24th Annual
Everglades Coalition Conference

New Opportunities, New Challenges

January 8—11, 2009, Miami, Florida

Proudly hosted by the National Parks Conservation Association

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11:15 – 12:30 pm	Concurrent Sessions A	
	1. Case Study of Local Initiatives for Water Quality Improvement	Concerto B
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	3. Restoration Coexisting with South Miami-Dade Agriculture to Revive Florida Bay	Concerto D
	4. Flowway vs. Reservoirs	Tenor
12:30 – 2:00 pm	Lunch: Key Note Speaker - U.S. Senator Bill Nelson Guest Speaker - Tom Van Lent, Ph.D.	Symphony 3 & 4
2:00 – 3:30 pm	Plenary Session II: Sustainable Connections - Local Government's Role in Restoration	Symphony 1 & 2
3:30 – 4:00 pm	Break - Poster & Exhibitor Session	Foyer
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7:00 – 9:30 pm	Dinner: Key Note Speaker - Florida Governor Charlie Crist Guest Speaker - U.S. Representative Mario Diaz-Balart	Symphony 3 & 4

Saturday, January 10

7:30 am	Conference Check-In and On-Site Registration	Foyer
7:30 - 8:50 am	Breakfast - Speaker: Carol Wehle, SFWMD	Symphony 3 & 4
9:00 - 10:15 am	Concurrent Sessions B	
	1. Lake Okeechobee: Hopelessly Polluted?	Concerto B
	2. Recreation Issues in the National Parks	Concerto C
	3. Fueling the Everglades: How Florida's Energy Policies Affect Restoration	Concerto D
	4. 20 Years Later: Making Tamiami Trail a Transportation Project	Tenor
10:15 - 10:45 am	Break - Poster & Exhibitor Session	Foyer
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12:00 - 1:50 pm	Lunch: Guest Speakers: President Jeff Atwater, Florida Senate Keynote Speaker: U.S. Representative Debbie Wasserman-Schultz	Symphony 3 & 4
2:00 - 3:30 pm	Plenary Session IV: Everglades Restoration and Wildlife Habitat Preservation	Symphony 1 & 2
3:30 - 4:00 pm	Break - Poster & Exhibitor Session	Foyer
4:00 - 5:30 pm	Plenary Session V: Wetlands, Water Quality Protection and the Everglades	Symphony 1 & 2
6:30 - 7:30 pm	Reception and Poster Session	Foyer
7:30 - 10:00 pm	Dinner & Awards Ceremony	Symphony 3 & 4

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8:00 - 9:00 am	Breakfast	Symphony 3 & 4
9:00 -11:15 am	Plenary Session VI: Is Pollution Outrunning Restoration? Key Note Speaker: U.S Senator Bob Graham	Symphony 1 & 2
11:30 am	Field Trips	Meet in Motor Lobby

Everglades Coalition

2009 Annual Conference

Everglades Restoration: New Opportunities, New Challenges

Welcome to the 2009 Everglades Coalition Annual Conference in downtown Miami. Our theme for the 24th Annual Conference, "New Opportunities, New Challenges" comes at a pivotal time for the Everglades. Lack of progress means the Everglades continues to deteriorate, but with a new Administration and exciting new opportunities in the Everglades Agricultural Area thanks to the State of Florida, we are hopeful for the future.

This year's Conference is hosted by the National Parks Conservation Association, the nation's leading voice for protecting and enhancing our national parks. As we prepare for the Centennial of our National Park System in 2016, we must make sure that the most ambitious restoration program in the world sets a high bar for how we protect and restore our national treasures.

The Everglades Coalition continues to provide leadership in the collaborative efforts needed to ensure restoration and long-term protection of our greater Everglades ecosystem. Thank you for your participation in the 2009 Everglades Coalition Conference.

Mark D. Perry
State Co-Chair

Sara Fain
National Co-Chair

Everglades Coalition 2008 - 2009 Board of Directors

Mark Perry, State Co-Chair
Florida Oceanographic Society

Sara Fain, National Co-Chair
National Parks Conservation Association

John Adornato
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Mike Chenoweth
Isaak Walton League of America

Richard Grosso
Everglades Law Center

Malia Hale
National Wildlife Federation

Jennifer Hecker
Conservancy of Southwest Florida

Dawn Shirreffs
Clean Water Action

Jonathan Ullman
Sierra Club

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Florida Oceanographic Society
Friends of the Everglades
Loxahatchee River Coalition
Palm Beach County Convention and Visitors Bureau
The Pegasus Foundation
Tropical Audubon Society

Thursday, January 8

10:00 am – 3:30 pm — Everglades Coalition Quarterly Meeting — Concerto A

3:00 pm – 8:00 pm — Conference Check-In and On-Site Registration — Foyer

4:00 pm – 5:30 pm — *Pre-Conference Session: Everglades 101* — Tenor

A primer on the Everglades. Starting by exploring the geology, hydrology and biology that make up the unique Everglades ecosystem. Finishing with the social and political dynamics that let to the flood control projects that divided and drained the Everglades, and ultimately to the Restoration movement.

