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Restoring the Everglades: Good for the Ecosystem and the Climate

As public awareness and concern about climate change heat up across Florida, scientists are beginning to look at the impacts and interdependencies of this challenge as it relates to land use and natural systems.

Scientists worldwide have found that human emissions of carbon dioxide and other greenhouse gases are altering our climate and that “warming of the climate system is unequivocal,” according to the Nobel Prize winning Intergovernmental Panel on Climate Change (IPCC).

While there is still much to learn, what is known is that restoring the right quantity, quality, timing and distribution of water in the Everglades is not only important for birds, wildlife, and the land and water on which they depend, it is also important for storing carbon and protecting our atmosphere.

“The Everglades cover six percent of Florida’s land area and contain some of the largest stocks of soil organic carbon per area in all of North America,” reports Stephen Mulkey, Ph.D., of the University of Florida, in his paper to the Century Commission for a Sustainable

Florida, titled “Climate change and land use in Florida: Interdependencies and opportunities,” revised on September 30, 2007. Soils that trap large amounts of carbon (thus helping to reduce the amount of the greenhouse gas pollutant carbon dioxide in the atmosphere) are described as being high in “soil organic carbon.”

An expert on climate change and sustainable land use, Mulkey writes, “As the Everglades continue to be degraded through failure to maintain appropriate seasonal water flows (hydroperiod), an unknown amount of carbon is being lost. Overall, it is uncertain how anthropogenic climate change will affect Florida wetlands, but it is clear that we can reduce losses of carbon stocks by maintaining hydroperiod and controlling wildfires during dry periods.”

Mulkey’s report, available at: www.commentmgr.com/projects/1148/docs/Climatechange.pdf, is one more compelling reason for our commitment to moving Everglades restoration forward. With your help and involvement, Audubon of Florida will continue to do just that.

A 2008 Legislative Action Agenda for the Everglades and Lake Okeechobee

As Legislators gear up for the 2008 session, Audubon and its Everglades partners have developed an ambitious action agenda. The goal is to build on a successful 2007 during which we helped enact new protections, and secured funding, for the Northern Everglades and the estuaries. This work will not be easy, however, as continued or increased funding for the Everglades, and for Lake Okeechobee and Estuary Recovery, will compete with other priorities for declining state revenues.

This Legislature, having squandered much of its good will on ill-considered tax reform and insurance solutions, will likely spend much of its remaining capital allowing outgoing leaders to position themselves for future jobs. So securing bills, amendments, and funds for the Everglades will be a daunting task.

Audubon calls on its members, partners and the thousands of people who participate in the online Everglades Conservation Network, to help leverage legislative support for the Everglades. If you or your business or organization have a good working relationship with an elected official, consider helping Audubon deliver a pro-Everglades message. Even if you don't think of yourself as politically influential, help us by making phone calls, writing letters, and sending emails. Together we can—and do—make a difference.

EVERGLADES FOUNDATION:

An Important Partner for Restoration

Audubon of Florida and our team of Everglades Restoration Advocates statewide thank the Everglades Foundation for the 2008 calendar year grant funding our work to bring the River of Grass back to health.

The Foundation funding makes Audubon's environmental policy work possible in key decision-making centers of Washington D.C. and Tallahassee, and in strategic locations near Orlando, Lake Okeechobee, Big Cypress, and Miami. A warm thank you goes out to all the leaders and restoration scientists at the Foundation. We look forward to working together on the Essentials for Everglades and Estuary Recovery in 2008 and to making progress to restore America's Everglades.

