

# EVERGLADES NATIONAL PARK

*Not often in these demanding days are we able to lay aside the problems of the time, and turn to a project whose great value lies in the enrichment of the human spirit. Today we make the achievement of another great conservation victory. We have permanently safeguarded an irreplaceable primitive area. We have assembled to dedicate to the use of all people for all time, the Everglades National Park.*

*President Harry S Truman, Address at the Dedication of Everglades National Park, December 6, 1947*



# DRY TORTUGAS NATIONAL PARK

*The Tortugas were first discovered by Ponce de Leon in 1513. Abundant sea turtles or "tortugas" provisioned his ships with fresh meat, but there was no fresh water-the tortugas were dry. Since the days of Spanish exploration, the reefs and shoals of the Dry Tortugas have been a serious hazard to navigation and the site of hundreds of shipwrecks.*

SUPERINTENDENT'S ANNUAL REPORT  
FISCAL YEAR 2007

*Superintendent Dan Kimball, Deputy Superintendent Keith Whisenant*

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## **BACKGROUND**

### **Everglades A Biologic Park**

Practically without exception, areas that have been turned over to the National Park Service (Service) as national parks have been of superlative value with existing features so outstanding that if the Service were able to merely retain the status quo, the job was a success. This will not be true of the Everglades National Park. The reasons for even considering the lower tip of Florida as a national park are 90 percent biological ones, and hence highly perishable. Primitive conditions have been changed by the hand of man, abundant wildlife resources exploited, woodland and prairie burned and reburned, water levels altered, and all the attendant, less obvious ecological conditions disturbed. (Daniel B. Beard Wildlife Reconnaissance: Everglades National Park Project, 1938)

There are no other Everglades in the world. They are, they have always been, one of the unique regions of the earth, remote, n wholly known. Nothing anywhere else is like them; their vast glittering openness, wider than the enormous visible round of the horizon, the racing free saltiness and sweetness of their massive winds, under the dazzling blue heights of space. They are unique also in the simplicity, the diversity, the related harmony of the forms of life they enclose. The miracle of the light pours over the green and brown expanse of saw grass and of water, shining and slow-moving below, the grass and water that is the meaning and the central fact of the Everglades of Florida. It is a river of grass. -- -- Marjory Stoneman Douglas, The Everglades-River of Grass 1947

Everglades National Park is a public Park for the benefit of the people. It is set aside as a permanent wilderness, preserving essential primitive conditions including the natural abundance, diversity, behavior, and ecological integrity of the unique flora and fauna. It is the first national park dedicated for its biologic diversity as opposed to its scenic vistas.

### **Dry Tortugas a unique Marine and Cultural Resource**

Dry Tortugas National Park (DRTO) is managed by the Superintendent of Everglades National Park (.). The management team at Everglades NP assists the staff at Dry Tortugas in all areas of park management. Concessions, contracting & procurement, budget, personnel, safety resource's management, interpretation, visitor & resource management and maintenance planning and design are all areas where assistance is provided. The staffing and operation of Motor Vessel Fort Jefferson, the supply boat for Dry Tortugas NP is funding by Everglades National Park. Since the accomplishments of Everglades and Dry Tortugas National Parks are so intertwined, the Annual Reports of both parks are combined into one.

The Tortugas were first discovered by Ponce de Leon in 1513. Abundant sea turtles or "tortugas" provisioned his ships with fresh meat, but there was no fresh water-the tortugas were dry. Since the days of Spanish exploration, the reefs and shoals of the Dry Tortugas have been a serious hazard to navigation and the site of hundreds of shipwrecks.

U.S. military attention was drawn to the keys in the early 1800's due to their strategic location in the Florida Straits. Plans were made for a massive fortress and construction began in 1846, but the fort was n completed. The invention of the rifled cannon made it obsolete. As the military value of Fort Jefferson waned, its pristine reefs, abundant sea

life and impressive numbers of birds grew in value. In 1935, President Franklin Roosevelt set aside Fort Jefferson and the surrounding waters as a national monument. The area was redesignated as Dry Tortugas National Park in 1992 to protect both the historical and natural features.

### ***2007.1.1. Superintendent's Office - Major issues faced by park management, Congressional relations, and public relations***

**Weather Events** Fiscal year 2007 was an inactive hurricane year for both parks. Both parks continue to grapple with funding repair of damages delivered in 2005 from Hurricanes Katrina and Wilma that hit both Everglades and Dry Tortugas causing significant damage to docks and backcountry chickees, and concession facilities. The Flamingo area of concession lodging operation and restaurant remain closed; with the cost to repair damage to the lodge and cottages exceeding the cost of building new facilities.

**Planning efforts** Staff continued to make progress on the Everglades National Park General Management Plan (GMP) in 2007, including refining draft alternatives, zoning documents, and maps to prepare for park SERO and WASO review/approval. In addition, a major public involvement effort in 2007 took place, with 7 public meetings and numerous other stakeholder meetings taking place to discuss and receive feedback on the Preliminary Management Alternatives.

In light of the hurricane damage to the Flamingo area in 2005 and the tremendous public interest in this part of the park, the Flamingo Commercial Services Plan continued to proceed concurrently but separately from the GMP. In 2007 the draft CSP/EA was produced and released for public review and comment. It is anticipated that the Final Plan will be approved in 2008 with implementation activities to follow.

**Personnel** The site manager for DRTO was hired filling a significant leadership gap at this remote park. Resource and Visitor protection has struggled to keep positions filled due to a number of transfers this year. A new IT director was brought on that has made a significant difference in this division he's put together an impressive new team who are working hard to address backlogs in this area of operations in the parks.

**Public interest in invasive exotic species in the park** continued to escalate in 2007. The continued increase of Burmese python populations in the park and a documentary by the National Geographic Organization continued to fuel intense interest from reporters around the world. This topic again aired on radio and television shows from Great Britain, Japan, and states as far as Texas and Washington State. There was extensive news and magazine coverage in such publications as the New York Times and Time Magazine that reignited the media interest in this topic. The PIO fielded requests for interviews and tours from many international as well as national reporters, along with those in the local area. Science staff developed a myriad of partnerships with other jurisdictional governments faced with the same challenged and academic organizations to address this increasingly difficult problem. The state of Florida passed a law that changed owners' responsibilities and there was work to have the species included as injurious under the Lacey Act.

**Congressional** The Superintendent hosted a number of congressional and agency VIPs including Senators Nelson and Martinez, Congressional Representatives Obey, Wasserman-Schultz, Diaz Balart, Secretary Kempthorne and Administrator Johnson and others throughout

the year, cooperating with the south Florida Water Management district and other public agencies when needed.

**Dignitary and International Visitors** Everglades and Dry Tortugas garner a great deal of attention from high level federal leaders, both elected and appointed, due to the complex restoration program in place and its unique biologic properties. The park PIO has organized a number of congressional and Secretary level visits to view the Everglades Ecosystem and to the Dry Tortugas. In addition, there are regular contacts with the Everglades PIO to provide special briefings and tours to international visitors through the State Department. Often these are international leaders in environment, natural resource protection, and other areas of interest that want to learn from the NPS policies and programs in place here in Florida.

**Adjacent Land use concerns** continued to take up park staff time and effort, the SFNRC hired an adjacent lands staff person to address the many development pressures experienced by the park. The park staff commented on various developments proposed in the area, particularly those proposing to move the Urban Development Boundary further west and closer to the park. As part of a broader response to the unique issues of such a large park adjacent to urban areas with 7 million people staff participated in project team meetings for NPS-USGS project that will design a GIS-based tool for assessing impacts to BISC and from adjacent land development proposals. FPL proposed a large coal fired complex in the northern end of the ecosystem that was eventually vetoed by the state of Florida. The company is now exploring expanding their nuclear capacity at Turkey Point, very near the park. Staff is participating in the long process of permitting such a facility to ensure that it does not impact restoration of the park resources.

**Filming** in both parks has required dedicating a full time staff person to managing the regular requests to use the park as backdrop for everything from five star movies to documentaries to student research efforts. New guidelines on fees charged by national parks for this effort posed a number of dilemmas through the year as different parks in the Service implemented new rules differently.

**Climate Change** Climate change has become a topic of interest to the general public and to the media following Al Gore's move an Independent Truth. The impact of potential sea rise to the state of Florida, particularly the southern tip has been the subject of many magazine and newspaper articles. The NPCA put out a publication on the potential impacts to parks across the country in July 2007 which raised additional interest. The Superintendent testified at a congressional hearing on this topic in April 2007 and has been put on a state Climate Change Task Force that began to look at this issue and hear testimony in July of 2007, as they continue to meet there is work to develop strategies that can be put in place now to reduce potential impacts of sea level rise.

**International Designations** There was a great deal of media and community focus on Everglades National Park when at an international meeting the park was taken of the endangered list of World Heritage sites. The concern was that this would not help in the work to gain support for restoration, as the park has not yet recovered in the three areas identified as problematic when it was put on the endangered list.

**CERP and Science** Everglades ecosystem restoration continues to take up a significant amount of the Superintendent and the South Florida Natural Resource Center's Time, and at times that of other staff throughout the park. The Superintendent was elected to fill the federal co-chair position for the South Florida Ecosystem Restoration (SFERTF) Working Group and the Director of the SFNRC regularly participates in the SFERTF Science Group. The restoration

program is evolving and coordination with the many federal and state partners requires a significant commitment of resources.

**DRTO Research Natural Area** - The Research Natural Area, or RNA, added a new layer of protection for the marine resources of Dry Tortugas National Park. The RNA is a 46 square-mile no-take ecological preserve that provides a sanctuary for species affected by fishing and loss of habitat in this region of the Gulf. The RNA also provides opportunities for boaters, divers, snorkelers, and researchers to explore and study the significant marine environment protected within Dry Tortugas National Park. Completion of final special regulations for the RNA that began with a management planning process in 1988 was completed in 2006. The Florida Fish and Wildlife Conservation Commission (FWC) approved the final regulations and the NPS obtained the concurrence of the Florida Governor and Cabinet at their November 14, 2006 meeting. This concurrence is for an initial five year period at which time their approval of the rule is again required. Publication of the final regulations in the Federal Register in December 2006 was the final step needed to begin implementing the research natural area zone and initiate recovery of the parks severely depleted fisheries.

**Migrant Landings at DRTO** Not too many National Parks are so significantly impacted by a federal immigration policy. Due to the large Cuban population in Florida and many years of migration issues the federal government passed a wet foot/dry foot policy some years back that became an issue for DRTO when enforcement of border patrols around Key West escalated after the 9-11 attacks on the United States. The very limited park staff available at DRTO has to respond to multiple migrant landings in “chugs” (handmade boats of all types) during the year. As this type of activity is not normally the responsibility of park service staff, meeting the needs of multiple groups of immigrants that would land on the remote island until another agency could take over continues to stress already limited resources.

**Communications and housing at DRTO** The remote island park is a beautiful and unique resource that requires a staff presence to perform protective, facilities management, and interpretive park service responsibilities. Due to the remoteness communication with staff on the island, coordination of visitor access, and housing of staff needed on the island pose numerous fiscal, logistical, and moral challenges. In addition, the escalating land costs in south Florida exacerbate housing at Key West for staff when off island.

### ***2007.2.1 Planning & General Management Plan - Planning and Compliance Branch***

The Planning and Compliance branch is responsible for providing planning and environmental compliance services for EVER and DRTO. These responsibilities are accomplished through the planning and compliance programs.

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## Park Planning Program

**Overview.** The planning program focuses on activities to support park legislative and policy requirements, mission goals, and long-term goals, and is designed to provide the framework for management actions and decision-making that take place in the parks.