Moderator: Susan Kennedy, Everglades Coalition and Cynthia Plockelman, Audubon Society of the Everglades
Panelists: Christopher McVoy, South Florida Water Management District
Martha Musgrove, President, Decision Makers Forum

6:00 pm– 7:30 pm — **Reception** *(Buffet, Cash Bar)* — Symphony 3 & 4

Guest Speaker: Mayor Carlos Alvarez, Miami-Dade County

7:30 – 9:30 pm — **Natural Florida in Word, Image and Deed** — Symphony 1 & 2

Tour how artists, painters, photographers, musicians and writers have represented natural Florida from the 1500s to the present. The 90 minute program will tour a CD produced by the Florida Defenders of the Environment, accompanied by live presentations from some of the artists on the CD. Featured artists during the presentation include photographer Clyde Butcher, singer-songwriter Grant Livingston, and Eleanor Blair, who will be completing a landscape painting during the program. The featured speaker is naturalist and author Peter Matthiesson, who will be available to sign books after the program.
Special thanks to Florida Defenders of the Environment, the Florida Humanities Council and The Martin Foundation for underwriting the program.

Friday, January 9

7:30 am — Conference Check-In and On-Site Registration — Foyer

7:30 – 8:20 am — **Breakfast** — Symphony 3 & 4

8:30 – 10:45 am — **General Session** — Symphony 1 & 2

Plenary Session I: ***Restoration after the U.S. Sugar Deal***

The U.S. Sugar deal may fundamentally change the planning, design and operational opportunities for restoration, and in particular the role of the EAA. In the wake of this acquisition, how could and should the restoration projects look like? How do the roles of federal and local government change given the current direction of the state?

Moderator: John Adornato, NPCA

Panelists: Lynn Scarlett, Deputy Secretary, U.S. Department of Interior

Mike Sole, Secretary, Florida Department of Environmental Protection

Shannon Estenoz, Governing Board Vice-Chair, South Florida Water Management District

Eric Eikenberg, Chief of Staff, Governor Charlie Crist

Craig Schmauder, Deputy General Counsel, Department of the Army

Eric Draper, Audubon of Florida

Friday, January 9

10:45 - 11:15 am **Break - Poster and Exhibitor Session** Foyer

11:15 - 12:30 pm **Concurrent Sessions A**

1. A Case Study of Local Initiatives for Water Quality Improvement Concerto B

Devastation of fisheries, food webs and water quality following the extraordinary hurricane seasons of 2004-05 motivated individuals on the west coast to engage in a process to develop local solutions for urban pollution in southwest Florida. Find out how individuals developed solutions, rallied support and empowered local communities to take control of water quality.

Moderator: Rae Ann Wessel, Sanibel Captiva Conservation Foundation
Panelists: Mayor Mick Denham, City of Sanibel
Dorothy Hirsch, Naples Community Activist

2. State of the Everglades Report Card Concerto C

The panel will be reviewing and interpreting the current status and trends in the natural Everglades ecosystem, i.e., the "health" of the Everglades, including any important new science results that help us better understand the Everglades. Each person on the panel will provide a different focus and perspective on the overall health of the current Everglades, in the context of the restoration goals.

Moderator: John C. Ogden, Audubon of Florida
Panelists: David Policansky, National Research Council
Paul Souza, Fish and Wildlife Service
Bob Doren, South Florida Ecosystem Restoration Task Force
Matt Harwell, U.S. Fish and Wildlife Service
Mark Cook, South Florida Water Management District

3. Restoration Coexisting with South Miami-Dade Agriculture to Revive Florida Bay Concerto D

The C-111 spreader canal project is an opportunity to restore water flow back into Taylor Slough, much to the benefit of Florida Bay. Various stakeholders have different perspectives about restoration methods in this project and thus C-111 has become a test case to address the savings clause issue of how to reconcile restoration goals with flood protection concerns. Time is of the essence as Florida Bay and the Southern Everglades coastal wetlands suffer from fresh water shortages, a panel of experts will discuss options to reconcile this issue in a collaborative and timely manner.

Moderator: Kahlil Kettering, NPCA
Panelists: Don Pybas, University of Florida Institute of Food and Agricultural Sciences Miami-Dade County Extension Director
Jerry Lorenz, State Research Director, Audubon of Florida
Tommy Strowd, Assistant Deputy Executive Director, SFWMD
Kim Taplin, South Florida Interagency Liaison, Army Corps of Engineers

4. Flowway vs. Reservoirs Tenor

Should restoration officials abandon plans for storing water in reservoirs in the Everglades Agricultural Area in favor eliminating barriers to allow the free flow of water from Lake Okeechobee to Everglades National Park?

Moderator: Joe Schweigart, South Florida Water Management District, retired
Panelists: John Marshall, Marshall Foundation
Thomas Poulson, Marshall Foundation
Kevin Kotun, Everglades National Park
Herbert Zebuth, Florida Department of Environmental Regulation, retired

12:30 - 1:50 pm **Lunch** Symphony 3 & 4

Host: Sierra Club

Key Note Speaker: U.S. Senator Bill Nelson
Guest Speaker: Tom Van Lent, Ph.D.

Friday, January 11

2:00 - 3:30 pm **General Session** Symphony 1 & 2

Plenary Session II:

Sustainable Connections - Local Government's Role in Restoration

Local governments play a critical role in the success of Everglades restoration, and have many opportunities to be involved in the various decision-making processes. This panel will focus on local governments as partners in restoration, particularly in their key roles regarding land use and water supply issues.