EVERGLADES 2008 ACTION AGENDA Critical issues and objectives this year include:

- 1. Growth Management** - Pass legislation requiring that each county's comprehensive land use plan has an Everglades protection and restoration element requiring storage and treatment of runoff in new developments to help meet restoration goals, and includes strict water conservation practices.
- 2. Citizen Participation** - Support Department of Community Affairs Secretary Tom Pelham's proposal to increase citizen participation in land use decisions, including making amendments to land use plans more difficult.
- 3. Florida Forever** - Double the Florida Forever appropriation, which will bring needed land acquisition funds for projects not officially part of the Everglades Restoration Plan, including the Upper Kissimmee and Corkscrew watersheds.
- 4. Florida Bay Algae Bloom** - Amend the 1994 Florida Bay Restoration Act to require the SFWMD to begin a crash program to better manage freshwater flows into Florida Bay.
- 5. Water Conservation** - Amend state water permitting laws to make water conservation a mandatory condition of receiving a consumptive use permit, and requiring water management districts to prescribe water conservation practices.
- 6. Florida Keys Wastewater** - Secure a \$10 million appropriation for the State's share of Florida Keys wastewater treatment upgrades.
- 7. Biscayne Bay Coastal Wetlands** - Create a planning and conservation area for Biscayne Bay Coastal Wetlands and require that all land uses in the area support restoration goals.
- 8. Everglades Funding** - Secure \$100 million for Everglades Restoration and \$100 million for the Northern Everglades (Lake Okeechobee and Estuary Recovery).
- 9. Water Policy** - Defend environmental water policy from proposals to make it easier to ignore water resource and wildlife impacts in water supply planning and permitting.
- 10. Property Tax Impacts** - Oppose additional property tax impacts to Everglades restoration. The proposal on the January ballot will cause hundreds of millions of dollars to be cancelled or postponed.



Congress Enacts Ecosystems Law in Historic Veto Override

Audubon of Florida and its partners celebrated in November when the historic Water Resources Development Act (WRDA) became law after Congress overrode President Bush's veto by a substantial margin. Five years in the making, this legislative authorizes critical Everglades restoration projects, and renews the federal promise to participate in the Comprehensive Everglades Restoration Plan (CERP).

A longtime Audubon priority, the law authorizes funding for restoration projects, which still must be approved in the 2009 appropriations process. Three crucial Everglades restoration projects totaling \$1.8 billion are authorized in WRDA. The projects mitigate harmful federal drainage projects, help the Everglades by restoring more than 150,000 acres of wetlands and significant estuarine habitat, and help secure Florida's tourism and outdoor recreation economy. The projects will also improve water quality for the Everglades, Florida Bay, 10,000 Islands, St. Lucie Estuary, and Lake Okeechobee.

To advance Everglades restoration, Congress authorized the Indian River Lagoon, Picayune Strand, and Site 1 Impoundment, all components of the CERP. Congress also instructed the Army Corps of Engineers to expedite completion of Modified Water Deliveries to Everglades National Park Project, including modifications to Tamiami Trail. The latter has been identified as critical, because Florida Bay faces impending estuarine collapse as a result of this project's delay.

Audubon, the Everglades Foundation, Everglades Trust, and other important conservation organization partners worked hard supporting this long overdue reauthorization of key Everglades projects. Your support, by communicating with the Florida Congressional delegation and supporting WRDA passage through Audubon's Conservation Action Network, was also important to its passage. The Everglades, and the birds and people who depend on it, will all benefit when this internationally unique ecosystem is brought back to health.

\$371 Million Needed for the Everglades in 2009

The federal appropriations process for 2009 is already underway. President Bush's proposed budget is in the works and will be released the first week of February. To keep the promise of restoring America's Everglades, the president must request \$371 million for Everglades programs and projects in fiscal year 2009.

Restoration of the Everglades is at a critical juncture. There is a new opportunity to make great strides in restoration, including funding the construction of the first three Comprehensive Everglades Restoration Plan (CERP) projects, which were authorized in the Water Resources Development Act of 2007. These three long-awaited projects—Indian River Lagoon, Picayune Strand, and Site One Impoundment—were developed through the unique partnership of federal, state, and local government entities and private sector partners. They are now ready for construction funding.

The future of Everglades restoration depends largely on the implementation of CERP. Many other projects in various stages of planning are awaiting construction of the first CERP projects, making these three

projects particularly important. In the five years it has taken to pass WRDA, the Everglades ecosystem has continued to degrade, waiting for critical funding. Keeping Everglades restoration on schedule and the federal/state partnership strong requires significant federal investment in 2009.