In FY07 the planning program was involved in a wide-range of short and long-term planning efforts that enhanced park resource management and visitor use goals, and strived to improve relationships between the park and neighboring communities on issues of mutual interest. Projects worked on included the EVER General Management Plan; the Flamingo Commercial Services Plan, the Biscayne – Everglades Greenway, as well as a number of more focused plans and projects both within and beyond the boundaries of the park. Examples of these more discreet efforts included: participation in the EVER Long-range Interpretive Plan, coordinating the South Florida gateway community team to attend a national training program, working to secure commitments from NPS air resources/soundscape program staff to conduct field work and assessments in EVER and DRTO on priority short- and long-term issues.

Activities included coordination of work with park staff, project cooperators such as other government agencies and university researchers, project scoping and public involvement, data collection and analysis, development of alternatives, selection of a preferred alternative, preparation of draft and final documents, and conducting public involvement.

Through a broad range of projects the planning program has served to help focus park managers, staff, community leaders, and cooperating organizations, on the critical challenges associated with:

- better protecting the parks' unique natural and cultural resources,
- providing higher-quality visitor experiences,
- improving the quality of facilities and operational functions, and
- establishing the parks as more meaningful parts of the South Florida community.

**Program Capacity and Consequences.** Staff responsibilities for the park planning program in 2007 largely fell to three employees, only one of which is dedicated to park planning on a full-time basis. The increasing workload coupled with continued budget constraints and reductions of FTEs throughout the park (including the Planning and Compliance Branch) has created a situation that can be characterized as one of constant catch-up and crisis or reactive management to an ever-expanding workload and set of high priority issues. Since the park planning program relies so much on the involvement of staff from across all other divisions and programs, the competition for gaining the necessary staff involvement in a timely manner is a constant challenge. The recently updated OFS request identifies a need for 2 additional park

planning positions (1 park planner, 1 community planner) to meet the needs in upcoming years for projects within the park and those developed involving resources outside, but impacting the park and those that are developed in partnership with other community interests. Some examples where the shortfall in staff resources has been apparent are in the areas of gateway/community planning and at DRTO, where GMP implementation has been hampered due to limited staffing and funds, as well as the substantial workload at Everglades NP. In some cases, limited resources create situations where certain work is not accomplished.

FY07 Planning Projects and major accomplishments; anticipated work in FY08		
Plans and Projects	FY07 Accomplishments	Major activities in FY08
<p><b>General Management Plan/EIS</b></p>   	<p>Substantial progress was made on the GMP including refining alternatives, zoning documents and maps and securing SERO and WASO approval for the Preliminary Management Alternatives.</p> <p>Branch staff coordinated 7 public meetings and 10 stakeholder meetings, attended by more than 1600 people, on the Preliminary Management Alternatives.</p> <p>Based on strong public concern expressed on the alternatives for the park's marine areas, the park committed to reassessing and revising as necessary the alternatives, based on gathering and analyzing more detailed science and visitor use data supporting the rationale for the alternatives.</p> <p>In response to concerns on the marine area alternatives, began coordinating with park staff, other agencies and cooperators to gather relevant data to support the revised alternatives.</p> <p>As project manager for East Everglades Wilderness Study (added to GMP in 2006); coordinated staff, stakeholder and public involvement to integrate wilderness eligibility data into the GMP alternatives.</p>	<p>Continue to identify and gather science and data needs to respond to public input on alternatives received in 2007</p> <p>Coordinate with park staff and cooperators to disseminate data relevant to the GMP and conduct meetings/workshops to identify appropriate ways to integrate that data into the GMP process</p> <p>Analyze science and data that support revised marine area alternatives; initiate peer review process(es) as necessary per NPS guidelines on science results used to support GMP alternatives</p> <p>Conduct public and agency involvement on revised draft alternatives for marine areas</p> <p>Begin preparation of draft GMP/EIS</p>
<p><b>Flamingo Commercial Services Plan / EA</b></p> 	<p>The Flamingo Commercial Services Plan continued to proceed concurrently but separately from the GMP. In 2007 the draft CSP/EA was produced and released for public review and comment.</p> <p>As project manager developing the draft Flamingo Commercial Services Plan (CSP) /EA, coordinated all park involvement, public involvement and writing/reviewing/editing CSP/EA and related documents.</p>	<p>Conduct public involvement on draft CSP/EA</p> <p>Finalize CSP and get FONSI approval</p> <p>Begin CSP implementation</p>
<p><b>Biscayne – Everglades Greenway</b></p> 	<p>Served as point of contact for the Greenway Feasibility Study and as key liaison with agencies, organizations and elected officials needed to advance the project. Developed state and federal grant proposals for design and construction of the Greenway</p> <p>Coordinated/participated in design charrette with project partners and the public for key features of the Greenway. Worked with project partners on management and implementation actions and strategies. Planned for and facilitated public workshop to discuss the draft plan and seek public input</p>	<p>Finalize Feasibility Study with additional public workshop</p> <p>Pursue funds for Implementation</p>

**FY07 Planning Projects and major accomplishments; anticipated work in FY08**

Plans and Projects	FY07 Accomplishments	Major activities in FY08
<p><b>East Everglades Airboat Trail Inventory and Assessment</b></p> 	<p>Coordinated with University of Georgia and park staff to complete fieldwork and provide park input on the draft report in order to finalize the report for use in GMP and Interim Airboat Plan.</p>	<p>Insure that park comments on the draft report are integrated in final report</p> <p>Conduct project closeout. Integrate project results into draft GMP/EIS</p>
<p><b>Manatee Study</b></p> 	<p>Participated in final draft review process, insuring report met scope of work requirements and provided needed support to the GMP</p>	<p>Integrate results into revised marine areas alternatives and draft GMP/EIS</p>
<p><b>Florida Bay Aerial Survey of Boating &amp; Fishing Activity</b></p> 	<p>Managed ongoing agreement with University of Miami/RSMAS for conducting a comprehensive boating study to support park GMP and other initiatives.</p> <p>Helped develop the pilot (test) program for the study</p> <p>Facilitated logistics and coordination of test flights with park aviation and district staff to field test project methodology. Secured \$75,000 to conduct Phase 2 of the study</p>	<p>Conclude field work on the study (85 flights)</p> <p>Coordinate review/comments on draft and final report</p> <p>Integrate results into revised marine areas alternatives and draft GMP/EIS</p>
<p><b>Florida Bay Seagrass Assessment</b></p> 	<p>Held discussions with potential project cooperators to conduct high resolution aerial photography of 20 high priority sites. Since cooperators were not found to conduct this work, worked with park's biology branch and others to get the work accomplished with park resources</p> <p>Co-authored draft report and assisted in initiating peer-review process</p>	<p>Integrate results into revised marine areas alternatives and draft GMP/EIS</p>
<p><b>Flamingo CSP Transportation Study</b></p> 	<p>Developed SOW and managed contract to conduct assessment of alternatives' requirements for roads, parking and circulation and their impacts for inclusion in draft CSP/ EA.</p>	<p>Work with contractor to complete study in timely manner for integration into the draft CSP/EA</p> <p>Following review of draft CSP integrate study results for preferred alternative in Final CSP and use in implementation efforts.</p>

**FY07 Planning Projects and major accomplishments; anticipated work in FY08**

Plans and Projects	FY07 Accomplishments	Major activities in FY08
<p><b>Transportation Planning Scholar</b></p> 	<p>Secured funding and assisted in hiring Ford Transportation Scholar for 6-month assignment in the park.</p> <p>Coordinated work for Transportation Scholar with park staff and stakeholders, focusing his work on transportation and facility aspects of the Flamingo CSP, enhancing knowledge for implementing the Biscayne – Everglades Greenway, and the feasibility/options for a bike trail for park HQ to Flamingo (part of GMP).</p>	<p>Complete work on the 3 projects begun by the scholar in FY07.</p> <p>Utilize results of the scholar’s work in the park to support implementation of the Flamingo CSP, the draft GMP/EIS, and the Biscayne – Everglades Greenway Plan and implementation efforts.</p>

## Environmental Compliance Program

**Overview.** The compliance program is responsible for ensuring that the requirements of environmental laws and regulations are completed prior to implementing actions that may impact park resources and visitor use. Activities include leading interdisciplinary teams; determining NEPA pathway; coordinating public involvement; consulting with agencies and tribes; analyzing project impacts; preparing categorical exclusions, environmental assessments and environmental impact statements; maintaining administrative records and reviewing actions proposed by others that may affect the two parks. Results include better coordination between the parks, the public and elected representatives; better-informed decisions; and implementation of programs needed to protect resources, enhance visitor services and benefit surrounding communities.

In FY 07, branch staff contributed significantly to completion of final Special Regulations for Dry Tortugas National Park. This event marked the culmination of an extensive general management planning process that began in 1998. Staff also made progress on four environmental assessments (EAs) and two environmental impact statements (EISs), completed documented categorical exclusions for 24 projects, coordinated National Historic Preservation Act compliance for 31 projects and participated in 11 wilderness minimum tool determinations. In addition, the compliance program participated in the FY 07 Management Control Review conducted by the NPS southeast regional office. No programmatic deficiencies were identified through this review which noted that the park’s natural resources program has been extremely effective in planning work, tracking accomplishments, and integrating the different components of a highly complex and extensive natural resources program.

**Program Capacity and Consequences.** The parks' ability to complete compliance and thus accomplish projects is limited by current funding and staffing levels. FY07 compliance staffing consisted of one full-time compliance specialist supplemented by one student intern and 70% of the branch chief's time. The existing and anticipated compliance workload far exceeds staff capacity to accomplish in a timely manner. This has resulted in a backlog of compliance projects and implementation of some programs without fulfilling compliance requirements. The branch OFS request identifies a need to base-fund 2 additional compliance specialist positions and an administrative assistant. Failure to meet planning and compliance requirements risks potential resource damage, project delays and costly litigation. The branch budget request to enhance planning and compliance capacity is currently the parks' #2 OFS priority.

## Compliance Projects

**Dry Tortugas Special Regulations** The NPS and the Department of the Interior (DOI) worked with the state of Florida to complete final Special Regulations for the park in accordance with the 2005 Florida / Department of the Interior Submerged Lands Management Agreement. The Special Regulations went into effect on January 19, 2007 and were the final step needed to begin implementing the Research Natural Area (RNA) zone established in the park's 2001 General Management Plan. The RNA is a 46-square mile



marine reserve designed to protect shallow water marine habitat, ensure species diversity, and enhance the productivity and sustainability of fish populations. Resource consumptive activities such as fishing and anchoring are prohibited in the RNA. The RNA complements the adjacent Tortugas Ecological Reserve of the Florida Keys National Marine Sanctuary (FKNMS) established by the National Oceanographic and Atmospheric Administration and the state of Florida, and thereby contributes to a region-wide effort to strengthen resource protection.

### **Dry Tortugas Research Natural Area Science Plan.**

The RNA provides a unique unexploited area that can be used to help assess the effects of fishing on exploited areas. In 2007, the NPS and the FWC established a Memorandum of Understanding (MOU) and a Science Plan to facilitate cooperation in the evaluation of six areas of RNA performance. Long-term studies and monitoring will document existing baseline conditions and analyze how park natural resources respond to the protection provided. This work will be coordinated with similar efforts by the FKNMS and will provide a status report on marine fisheries at least every five years to the Florida Governor and Cabinet. Branch staff participated in the development of the MOU and Science Plan.

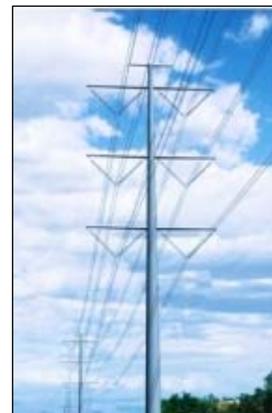


**Dry Tortugas Buoy and Aids to Navigation Management Plan** Park resource management, operations and compliance staff began planning to implement the 2007 regulations regarding anchoring, mooring buoys, submerged cultural resources and management zone boundaries.