Moderator: Richard Grosso, Everglades Law Center

Panelists: Secretary Tom Pelham, Florida Department of Community Affairs

Commissioner Jose "Pepe" Diaz, Miami-Dade County

Commissioner Kevin McCarthy, Hendry County

Commissioner Sarah Heard, Martin County

Carol Wehle, South Florida Water Management District

3:30 - 4:00 pm **Break - Poster and Exhibitor Session** Foyer

4:00 - 5:30 pm **General Session** Symphony 1 & 2

Plenary Session III:

Executive Call to Action - The Role of the White House

This panel will focus on current and future necessary role of the federal government in the restoration of the Everglades. Goals are to guide the new administration in the right direction for Everglades restoration, through discussion of federal involvement and State-Federal partnership.

Moderator: April H.G. Smith, Esq., Audubon

Panelists: Mary Doyle, Professor of Law and Director, Abess Center for Ecosystem Science and Policy, University of Miami

Susie Perez Quinn, Deputy Legislative Director, Senator Bill Nelson

Rock Salt, U. S. Department of the Interior

Fowler West, The Everglades Trust

6:00 - 6:50 pm **Reception - Poster and Exhibitor Session** Foyer

(*Cash Bar)*

7:00—9:30 pm **Dinner** Symphony 3 & 4

Host: Everglades Foundation

Keynote Speaker: Governor Charlie Crist

Presentation of the *Everglades Legacy Award*

Guest Speaker: Congressman Mario Diaz-Balart

Saturday, January 10

7:30 am — Conference Check-In and On-Site Registration — Foyer

7:30 – 8:50 am — Breakfast — Symphony 3 & 4

Host: Conservancy of Southwest Florida

Guest Speaker: Carole Wehle, Executive Director, South Florida Water Management District

9:00 - 10:15 am

Concurrent Sessions B

1. Lake Okeechobee: Hopelessly Polluted? — Concerto B

Phosphorus levels in Lake Okeechobee have risen steadily for four decades. This rise has been fueled by phosphorous inflows averaging four to five times greater than the Lake's phosphorus Total Maximum Daily Load (TMDL). The panel will discuss the impacts of nutrient pollution, the latest numbers, the various agency efforts and the long-term prospects for controlling the phosphorus loads.

Moderator: Jacquie Weisblum, Audubon of Florida
Panelists: David Unsell, PE, PMP, SFWMD, Director, Lake Okeechobee Division
Paul Gray, Science Coordinator , Audubon of Florida
Don Fox, Biological Administrator II, Florida Fish and Wildlife Conservation Commission
Del Bottcher, President, Soil and Water Engineering Technology, Inc.

2. Recreation Issues in the National Parks — Concerto C

How the lands are managed and resources protected in the National Parks and Refuges is a critical issue. The proper recreational uses, especially motorized uses, have long been debated in the protected areas. Conflicts between different user groups, resource protection, wildlife impacts, and the missions of the various land managers, all create a lively discussion in this session.

Moderator: Nat Reed
Panelists: Fred Herling, Everglades National Park
Manley Fuller, Florida Wildlife Federation
Matthew Schwartz, Sierra Club

3. Fueling the Everglades: How Florida's Energy Policies Affect Restoration — Concerto D

Energy issues with the Everglades, including the proposals to transition the EAA to biofuel production, nuclear plant, and other issues.

Moderator: Dawn Shirreffs, Clean Water Action/Clean Water Fund
Panelists: Roger Smith, Connecticut Campaign Director, Clean Water Action/Clean Water Fund
Rock Salt, Director of Everglades Restoration Initiatives, Office of the Secretary, U.S. Department of the Interior.
E. Leon Jacobs, Jr., Williams & Jacobs, Former Chair, Florida Public Service Commission

3. 20 Years Later: Making Tamiami Trail a Transportation Project — Tenor

The bridging of Tamiami Trail has languished for years under Corps management, an agency not in the business of building bridges. With the expected initiation of the Tamiami Trail modifications under ModWaters, it is time for an innovative approach to funding and building this bridge. This breakout would challenge conventional thinking on the Trail, and generate a discussion of new ways to get water into Everglades National Park.

Moderator: Kirk Fordham, Everglades Foundation
Panelists: Secretary Stephanie Kopelousos, Florida Department of Transportation
Eric Buermann, Board of Governors Chairman, South Florida Water Management District
Lauren Robitaille, Legislative Director, Congressman Mario Diaz-Balart
Dick Ring, Past Superintendent, Everglades National Park

10:15 - 10:45 am — **Break - Poster and Exhibitor Session** — Foyer

Saturday, January 10

10:45 - 12:00 am

Concurrent Sessions C

1. Biscayne Bay, an Estuary in Peril: Can we wait until 2016? — Concerto B

This panel will attempt to review the current science and provide a basis for implementation of BBCW. From current lawsuits, and money shortages to a shift in Everglades restoration focus, this panel will highlight the strong need to bring focus back to Biscayne Bay and restore it to a more productive estuarine condition that will ultimately help sustain the shrimp industry, recreational fishing and ecotourism in the area.

