Conservation Watch

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Following the Flow: An Everglades Journey

From September 28 until October 3rd, 2008, members of the Garden Club of America Conservation and National Affairs and Legislation Committees toured the Florida Everglades under the direction of part-time Floridian and GCA member Judy Boggess. The group donned waterproof shoes, long sleeve shirts, broad-brimmed hats, and applied plenty of sunscreen and bug repellant for our treks through the Everglades. We learned why man, in Florida, has been an "invasive," forever changing the area we were exploring. It is a critical time to take stock of the Florida Everglades, now that the world's most ambitious wetlands and ecosystem restoration project is underway. The Everglades' waters journey begins in central Florida, flows into Lake Okeechobee, seeps into farmlands and water conservation areas, and finally trickles into Florida Bay. The population of South Florida is seven and a half million people and is expected to double by 2025. Only half of the Everglades are left now; what will become of the remainder? What follows are the stories of our journey through the Everglades and what we learned. *Editor*

The Everglades: An Endangered Treasure

The Everglades Ecosystem is the largest wetland in North America. It is, in fact, a complex system of interconnected wetlands. Once water flowed freely through its marshes, meandering south from Lake Okeechobee across the limestone shelf that is Florida Bay. Its interdependent ecosystems include cypress swamps, estuarine mangrove forests, tropical hardwood hammocks, pine rock land, as well as the marine environment of Florida Bay.

Between 1850 and 2000, Congress turned Florida land unfit for cultivation over to the state for private development. Florida drained water from the Everglades for farmland and, as the population grew, diverted it to cities. In the twentieth century, the state first gave away swampland and then did the same with groundwater. Of all the degradations to the Everglades, the most devastating was the 1913 construction of the Tamiami Trail. It was built to connect the Gulf and Atlantic coasts. It has blocked the flow of water into the primary headwaters to the Everglades, causing marshes to dry up and estuaries to turn salty. The disastrous floods of 1947-1948 led to the construction of levees, water storage areas, channels, and large-scale pumping to supplement the gravity drainage of the Everglades.

The degradation of the Everglades continues. More than six feet of natural peat has disappeared after decades of drainage. Farming in this environment is declining. Limestone miners and developers are lining up to buy the depleted farmland.

None of these uses is sustainable. Blasting for limestone has been a thriving business in the Everglades, but eventually companies exhaust their quarries. They convert them into lake housing developments while looking for new ground to mine. Today developers put great pressure on their politicians to find water so they can build. Currently, six million people draw water from a single aquifer. Any further drawing down of the aquifer would divert water from the Everglades and invite saltwater intrusion.

Today, the waters of the Everglades are highly polluted. Phosphorus and nitrogen from sugar cane fertilizers has spread deep into the Everglades. Hurricanes have stirred up pollutants in *treatment marshes,* tripling phosphorus flowing to farms. Non-native plants are thriving on the phosphorus, smothering native vegetation. Mercury levels in fish are high.

In 1947, Marjorie Stoneman Douglas wrote her iconic book, *The Everglades: River of Grass,* changing forever the perception of Southern Florida from a dismal swamp to a national treasure. Now the vast Everglades area has shrunk to half the size it covered in the early twentieth century. The future of Florida's crown jewel, the "River of Grass" is murky. Developers, water utilities and their political allies continue to vie for their disproportionate shares of the water.

Lloyd Brown, The Weeders (PA) – Zone V
GCA Conservation Committee, Vice-Chair – National Parks/Public Lands

[Note: *"treatment marshes"* or Stormwater Treatment Areas are constructed wetlands that remove and store nutrients through plant growth and the accumulation of dead plant material in a layer of peat.]

Everglades National Park – The Original "Magic Kingdom"

Everglades National Park is the only U.S. park to hold three international designations: International Biosphere Reserve, World Heritage Site and Wetland of International Importance. The 60-plus years since Everglades National Park was created have brought increased appreciation for the function as well as the beauty of this important land. Thanks to Douglas' book, *The Everglades: River of Grass*, the Park was dedicated as the first national park created to protect a threatened ecological system. Since then, the important role it plays has only become more apparent. The Everglades receive about one million visitors each year.

The boundaries of Everglades National Park protect only the southern one-fifth of the historic Everglades ecosystem. Twenty years after it was established, degradation of the community surrounding the Park has brought a new awareness that those original lands were not enough to preserve the ecosystem. In the late 1960's scientists and citizens came to realize that the Big Cypress watershed was essential to the survival of the Everglades and the integrity of the entire South Florida ecosystem, where the exploding human population competed for the same water that Everglades plants and animals needed for preservation.