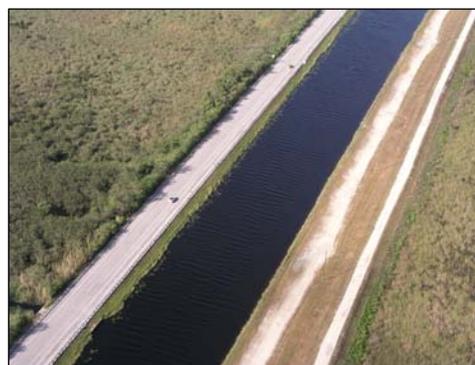


Criteria and strategies were developed for siting and installing the types and numbers of buoys and aids to navigation needed to achieve resource protection, visitor enjoyment and management efficiency objectives. Completion of the plan is anticipated in FY 2008.

***Proposed Relocation and Exchange of Florida Power and Light Corridor.*** The NPS, the Department of the Interior and Florida Power and Light Co. began discussions regarding a potential exchange and relocation of a corridor of FPL property in the Everglades National Park Expansion Area. FPL acquired this corridor in the 1960s and early 1970s in anticipation of the future need for electrical facilities to serve electrical load growth in southeast Florida. The seven-mile-long, 330- to 370-foot wide corridor, through lands that became part of the ENP Expansion Area in 1989, is a portion of a contiguous forty mile corridor connecting FPL's Turkey Point generating stations and the Levee Substation. The Department of the Interior, ENP and other agencies are exploring the possibility of relocating the existing unoccupied corridor through a land exchange to alternate properties at the eastern edge of Everglades National Park. The parties have identified property which may have substantially less impact on the park, if utilized for an electrical transmission corridor. FPL is willing to relocate its corridor to this alternative alignment. Relocation would help to fulfill the purposes of the ENP Expansion Area, including restoration efforts associated with the Modified Water Deliveries Project. Congressional legislation would be necessary to accomplish the proposed relocation of the corridor. Resolution of this issue is anticipated in 2008.



***Modified Water Deliveries to Everglades National Park, Tamiami Trail Modifications Limited Reevaluation Report / Environmental Assessment.*** The Modified Water Deliveries Project was authorized by Congress as part of the 1989 Everglades National Park Protection and Expansion Act which authorized the park to acquire Northeast Shark River Slough. The project was designed to improve water deliveries through structural and operational modifications to the Central and South Florida (CS&F) project. When completed, the MWD project components will improve the conveyance of water to the park from the watershed north of the park, provide for flood mitigation in adjacent urban and agricultural areas, and provide improved connectivity of the Everglades marsh ecosystem adversely affected by the features of the C&SF project. The Tamiami Trail Modifications (TTM) has proven to be one of the most contentious and costly components of the MWD Project. The 2005 Revised General Reevaluation Report and Environmental Impact Statement for TTM recommended a plan that would have resulted in full restoration of the Northeast Shark Slough at a cost more than \$500 million. Concerned about escalating project costs, Congress directed the U.S. Army Corps of Engineers to reevaluate less costly plans for modifying Tamiami Trail and to prepare a report to Congress by July 1, 2008. The Corps has initiated a Limited Reevaluation Report and Environmental Assessment of alternatives for conveying water through Tamiami Trail. The NPS is working closely with the Corps to complete the LRR/EA by the July 1 deadline.



**Flamingo Seawalls Rehabilitation / Environmental Assessment.**

Funding was received to begin planning and compliance for the rehabilitation of deteriorating seawalls at the Flamingo developed area. An environmental assessment of alternatives for repairing the seawalls will be prepared in FY 2008.



**South Florida and Caribbean Parks Exotic Plant Management Plan and Environmental Impact Statement .** Park resource management and compliance staff played a key role in the development of this multi-park exotic vegetation management plan and EIS. Completion of the plan/EIS and a record of decision are expected in FY 2008.



**Fire Management Plan / Environmental Assessment.** Resource management and compliance staff revised the draft Fire Management Plan. Progress continued on the EA which is anticipated to be completed in FY 2008.



**NEPA Categorical Exclusion Projects.** Compliance staff led interdisciplinary teams to determine the appropriate level of compliance with the National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), Endangered Species Act, Wilderness Act and other legal standards; and to complete compliance requirements prior to project implementation. In FY 2007, 24 projects completed NEPA compliance as Categorical Exclusions with documentation, 4 were completed as Categorical Exclusions without documentation, and 6 were completed at the Memo-to-File level. Each project was screened by an interdisciplinary team and many required a site visit and consultation with regulatory agencies. The diversity of these projects is reflected in the table below. Twenty-five active projects rolled over into FY 2008.



**Wilderness Projects.** Everglades National Park has 1,296,500 acres of designated wilderness, out of 1,509,000 total acres within the park. In compliance with the Wilderness Act and Director's Order 41, the park's Wilderness Committee screens proposals to install structures or use motorized vehicles or mechanized equipment in designated or potential wilderness areas to determine the minimum tools to accomplish the project. Compliance staff participated in Minimum Tool Determinations for 11 projects in FY 2007.

**National Historic Preservation Act Projects.** Compliance staff coordinated NHPA review with the Chief of Cultural Resources within the context of the NEPA process. In FY 2007, 31 projects completed compliance with Section 106 of the NHPA (see table below). Four projects required consultation with the State Historic Preservation Office.



**COMPLETED NHPA & NEPA CATEGORICAL EXCLUSION / MEMO TO FILE PROJECTS - FY 2007**

	<b>Project #</b>	<b>Project Name</b>	<b>NEPA Completion Date</b>	<b>NHPA Completion Date</b>
<b>Categorical Exclusions with documentation</b>				
1	FY07-002	Install Underground Utilities at Chekika	10/27/06	PE 10/27/06
2	FY06-029	Install Transfer Switches at DBC	10/27/06	SC 10/24/06
3	FY06-033	Replace Information Kiosks at Flamingo	10/31/06	PE 10/31/06
4	FY06-036	Plant a tree in memory of Donn Whitenight	11/14/06	SC 11/09/06
5	FY02-076	Replace Sandfly Island Boardwalk	12/07/06	PE 12/07/06
6	FY06-006	Demolish and Relocate Kingston Key Chickee	12/07/06	PE 12/07/06
7	FY07-001	Install 16 Trailhead Exhibits	01/09/07	PE 01/09/07
8	FY07-003	Cape Sable Canals Engineering Analysis	01/19/07	PE 01/19/07
9	FY05-007	Construct Everglades Trail Kiosk at SV	01/19/07	PE 01/19/07
10	FY06-034	Install Cables and Floats	02/01/07	PE 02/01/07
11	FY07-013	Conservation Treatment of Ft Jefferson Cannon	02/05/07	PE 02/05/07
12	FY07-019	Test Museum Floor for Moisture	03/05/07	PE 03/05/07
13	FY07-020	Rehabilitate Museum Storage Area	03/05/07	PE 03/05/07
14	FY06-038	Seagrass Restoration at 3 Sites in FL Bay	04/19/07	PE 04/19/07
15	FY06-025	DRTO Reconstruct Superintendent's Quarters	04/24/07	SC 02/15/07
16	FY03-022	DRTO Install Modular Housing	04/24/07	SC 02/15/07
17	FY07-026	Excavate Flamingo VC Bulkhead System	05/04/07	PE 05/04/07
18	FY07-027	Flamingo Service Station Repairs	05/04/07	PE 05/04/07
19	FY07-038	DRTO Remove Totten Shutter Debris	06/15/07	PE 06/15/07
20	FY07-008	Lygodium Biological Control Research Permit	07/10/07	PE 07/10/07
21	FY07-029	Install Gate at East EVER	08/22/07	PE 08/22/07
22	FY07-022	Replace Amphitheatre in Flamingo	08/31/07	PE 08/31/07
23	FY07-031	Install Fiber Optic Cable at Robertson	09/21/07	PE 09/21/07
24	FY07-023	Replace Campground Fee Booth in Flamingo	09/28/07	PE 09/28/07
<b>Categorical Exclusions without documentation</b>				
25	FY07-012	Dr. Voley Research Permit 2006	CE w/o doc	PE 12/06/06
26	FY07-011	Dr. Wingard Research Permit 2006	CE w/o doc	PE 12/13/06
27	FY07-045	Flamingo Duplex and Maint. Bldg. Soil Borings	CE w/o doc	PE 07/19/07
28	FY07-049	Tree Trimming at Flamingo Marina	CE w/o doc	PE 08/13/07
<b>Memos to File</b>				
29	FY07-009	Modification to FY06-029: Install Transfer Switches at DBC	02/13/07	PE 02/13/07
30	FY07-018	Everglades City Canoe Launch Repairs	03/20/07	PE 03/20/07
31	FY07-032	EVER DRTO FY07 Interim Exotic Vegetation Management Program	04/10/07	N/A
32	FY07-005	PI WWTP Modifications for Low Flows	11/17/06	N/A
33	FY07-006	Flamingo WWTP Modifications for Low Flows	11/17/06	N/A
34	FY07-010	Modification to FY06-010: Install Desiccant Wheels for Museum HVAC System	08/24/07	PE 08/24/07

## **2007.2.2 Cultural Resource Stewardship**

### **Program Overview**

Fiscal Year 2007 was a milestone year for Everglades (EVER) and Dry Tortugas (DRTO) National Parks cultural resource stewardship with the establishment of the first integrated Cultural Resource program in the Parks. The South Florida Collections Management Center (SFCMC) was transferred from the Planning and Compliance division to the newly created cultural resource division. Melissa Memory, the new Chief of Cultural Resources spent much of FY2007 reviewing past projects, assessing needs, and appropriating resources to facilitate

cultural resource stewardship. The Cultural Resource program was furthered in May of 2007 with the hiring of DRTO Exhibit Specialist Kelly Clark, who worked closely with Memory on cultural resource projects and programmatic planning at DRTO for the remainder of the fiscal year.

## **Archeological Resources**

**DRTO:** The Southeastern Archeological Center (SEAC) conducted a Ground Penetrating Radar Survey of the Ft. Jefferson Parade Ground. This project was designed as a resource management and compliance tool to identify areas with intact archeological deposits as well as areas of disturbance.

Cultural Resource staff worked with the NPS Submerged Resource Center to establish Park based data sets of DRTO submerged cultural resources from the work that SRC had done in the past in the Park.

**EVER:** Cultural Resource staff worked with SEAC to conduct ASMIS condition assessment project to assess condition of the Parks' archeological resources. Also worked with SEAC to plan and begin data collection to support a National Historic Landmark nomination for the 10,000 Island National Archeological District.

## **Collections Management**

The South Florida Collections Management Center (SFCMC) at Everglades National Park continued to provide museum management services to Big Cypress (BICY), Biscayne (BISC), Desoto (DESO), DRTO and EVER.

The SFCMC base budget from all sources in FY2007 totaled \$133,360. The vast majority of this funding (\$125,360) came directly from the EVER base budget. A total of \$625,800 in PMIS project funds were received and managed by the SFCMC. Funding was received for a wide variety of projects, including museum collection backlog cataloging, compactor storage installation and other storage improvements, an archives collection condition survey, and a major rehabilitation of the Daniel Beard Center museum storage area to correct environmental deficiencies and employee health and safety issues. In addition, the SFCMC received \$34,375 from the South Florida and Caribbean Inventory & Monitoring Network for curatorial support of I&M generated projects.

Bonnie Grysko, a term GS-9/11 Archivist was hired in September 2007. There was also a significant increase in temporary staffing, due to project funding. The total number of staff throughout FY07 was 12 employees, three interns, and three volunteers. A total of 2,829.25 volunteer hours were contributed to the SFCMC by interns and volunteers in FY2007. This figure represents 70.7 weeks of time or 1.4 FTE and is a 62% increase over the 1,745.5 volunteer hours received in FY2006.

An additional 729,077 museum objects for EVER and 106,189 for DRTO were added to the collections in FY2007. EVER had 392 new accessions while DRTO's accessions increased by 67. SFCMC staff cataloged a total of 115,537 archival documents and objects for EVER and 216 for DRTO in 2007. Over 190 research requests for access to the EVER and DRTO museum collections were also supported. In addition, the number of professional museum standards met for EVER and DRTO increased from 62.30% to 68.44% and 50% to 57.31%, respectively. The full conservation treatment of one Rodman cannon at DRTO was completed under contract.