Moderator: Dick Townsend, Tropical Audubon Society
Panelists: Joe Serafy, Research Fishery Biologist, NOAA Fisheries Service
Rene Price, Southeast Environmental Research Center, FIU
Joan Browder, NOAA Fisheries Service
Mark Lewis, Superintendent, Biscayne National Park

2. Restoration and the Economics of Glades Communities: Inland Port, Biofuel and Compatibility of Restoration — Concerto C

Exploring some of the proposed economic development ideas to offset the U.S. Sugar purchases and establish a positive future for the Glades communities that are consistent with overall restoration goals, including overall economic diversification of the region.

Moderator: Charles Pattison, 1000 Friends of Florida
Panelists: Mayor Mali Chambless, City of Clewiston
Carl Baker, Port of Palm Beach
Jon Capece
Maryanne Martin
Lisa Interlandi, Everglades Law Center

3. Rewriting the Regs: Can we get it right the second time? — Concerto D

The Programmatic Regulations are the package of rules that explains how to carry out the nuts and bolts of CERP implementation. They translate the general Congressional intent articulated in WRDA 2000 into concrete and legally binding agency guidance and are designed to guarantee that the restoration goals and purposes of CERP are achieved. The Regulations are currently undergoing their first five-year revision, providing an important opportunity for their reconsideration. This panel will discuss, contest and re-evaluate the existing Regulations, including the Next Added Increment Analysis, to shed light on how the Regulations need to evolve.

Moderator: Rebecca Garvoille, NPCA
Panelists: Stu Appelbaum, Division Chief - Everglades Division, U.S. Army Corps of Engineers, Jacksonville District
Donald Jodrey, Esq., Senior Attorney on Everglades Restoration, U.S. Department of Interior
Bradford Sewell, Esq., Senior Attorney, Natural Resources Defense Council
Shannon Estenoz, Vice-Chair, South Florida Water Management District Governing Board

12:00 - 1:50 pm

Lunch — Symphony 3 & 4

Co-Hosts: National Wildlife Federation and Sanibel-Captiva Conservation Foundation

Guest Speakers: President Jeff Atwater, Florida Senate
Congresswoman Debbie Wasserman-Schultz

Saturday, January 10

2:00 - 3:30 pm **General Session** — Symphony 1 & 2

Plenary Session IV:

Everglades Restoration and Wildlife Habitat Preservation

A primary goal for preserving and restoring the Everglades is sustainable and sufficient wildlife habitat. A panel of wildlife biologists and advocates will present their insights on endangered indicator species. The ecological context of large-scale preservation will be discussed. Issues will be discussed with regard to regulations and growth management and whether these frameworks will produce a net benefit in natural resource and habitat protection, and adequately protect the other critical natural resources in the Everglades.

Moderator: Frank Jackalone, Sierra Club

Panelists: Carol Pratt, Florida Fish and Wildlife Conservation Commission
Laurie MacDonald, Defenders of Wildlife
Nicole Ryan, Conservancy of Southwest Florida
Paul Gray, Phd., Audubon of Florida
Jason Lauritsen, Audubon of Florida

3:30 - 4:00 pm **Break - Poster and Exhibitor Session** — Foyer

4:00 - 5:30 pm **General Session** — Symphony 1 & 2

Plenary Session V:

Wetlands, Water Quality Protection and the Everglades

Improvements to federal and state policies are needed in order to prevent the further degradation and destruction of wetlands, as well as deteriorating water quality. However, some proposed policy changes could further threaten our mutual objective of providing sufficient water quality and wetland protection; with the resulting loss of the natural storage and treatment failing to ensure everglades' restoration and our sustainability despite successful growth management and CERP implementation. This panel will discuss federal and state water policy and proposed changes, as well as how the environmental community can get involved to preserve water quality, the function and spatial extent of Florida's wetlands, and the Everglades.

Moderator: Gary Davis, Esq., Conservancy of Southwest Florida

Panelists: Jim Giattina, Environmental Protection Agency, Region 4
Greg Knecht, Florida Department of Environmental Protection
Chip Merriam, South Florida Water Management District
Bruce Boler, Everglades National Park
Jennifer Hecker, Conservancy of Southwest Florida

6:30 - 7:30 pm **Reception - Poster & Exhibitor Session** — Foyer

Cash Bar

7:30 - 9:30 pm **Dinner** — Symphony 3 & 4

Host: National Parks Conservation Association

Awards Presentation: Sara Fain, National Co-Chair
Mark Perry, State Co-Chair

Sunday, January 11

8:00 – 8:50 am **Breakfast** Symphony 3 & 4

9:00 - 11:30 am **General Session** Symphony 1 & 2

Plenary Session VI:

Is Pollution Outrunning Restoration?

The EPA's status report on Everglades pollution reveals that in 2005 almost half the soil in the Everglades (49 percent) exceeded 500 mgs per kilogram, which is Florida's definition of impacted, up from 16 percent in 1995.

Moderator: David Reiner, President, Friends of the Everglades

Panelists: Peter Kalla, Manager, EPA Region 4 Science and Ecosystem Support Division

Daniel Scheidt, Associate Manager, EPA Region 4, Science and Ecosystem Support Division

Tommy B. Strowd, South Florida Water Management District

Nicholas G. Aumen, Ph.D., Everglades Program Team, National Park Service

Charles Lee, Audubon of Florida

Key Note Closing Speaker

U.S. Senator Bob Graham

11:30 am Field Trips

All field trip participants should meet in the Motor Lobby. We will help arrange car-pool groups to the different destinations.