Combating nutrient-rich (nitrate-contaminated) water, interrupted hydrology, decreased water supply, exotic plants, and mercury contamination cannot be done successfully at the park level alone. Instead, combined and integrated efforts at the federal, state, county, and local levels are necessary. In 2000, the Comprehensive Everglades Restoration Program (CERP) was passed, a joint federal and state project designed to protect vital lands of the watershed outside the park. This plan benefits both the Park and citizens of South Florida. CERP progress has been slow and project costs continue to rise. Two new projects, critical to the success of the overall plan, need to be completed first, a bridge over part of the Tamiami Trail, which will allow more water flow into the Everglades; and second, the purchase of the 'missing link' of land owned by U.S. Sugar that will connect lands south of Lake Okeechobee and north of the Park.

A critical function of the Everglades is prevention of saltwater intrusion into underground aquifers. A looming threat to the Everglades is climate change, estimated to bring a minimum 7 to 23-inch rise in water. Everglades National Park Superintendent Dan Kimball says, "Healthy wetlands can serve as a first line of defense against rising seas and could perhaps block or filter saltwater from seeping into the underground freshwater aquifers. Current studies need to continue to determine if flows of freshwater from the north will be able to offset the pressure of sea level rise."

A recent report by the National Research Council, a biennial review required by Congress, states that, "without near-term progress … the Everglades ecosystem may experience irreversible losses to its character and functioning." The centennial of the National Park System in 2016 provides an excellent opportunity to create new enthusiasm and study of Everglades National Park. The 111th Congress will be pressed to provide the promised funds necessary for Everglades restoration before more valuable time is lost.

Carole Hunter, Lake Minnetonka (MN) G.C. – Zone XI
GCA NAL Committee, Vice-Chair - National Parks/Public Lands

Sources:
South Florida Water Management District, "Quick fact: Everglades Restoration Progress," Dec., 2007 and "Water Matters," Fall, 2008.
ICLEI-Local Governments for Sustainability U.S.A. at wwwicleiusa.org.
Care, Damien, "Harsh Review of Restoration in Everglades," *New York Times*, Sept. 30, 2008.
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What's the Difference Between a Swamp and a Marsh?

A **swamp** is a wetland featuring temporary or permanent inundation of large areas of land, by shallow bodies of water. A swamp has a substantial number of hammocks, or dry land protrusions, covered by aquatic vegetation, or vegetation that tolerates periodic inundation. The water of a swamp may be fresh water or salt water.

A **marsh** is a wetland without woody vegetation or has less open water surface than a swamp. Swamps have trees; marshes are treeless wetlands. Marshes have lush growth of herbaceous plants, such as grasses, sedges, reeds, and cattails. While the Everglades are the world's largest freshwater marsh, the Everglades contains hardwood hammocks and mangrove swamps as well.

(Wikipedia)

It's All About the Water

Sawgrass as far as the eye can see, alligators, and Great Blue Herons . . . these are some of the images you see as you enter the Florida Everglades. All seems right with the world. How could anything be wrong when such beauty surrounds you? But the Everglades ecosystem is in grave danger.

The prevailing thought in the 1800's was that the only good swamp was a drained swamp. From the early 1800's to the 1970's, the United States lost over 50% of it wetlands due to drainage, dredging, and damming of rivers. This process transformed the United States from an agrarian society into a world-class industrial and agricultural power. One cannot discount the incredible progress in the quality of life during this period. The 19th and 20th centuries were marked by incredible environmental and industrial innovation. But, we are just beginning to understand the consequences of this progress and the Everglades are no exception. Since 1900, the Everglades have been continually drained for agriculture and urban development. Today only 50 percent of the original wetlands remain.