The EVER Scope of Collection Statement was revised and approved in 2007. Nancy Russell, SFCMC Curator provided review and comment for the DRTO park-wide archives assessment prepared by SERO Museum Services staff. A Preventive Conservation Plan, including a Housekeeping Plan, was prepared under contract. The SFCMC also produced its first Archives Processing Manual, to serve as a staff training manual and guide to processing and cataloging archival collections. The FY07-FY11 Strategic Plan was also completed.

In addition to the achievements of the SFCMC, Russell participated on the collection management plan (CMP) team for Fort Pulaski National Monument in May 2007. The ongoing cooperative agreement with the Florida Museum of Natural History was supported, as was the cooperative agreement between Fairchild Tropical Botanic Gardens and the South Florida and Caribbean I&M Network. The Annual Inventory of Museum Property, MCPPP Checklist, Collection Management Report, and National Catalog Submission were all submitted in a timely manner. In addition, the first 100% inventory of the museum collections at the Beard Center storage area was completed.

### **Cultural Landscapes**

**DRTO.** Chief of Cultural Resources reviewed and submitted Garden Key Cultural Landscape Inventory conducted by the Southeast Regional Office (SERO). Park staff provided assistance to the SERO cultural landscape program in planning Cultural Landscape Report of Garden Key.

### **Historic Structures**

**DRTO.** Preparations were made for the upcoming start of the Line Item Construction Project; Preserve Fort Jefferson Phase II which was slated to begin in early FY2008. Upon filling Clark's position late in the FY, plans were made for Repair of the Counterscarp Wall and Restoration of Historic Shutters and Doors on the Garden Key Light. Additionally, replicated Totten Shutters were installed on Front 5 of Fort Jefferson. The fabrication, delivery and installation of these 17 shutters were the last component of the previous work to stabilize and restore Front 5. The Replicated Totten Shutters are made of Glass Fiber Reinforced Concrete and replicate the original iron shutters that were removed as part of the stabilization.

**EVER.** Worked with SERO on determinations of eligibility for two NPS Mission 66 structures at Flamingo and strategies to nominate other EVER Mission 66 resources. Worked with SERO on Old Ingraham Highway National Register nomination.

### **National Historic Preservation Act (NHPA)**

**EVER & DRTO.** Chief of Cultural Resources served as NHPA coordinator for both Everglades and Dry Tortugas National Parks. Thirty Four projects with NEPA Categorical Exclusions were reviewed for NHPA compliance, including four requiring SHPO consultation. In addition, division participated as part of National Environmental Policy Act (NEPA) Interdisciplinary Team and NHPA Coordinator in General Management Plan, East Everglades Wilderness, Flamingo Commercial Services, DRTO Buoy Planning, Cape Sable Canal, and Fire Management planning efforts.

### **Native American Graves Protection and Repatriation Act (NAGPRA) and Tribal Consultation**

**EVER.** Cultural resource division secured funding from Park NAGPRA Program and hired a NAGPRA intern. Cultural resource division worked with regional NAGPRA coordinator and

Regional Ethnographer to draft an action plan for inadvertent discoveries of human remains during Park undertakings. Staff developed a centralized Tribal consultation file and secured additional funding from SERO to develop a cooperative agreement with the Cooperative Ecological Study Unit and Florida International University to organize and facilitate consultation to revise the draft Action Plan documents.

### ***2007 3.1 Administration - Major budget and personnel issues, concessions, contracting, and volunteer program***

This section summarize the major budget and personnel issues that came up over 2006, in addition to a discussion of concession, contracting, and volunteer program activities.

#### **Personnel**

##### **Everglades**

###### ***Recruitment and Placement***

- 23 vacancy announcements were issued through Delegated Examining Unit (DEU) authority.
  - 27 merit promotion vacancy announcements were issued.
  - 32 Denver Franchise Office announcements were requested
- Total: 82 vacancy announcements issued/requested

###### ***Hires***

Permanent – 38      Temporary/Term – 30      Seasonal – 34      Total – 102

###### ***Training***

- 2007 Discrimination and Whistleblowing in the Workplace (No Fear) – all employees.
- Annual IT Security Awareness Training – all employees received.
- Sponsored Assistance Agreements for Assistance Representatives – 40 hours/56 employees trained.

###### ***Awards***

- 57 employees received monetary awards to total \$70,369
- 2 employees received a Quality Step Increase (QSI).
- 50 employees received time-off awards to total 1,114 hours.

##### **Dry Tortugas**

###### ***Recruitment and Placement***

- 2 vacancy announcements were issued through Delegated Examining Unit (DEU) authority.
- 1 merit promotion vacancy announcements were issued.

###### ***Hires***

Permanent – 5      Temporary – 1      Total - 6

###### ***Training***

- 2007 Discrimination and Whistleblowing in the Workplace (No Fear) – all employees.

- Annual IT Security Awareness Training – all employees received.

## Budget

### EVER FINANCIAL SUMMARY FY 2007

#### ONPS BUDGET

Park Management	2,099,300
Administration	1,780,400
Interpretation	1,456,200
Visitor Protection	3,096,300
Maintenance	4,282,800
Research	2,611,600
Initial Allotment	15,326,600

#### OTHER FUNDING:

CESI	3,879,000
CERP	4,667,000
Task Force	1,299,000
VIP	7,700
Parks As Classroom	17,900
Equipment Replacement	78,000
Air Quality	12,400
Cyclic	628,600
Hazardous Waste	112,400
Donations	219,082
Museum	158,700
ELEDPS stipend	12,000
Helicopter Funds	2,000
PCS Funding	7,300
Uncaptured Storm	39,300
FMO Travel	600
LIC-Cont.	99,479
LIC-EMHO	12,100
LIC-Net	153,162
Total Other	11,405,723

Total ONPS/Other 26,732,323

#### HURRICANE FUNDING

Hurricane Charley	200,000
Hurricane Katrina	1,891,314
Hurricane Wilma	3,735,044
Total Hurricane	5,826,358

**TOTAL FUNDING 32,558,681**

**Fees Collected in Fiscal Year 2007:**

IBP's	53,557.00
Commercial Film	3,500.00
Film & Photo Public	1,550.00
NPS Passports Prog	76,110.00
Golden Eagles	2,750.00
Special Use Permits	175.00
Park Specific	63,076.00
Entrance Fees	706,437.50
Golden Age	32,490.00
Boat Use Fees	35,830.20
Back Country Fees	24,880.00
Concession Fees	Error in Allocation –Trying to Resolve
Special Interp Programs	15,435.00
Campground	95,104.00
Commercial Aircraft Tour Fee	1,320.00
Commercial Tours	4,280.00
Unclaimed Money	369.00
Fees Collected	1,116,863.70
Cont. Campground Sales	29,260.10
<b>TOTAL FEES COLLECTED</b>	<b>1,146,123.80</b>

FTE Actual	
Park Management	16.69
Administration	18.74
Interpretation	26.32
SF Task Force	8.18
Visitor Protection	63.42
Maintenance	46.09
Research	58.13
Total FTE Usage:	237.57

**DRTO FINANCIAL SUMMARY FY 2007****ONPS Budget**

Park Management	120,000
Ranger Admin	38,100
Interpretation	34,500
Visitor Protection	322,600
Maintenance	
Bldgs	38,800
Stabilization	250,000
Grounds	51,400
Utilities	141,000
Boats	119,500
Natural Resources	212,200

Initial Allotment 1,328,100

**Other Funding:**

VIP 2,000  
Cyclic 43,600  
Equip Replace 8,000  
Constr-Title VIII 45,100  
Const-Supv 3,911  
Const-Plan -1,925

Total Other 100,686

Hurricane Funding  
Hurricane Wilma 91,850

**TOTAL DRTO FUNDING 1,520,636**

Fees Collected in Fiscal Year 2006 Were:

Entrance Fees 184,620.75  
Golden Age 40.00  
Campground 2,332.00  
Donations 8,925.00

**TOTAL FEES COLLECTED 195,917.75**

FTE  
Park Management 0.99  
Administration 0.41  
Interpretation 0.30  
Visitor Protection 3.24  
Maintenance 4.16  
Research 0.50  
TOTAL FTE Usage: 9.60

**Contracting**

- Total Quantity of Awards (includes: Contracts, Purchase Orders, Delivery Orders & Task Orders): 147
- Total Dollars of Awards (includes: Contracts, Purchase Orders, Delivery Orders & Task Orders) : \$3,449,713.15
- Total Quantity of Assistance Agreements: 52
- Total Dollars of Assistance Agreements: \$2,155,109.34
- Total Quantity of all awards (including agreements): 199
- Total Dollars of all awards (including agreements): \$5,604,822.49

**Information Management**

- Hired 5 new IT Specialists 1-GS-2210-12, 2-GS-2210-11's, 2-GS-2210-9's): \$360,000.00
- Total Quantity of Recurring Service IT contracts over 3k: 36
- Total Costs of Recurring Service IT contracts over 3k: Approx.\$936,112.00

- Total Costs of IT purchases under 3k: Approx. \$125, 650.00
- Pending IP conversion estimated costs: Est. 250k Plus
- Pending Krome Electrical / Generator / Incident Command Post Upgrade: Est. 250k Plus

## **2007 4.1 Facility Management, and Development**

### **Facility Operations and Maintenance**

The Everglades National Park, Division of Facility Management is responsible for the asset condition and operation of park facilities. These include:

82 miles of paved roads, 156 miles of waterway trails, 20 miles of hiking trails and 3 miles of elevated boardwalk trails; five boat basins with fueling facilities, two campgrounds (Long Pine Key, 108 sites and Flamingo, 235 drive-in and 60 walk-in tent sites); 48 designated backcountry campsites (accessible by boat); 280 buildings (five visitor centers, park headquarters, maintenance and utility buildings, research and wild land fire facilities, 52 housing units, and two environmental education camps). The division operates two central wastewater treatment plants, 15 water treatment systems; maintains a four-park radio communications network and over 180 vehicles, boats and special purpose equipment. Also included are fee collection stations and 3 areas of concessions assigned assets (at Flamingo, Shark Valley and Everglades City):

Maintenance and operations budget in FY 2007; \$4,285,387

Permanent staff; 51

Temporary staff; 6

Term staff; 1

Selected examples of the division's accomplishments in providing visitor services during FY 2007 include the following: the partial installation of 750 replacement signs (highway, pedestrian, regulatory), emergency procurement of a work barge to support backcountry visitor use, installation of campground equipment in Long Pine Key and the Flamingo campgrounds, rehabilitation of three restroom facilities in Flamingo and the reopening of the Snake Bight and Christian Point trails.

**Recycling.** The park resumed its recycling program in 2007, largely due to the efforts of a full time volunteer and other volunteers and park staff. The program had been discontinued in some outlying districts as a result of storm impacts from hurricanes Katrina and Wilma in 2005. At the end of the year, recycled solid waste was being collected from the Pine Island and Northwest districts of the park. Materials which are collected and recycled include: white office paper, aluminum, steel, scrap metal, plastic, glass, cardboard, paperboard, newspapers, magazines, catalogs & junk mail, phone books, six pack rings, plastic bags, ink and toner cartridges, Styrofoam peanuts, tires, motor oil and anti-freeze, batteries (all kinds & sizes), spay paint cans, fluorescent lamps and ballasts, electronics and fishing line. The park plans to expand the recycling program in 2008 to include all areas of the park.

**Water and Wastewater Treatment.** Water and wastewater treatment operations were challenging during 2007 but the staff managed to overcome staff shortages, new operator certification and continued to increase their knowledge of the new treatment plant's

processes, technology and equipment repair. The park completed the rehabilitation of the Dan Beard and Bill Robertson Centers water treatment systems to improve water quality, replace old equipment and provide standby electric power. Work was performed through a design-build contract with URS at a cost of \$180,000.