EVERGLADES PROJECTS BY AGENCY	2009 RECOMMENDATION
Mod. Waters Construction	\$ 25 million
CERP – DOI NPS/FWS	\$ 10 million
Restoration Task Force	\$ 1.3 million
USGS – Integrated Research, Planning, and Interagency Coordination	\$ 8 million
NPS – NPS Critical Ecosystem Studies Initiative (CESI)	\$ 6 million
Interior Total	\$ 50.3 million
Modified Waters Construction	\$ 25 million
Kissimmee River Construction	\$ 69 million
C-111 Construction	\$ 28 million
CERP Project Construction	\$ 62 million
• Indian River Lagoon	-\$ 16 million
• Picayune Strand	-\$ 24 million
• Site 1	-\$ 22 million
CERP Pilot Projects	\$ 60 million
• Seepage Management	
• ASR	
• Reuse	
CERP Planning & Design	\$ 70 million
Water Quality Circulation & Salinity Monitoring	\$ 0.5 million
Everglades Projects by Agency	\$ 314.5 million
Mod. Waters Construction	\$ 6 million
\$2.0M NNMFS/SEFSC	
\$1.0M NOS/MSA/FKNMS	
\$1.0M NOS/NCCOS/CSCOR	
\$2.0M for OAR/AOML	
Commerce/NOAA Total	\$ 6 million
Total Everglades Restoration	\$ 370.8 million

Water for the Everglades: Audubon Advocates for Conservation

Audubon of Florida takes great pride in its advocacy efforts to protect the soul of Florida's precious Everglades ecosystem – water. The Everglades would not exist as we know it had it not been for the continual southern flow of fresh water from the Kissimmee chain of lakes to Florida Bay. Unfortunately, human actions in redirecting the flow and overuse of the water have led to a dramatic decline in the health of the Everglades and the wildlife that depend on it.

In recent months, Florida has experienced a drought that has been unprecedented in recent history. Audubon has advanced policies to protect the water required for the benefit of the environment. Our policies strive to ensure the environment is prioritized in water allocations. We also continue to advance awareness of the importance of Everglades restoration to water supply for the environment. While we acknowledge and appreciate that nature is unpredictable, we must ensure that the gift of water is

used in the most responsible manner possible. Whether it is raining or not, we cannot take for granted the availability of fresh water.

Audubon continues to support the application of the Regional Water Availability Rule, thus ensuring that South Florida's growing population cannot tap any further into fresh water supplies above what has already been allocated. Furthermore, we successfully advocated for Miami-Dade County's new consumptive use permit (CUP) to contain a requirement for the use of reclaimed water. We also supported the South Florida Water Management District (SFWMD) when it decided to hold Miami-Dade County's new CUP to a volume of water equal to the average actual use, rather than the higher previously-permitted volume. This enabled additional water to remain in the ecosystem.

Audubon of Florida was chosen by the SFWMD as one of two environmental

stakeholders groups to participate on the Water Conservation Summit stakeholder's panel. As a member of this panel, we will work to guarantee that the environment's interest in water is prioritized above wasteful uses, such as landscape irrigation. Audubon will continue to advocate for the implementation of alternative water supply as a necessary tool to protect the aquifers from saltwater intrusion and to preserve the availability of fresh water for the Everglades.

This year we will further promote the responsible use of water throughout the state of Florida. We will seek to educate the public about water conservation methods, such as proper irrigation and the use of native vegetation, that are available to achieve our water conservation goals and protect the environment.

Together, and with your support, we will safeguard our cherished water supply, because all life depends on it.

Audubon Advocates for Urban Infill to Reduce Sprawl and Preserve Wetlands in Miami-Dade County

To further the goals of Everglades restoration, preservation of wetland habitat, and mitigation of the worst impacts of global warming, Audubon of Florida encourages smart growth in Miami-Dade County and opposes new developments outside of the Urban Development Boundary (UDB). This County-established boundary separates urban areas from agricultural lands, wellfields that supply drinking water, and the Everglades. Conversion of this natural habitat to development poses an irreversible threat to sustainable habitat for birds and other wildlife, as well as threats to Biscayne Bay, and to the quality of life for South Florida residents.