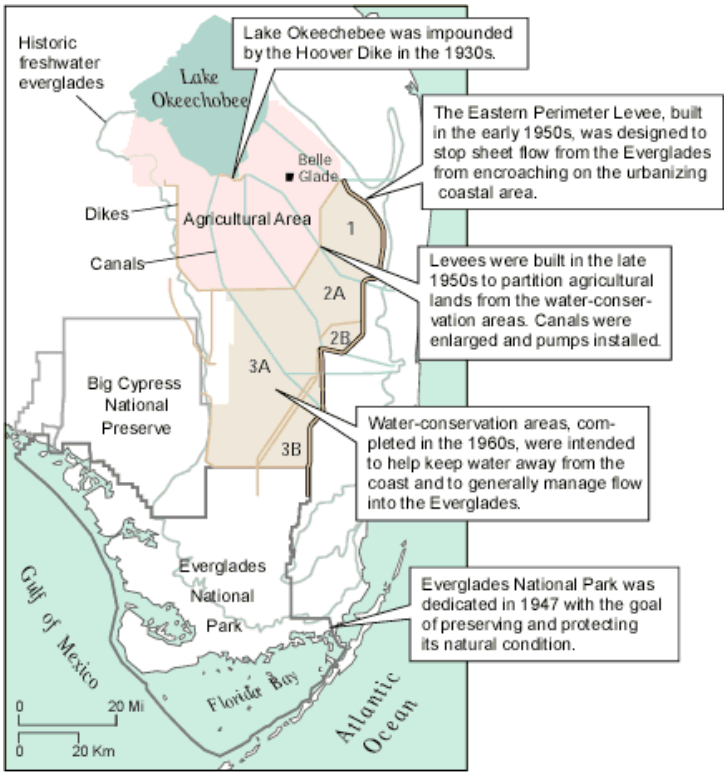
Prominent symptoms of the demise of the Everglades include an eighty percent decline in wading bird populations, the near extinction of the Florida panther, and a vast algae bloom that appeared in one-fifth of Lake Okeechobee in 1986. The Everglades also face an ongoing threat from invasive species such as the melaleuca tree, Brazilian pepper, water hyacinth, and abandoned pets like the Burmese python.

Photo by Gretchen Downs

To understand the problems of the Everglades and the plans for restoration, one must understand how the Everglades function. As mentioned earlier, the environmentalist Marjory Stoneman Douglas in 1947 called the Everglades a "river of grass," although, to the casual observer, the Everglades appeared to be a giant swamp. Douglas's description was right. The system began with the Kissimmee River near Orlando, which flows into Lake Okeechobee. The landscape falls one inch per mile from the lake to the tip of Florida. In wet seasons, the water leaving the lake formed a slow-moving river 60 miles wide and over 100 miles long, flowing southward to Florida Bay at the southern end of the state. This vast river moved extremely slowly, about a quarter of a mile per day. What was once considered a nuisance has been found to be an invaluable water storage system. As the water moved slowly south, it was cleansed and purified.

Over the years, the hydrology of the Everglades has been dramatically altered. The U. S. Army Corps of Engineers have built 1,000 miles of canals and 720 miles of levees, controlling the flow of water with sixteen pump stations and two hundred gates and barriers. Barriers have been built between the sea and canals to block saltwater intrusion. The 90-mile long Kissimmee River, through a system of dams, has been transformed into a 52-mile canal.

All of the changes were made in order to make the land more habitable. Floods from the 1928 hurricane devastated the area, and the government decided that, if the excess water could be channeled directly to the ocean, lives and property would be protected. Half of the area was opened to agriculture. A dike system and canals directly from Lake Okeechobee to the Atlantic and Gulf Coast channeled water that had previously been stored in the Everglades. It all seemed like a good plan until the 1970's, when development was progressing at an astounding rate. Suddenly, water problems began to surface. Environmentalists began to demand changes to preserve the Everglades.



After years of study and collaboration, the Comprehensive Everglades Restoration Plan (CERP) was developed.

It provides a framework and guide to restore, protect and preserve the water resources of central and southern Florida, including the Everglades. The Plan was approved in the Water Resources Development Act (WRDA) of 2000. It includes more than 60 elements, will take more than 30 years to construct, and will cost an estimated $7.8 billion.

Sadly, eight years later, the Federal Government has not provided a single dollar of funding for the project. Even more discouraging is the constant march of development. Broward County has long been notorious for pushing development right up to the edge of the Everglades. Miami-Dade County, however, has resisted development through the use of an Urban Development Boundary. But even there, developers recently have been able to move the boundary west toward the Everglades.

Good news, however, is on the horizon. The South Florida Water Management District, a State of Florida entity, has passed a resolution to purchase a large portion of United States Sugar Corporation agricultural land. The proposed acquisition includes nearly 300 square miles of land in four counties, nearly all in the Everglades Agricultural Area. If it succeeds, the acquisition is expected to help re-establish the original overland flow from Lake Okeechobee to the Everglades. The expanse of sawgrass with its alligators and water birds will no longer by an illusion.