## **Engineering and Professional Services**

The division provides architectural and engineering design and construction management services for new construction and rehabilitation projects, for both EVER and DRTO. In addition, the professional services office assists cooperators and concessions operators by providing technical review and specifications for work products as well as construction inspection support. The office manages all aspects of the FMSS program and coordinates these activities between all divisions in support of work order development, construction estimating and PMIS project funding requests.

The park met all requirements for the continued support of the FMSS program. Comprehensive annual condition assessments were completed for the parks housing assets. The staff met the 2007 SCC deadline for project funding requests, documenting millions of dollars in deferred and cyclic maintenance needs which are supported in the FMSS. FMSS staff represents the park on the Unique Assets and Cost Estimating working groups. EVER participated as a pilot park for the testing of the Mobile FMSS Trail Tool and the FMSS Project Bridge.

## **Line Item Construction**

EVER packages 191A and C (Flamingo and Pine Island wastewater treatment plants) were evaluated and a contract was issued to modify the plants, post construction. The wastewater treatment capacities and processes were required to be modified to meet treatment standards as a result of the loss of facilities during the 2005 hurricanes, which have significantly reduced flows to the plants. The contractor of record, Camp, Dresser and McKee, proposed the cost of \$420,000 to modify the Pine island wastewater treatment plant. The contract modification was awarded by DSC and the work was still underway at the conclusion of 2007. Field work was undertaken by US Filter, Inc. as a subcontractor to CDM. Subsequent modification of the Flamingo plant was still under review at the end of 2007.

A line item construction contract was awarded at the end of 2007 for the stabilization of Fort Jefferson, contract number DRTO 1443C5010070905. The contract was awarded for \$5,581,000 net and will result in the repair of masonry on sides four and six, from the water line to the top of the scarp at the terreplein level. Enola Contracting Services, Inc. is the general contractor and the masonry subcontractor is Joseph Gazzo Company Inc. Lord Aeck and Sargent Architecture was retained to provide A/E consulting for the duration of the project. The notice to proceed was issued on November 2, 2007 and the contract completion date is July 1, 2010.

## **Rehabilitation**

**Dry Tortugas.** Construction drawings and specifications were completed for the rehabilitation of two employee housing units in Key West and the installation of fire suppression systems in eight employee housing units. Three employee housing units were replaced through the repair/rehabilitation program. These new housing units, each of

approximately 660 square feet, were substantially completed by the end of the year. The replacement of two transient housing units was also near completion by the end of the year. The replacements were funded through hurricane recovery funding. The total cost of these replacement projects was over \$600,000.

The park consulted with county regulators for the development of plans for a shoreline dredging project at Garden Key. The project will dredge the shoreline adjacent to the main dock on Garden Key and attempt to stabilize the eastern shoreline and protect the facilities from accelerated siltation. The project is still in development.

**Everglades.** Statements of work and plans/specifications were prepared for 12 major projects. Total value of the engineering projects when constructed is \$ 4,174,000. The rehabilitation and replacement projects include a marine repair shop and emergency vehicle storage building, housing, campground amphitheater, comfort stations, docks and two entrance stations. General renovations of park assets included the exterior painting and repair of visitor and administrative facilities in the Pine Island district and installation of hurricane shutters on the headquarters and Coe Visitor Center buildings.

**Hurricane Repairs.** Numerous contracts and day labor projects were undertaken to repair assets throughout both parks. Common repairs included the replacement of roofing, screens, fencing, and signs. Maintenance staff continued to make repairs to housing, administrative facilities, and hiking and waterway trails in Flamingo and the Northwest districts.

Special purpose equipment, which was destroyed by hurricanes Katrina and Wilma was replaced at both EVER and DRTO. Plans were initiated to replace the Flamingo campground amphitheater and entrance kiosk and two visitor shade structures in the Northwest District.

Planning documents were initiated for the replacement of hurricane damaged finger piers on Garden Key in Dry Tortugas and the Whitewater Bay docks in Flamingo.

The Denver Service Center was tasked with project management responsibility for the replacement of housing and maintenance facilities, the structural assessment of the visitor center and marine bulkhead, and the demolition of the Flamingo Lodge accommodations, all located in the Flamingo District of the park. With the exception of the structural assessment which was completed in April, 2007, all other projects were about 60 percent complete. HDR Engineering, Inc is the engineering firm of record for all of these projects and the gross construction estimate is approximately \$2,800,000.

**Telecommunications.** Staff provided operations and maintenance support for radio and telecommunications systems for both EVER and DRTO. Planning was initiated to replace the 150 foot communications tower at Key Largo, relocate the Cape Florida repeater facility for Biscayne National Park and consolidate television antennas and provide wireless service for satellite television and internet at Dry Tortugas National Parks. The DRTO project proposed to provide in-home services to employees and at the same time eliminate most of the communications infrastructure located on the terreplein of the historic structure.

The communications staff installed 30 mobile radios in fleet vehicles and boats, as the fleet was replaced with new equipment. Radio training was provided for primarily law

enforcement personnel at both parks and their narrow band radio equipment was loaded with encryption software.

The communications office assumed project management responsibilities for the installation, testing and acceptance of the Cisco VoIP telephone network. New telephone equipment was installed at the Krome Center offices, headquarters, Pine Island, Key Largo, research and fire office buildings and at DRTO. The system was commissioned in April, 2007.

Staff improved the lightening and surge protection systems at several of the parks larger building assets and includes an alarm with automatic reporting features. These systems protect the parks radio, telephone, IT, and water and wastewater treatment plants as well as building electric distribution systems.

## **2007 4.2 Motor Vehicle Fort Jefferson**

### **Background**

The 110' National Park Service R/V Fort Jefferson was designed and built to support supply, research and educational missions. She has the ability to carry up to 49 passengers and a crew of 3 for day trips. She also can carry out missions for up to 8 live-aboard passengers and a crew of 3. She has twin 65kw gensets either of which can handles all electrical needs. Her RO unit can produce up to 400 gallons of fresh water per day. The Fort Jefferson can carry up to 66,000#'s of deck cargo. Her onboard crane can lift 2,000#. She has a dive platform and boarding ladder at her stern. She carries a 14' tender with a 25hp outboard motor. Weather permitting; the Fort Jefferson can tow small vessels if needed to and from the desired site. The NPS allows the use of the Fort Jefferson by other agencies for the mutual benefit of all parties.

**Staff:** Personnel currently supporting the operation of this vessel include a 1<sup>st</sup> officer, Captain, 2<sup>nd</sup> Officer, and a 3<sup>rd</sup> officer. DRTO personnel being transported off and on island provide some additional support as needed. This new staffing is slightly increased from prior years that had a Captain, mate and a deckhand as if the Captain was not available it crippled the entire operation. There is currently two staff that are qualified to Captain this vessel.

**Current Operations:** In prior years the vessel would make 48 trips a year to DRTO oven not at capacity, given the cost of fuel and personnel time the new Captain has expanded the use of the vessel and refined operational practices.

Fuel conservation has been improved by reducing the number of supply trips to 24. This alone cut fuel costs by 50%. Fewer trips were made, but the loads (weight of cargo and number of personnel) carried per trip greatly increased. A total of 36 trips, including research trips, carried 750 people or roughly 20.8 per trip. On one trip the maximum cargo load of 66,000# was achieved. In order to reduce fuel cost even more the vessel is now operated using a fuel conservation schedule. The trips are slower but this is not a factor for cargo. The net result is a savings of 468 gallons of diesel per round trip. This amounts to 11,232 gallons over 24 trips, which at today's prices equals a savings of \$50,207. These cost reductions allowed the hiring of a second permanent crew and a temporary third.

The reduction in dedicated supply trips had another positive impact in that it opened time slots for support of research and educational trips. During the fiscal year the R/V Fort Jefferson supported 6 weeks of research. This has had two distinct benefits. A direct impact on the budget of the R/V Fort Jefferson is the deferment of operational costs to the research teams. All operational costs are transferred to the team utilizing the vessel. The 6 weeks of research use reduced our operational expense by 12%. Our goal is to handle 12 research trips per year which will reduce our operational expenses 23% annually. An additional benefit is to the government and therefore the taxpayer in general. Our cost per day to support a research trip is roughly 50% of that of a private charter vessel. This means the research team dollar goes twice as far. For example a team would pay approximately \$24,500 to use the R/V Fort Jefferson for an 11 day trip. A private vessel cost for the same trip would be \$55,000. The net result is a positive impact of \$30,500 on this one trip.

A third benefit of this arrangement is “extra” supply trips to DRTO. We retain the right to add cargo on all research trips. For example on the return a research trip for the South Florida and Caribbean Monitoring Network we brought back 6 migrant vessels. All associated costs normally absorbed by the Fort Jefferson were deferred to the research team. On another occasion a large piece of equipment sorely needed at DRTO was carried out to the park. Once again all costs were absorbed by the research team. This has been done with other agencies as well. The USGS has used the vessel for support 3 times as of this date. We believe this interagency cooperation serves the best interests of not only the agencies involved, but the taxpayer as well. The bottom line at today’s fuel/operational costs is a positive impact of \$433,850/year based on 12 weeks of research. As we did 6 trips in FY 07 the benefit would be in the range of \$200,000. The lower fuel cost in 07 accounts for the benefit being less than 50% of the impact this year.

**Disposal of migrant vessels.** The R/V Fort Jefferson has reduced costs to DRTO by providing an alternative to remove many of the vessels that Cuban migrants have arrived in. In the past DRTO paid a private contractor \$600 per vessel for disposal. Now the migrant vessels, “aka chugs” are carried by the FJ. In Key West the chugs are picked up by a disposal truck. Now the cost is \$125 per vessel. This savings of \$475 per vessel has been realized for 29 chugs as of this date for a total savings of \$13,775.

Other areas in which the role of the FJ has been expanded include support of various projects such as the Cannon Conservation project headed by the Museum Collection Division and the K-CON housing project managed by the Facilities Division. FJ staff suggests consideration of supporting the current reconstruction project headed by Cultural Resources that could proceed more efficiently if the R/V Fort Jefferson was utilized.

**Maintenance/Upgrades.** The vessels annual haulout was done in July. Props/shafts/cutlass bearings were inspected and found to be sound. The crane was completely disassembled serviced and repainted. All through-hulls were inspected and valves rebuilt. Drip-less packing glands were installed. The bottom received new antifouling paint. The original floor plan of the galley was not functional. The crew developed a new floor plan, installed a dishwasher, convection oven, washer/dryer and trash compactor. Cabinets were built by the crew.

**Future goals.** The full implementation of the FMSS is a high priority. The crew is working with Lee Arnhold at headquarters to put this program in place. We hope to incorporate our preventive maintenance and inventory control in this effort.

In addition, a future goal is to take on the maintenance of buoys associated with the RNA at DRTO. This will require an additional member for crew. As mentioned above vessels of this size generally have a crew of 5-6. The R/V Fort Jefferson has completed quite a bit with limited crew in a relatively short period of time.

Motor Vehicle the Fort Jefferson, 2007



## **2007 5.1 Resources Stewardship - Everglades Restoration and Supporting Science**

### **Foundation Projects**

A series of foundation restoration projects that predate the Comprehensive Everglades Restoration Plan (CERP) have been underway since the early 1990's, and the restoration benefits of the later CERP projects are dependent on the successful completion of these projects. Three of these pre-CERP projects are most critical to NPS managed resources in South Florida: (1) the Everglades Construction Project - improving the quality of water flows entering the northern Everglades, through the construction of Stormwater Treatment Areas (STAs), (2) the Modified Water Deliveries Project - restoring more natural water flows through the central Everglades and Shark Slough watershed of Everglades National Park (EVER), and (3) the C-111 Project - restoring water flows to the Taylor Slough and eastern Florida Bay regions of EVER.