In 2007, four applications were filed to amend Miami-Dade County's Comprehensive Development Master Plan to allow development beyond the UDB. These amendments to move the UDB would change the designated use of four parcels of land. At the November 27, 2007, Board of County Commissioners meeting, the first application, which sought to change 2.54 acres of open space to industrial and office usage, was denied outright. The Board of County Commissioners voted to transmit the three remaining applications to the State Department of Community Affairs (DCA) for review and recommendations. One application, to change the land designation of 81.6 acres from agriculture to allow for residential construction, including 426 new units, was sent to the DCA with no recommendation. The other two, previously submitted in 2005, were denied. A contentious application to permit a Lowe's home improvement store would require a remove of 51.7 acres from open land designation. The other application would change 42 acres from agriculture to business and office designation. In 2007, the Board of County Commissioners transmitted both applications to the DCA with a recommendation for approval.



Photo of female snail kite by Mike Tracy

Audubon and other environmental and community activists urged the County commissioners to consider the strain these projects would place on county resources, including water supply. Audubon also expressed concern about the impact these developments would have on the well fields, and specifically noted that the proposed construction would exacerbate the impacts of climate change.

On December 5, 2007, Miami-Dade County Mayor Carlos Alvarez took a bold step in the right direction and vetoed the transmissions to the state. In his veto message, the mayor expressed concern for the strain that developing outside the UDB would put on infrastructure and the effects it would have on all county residents. The veto noted that such developments would worsen traffic conditions, and increase response time for police and fire rescue. Insightfully, the Mayor noted the need

for a comprehensive strategy for future expansion and development of Miami-Dade County.

On December 18, 2007, the Board of County Commissioners voted 9-4 to override the veto, therefore sending the proposals back to the State for review. Commissioners will now make the final decision in April to approve or deny these proposals. Mayor Alvarez has stated that he will not change his position against developments outside the UDB and has promised to use his veto power again if any of the projects beyond the UDB are approved in April.

With your support, Audubon will continue to promote a growth management plan that addresses future development with recognition of the importance of urban infill and wetland preservation and restoration. Together we can continue to hold the line and make smart growth a priority in Miami-Dade County.



Photo of roseate spoonbill courtesy of South Florida Water Management District

Audubon to Work on Healing Florida Bay

As 2007 came to a close, an algae bloom continued to lurk offshore of the Florida Keys, seeming to drift aimlessly from basin to basin in Florida Bay and occasionally creeping toward the Atlantic and hovering over the reef. While the bloom had shrunk compared to its size in late summer, the scope of the problem remained the same. Algae blooms, although at times naturally occurring, have popped up repeatedly in Florida Bay in the past few years and persisted for long periods of time, which is not natural.

“The bloom moves around the Bay, depending on winds and currents, but it has not completely dissipated since it appeared,” said Captain Tad Burke, Commodore of the Florida Keys Fishing Guides Association. “Now that the bloom has moved out further into the Bay and is less visible from land, it’s not showing up in the news, which is concerning, given that this bloom may have been bigger than the one in the early nineties and has the potential to impact the multi-billion dollar fishing and diving industry in the Keys.”

As a result of the consistent reappearance of algae blooms in Florida Bay and the troubling consequences to the environment and the local economy, the World Wildlife Fund and Audubon of Florida successfully lobbied the South Florida Water Management District at that agency’s November 2007 governing board meeting, requesting that it hold a workshop to address the bloom and potential solutions. The workshop, tentatively scheduled for January, will consist of a public forum and scientific panel. Audubon of Florida will work to ensure that this first step contributes to developing solutions to what is ailing the Bay and its interconnected systems. The event’s location at the Florida Keys National Marine Sanctuary will allow all stakeholders affected by the bloom to attend and participate.

To attend the workshop and engage in finding solutions to this problem, join Audubon’s Conservation Action Network by visiting www.audubonofflora.org and clicking on Take Action.