Gretchen Downs, Country Garden Club (OH) - Zone X
GCA Conservation Committee
Vice Chair - Water, Wetlands and the Great Lakes

Sources:
Barnett, Cynthia, *Mirage: Florida and the Vanishing Water of the Eastern U.S.* Ann Arbor: the University of Michigan, 2007.
Lectures: Dr. Sandra Norman, Professor Environmental History, Florida Atlantic University.
Ms. Sandra Fein, Florida NPCA.
U.S. Geological Survey, South Florida Information Access: Florida Everglades, USGS Circular 1182.

Note: The Comprehensive Everglades Restoration Plan now underway in South Florida is the largest public works project in the history of the world.
[Source: Cynthia Barnett, *Mirage*.]

The Everglades and Agriculture – Part of the Problem

In the early 1800's, Floridians recognized that the Everglades had great potential for agricultural development. They made the first attempt to drain them in 1882. In the early 20th century, the Seminole tribe and various other entrepreneurs attempted to grow crops on the drained land. In 1931, the newly built Hoover Dike successfully controlled water in Lake Okeechobee. U.S. Sugar began to successfully grow sugar cane on land drained south of the lake and to process cane sugar. By 1945, it was America's largest sugar operation with 6000 employees.

As mentioned earlier, U.S. Sugar is in the process of being sold to the State of Florida this year for in a tremendous effort to save the South Florida environment Everglades. The elimination of a large piece of sugar cane agricultural land will help create a corridor for water to flow from the central areas of Florida south through the Everglades.

Lobbying began early on with sugar farmers asking for government protection from flood and drought and a repeal of the government quotas on domestic sugar production. Washington established a system of price, planting and import controls in the 1930's. Protection continues today using a tariff-rate quota to regulate the volume of sugar imports.

The changes began in 1986, when attention to water quality was focused on South Florida as a widespread algal bloom occurred in one-fifth of Lake Okeechobee. The bloom was discovered to be the result of fertilizers from the Everglades Agricultural Area that fed the Everglades Water Conservation Areas, and was eventually pumped into the lake.

In particular, phosphorus control has been the goal of a billion dollars in water quality improvements over the last ten years. The phosphorus levels in water entering the Everglades from sugar cane fields were at one time 170 parts per billion. Today they are as low as 12 parts per billion. Concerns are now being raised about the effects of nitrogen runoff in the water. Both phosphorus and nitrogen problems are the result of agricultural use of fertilizer.

Sugar is the most valuable crop in Southern Florida, but cattle ranching causes problems in the areas north of Lake Okeechobee. Florida is one of the top ten cattle raising states. Excess nitrogen and methane gas production from the cattle industry first enters the system here and flows all the way through the system.

Citrus used to be a big crop in this area, but is no longer. Land prices are now so high that development is taking place on former citrus groves. Hard freezes in recent years have also resulted in the loss of citrus crops, causing great financial loss to growers who are then tempted to sell their land to developers. Rice is also grown in various locations, often as a rotation crop with sugar cane. Vegetable truck farming still takes place right outside the wealthy communities on the west coast of Florida; but perhaps not for much longer, as development continues to lure property buyers.

Growing crops in the rich soil of South Florida, while one of the forces behind the development of the area, has caused many problems in Lake Okeechobee and the Everglades. The natural contours of the land, with its ever-so-gradual slope toward the south, have been largely eliminated by laser leveling of fields for sugar growing. The problems from nutrient runoff are monumental, even with modern limitations on fertilizer use. Because water is constantly being pumped into and out of the Everglades for agricultural purposes, whatever goes on in the farm fields, ends up in the wetlands. Control of agricultural runoff, as well as the shrinkage of agricultural lands, is the principal means to achieving cleaner Everglades water.

There is great hope that the purchase of U.S. Sugar will be a huge boost in the fight to save the Everglades. As man acts in cooperation with nature, we are learning, both agriculture and natural ecosystems like the Everglades will benefit.

Susie Wilmerding, G.C. of Philadelphia (Zone V)
GCA Conservation Committee, Vice-Chair – Agriculture

The "Burbs" that Ate the Wetlands

The first big boom in South Florida's population began at the turn of the twentieth century when Henry Flagler extended the railroad from Jacksonville all the way down to Miami. Tourists and pioneers flocked to the warm southeastern coast where the promise of year-round agricultural jobs and a balmy climate beckoned.

But with that migration, came the first decimation of the land. The fire-resistant pinelands, which were ideal habitat for woodpeckers and blue-tailed skinks, were converted into termite-resistant homes. The hardwood forests, which sheltered the swallowtail butterflies and multicolored tree snails were leveled. In addition, the entrepreneurial spirit of these adventurous settlers enticed them to drain the Everglades, to make room for more agriculture and development.