Please check with the Conference Registration Desk for changes or cancellations.

Participants are responsible for dressing for current weather.







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Water your lawn during early morning hours when temperatures and wind speed are the lowest. This reduces evaporation and wasteful watering.

How much is enough?

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Brushing teeth, showering or washing hands uses 4 gallons per minute. Turning the water off while brushing your teeth or taking a shorter shower helps to save gallons of water. Saving 10 gallons per day saves up to 3,650 gallons a year.

For more ways to conserve water – both indoors and out – and to help protect our resources, visit the South Florida Water Management District's water conservation web site at www.savewaterfl.com

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Everglades Coalition Award Winners

Everglades Legacy Award — *Governor Charlie Crist*

Since taking office, Governor Charlie Crist has taken an active role in restoring the critical ecosystems in south Florida. He immediately recognized Everglades restoration addressing the Everglades Coalition Conference in January 2007, and announcing his priority for "getting the water right" for the Everglades. Governor Crist toured the St. Lucie River estuary by boat in February 2007 and announced a plan to provide immediate sources of funds to bring back the health of these vital habitats. His commitment was swift and hands-on giving hope to the environmental community that we now have a Governor who will take action.

In his initial appointments for Secretaries of FDEP, FDCA and FDOT Governor Crist gave indication of his promise to Florida's future. Appointments of five new members to the Governing Board of the SFWMD also provided a clear signal of his commitment to the environment. The June 2008 announcement to purchase US Sugar farmlands and restore the "missing link" to the River of Grass was a bold step for our future. This comprehensive plan will take time but the result will in a lasting legacy of Everglades restoration.

George M. Barley Award — *Shannon A. Estenoz*

Since being appointed to the Governing Board of the South Florida Water Management District Shannon has been a strong, thoughtful, and reasonable voice for the Everglades. A former co-chair of the Everglades Coalition, as well as associations with several Everglades organizations, Shannon came to public service with unquestioned environmental bona fides. She has won the respect of all interest groups and public agency staff for her intelligence, expertise, collegiality, and ability to identify workable solutions to problems. Her technical and administrative expertise, and her personal qualities make her one of the most effective Governing Board members for Everglades issues.

John V. Kabler Award — *Paul Holmes*

Paul is past president of the Peace River Audubon Society (Charlotte County). This past year in March, 2008, on his own initiative, Paul established a new environmental communication internet list-serve tool which now delivers daily digests of submissions of environmental interest to its subscribers. It is called the Environmental Voice of Southwest Florida (affectionately, "Eco-voice") and currently boasts over 3200 participants. Paul is both the founder and moderator/administrator for this operation which has filled a communication need in the Southwest Florida environmental community. To see information on this tool, or to subscribe, visit: http://groups.yahoo.com/group/EnvironmentalVoiceofSouthwestFlorida

James D. Webb Award — *Eric Buermann*

Eric Buerman has championed a number of environmental issues important the Everglades Coalition. His support in preventing backpumping into Lake Okeechobee, re-examining a flawed wetlands mitigation analysis to prevent unnecessary wetland destruction, and leading the charge to support the deal to acquire U.S. Sugar have all advanced ecosystem preservation and restoration in positive ways. Because of his leadership as Chairman of the South Florida Water Management District Governing Board, the District has again become a valuable partner for the Everglades Coalition Conference, bringing expertise and exceptional participation from all levels.

Science Poster Abstracts

Posters are on display in the Foyer throughout the Everglades Coalition Conference.
The Posters showcase current scientific research and findings or restoration projects within the Everglades watershed. Posters need not have been peer reviewed or published.

Increase in Red Tide along the Southwest Florida Coast

Author: Larry E. Brand
University of Miami, Rosenstiel School of Marine and Atmospheric Science
Email: LBrand@rsmas.miami.edu
Co-Authors: M. Josefina Olascoaga, Professor, and Angela Compton

Data collected along the southwest coast of Florida on the abundance of the Florida red tide dinoflagellate Karenia brevis over the past half century were examined for spatial and temporal patterns. K. brevis was found to be far more abundant within 5 km of the shoreline than further offshore. Overall, K. brevis was at least ten times more abundant in 1994-2002 than in 1954-1963. In 1954-1963, K. brevis occurred primarily in the fall months. In 1994-2002, it was abundant not only in the fall, but also in the winter and spring months, particularly inshore. It is hypothesized that greater nutrient availability in the ecosystem is the most likely cause of this increase in K. brevis biomass, and the large increase in the human population and its activities in South Florida over the past half century is involved. The Caloosahatchee River appears to be a major source of these nutrients.