Save Our Swamp Campaign Looks to the Big Picture

Audubon and its Cocohatchee Slough Coalition partners have had mixed results over the past several months in the campaign to Save Our Swamp near Corkscrew Sanctuary from four development proposals that could potentially destroy 1,100 acres of important wood stork habitat.

In September, the Mirasol development's state permit was upheld despite a legal challenge by the coalition of Audubon of Florida, Collier County Audubon Society, Florida and National Wildlife Federations, and the Conservancy of Southwest Florida. In October, the Army Corps of Engineers granted Mirasol a federal permit. The Coalition is currently preparing a federal lawsuit in response. The only good news is Mirasol's local permit has expired so the developer must start over. Terafina/Saturnia Falls beat a challenge of its state permit by the Conservancy, and also received a final federal permit in September. In response, the Coalition filed a lawsuit and a motion for preliminary injunction.

Unfortunately, the developer had already cleared their entire site. Parklands-Collier resubmitted their federal application in the fall of 2007 to destroy 208 acres of wetlands.

In an effort to put an end to this senseless destruction of vital wetlands, the Save Our Swamp Campaign has begun targeting the permitting process itself. The Coalition's effort will be focused on convincing state and federal agencies to recognize the value of shallow seasonal wetland habitats, including those invaded by the exotic tree, *Melaleuca quinquenervia*. Currently, the agency's logic is "better fewer wetlands without melaleuca, than more with." This, however, ignores the restoration potential of simply removing the trees, and the fact such invaded wetlands still produce fish for stork food while recharging and cleansing aquifers.

Corkscrew Swamp Sanctuary Science Coordinator Jason Lauritsen and his staff are meticulously documenting the wetland-stork connections and, along with policy staff, will be working with the Army Corps of Engineers, the South Florida Water Management District, and possibly the Florida legislature to reform current gross errors in permitting process, methodology and criteria.

Rock Mines as Far as FDOT Can See

Southeast Lee County, called the Density Reduction/Groundwater Resource Area (DR/GR), contains wetlands and habitat that sustain many species, including panthers, bears, wood storks, and gopher tortoises. Sadly, it is also a significant source of limestone for construction. Audubon of Florida and its partners successfully persuaded the Lee County Commission to place a moratorium on any more mines or development until a plan is crafted to protect the wetlands and habitat vital to the region. However, the Florida Department of Transportation (FDOT) is trying to force a mining study advisory committee effort through in Tallahassee to justify asking the 2008 Legislature to usurp local authority over rock mines, claiming rock is critical to state roads and the economy. Fortunately, Audubon of Florida's Policy Director Eric Draper sits on that committee and Corkscrew's Jason Lauritsen sits on Lee County's more balanced DR/GR Planning Advisory Committee. Audubon will be engaged in this issue as it moves forward.



Okeechobee's ongoing woes highlight need for restoration efforts

At close to ten feet, Lake Okeechobee's water level is a foot lower than it has ever been for this time of year. With six more months of dry season to go, the lake could break the previous low record by two feet or more. The driest two-year rain total was recorded in 1955-56, but the lake has already surpassed the lowest level reached in that drought.

Human-caused changes in the water management system account for the record low levels. The most important factor is drainage. Drainage in Okeechobee's watershed moves water to the lake much more quickly now than in the 1950s, making it rise more quickly during wet periods and triggering harmful (and wasteful) estuary releases. Once dry periods start, no residual water flows into the lake, so levels drop more quickly than in the past. This rapid decline in water levels is exacerbated by withdrawals for irrigation and cities. People now take an average of a foot of water from the lake each year, much more than in the 1950s. Some have blamed the low levels on the South Florida Water Management District's (SFWMD) decision last year to not refill the lake with water from farms south of its shores, but such claims are inaccurate (see sidebar for more about "backpumping").

The good news about the drought is that it is allowing plant communities drowned during the hurricanes of 2004 and 2005 to begin re-establishing themselves. Prescribed burns and some habitat work in the lake's dried marsh portend improved conditions when water returns to favorable levels. Fish stocks, badly depleted by years of poor spawning, can rebound with the plant communities.