The population has continued to grow at a rate of two to three million people per decade ever since those early years. The favorable tax policies and a high quality of life have been irresistible attractions. [Note: There is no personal income tax in Florida.] Certainly, growth was desirable and beneficial. It meant more jobs and more opportunities and every new resident lowered the cost of providing basic services to all.

However, in recent decades, the situation has reversed and the tipping point in population growth has been reached. By 1999, a survey of Florida voters reported that more than 80 percent considered the state's burgeoning population a problem. This rampant growth has transformed Florida into a crowded mass of subdivisions, congested highways, and paved-over pastures, according to a national population growth report. The trend to escape the inner city and move to the suburbs has created huge areas of urban sprawl, resulting in neighboring towns overlapping each other. The three counties abutting the once-pristine Everglades (Miami-Dade, Broward, and Palm Beach) are the most densely populated counties in the state and make up one continuous metropolitan area.

According to the US Census Bureau, Florida grows by approximately 1000 inhabitants per day. At this rate, the state's infrastructure cannot continue to meet the needs of its people, much less preserve the

environment. When the Sierra Club rated cities on urban sprawl, many Florida cities were at the top of the list. In the top ten: Fort Lauderdale, West Palm Beach, and Daytona Beach – all in South Florida. Today development is Florida's second largest industry, after tourism. On our recent GCA trip, while coursing the canals cut in the Everglades on airboats, we saw new housing developments literally on the edge of the protected areas of the Everglades.

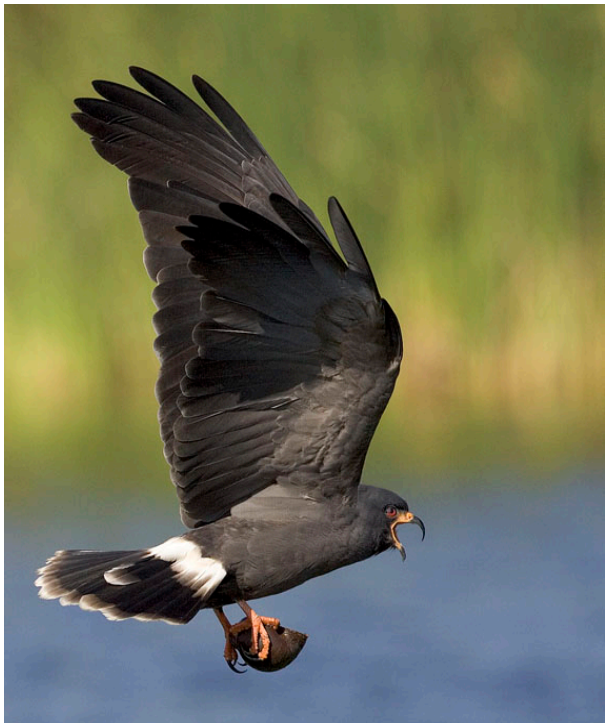
This aggressive development has invaded the wetlands and destroyed natural habitats for many species. Entire animal populations, including the Florida panther and the manatee, are endangered. And pollution from runoff in urban areas has dramatically damaged all that remains. The population of wading birds has been significantly reduced, the Florida Keys reef system has been damaged, and fisheries in Florida Bay have been degraded.

The state of Florida is keenly aware of these problems and has taken steps to plan for the future. With the population projected to double from 18 million to 36 million in fifty years, the task is urgent. In 2006, the Executive Director of 1000 Friends of Florida, the state's leading growth management advocate, reported, "A tidal wave of growth is headed our way, and we need proactive leadership and long-term, large-scale planning to ensure we protect our environment and quality of life." We can only hope that this is not too little, too late.

Jane Whitaker, Cherokee G.C. (GA) – Zone VIII
GCA Conservation Committee, Vice-Chair - Land Use/Sustainable Development

Everglades' Birds – Indicators of Trouble

To those of us accustomed to searching for elusive birds in forest canopy, birding in the Everglades was easy on the eyes in every sense: large birds perched or wading nearby were more intent on spotting prey than being spotted. Our list included herons – great blue, little blue, tricolored and green egrets – great, snowy and cattle; white and glossy ibis; brown pelicans; anhingas; ruddy turnstones; common moorhens and American coots; ospreys and red-shouldered hawks; belted kingfishers; American crows; boat-tailed grackles. We spotted individual species as well: a red-bellied woodpecker, a white-eyed vireo, and a redstart arriving for its winter in the south. Of special note, were a loggerhead shrike and, flying overhead, a wood stork; both these species are seriously declining and are listed as "uncommon" in the Everglades.