Use of Habitat Suitability Index modeling for both Roseate Spoonbills (Platalea ajaia) and American Crocodiles (Crocodylus acutus) in South Florida

Author: S.S. Romanach
U.S. Geological Survey, Davie, FL
Email: jlorenz@audubon.org
Co-Authors: Lorenz, J.J., Audubon of Florida; Mazzotti, F.J, University of Florida, Fort Lauderdale Research and Education Center; K.L. Chartier, University of Florida, Fort Lauderdale Research and Education Center; M.S. Cherkiss, University of Florida, Fort Lauderdale Research and Education Center; L.A. Brandt, US Fish and Wildlife Service

Historically, Florida Bay experienced large volumes of fresh water as runoff from the Everglades, but development in South Florida led to a system of canals being constructed altered the quantity, timing and distribution of flows to Florida Bay. This resulted in major changes in salinity and water level which have resulted in declines in numerous species. The goal of restoration projects is to reverse these trends. Roseate Spoonbills and American Crocodiles were selected for modeling because they are ecologically important and have a well-established linkage to the stressors (salinity and water depth). Habitat suitability index (HSI) models were developed as an evaluation tool to aid in the assessment of acceptable ranges of salinity and water depth. In the case of spoonbills we focus on how these two factors relate to prey availability and abundance and distance from nesting site to foraging site. In the case of crocodiles we focus on how these two stressors relate to prey production and distance nestlings travel from suitable nesting sites. Both models are based on a common sub-model that uses salinity and water level to estimate the abundance and availability of a common prey base for both juvenile crocodiles and nesting adult spoonbills. The models are interfaced through a user friendly, computer package that allows any of the parameters (salinity, water depth, prey abundance and availability, and spoonbill and crocodile success) to be visually intuited through time. The inputs can be manipulated to demonstrate how changes stressors influence the indicator species.

Electrofishing as a Tool to Reduce the Numbers of Asian Swamp Eel in Canals of the South Florida Water Management District: 2006-2008

Author:John Galvez, Ph.D.
Project Leader, U.S. Fish & Wildlife Service - South Florida Fisheries Resource Office
Email: John_Galvez@fws.gov
Co-Authors: Allan Brown, and Andrew Jackson, U.S. Fish & Wildlife Service, Welaka National Fish Hatchery; Jay Troxel, U.S. Fish & Wildlife Service, Aquatic Nuisance Species Coordinator; Tom Sinclair, U.S. Fish & Wildlife Service, Southeast Region Fisheries Program

Asian swamp eel (Monopterus albus) are highly evolved air-breathing teleost, native to Southeast Asia. Their biology makes them well suited for a variety of habitats in Florida, including the Everglades. Asian swamp eels are very resilient, with a minimum population doubling time between 1.4 - 4.4 years. Because of these high fecundity rates they could pose a significant threat to native wildlife by reducing the abundance of small prey species (insects, crayfish, tadpoles, etc.) that form the food base of fishes, wading birds, and other Everglades wildlife. Moreover, these eels have similar feeding and habitat requirements as American eel (Anguilla rostrata).

A population of swamp eels is found in the canals (C-111 and C-113) that border Everglades National Park near Homestead, and until 2008, only two individuals of this species has been found inside the Park. Therefore, our project objective was to use electrofishing gear to reduce the numbers and slow the spread of Asian swamp eels into wetlands in and adjacent to the Everglades National Park.
Between June 2006 and February 2008, a total of 3,470 Asian swamp eels were removed from the project area using a 20-foot Jon boat with a 9.0 GPP Smith-Root electrofishing unit. The average settings of the electrofisher were 8.0 Amperes, 30 volts DC, and operated until a 1-km transects was covered. The number of eels observed but not captured was 2,765 (capture efficiency of 55.7%). Fifty-two American eels (<1.1% of all eels) were seen during the collection period.

Characterization of Loxahatchee River Water Quality During the Period 2006-2007

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Since 1971 the Loxahatchee River District (LRD) has been fulfilling its mission to preserve and protect the Loxahatchee River through an innovative wastewater treatment and reuse program and an active water quality monitoring program. Over the past year LRD staff monitored water quality at approximately 40 sites in the Loxahatchee River watershed in an effort to document the ecological health of the river and to determine the location and extent of water quality issues that need to be addressed. Ten stations were sampled monthly, while the remaining stations were sampled every other month. Water quality results were summarized for five distinct reaches of the Loxahatchee River (i.e., marine, polyhaline, mesohaline, wild and scenic, and freshwater tributary zones), and compared to values during the previous three years and the water quality 'target period' (1998-2002). During 2006-2007, total phosphorous, turbidity, and chlorophyll *a* concentrations exhibited a marked increase in the wild and scenic river segment and the freshwater tributaries over the past year relative to each of the previous periods assessed. These results appear to have been driven by a project to stabilize the banks and re-dredge the C-18 canal. Also during this period, salinity values were higher than normal due to the ongoing drought conditions experienced during the 2006-2007 period. In conclusion, it appears that water quality during the 2006-2007 sampling period was affected primarily by (1) a project to stabilize the banks and re-dredge the C-18 canal, and (2) an extended drought that resulted in drier than normal conditions.

A Review of Ruppia maritima in Relation to Salinity in Northeastern Florida Bay

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In the Northeastern transitional creeks and basins of Florida Bay, Ruppia maritima has been identified as a critical component of the submerged aquatic vegetation (SAV) community and as a potential indicator species for restoration and regulatory requirements for water management scenarios. Two independent SAV monitoring programs have been documenting SAV conditions within the northeastern transitional embayments of Florida Bay. The Miami-Dade Department of Environmental Resources Management (DERM) program has been ongoing since 1993, and the Audubon of Florida program was initiated in 1996. Collectively the two programs cover many of the key areas for Ruppia in the transitional region. This review seeks to provide insight into the period of antecedent salinity that best relates to observed Ruppia coverage and discuss the spatial-temporal relationships between those antecedent conditions and the declines in Ruppia.