The bad news about the drought is the possibility of severe water rationing for people. When lake levels remain low for extended periods, organic soils on the southern islands may oxidize and subside or catch fire; there can also be massive losses of marsh-dependent creature populations, including the endangered snail kite.

The Florida legislature took note of the lake's problems in 2007 and passed the important Northern Everglades Bill. In addition to allocating record funding for lake restoration projects, it calls for a reassessment of Okeechobee's total restoration needs. Audubon issued a report in early

2007 estimating that lake restoration projects were grossly undersized and called for just such a re-evaluation. A first draft of that reassessment—technically called the Lake Okeechobee Watershed Construction Project—has now been released by the District.

The report's most dramatic conclusion is that water storage upstream of Lake Okeechobee needs to be increased from the currently-planned 300,000 acre-feet to between 900,000 to 1.3 million acre-feet, the equivalent of two to three feet of lake depth. This storage is needed to replace wetland capacity lost to manmade drainage. If this much water storage can be recreated, the agencies predict that harmful estuary releases can be reduced by half, that Lake Okeechobee will have desirable levels about 90 percent of the time (as opposed to about 60 percent now), and that water shortages will be less than half the current rates. Recapturing this water will also allow time for filter marshes (or other means) to clean it, moving Lake Okeechobee's water quality closer to stated phosphorus goals. It is important to note that restoring Lake Okeechobee not only improves the health of the environment, it also improves water supply services for people.

Audubon is emphasizing, and the District has agreed, that this project must encompass much more than massive reservoirs, water injection wells, and filter marshes. Technological fixes are expensive to build and operate and, while useful to maximize storage and cleansing, they do not improve habitat in the watershed. On the contrary, they usually destroy habitat when installed. Therefore, Audubon will work with the agencies to encourage extensive use of cooperative ventures with private landowners throughout the watershed.

Although it is good news that substantial improvements can be made, the magnitude of the recommendations is sobering. Presently-planned water storage and cleansing projects will cost more than \$2 billion, an indication that future efforts will require billions as well. Audubon has been instrumental in guiding Northern Everglades restoration efforts, and will continue working through all stages to ensure real environmental restoration results for the lake and estuaries, and throughout the entire watershed for its own sake.

For the first time in history, the Governing Board of the South Florida Water Management District voted, in the summer of 2007, not to backpump water into Lake Okeechobee during a drought. "Water supply backpumping" is the term used to describe pumping water from the Everglades Agricultural Area (EAA), south of the lake, into the lake to help refill it. The practice has a long, controversial history because the water is full of harmful constituents that normally would never flow into the lake.

This important victory for Lake Okeechobee was symbolic of an increased awareness that human actions can harm, or help, this great ailing lake. But the battle is not over. Some agricultural interests are upset over continuing water shortages. They blame the District for not protecting their interests, even to the point of charging that the decision was "anti-agricultural." Much misinformation about backpumping is in circulation.

The fact is, had backpumping been employed in 2007, the lake would have risen only to about eleven feet, not nearly high enough to get farmers out of "Phase III rationing." Farmers would be receiving exactly the same amount of water as they are now. Besides failing to help growers, backpumping would have sent massive amounts of nutrient pollution into the lake—water that is twice as high as its phosphorus goal, three times as high as its nitrogen goal. Algal blooms, fish evacuations, and invertebrate die-offs—"dead zones"—are usually the result. Backpumping also taints the drinking water of lakeside communities too poor to treat it to safe levels.

Perhaps more important is the oft-ignored fact that backpumped water is diverted from its normal path of flowing south to replenish the Everglades Protection Area (EPA), including the Water Conservation Areas. Rains did not completely refill the EPA last year. Had water been backpumped, levels would now be even lower, increasing the drought's impact on the EPA. Another effect of low water in the EPA would be increased rationing for farms and cities that rely on the lake for water. While backpumping might improve water supply for farmers around the lake, it does so by taking water supply recharge from those farming in the southern part of the system (and from the Everglades).

Audubon helped inform the District's governing board of the tradeoffs of backpumping prior to the vote last summer, and will continue to supply reliable information to them and to the legislature for next summer's decision.