### **Comprehensive Everglades Restoration Plan (CERP)**

The CERP was authorized in the Water Resources Development Act of 2000, and is still in the planning and design phase for all but a few projects. To date, no CERP projects have been approved for construction in the southern Everglades region, near the four south Florida NPS units. Two initially authorized CERP projects, the WCA3 Decompartmentalization project (Decomp) and the C-111 Spreader Canal project have been delayed. The Decomp project, which has major restoration benefits for both EVER & BICY, is dependent on improvements to Tamiami Trail, a component of the Modified Water Deliveries project. The C-111 Spreader Canal project, which has restoration benefits for EVER and BISC, is dependent on the completion of detention and seepage management features from another foundation project (the C-111 project).

In 2005 the State of Florida began an initiative to accelerate elements of CERP and committed to more than \$1.5 billion to plan, design, and construct selected CERP components (referred to as "Acceler8"). Acceler8 "jump started" the CERP program on many northern Everglades projects such as the EAA Reservoir (water storage), STA expansion (water quality) and the C-9/C-11 impoundments (seepage management and storage), as well as one southern Everglades project, the C-111 Spreader Canal project, that will reduce seepage losses from Taylor Slough and redistribute flows to northeastern Florida Bay. Since 2000 long-term funding constraints within the Army Corps of Engineers have led to major CERP project delays. At the same time, land acquisition and construction costs have risen sharply in south Florida. These changes have prompted the development of a new Integrated Delivery Schedule to improve project integration and revise the timelines on the full suite of Everglades restoration programs.

In 2000, when Congress authorized the Comprehensive Everglades Restoration Plan (CERP), the full suite of Everglades restoration projects was estimated to cost \$15.4, to achieve the overarching goal of restoring the greater Everglades ecosystem, while meeting the needs of an expanding south Florida population. In a 2007 GAO review report, the overall restoration cost estimates had increased to approximately \$19.7 billion. Since the 2000 WRDA authorization and the CERP conceptual plan, each of the 60 project components have begun to undergo detailed assessments to select the recommended combination of structural and operational features. The Army Corps has established a series of interagency Project Development Teams (PDTs) to develop these

required detailed plans. The EVER South Florida Natural Resources Center coordinates NPS involvement on these PDT efforts, as well as our involvement on CERP programmatic activities. This effort has three key components: (1) technical staff participation in CERP project teams to develop detailed restoration targets and model/evaluate alternatives to recommend environmentally preferred plans, (2) technical staff participation on interagency programmatic activities to develop system wide monitoring plans, natural system water supply assurances, and interim goals to track restoration progress, and (3) the integration of DOI funded applied science projects managed through the Critical Ecosystems Studies Initiative (CESI).

## **Critical Ecosystems Studies Initiative (CESI)**

Applied science projects funded through CESI address four major areas of needed support for Everglades restoration: (1) applied research to fill gaps in our knowledge of ecosystem processes and how they have changed over time, (2) development of decision support tools and computer simulation models, (3) restoration project assessments (application of performance measures or ecosystem health indicators to evaluate CERP project plans), and (4) long-term monitoring to track on-the-ground changes and evaluate restoration success. The south Florida science needs funded by CESI are closely coordinated with the funding programs of the USGS (Priority Ecosystem Studies), to avoid overlap and assure efficient use of DOI funds. Science needs are also coordinated with the funding of other government agencies participating in the CERP.

A total of \$39.8 million has been invested in the National Park Service CERP effort since 2000 to support project level and programmatic activities. These funds have primarily gone toward the hiring of 35-40 technical and science staff (78%), and for administrative and information technology support (22%). The NPS staff supports our efforts on both pre-CERP foundation projects and CERP projects. A total of \$72.6 million has been invested in the CESI program since 1997, to support DOI's science programs in south Florida. This includes support for the South Florida Ecosystem Restoration Task Force (15%), EVER internal ecosystem monitoring projects and CESI administration (10%), and applied science projects (75%) that are conducted by agency scientists or university cooperators.

## **Achievements since 2000**

### ***Foundation Projects***

- NPS staff and cooperators developed a series of simulation models to evaluate the performance of Stormwater Treatment Areas (STAs) and made recommendations for supplemental technologies to optimize STA performance. DOI and State of Florida staff routinely track water quality compliance to assure that the requirements of the 1992 Consent Decree are met in EVER and the Loxahatchee NWR.
- NPS staff completed technical assessments of the 8.5 Square Mile Area flood protection features and Tamiami Trail features, and worked to incorporate improvements into the Army Corps designs for the Modified Water Deliveries Project.
- NPS staff assisted in the design of the detention areas for the C-111 project, and monitored their performance to recommend improved operational changes that better reflect natural marsh responses to rainfall.

## **CERP Program**

- The NPS participated in development of the CERP Programmatic Regulations, which provide detailed guidance on CERP implementation and were formally issued in November 2003.
- The NPS participated in the development of Interim Goals and Interim Targets, to provide “a means by which the success of the Plan in providing for other water-related needs of the region, including water supply and flood protection, may be evaluated throughout the implementation process.” The Interim Goals Agreement was signed by the Corps of Engineers, the State of Florida, and the Department of the Interior in April 2007.
- The NPS participated in completion of the final draft of the six CERP Guidance Memoranda, which was produced in July 2007, and is currently undergoing public review and comment.
- The NPS participated on the CERP RECOVER team to develop a scientifically robust Monitoring and Assessment Program to track and evaluate changes in the ecosystem due to CERP (Monitoring and Assessment Plan completed in 2004, and first System-wide Status Report completed in 2007).

## **CESI Program**

- Since 1997, the CESI program has provided support to 237 applied science projects. These projects have provided substantial contributions to CERP Interim Goals, to the RECOVER Monitoring and Assessment Program, and to the development of CERP performance measures.
- Many of the CESI funded decision support tools and simulation models have been directly applied to pre-CERP and CERP assessments of alternative restoration plans. CESI monitoring studies have developed a robust baseline to track the status and trends in key ecosystem indicators and document restoration progress. CESI Project reports are maintained in an NPS database at EVER, and are available to the CERP and broader scientific community.
- CESI Task Force funding in FY06 and FY07 was invested into the production of a method to synthesize south Florida ecosystem monitoring data into a “Restoration Report Card.” This method will be refined, and more indicators reported on, in FY08.
- Several CESI funded projects have been fundamental to the USFWS recovery efforts for south Florida threatened and endangered listed species. A 2007 USFWS sponsored Avian Ecology Workshop had eight of the 12 scientific presentations funded by the CESI program.
- CESI has supported projects under the Florida Coastal Everglades LTER program, which was established by the National Science Foundation. This has led to the completion of several major synthesis reports on the hydrology and ecology of the Everglades and Florida Bay.
- In 2007, two major NPS integrated technical reports on ecosystem restoration were published, and four shorter technical fact sheets were produced, including one on climate change. A significant update to the NPS/Everglades National Park website was completed, focusing on NPS participation in the CERP and natural resources management.
- The National Research Council’s independent review of the CERP is supported by CESI funding through the Task Force. Recommendation Reports were produced in 2004 and 2006, and the 2007 meetings were successfully implemented, with

significant attendance from scientists and managers from the various South Florida agencies.

## **Effects of the Everglades Hydrological Restoration on Manatees: Integrating Data and Models for the Ten Thousand Islands and Everglades.**

GEPES and CESI funded study to USGS Florida Integrated Science Center  
USGS development of the heat transport component for the FTLOADDS hydrology model and integration with the manatee individual-based model continued in 2007. Development of new aerial survey designs and statistical analysis continued, focusing on data from the Ten Thousand Islands area. EVER staff participated in an aerial workshop conducted jointly by the Fish and Wildlife Research Institute of the Florida Fish and Wildlife Conservation Commission and USGS – Florida Integrated Science Center. A manuscript is in preparation for peer review. Upon completion, EVER staff will work with USGS to extend the new design into EVER.

A series of workshops and seminars by USGS researchers were held to present the integrated biology/hydrology research to resource managers in order to facilitate discussion as to how the research could be used to reach management objectives. These included:

- **February, 2007.** Meeting with SFWMD and USFWS regarding permit issues for the Picayune Strand Restoration in light of unknown effects to manatees. An outcome of the meeting was a request by SFWMD to use the new USGS Ten Thousand Islands application of the FTLOADDS hydrology model.
- **May 4, 2007.** Joint workshop with the North Florida and South Florida USFWS field stations presenting the manatee/hydrology modeling effort. The workshop addressed implications for understanding restoration impacts and incorporation of data and model output to assessment of statewide recovery of the Florida manatee.
- **May 31, 2007.** Series of seminars were presented to staff at Everglades Park outlining the research and initial findings.
- **August 9, 2007.** Presentation at the Department of the Interior – Southeast Bureau Partnership Meeting in New Orleans, LA: “The Relationship of USGS Hydrologic Modeling Efforts to Ecosystem Restoration”.
- **September 6, 2007.** Presentation at a meeting sponsored by FWS to determine research needed in Southwest Florida for the next FWS manatee status review.
- **October 10, 2007.** A briefing was presented at the Department of Interior to Deputy Assistant Secretary for Water and Science, Tim Petty. The research team presented an overview of the state-of-the-art hydrological models, Greater Everglades hydrological monitoring, and the integrated hydrology-manatee model.
- **October 10, 2007.** Briefings were presented to USGS staff at the National Headquarters in Reston Virginia: Hypersalinity, Heat Transfer, and Manatees in the Everglades of South Florida. A total of 6 individual talks were presented.

## **2007.5.2 Resources Stewardship**

### **2007.5.2.1DRTO Natural Resource Stewardship and Science**

Natural resource stewardship and science staff participated in developing the new park special regulations, and in implementation planning for the new Research Natural Area

(RNA), a no fishing marine reserve covering 46% of the park. A DRTO marine ecosystem science needs document was produced.

### ***Research Natural Area (RNA) Science Plan and 2008 Implementation Activities***

The decline in reef associated gamefishes, primarily grouper and snapper species, is a major DRTO ecological resource stewardship issue. A DRTO reef fishery assessment conducted in 1999 and 2000 concluded that 45% (13 of 29) of gamefish species that could be analyzed are overfished; 62% (18 of 29) of fish species analyzed exceed the Federal fishing mortality target by two to six times. Addressing this issue, the park developed and implemented (2007) a no take marine reserve, termed the Research Natural Area (RNA), covering 46% of the park, including much of the coral reef habitat. RNA goals are to restore depleted coral reef gamefish populations, to protect coral reef and other benthic habitats from anchor damage (anchoring is prohibited), and encourage coral reef research.

A joint NPS and Florida Fish and Wildlife Conservation Commission (FWC) RNA Science Plan was completed in early 2008 with the assistance of scientists from multiple agencies and non-government organizations. The plan purpose is to assess the conservation efficacy of RNA implementation. This plan will test the following hypothesized effects of no fishing reserves: increased abundance, size, and productivity of target fishery species within the reserve; the abundance and size of target species increase in areas adjacent to the reserve due to net emigration from the reserve; improve fisheries (e.g., greater catch per unit effort) in areas proximate to the no-fishing zone; and regional enhancement of target species via greater larval export from the reserve. The plan has six major objectives or topics: quantify changes in the abundance and size-structure of exploited species within the RNA relative to adjacent areas; assess net emigration of targeted species from the RNA; monitor changes in catch rates of exploited species outside the RNA; evaluate the effects of RNA implementation on marine benthic biological communities; assess the reproductive potential of exploited species by evaluating egg production and larval dispersal; and appraise the socioeconomic effects of RNA implementation. In 2008, the DRTO and the FWC implemented substantial components of the RNA science plan by completing a reef visual census of reef fishes at sites inside and outside the RNA and completing the first year of a sonic fish tagging study to understand the benefits associated with spillover of mature reef fish from the RNA into adjacent reef habitats. The science plan is available here:

<http://www.nps.gov/ever/naturescience/upload/DRTOSciencePlanSmall.pdf>

***Coral Reef Benthic Communities Assessment Project.*** Coral reefs are a vital natural resource in Dry Tortugas National Park (DRTO). The 2007 findings of the DRTO Coral Reef Benthic Communities Assessment Project, focusing on stony corals are summarized below. 2007 data are compared to previous years monitoring data, providing an assessment of stony coral status and trends from 1975 to 2007. This information will be presented at the International Coral Reef Symposium in 2008. The following additional key coral reef key ecological attributes are monitored:  
sea urchins, especially *Diadema*, important reef herbivores promoting coral recruitment;  
soft corals, which are more common than stony corals; and  
Seaweeds, which compete with corals for space and inhibit coral recruitment and growth.