The bird we *didn't* see was the snail kite, whose survival will be dependent on the restoration of the Everglades. Kites are medium-sized raptors related to hawks, often with highly specialized habits. The snail kite feeds almost exclusively on one species of aquatic snail, the apple snail, which it plucks with its sickle-shaped bill from marsh grass while in flight. Although it is widely distributed in Latin America, the snail kite's range in the U.S. is restricted to the South Florida ecosystem, where apple snails are subject to the fluctuating levels due to Everglades' water management. Degradation of the Everglades had reduced the snail kite's population to fewer

than seventy birds by 1972. After passage of the Endangered Species Act in 1973, when it was listed as endangered, numbers rebounded to 995 birds by 1997. However, after the drought of 2001 and subsequent droughts, which affected nesting sites, the current population could be 700 or less. Because its range and feeding habits are restricted to the hydrologic functions of the South Florida ecosystem, the snail kite is a key species to monitor during Everglades restoration.

It was therefore heartening to learn during a nature walk in the Loxahatchee National Wildlife Refuge, that the species may be surviving. This spring, wildlife biologists noted that in their impoundments were ten snail kite nests and a confirmed two offspring that fledged and left the nests, with a possible third safely off. By monitoring the nests, the biologists can help protect these individual kites, but also the entire population through determining their habits, movements, and habitat preference. This will aid in knowing whether this species can be removed from the endangered species list in the future. They can also then identify what changes in the environment can help the kites successfully nest in future years. Birds and other wildlife in the Everglades are among our best indicators of the impact of man on this environment.

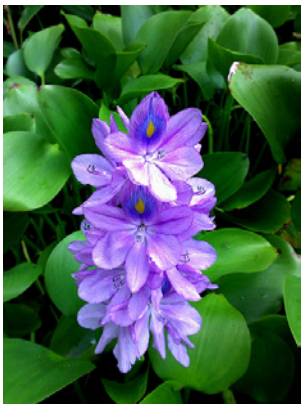
Calvert Armbrecht, Kanawha (WV) G.C. – Zone VII
GCA Resource Committee

[Source: Martin, Gayle, "Endangered Snail Kites Nesting at the Refuge!," ARM Loxahatchee National Wildlife Refuge, Fall, 2008.]

Everglades Dreaming – Seductive Dangers of the Swamp

The Everglades are beautiful, mysterious and dangerous, and – as we discovered – they are deceptive.

Our Conservation/NAL fall trip members paddled in to the Everglades Loxahatchee National Wildlife Refuge on a balmy afternoon during our trip. There was a light breeze, little humidity and no bugs. All of a sudden, I noticed a lovely light scent – sweet, but not cloying, drifting along the canals. This was the Lorelei scent of the water hyacinth, the most beautiful of the Everglades aquatics – and the most destructive. Daily, it multiplies, overwhelming native plant life, and, with its sister invaders, the water lettuce and the hydrilla, eventually it chokes and kills the less glamorous natives, destroying the diversity of the swamp and replacing it with a monoculture.


Water hyacinth

And these are only three of the "monster plants" threatening the Everglades' thrilling diversity of plants and animals. Everywhere on our trip, we saw evidence of unwelcome invasions of exotics. The seed of the melaleuca tree was spread from airplanes on purpose to dry up the Everglades, creating land suitable for human use while providing a source of wood. The result: millions of invasive melaleuca trees covering half a million acres and destroying the endangered Everglades environment and with it the animals. They must be removed – and it is costing millions of dollars in manpower and helicopter-applied herbicides to stem the spread of these uninvited guests.

This is a true war of the weeds, and weather is on the side of the exotics. It is said that anything will grow in Florida – and faster than anywhere else! In addition, it is postulated by the University of Florida Center for Aquatic and Invasive Plants that one unexpected enabler to this proliferation of invasives is

Florida's frequent and powerful storms, which seem to exacerbate exotic invasion by creating massive physical disturbance of large areas of native vegetation. The experts say, hurricanes are not more frequent, but may carry stronger wind intensity. With this change has come an increasing transference of plants from area to area enabling exotics or invasive plants to travel and establish themselves in swamp areas hitherto free of infestation.