The strongest relationships, across stations and between datasets, for Ruppia decline were found with the 90-day and 120-day antecedent mean salinity. These analyses give an indication that in areas known to have lower salinity regimes, less of a change in salinity is associated with declines in Ruppia. Additionally, there appears to be a relationship across the sites in the proportionality of Ruppia's tolerance to salinity between years. Further work needs to be conducted to understand this point more completely. In summary, there are indications that Ruppia populations within northeastern Florida Bay may acclimate to salinity spatially and temporally. Ruppia's varied response to salinity must be recognized when considering this species as an indicator species in the transitional basins of the region.

Introduction to the Florida Natural Resources Leadership Intitute

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People often disagree over how our land and water resources should be used and managed. Disputes arise over such issues as endangered species, private property rights, wetlands, timber management, and water quality. People with a stake in these issues tend to focus on their disagreements rather than their common interests. What often follows is policy gridlock. Important decisions move from the meeting room, legislative and commission chamber to the courtroom. Typically, no one is happy with the outcome.
NRLI is an eight-month long program in which Institute Fellows study personal and group leadership skills, communication skills, and conflict management techniques, and learn about environmental issues, concepts and policy. Activity sessions also include tours of key natural resource sites around the state and discussions with managers, leaders, and policy-makers directly involved in natural resource issues. Fellows learn to delve into the science, policy, politics and perceptions behind natural resource issues and explore alternatives for addressing them. The practicum is a "real world" project through which NRLI Fellows apply skills and concepts learned in the program to actual conflict or leadership issues in their professional settings.

Assessing Large-Scale Spatial Distribution of Seagrasses in the Loxahatchee River

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The Loxahatchee River District (LRD) has been fulfilling its mission to preserve and protect the Loxahatchee River. During 2007, LRD staff quantified the spatial distribution of seagrasses in the Loxahatchee River. Occurrence and density of seven seagrass species were assessed using large (9 m^2) quadrats deployed in a random-stratified manner throughout the Loxahatchee River, and the spatial coordinates of each quadrat were recorded. Nearly 1,100 quadrats were sampled during the summer of 2007. Seventy-eight percent of our samples (quadrats) contained at least some seagrass, while 22% of our samples completely lacked seagrass (i.e. were bare substrate). Johnson's seagrass was the most frequently encountered seagrass species within the Loxahatchee River, occurring in 71% of samples. Shoal grass was the second most abundant seagrass, and occurred in 50% of samples. Paddle grass occurred in 11% of samples, and manatee grass and turtle grass both occurred in 4% of samples. Interestingly, star grass was the only seagrass not found within the Loxahatchee River estuary, though it was present in our 2003 survey. Widgeon grass, not a true seagrass, occurred in the upstream reach between river miles 7 and 8. Spatial analysis of the quadrat data using Arcgis indicated that there were approximately 496 acres of seagrass in Loxahatchee River during the summer of 2007, while only 120 acres of seagrass were mapped by Loxahatchee River District staff in 2003.

Key messages relevant to larger-scale ecosystem restoration include:

- creating seagrass maps using GIS-based interpolation of random, stratified point samples in lieu of aerial photography interpretation;
- assessing landscape scale changes in seagrass to assess modifications to freshwater delivery schedule.

Investigation of the Algal Turf Scrubber technology for nutrient reduction in the Everglades Agriculture Area

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The Algal Turf Scrubber® (ATS™), is a managed aquatic plant technology which cultivates periphyton to remove nutrients from storm or waste water. It is being investigated as a nutrient removal process to meet designated TMDLs and for water quality improvement projects throughout the State of Florida and the U.S. A 15 MGD Algal Turf Scrubber® system is in operation at Taylor Creek, which discharges to Lake Okeechobee (Okeechobee, FL). The ATS™ has also been designated as an agricultural Best Management Practice (BMP) in the Master Stormwater Plan for Indian River County, with a 10 MGD ATS™ to be constructed at the Egret Marsh Stormwater Park,.

As part of the full-scale ATS™ facility design process, pilot studies are conducted to (i) verify field biomass production and treatment performance relative to preliminary system design model projections and (ii) optimize the full-scale periphyton treatment system design based on site specific environmental and water quality conditions.

A pilot study is being conducted at the STA-1W discharge canal in an effort to evaluate the potential for ATS™ technology to cost-effectively reduce phosphorus discharges in conjunction with stormwater treatment areas in the Everglades Agricultural Area. Water quality data for the first 10 weeks of start-up operation (influent TP 48.3 ppb; effluent TP 38.6 ppb) shows a 23% reduction in total phosphorus concentration. The poster will identify current and future pilot and full-scale facilities, and will present findings of the STA-1W pilot project to-date.

Compound Interest: The Value of Long-Term Coastal Water Quality Monitoring in South Florida

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There are several important reasons to monitor water quality:

- establish baseline data about a body of water
- document chronic or episodic events (i.e. algal blooms, hurricanes)
- monitor trends or changes over time in a body of water
- provide information for resource management decisions
- monitor compliance practices (regulatory)
- educate the public about importance of water quality in natural resource issues

The objective of the SERC Water Quality Monitoring Network is to characterize the status and trends in water quality in South Florida coastal areas. Until recent budget cuts, field sampling was performed in Biscayne Bay, Florida Bay, Whitewater Bay, Ten Thousand Islands, Marco-Pine Island Sound, Southwest Florida Shelf, and the Florida Keys National Marine Sanctuary. Only the FKNMS component remains.