Stony coral abundance in DRTO has been monitored periodically since the mid-1970. There has been a substantial decrease in stony corals, especially Endangered Species

Act listed and once major reef forming *Acropora* species, over the last 30 years. There were 1,200 acres of *Acropora* dominated reefs (mostly staghorn coral) in the park in 1976; but, there are currently only about three acres of live *Acropora* thickets, a greater than 99% loss. Furthermore, *Acropora* live cover in 2007 was less than or equal to 7% on these existing reefs. Reef forming *Montastrea*, *Siderastrea*, and *Colpophyllia* coral species also have declined in abundance. Mean coral cover at a long term monitoring site dominated by *Montastrea* spp. and *Colpophyllia* decreased from 45% in 1975 to 11% in 2007, a 75% decline. Stony coral cover at a long term monitoring reef once dominated by staghorn coral decreased over 90% from 1990 to 2007. Stony coral abundance declined 25% at seven monitoring sites from 2005 to 2006, based on pooled means (6.3% cover in 2005 and 4.7% in 2006). This follows a 14 month period of five hurricanes affecting DRTO in 2004 and 2005, an unprecedented occurrence in the 130 year history of Tortugas science. From 2006 to 2007, an interval with no hurricanes and low disease and bleaching prevalence, stony coral live cover did not decline. Most coral loss in the 1970's and 1980's was caused by hypothermic events (strong cold fronts) and disease. More recent coral loss has been due to disease and bleaching; and the 2004-2005 hurricanes. Coral decline is the most significant and challenging DRTO resource stewardship issue.

**Vegetation Monitoring on Loggerhead Key.** Long term monitoring transects were resampled in May 2008 by vegetation management staff as well as staff from the Florida Caribbean Network Inventory and Monitoring Program. These transects were originally established to track recovery of native plant communities following control of exotic Australian pine (*Casuarina equisetifolia*) trees and sisal hemp (*Agave sisalana*). Both species have now been eradicated from the island and plant communities are once again primarily comprised of native plant species. Monitoring of these transects has continued in an effort to study effects of hurricanes and other stochastic events on the plant communities of DRTO. Data from the 2008 monitoring effort are being entered and analysis of plant community succession will be conducted.

## **2007.5.2.2 EVER Natural Resource Stewardship and Science**

### **Wildlife Management and Monitoring**

Wading bird (Ciconiiformes) nesting colonies are monitored throughout central and south Florida as a combined effort between various federal, state and local agencies as well as non-government organizations. Data collected during colony monitoring flights and ground checks are used to track populations of wading birds with regard to ongoing ecosystem restoration projects. This summary report addresses colony monitoring within the mainland slough and estuarine areas of Everglades National Park using data collected during the years 2006 and 2007.

Central and south Florida parks, refuges and conservation areas hold most of the last remaining nesting habitat for colonial wading birds in Florida. The recovery of wading bird populations to numbers approaching historical accounts continues to be a lofty goal for all who value these birds and the remaining natural areas where they reside. Much progress has been made in understanding the complex relationships between wading birds and their habitat and prey requirements. Continued long-term monitoring of colonial wading birds is needed in order to detect trends in nesting effort, locations and numbers of colonies, and timing of colony nesting with respect to the ongoing restoration efforts. Sustained high numbers of successfully breeding wading birds across the Everglades

landscape is widely considered to be one of the key objectives in determining whether Everglades ecosystem restoration is moving in the right direction

In the mid-1990's, the "Annual South Florida Wading Bird Report" was initiated as a way for all participating agencies in Florida to collectively report and share data, as well as track seasonal variations of nesting. Group reporting from all geographic areas where wading birds nest allows biologists to monitor long-term trends for the Florida regional wading bird population as a whole. In order to better understand all the possible associations between different species of birds, their prey, and the aspects of their foraging and breeding habitat (e.g. hydrology, weather, vegetation, fire) analysis of combined long-term datasets is needed. Colony monitoring flights conducted by Everglades National Park biologists will continue to be an important part of this cooperative wading bird reporting effort. These data are used to evaluate Everglades ecosystem restoration and are a crucial component of this ongoing process.

The long-term monitoring objectives for wading bird nesting colonies in ENP are:

Collect data on wading bird nesting effort, locations and numbers of colonies, and timing of colony nesting.

Compile and share data with the South Florida Wading Bird monitoring group.

Colony monitoring flights are conducted by 1 or 2 observers and initiated at the first signs of colony formation (at least 2 colonies are visible from roadsides and often used as indicators for scheduling the first flight). Traditional colony sites (see map, Figure 1) are checked as well as sites used from recent years. New colonies are located during colony survey flights and while flying other wildlife project flights throughout the nesting season. Once colonies are active, flights are conducted monthly unless a significant weather or management event occurs that could disrupt colony activity. Before, during, or after any such event, colonies are checked as often as needed to determine if there is a response by nesting birds.

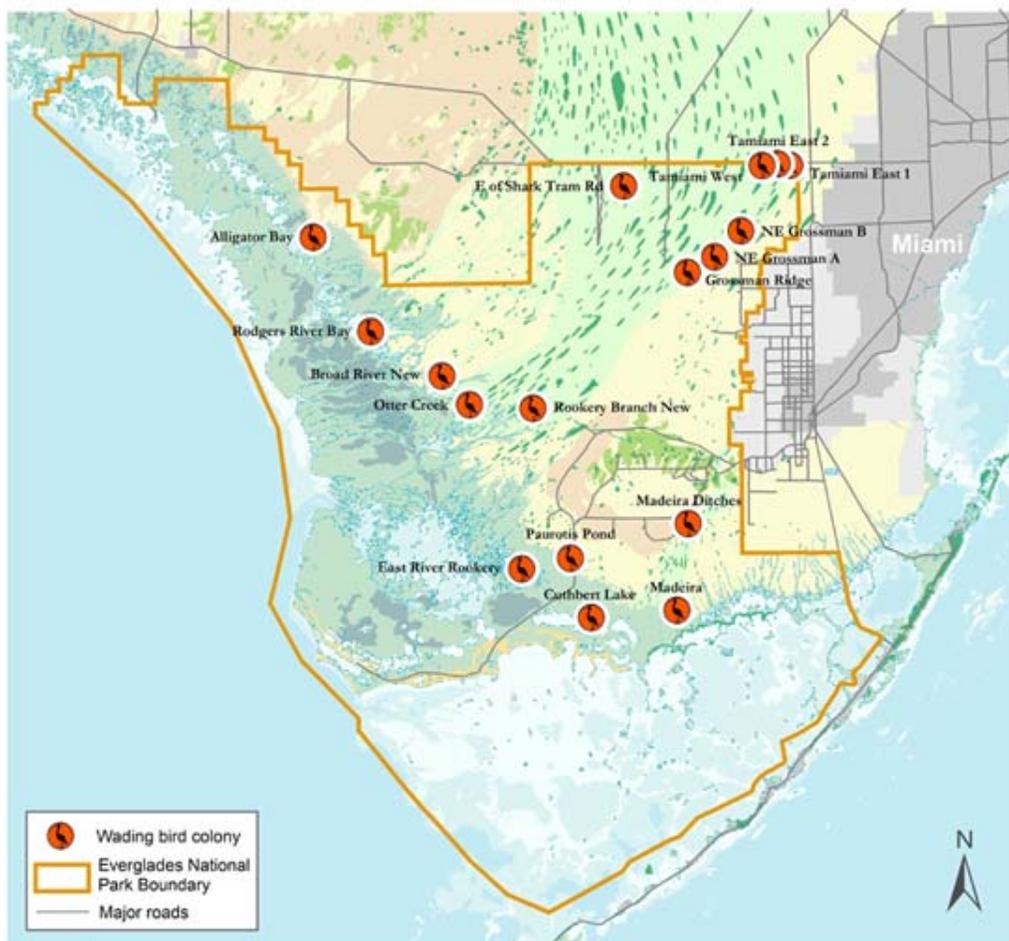
A Cessna 182 fixed-wing aircraft is most often used; however a Bell Jet Ranger helicopter is sometimes utilized if a better view is needed of a particular colony. When a colony is located, the coordinates of the colony are recorded using a Geographic Positioning System (GPS) device. At each colony site, the aircraft circles the colony high enough to avoid disturbance but also at a height low enough to allow observers adequate view of nests. The numbers of nests are estimated for each species and recorded to data sheets. The field data are later entered in database software and the GPS coordinates of each colony site are plotted on a map using Geographic Information System (GIS) mapping software.

Species monitored include the Great Egret (*Ardea alba*), Wood Stork (*Mycteria americana*), White Ibis (*Eudocimus albus*), Snowy Egret (*Egretta thula*), Roseate Spoonbill (*Ajaia ajaja*), Tri-colored Heron (*Egretta tricolor*), Little Blue Heron (*Egretta caerulea*), Cattle Egret (*Bubulcus ibis*), and Black-Crowned Night Heron (*Nycticorax nycticorax*). Other colony nesting species such as the Great White Heron (*Ardea herodias*), Anhinga (*Anhinga anhinga*), Brown Pelican (*Pelecanus occidentalis*) and Double-Crested Cormorant (*Phalacrocorax auritus*) are noted as well. In addition to numbers of nests recorded by species, the nesting stage for each species is noted. Remarks on stage of nesting can include nest-building, incubating or brooding behavior by adult birds, or nest disturbance and abandonment. Eggs and newly hatched young birds can sometimes be

seen in the nests and are recorded. Older young are generally easy to see if nests are not hidden by vegetation or shade. Size estimates are recorded for any young seen.

In terms of overall nesting effort, the 2006 nesting season was by far the most outstanding seen during the last 10 years of monitoring. In addition to numerous Great Egret colonies scattered throughout Shark River Slough, long-term sites such as Paurotis Pond and Tamiami West plus the recently re-formed headwaters sites had large increases in nesting birds of all species. Numbers were significantly higher than previous years and were compared to historic nesting events reported during the 1940's. Nest numbers for all species, including the Wood Stork, were down again in 2007. Compared to the 2006 nest numbers, Great Egret nests were down 53%, Wood Stork nests decreased 70%, White Ibis nests decreased 67% and Snowy Egret nests dropped by 96%. Despite nest numbers declining again, the nesting trend for Great Egrets, Snowy Egrets and White Ibis has retained an upward slant. Wood Storks remained at stable but low overall nest numbers for the period.

Optimal water conditions did prevail during the 2006 wading bird nesting season. The highly successful 2006 nesting season was preceded by above average water levels leading into the dry season, and followed by below average rainfall through the dry season.



Aerial monitoring of nesting colonies allows documentation of colony nest initiation, colony locations, nesting effort and ultimately some sense of overall colony success or failure. Wading bird reproduction in the southern Everglades is not yet approaching restoration goals. The environmental conditions that brought about the exemplary 2006 nesting season is seen as an indication that restoration efforts might be headed in the right direction. Meanwhile the circumstances for successful wading bird nesting colonies are not consistent among years and therefore, ongoing monitoring of wading birds will continue well into the future.