I came home to my Savannah garden from this fall trip and considered my small, contained pond, planted with a few water hyacinths pulled from Georgia's Altamaha River some years ago. (I cull them every year, taking care to carefully dispose of the multipliers.) I look at them now with more respect and, yes, fear. They are invasives. And they are destroyers of our native plants, the plants we rely on for the health of our planet and our own health. Beware of soft fragrance from the swamp. Do not be seduced by that lovely, brief lavender flower. It is a killer.

Audrey Platt, Trustees' G.C. (Savannah, GA) – Zone VIII
GCA Conservation Committee, Vice-Chair – Endangered Species & Invasives

Coral at the Crossroads

Dr. Brian LaPointe, a scientist with the Harbor Branch Oceanographic Institute in Fort Pierce, Florida, a speaker during our visit to Florida, explained why 2008 is the International Year of the Coral Reefs. We've already lost one quarter of the earth's coral reefs. Only in the last 10 years has the most significant cause of reef destruction been addressed.

Dr. LaPointe has been studying the impact of human-related activity resulting in coral reef decline in Florida since 1982. There has been a 30% reduction of living coral off Florida since that time and many scientists felt that overfishing, scuba diving, acidification of ocean water, and elevated water temperature were the major causes of the problem. Dr. LaPointe, however, through scientific studies, discovered that land-based nutrient pollution from agricultural runoff, chemical fertilizers, and sewage washed into the Florida Bay contributes more significantly to reef destruction. Elevated amounts of nitrogen and phosphorous are to blame for the decline of Florida coral reefs, postulates Dr. LaPointe. As the use of fertilizers increases, the number of red tide plumes of algae increase as well.

As a result of his work, clean water flowing into the Florida Bay is the goal of the Florida EPA. In 2007, the Florida Department of Environmental Protection addressed the clean-up of coastal waters. Legislation has been passed to expand water treatment facilities to include the removal of nutrient pollutants before the water flows into the Bay. This change is important, because the Florida Keys are the largest barrier reef in the world. Key West is one of the first places in the country to remove phosphorus and nitrogen from their wastewater and the use of phosphates is now limited by an ordinance there.

Partially bleached coral

Since the stresses on reefs obviously go far beyond sea temperature and overfishing, Dr. LaPointe's studies show that people must adapt also. The decline of coral reefs is a stark reminder of human

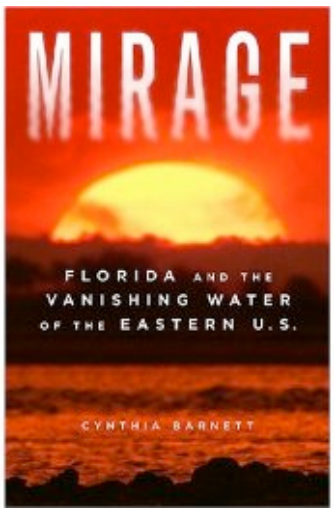
influence, but the possibility remains that we can restore these important systems. Using laundry detergent containing fewer phosphates is one tiny step we can take in nutrient cleanup. Using less chemical fertilizer is another. All of us need to work together to help restore these important ecosystems and save our oceans.

Anne Jennings, Mill Mountain (VA) G.C. – Zone VII
GCA Conservation & NAL Committees
Vice-Chair – Oceans

Book Reviews

Mirage: Florida and the Vanishing Water of the Eastern U.S.

By Cynthia Barnett



Mirage is a fascinating, well-written book that exposes the fresh water availability crisis facing the Eastern United States. It focuses mainly, however, on the water problems in Florida. Cynthia Barnett, an experienced journalist, uses the State of Florida as the prime example of poor planning when it comes to development and protecting the fresh water of the Everglades and its fragile ecosystem. Since more than one thousand people move to Florida every day, there is a demand for housing and services – and access to fresh water, which will soon be unsustainable. The writer exposes the self-serving business and shortsighted political decisions that have resulted in this dire situation. Ms. Barnett calls for sanity and foresight in the management of growth and development so we don't repeat the mistakes of America's water history. In the East we've drained water and just given it away. And in the West we dam rivers until there is not enough water left for nature or people. *Mirage* is a great read that makes sense of the complicated and important issue of water, or lack of it, in the United States. It is a call for action for those who are interested in doing something to solve the problem, before it's too late.