The product is a quasi-synoptic "big picture" as to what is happening in the South Florida coastal waters. As an ongoing process, we analyze the data for spatial trends, temporal trends, and for freshwater loading effects, to extend our understanding of the system by developing new hypotheses as to the underlying driving processes which may reflect ecosystems change with climate and management strategy.

The large scale of this monitoring program has allowed us to assemble a much more holistic view of broad physical/chemical/biological interactions occurring over the South Florida hydroscape. The results are useful in helping to define restoration targets and will be even more valuable in determining whether these goals are met. Data and interpretive reports are available at http://serc.fiu.edu/wqmnetwork/.

Cyanobacterial blooms and biomagnification of the neurotoxin BMAA in South Florida coastal waters

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Blooms of cyanobacteria have developed in Florida Bay, Biscayne Bay and other coastal waters of South Florida. It has recently been shown that virtually all cyanobacteria produce the potent neurotoxin, beta-N-methylamino-L-alanine (BMAA). Studies in Guam indicate that BMAA can biomagnify up the food chain from cyanobacteria to human food andhumans. Recent studies in Guam and on human brains in North America suggest an association between BMAA and neurodegenerative diseases such as Alzheimer's, Parkinson's, and Amyotrophic Lateral Sclerosis (ALS). A variety of organisms from South Florida coastal waters are being analyzed for BMAA content to determine if BMAA is biomagnifying in these food chains and if it is a potential human health hazard. High concentrations of BMAA have been found in some organisms in South Florida coastal waters.

EAA A-1 and C-43 CERP Reservoirs – EcoReservoir Lakes Betterment

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The recently developed Ecoreservoir Program is a "public betterment" of the currently outdated, financially and ecologically unsustainable CERP concrete reservoir design.

The 2008 application of the USACE, FDEP, SFWMD best practices, with other innovations relative to riparian greenways and communities, formed the innovative Ecoreservoir Program. Substantial construction and O&M savings, community, commerce, ecological, water storage and quality benefits, for the estuaries per CERP, and ecotourism are now achievable in affordable increments.
EcoReservoirs correspond with the CERP, WRDA, GAO and Northern Everglades Caloosahatchee River Watershed Protection Plan per Florida Statute being addressed by the 2009 Legislature.
C-43 West Reservoir CERP
Current reservoir: 6 X 3 mile rectangular reservoir; 21 mile 38 ft. tall breachable levee; 18 mile canal; 200+ concrete acres; escalating cost from 355 million (2007) to 700 million range (2008); no water quality; large pump stations, high O&M, energy and capital costs.
EcoReservoir Lakes Betterment: Providing the same water storage and cfs plus water quality; including "Lake LaBelle" (C-43 Reservoir hybrid) and historic Lake Hicpochee /Disston Island; community; commerce; jobs; plus 11,000 acres of Panther habitat restoration.
EAA A-1 Reservoir CERP
Current EAA A-1 Reservoir: (On hold)
Ecoreservoir Betterment: The US Sugar acquisition provides 1,000,000 acre-feet water storage with the Ecoreservoir Chain of Lakes approach, plus water quality to genuinely restore the historic River of Grass. Cities benefit from new waterfront development revenue; jobs, ecotourism, agricultural land set-asides; 100% habitat restoration; navigation; recreation and increased Glades quality of life.

Relationships Between Submerged Aquatic Vegetation Abundance and Salinity Variability within the Coastal Mangrove Zone of Northeastern Florida Bay

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Since 1996 we have been conducting a routine submerged aquatic vegetation (SAV) monitoring project within the coastal mangrove zone of northeastern Florida Bay. A purpose of this project was to determine the relationships between salinity and salinity variability and abundance and speciation of the SAV community within this estuary. SAV surveying was conducted every six weeks along 4 distinct salinity gradients, each beginning in an upstream, interior dwarf mangrove zone and ending in Florida Bay. Salinity and other hydrologic variables were continuously monitored at each surveying location using on-site dataloggers. Seasonal and annual salinity variability were examined for our period of record (1996-present) to determine the relationships with the SAV community. Results of regression analysis indicated that there were significant relationships between the SAV community and salinity. Salinity level and salinity variance were found to be the two environmental variables explaining most of the variance in SAV coverage. As composite variables in a stepwise multiple regression analysis, salinity and salinity variability together explained 43% of the variance in SAV coverage. An analysis of annual mean salinity in comparison with annual SAV coverage also indicated significant negative relationships between the two. High total SAV coverage occurred when annual mean salinity was low. During our period of record, there were two years that experienced prolonged hypersaline conditions in the coastal mangrove zone of northeastern Florida Bay (2000-01 and 2004-05). These two years of elevated, highly variable salinity conditions corresponded to the two years when major die-off events occurred in the SAV population in this region.

Everglades Coalition

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Audubon Society of the Everglades
Broward County Audubon Society
Caloosahatchee River Citizens Association
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Additional Thanks to the following groups for their generous support of time and resources.

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