the ***Central and Southern Florida Project Comprehensive Review Study, Final Integrated Feasibility Report and Programmatic Impact Statement,*** dated April 1999. Other sources were also used and are listed below with grateful acknowledgement.

Marjory Stoneman Douglas. ***The Everglades: River of Grass.*** Pineapple Press, Sarasota, Florida. Revised Edition, 1988.

U. S. Army Corps of Engineers, Jacksonville District, and South Florida Water Management District. ***Overview: Central and Southern Florida Project Comprehensive Review Study.*** October, 1998.

Working Group of the South Florida Ecosystem Task Force. ***Success in the Making: An Integrated Plan for South Florida Ecosystem Restoration and Sustainability.*** October, 1998.

For more information or to obtain a copy of the Plan, please contact:

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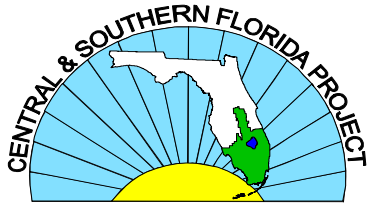

The Central and Southern Florida Project Comprehensive Review Study was led by the U S Army Corps of Engineers, Jacksonville District and the South Florida Water Management District, located in West Palm Beach, Florida. Many other federal, state, tribal and local agencies were active partners in developing the Comprehensive Plan and that partnersip will continue through the implementation of the Plan. Those agencies are listed below.

US Department of the Army
US Army Corps of Engineers
Office of the Assistant Secretary of the Army for Civil Works

US Department of Agriculture
Agricultural Research Service
Natural Resources Conservation Service

US Department of the Interior
US Fish and Wildlife Service
US Geological Survey/Biological Resources Division
Everglades National Park
Everglades Research and Education Center
Biscayne National Park
Big Cypress National Preserve

US Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
National Ocean Service
Office of Oceanic and Atmospheric Research

US Environmental Protection Agency

Miccosukee Tribe of Indians of Florida

Seminole Tribe of Florida

State of Florida
Department of Agriculture and Consumer Services
Department of Environmental Protection
Game and Fresh Water Fish Commission
Governors Commission for a Sustainable South Florida
Governor's Office
South Florida Water Management District

Local Agencies
Broward County Department of Natural Resource Protection
Broward County Office of Environmental Services

Lee County Utility Department

Martin County

Miami-Dade Department of Environmental Resource Management
Miami-Dade Water and Sewer Department

Palm Beach County Environmental Resource Management
Palm Beach County Water Utilities

Academic Institutions
Florida International University
University of Miami
University of Tennessee

"The Everglades are an American treasure, and saving them must be a national priority. In close partnership with the state of Florida, we already are hard at work restoring this extraordinary landscape. Now we must take the critical next step. By capturing precious freshwater that now flows to the sea, our Comprehensive Plan ensures both a strong, sustainable economy, and a healthy Everglades for generations to come."

Vice President Al Gore
June 18, 1999

"We must act now.....

.....if we are to reverse the course of 50 years of degradation and restore the Everglades. The Comprehensive Plan is a science-based and technically sound roadmap for restoring this ecosystem of international importance. It is flexible and will allow for adjustments as we learn more. In fact, it anticipates that such adjustments will have to be made. The ecosystem cannot wait for us to have all the answers and what we think is a perfect plan. We will never have all the answers and a perfect plan. If we become paralyzed by this desire and fail to act now, we miss what is very likely our last golden opportunity to restore this resource for the generations to come."

Nathaniel Reed April 7, 1999
Florida Environmentalist and former Assistant Secretary of the Interior,
Fish, Wildlife and Parks

US Army Corps of Engineers®

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