Ann Lyman, - Piedmont (CA) G.C. – Zone XII
GCA NAL Committee, Vice-Chair – Forests and Redwoods

The Swamp: the Everglades, Florida, and the Politics of Paradise

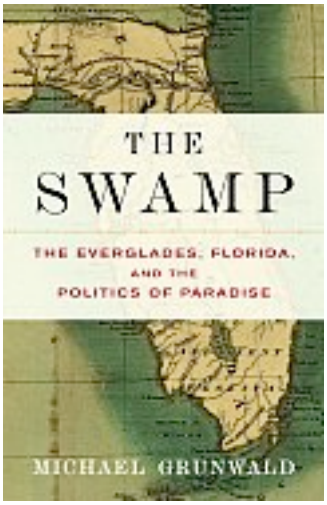
By Michael Grunwald

"Nature is overrated, but we'll miss it when it's gone,"
said Florida golfers in the 2002 film *Sunshine State.*

Washington Post reporter Michael Grunwald's book, *The Swamp,* gives a fascinating, beautifully written summary of the history of the Florida Everglades, "not quite land and not quite water but a soggy confusion of the two." Vivid descriptions of the various Indian tribes, countless settlers, and constant hordes of entrepreneurs, who have populated South Florida over the last 500 years, bring this mysterious, awe-inspiring region alive. As a native Floridian, I was charmed, intrigued and enlightened by the author's amazing knowledge of Florida and its great treasure, The Everglades.

In the last century, the pressure of large numbers of people moving to South Florida resulted in inadequate and poorly enforced growth management laws and overrode concerns for the declining

health of the Everglades. The Army Corps of Engineers (described by William O. Douglas as "Public Enemy Number One") with their endless efforts to "control the water – make it do our bidding," helped redirect the natural south flowing water away from the Everglades, making way for farms and housing developments. Of course, raw politics has always a factor in Florida and Grunwald entertainingly describes the tension between rapid growth and concern for the environment. Grunwald's theory is that Presidential candidate Al Gore lost Florida, and was thus defeated in 2000, because South Floridians were angry at his decision not to oppose the building of the Homestead Airport, planned for the edge of the Everglades.



The author's evocative descriptions of the Everglades as "about as fragile as nature gets" make more poignant his conclusion that, "There is just one Everglades and we have just about destroyed it. . . . Preserving it is a moral test on whether we deserve to keep the planet." Indeed, the last chapter on this unique ecosystem has yet to be written.

Susan Caven, Late Bloomers G.C. (FL)
GCA NAL/Conservation Rep, Zone VIII

Quote for the Everglades

"The miracle of light pours over the green and brown expanse of saw grass and of water, shining and slowly moving, the grass and water that is the meaning and the central fact of the Everglades. It is a *river of grass.* 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."

Marjory Stoneman Douglas in *The Everglades: River of Grass,* 1947.

And as for the Future?

"Floridians and Americans have failed the test of the Everglades for most of the last century. But they still haven't taken the final exam."

Michael Grunwald in *The Swamp*, 2006.

A Final Word

Most visitors to Florida, and many who live there full or part time, have never been to the Everglades. Few get to see this wonderful area as the conservation field trip attendees did this fall. The beauty and mystery of the Everglades was evident to all those fortunate to experience this "behind the scenes" tour of the River of Grass. The problems we saw were many. We are only just beginning to realize the fragility of the Everglades and how near to extinction the region truly has been.

As we go to press on this issue, it has been announced that the State of Florida has agreed to pay U.S. Sugar $1.34 billion for 181,000 acres of land to help restore water flows in the Everglades (Nov. 11, 2008). The state will acquire, when the deal is finalized, the acreage, but will now not buy a high-tech mill, railroad lines, or a processing plant. The new deal is simpler than the previous version and less costly, and thus, perhaps, more likely to succeed. Regardless of this deal, some 300,000 acres in the Everglades, or about 500 square miles, will remain in agriculture production by other companies. After decades of farming and development on the original Everglades land, it is hoped that flows can be restored and the problems of the past halted, and perhaps reversed. The garden club members who

walked, cruised, and glided across the Everglades can be hopeful that this natural wonder can be preserved for generations to come.

The issues we explored in South Florida are unique in their location in the Everglades, but the environmental issues of water, agriculture, development, and politics, are intertwined in every region of the country. As we learned and had reinforced, a caring informed citizen is what is needed everywhere. We saw what can be done to educate and to effect change when these same educated advocates get to work in their own regions.

Judy Boggess, Lake Forest G.C. (Zone XI)
Everglades Field Trip Coordinator 2008

Special thanks to Susan Caven (Late Bloomers G.C., Jacksonville, FL), Heidi Ho Conjugacion (Honolulu, HI G.C.), and Patricia Wall (Portland, OR G.C.) for taking photographs for this issue.

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Elva Busch, Editor

Members of the GCA Conservation and NAL Committees in Florida.

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