**Table 1. Nest numbers of 4 key colonial wading bird species monitored in Everglades National Park during years 2006 and 2007.**

YEAR	Great Egret	Wood Stork	White Ibis	Snowy Egret	TOTAL
2006	2629	1124	4430	1755	9958
2007	1259	340	1458	74	3131

**Pineland Bird Restoration** The pine rocklands are a globally unique subtropical forest ecosystem considered "critically imperiled." Everglades National Park (EVER) protects the largest remaining tract on the Atlantic coastal ridge in Florida. Although protected, the long-term management of its plant and animal communities presents significant challenges. Pine Rockland forests are fire-dependent and prescribed fire is an important management tool; the role of hydrology is unclear. Little is known about the effects of manipulating fire or hydrological regimes on the terrestrial fauna and their habitats, and thus managers lack guidelines for integrating the needs of the pine rockland fauna into management and restoration plans. EVER and the Ecostudies Institute have been addressing this information gap through a long-term study of the avifauna of the pine rocklands. Information provided here includes results from the final year of a three-year project. The objectives of the project include: 1) evaluating the upland avian restoration program in EVER including a preliminary population viability (PVA) model, and 2) the investigation of relationships between environmental factors (e.g., fire, hydrology), vegetation, and avian populations in south Florida pine rocklands.

**Brown-headed Nuthatch.** 23 Brown-headed Nuthatch territories were located in 2007, down substantially from 2006 (30) and 2005 (37). We located 24 nestlings that fledged. Our PVA indicates that the population appears to be well established. However, the significant decline from the previous two years is cause for concern and it is unclear if this is a systematic decline or the result of an environmental stochastic event. Long Pine Key was struck by two hurricanes, Katrina and Wilma, in 2005. Winds associated with the storms may have stripped pine cones from many trees resulting in reduced food availability in the following two winters. Management for this species should focus on using prescribed fire to provide forests with abundant snags (Lloyd and Slater 2007).

**Eastern Bluebird.** 17 Eastern Bluebird territories were located in 2007, similar to the number found in 2006 (16) and 2005 (18) in 2005. A total of 11 juveniles were produced. As in previous years the, primary cause of nest failure appears to be nest predation. Results from our population model indicate a slowly declining population. Some evidence suggests that a systematic constraint, such as road mortality, may be depressing the

ability of this population to grow. In 2007, at least two breeding adults and one juvenile were killed after being struck by a vehicle on Research Road.

Improving juvenile survival and breeding productivity of Eastern Bluebirds should be the primary focus of management efforts. Reducing Eastern Bluebird mortality from motor vehicle collisions on Research Road is likely important to the recovery of this species. In 2009 the speed limit will be reduced and, if enforced, will serve as a test of whether management will benefit this species. In general, nest restrictor plates at the entrance of accessible Eastern Bluebird nest cavities have been ineffective at deterring predation. Management of habitat through prescribed fire is critical to bluebirds. A fire program that maintains high-quality large snags and a diverse understory that provides patches of sparse vegetation for foraging for insects on the ground and patches of developed understory for foraging on hardwood fruits is important. These vegetation patterns can likely be best achieved by employing a variable prescribed fire interval of 2-7 years.

Some form of monitoring for nuthatches and bluebirds over the next several years may be warranted given the small populations and recent population declines.

**Wild Turkey.** In 2005, staff determined that the Florida Wild Turkey (*Meleagris gallopavo osceola*) population would benefit from population augmentation. In cooperation with the Florida Fish and Wildlife Conservation Commission, thirty-one turkeys (20 females and 11 males) were released approximately 100 m south of the Long Pine Key campground in 2006. This population is being monitored through standardized camera surveys and a personal observation database. Data for 2007 and 2008 are currently being analyzed, but in each of those years, individuals have bred successfully. Long-term success of reintroduction will be determined by development of a viable self-sustaining population.

**Environmental Factors, Vegetation, and Avian Populations.** Understanding the effects of management and restoration (i.e., fire and hydrology) in south Florida pine rocklands is a significant science information need (DOI 2004). Using avian surveys, vegetation sampling, and fire and hydrological data collected from 430 established survey stations at six pine rockland sites in south Florida (including 105 in Long Pine Key, EVER) we will determine effects of naturally-occurring variation in habitat and environmental conditions on the abundance and distribution of birds. Statistical models of ecological relationships will be developed from these data that can then be used to guide habitat management. Field data collection for this project was completed in June 2008. We are currently conducting data analyses and will have a final report completed in December 2008. Results from this study will help guide the development of fire management strategies within the greater landscape and within individual management units, both objectives of the DOI Science Plan (2004).

**Bald Eagle & Osprey Aerial Surveys Introduction.** Annual censuses of bald eagles nesting in Everglades National Park (ENP) were initiated in the late 1950's as a response to diminishing eagle populations nationwide. Since then, bald eagle nesting surveys have been conducted in ENP on a near annual basis. Nesting ospreys have been less frequently monitored over the years but monitoring has usually occurred in conjunction with bald eagle aerial monitoring flights. Ground surveys of both species have also been conducted by ENP or cooperating research agencies, but less consistently than aerial surveys.

The 1972 ban on DDT and other harmful organochlorine chemicals as well as the listing of bald eagles under the Endangered Species Act resulted in significant increases in the breeding population of bald eagles throughout the contiguous 48 States. Osprey populations rebounded as well in response to the pesticide ban. The bald eagle population has since recovered to the extent that Federal delisting has occurred.

Bald eagles and ospreys in ENP are fish and avian predators and the breeding adults of both species appear to be largely residents throughout the year. Therefore, they are an intrinsic part of the local environment. Monitoring of these avian apex predators can provide insight on changes in the ecosystem as Everglades restoration efforts move forward.

**Methods.** Aerial surveys of both eagle and osprey nesting are initiated in late October or November when the adult birds are constructing new nests or rebuilding existing nests. They are conducted monthly through April or May or until the outcome for each nest is determined.

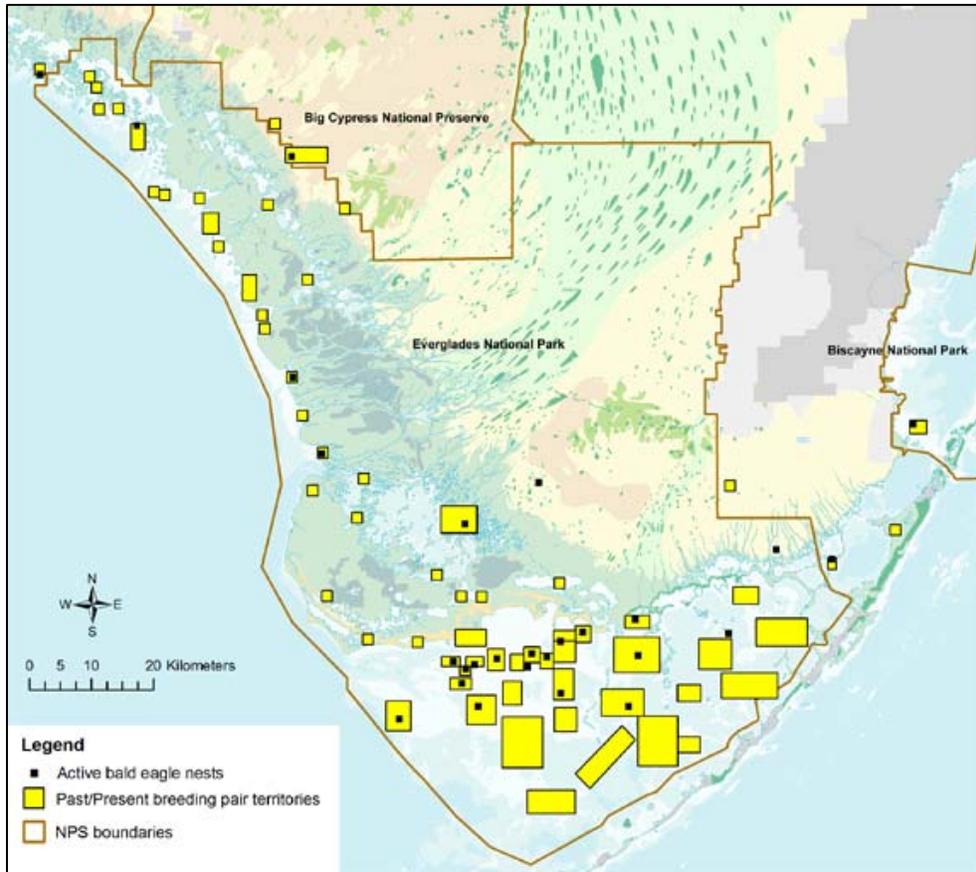
Nest monitoring flights are conducted by airplane, although a helicopter is sometimes used in conjunction with other wildlife monitoring projects. All eagle nests that were active during previous seasons are rechecked for activity. If the adult birds are actively nesting, one or both birds will often be seen on or near the nest. New outer branches or inner nest lining (grass or other soft vegetation) placed by the adult birds can often be seen from the airplane. If an eagle nest is found to be inactive, the general area around the original nest site is searched during consecutive flights. Adult birds in the area are noted and the new nest site, if found, is recorded. While checking the known eagle nest sites, locations and status of osprey nests in the area are also recorded. GPS locations are recorded for nest locations and photos of eagle nests are taken if possible. Observations of birds and nest status are recorded to field notebooks and data is entered to a computer database.

We are currently monitoring 27 known eagle nest sites within South Florida, mostly inside ENP park boundaries. Osprey nests are recorded and mapped, however determining the outcome of their nests is not always possible through aerial survey as they tend to be smaller and more difficult to see than eagle nests.

A cooperative multi-year study of nesting eagle and ospreys within ENP Florida Bay is concluding. We plan to combine the data from this study with monitoring data from all previous eagle and osprey nest surveys conducted in ENP. A more comprehensive analysis of data and a reporting is scheduled for the near future.

Within ENP, continued monitoring of both bald eagles and ospreys provides valuable data about the status of these populations and their environment concurrent with ongoing Everglades restoration projects. Both birds are considered to be valuable indicator species for monitoring the long-term health of Florida Bay as well as the western rivers and estuaries where both birds reside.

Figure 1. Bald eagle nesting sites (N=27) and adult territories in South Florida.



**Alligator Systematic Reconnaissance Flights (SRF): Summary of American Alligator Nesting Effort and Success in Everglades National Park, 2007.** The American Alligator (*Alligator mississippiensis*) is a keystone species which once occupied all wetland habitats in south Florida, from sinkholes in pinelands to mangrove estuaries during periods of freshwater discharge. Alligators are top predators formerly abundant in the pre-drainage Everglades and are considered ecosystem engineers which (directly or indirectly) influence nearly all aquatic life in the Everglades.

Systematic Reconnaissance Flights (SRFs) and subsequent egg checks have been used from 1985-2007 to monitor nesting effort and nesting success of the American alligator in Everglades National Park (ENP).

Everglades restoration, development, and changing water demands in south Florida continue to modify the quantity, quality, timing, distribution (QQTd) and flow of water on an ecosystem-wide scale. It is vital to managers and modelers that we continue to monitor how alligator (a top predator and keystone species) nesting effort and success relate to ever-changing hydrologic conditions within ENP and throughout the south Florida watershed.

**Key objectives of this long term monitoring include:**

Continue to document annual patterns of alligator nesting effort, success, and distribution throughout Everglades National Park.

Provide quantitative long term alligator nesting data for hypothesis testing, model verification, restoration success evaluation, and species population viability monitoring. Identify and examine factors that influence alligator nesting effort, success, density, and distribution and relate these findings to restoration objectives, particularly spatial and temporal changes in ENP hydrology.

SRF flights were flown along 26 established transects during four consecutive days in 2007 beginning July 9<sup>th</sup> and concluding July 12<sup>th</sup>. Seventy-six nest locations were confirmed inside SRF transect boundaries, resulting in an ENP wide estimated minimum of 304 nests. Shark Slough (SS) contained 63% (n=48) of nests, 24% (n=18) were in East Slough (ES), 4% (n=3) in North East Shark Slough (NES), 8% (n=6) in Taylor Slough (TS), and 1% (n=1) in Rocky Glades (RG). Sixty-one nests (estimated minimum \* 0.2) were initially selected for continued monitoring/nest visits.

Nests were visited a maximum of 4 times in 2007 between July 30 and September 17<sup>th</sup>. First nest visits occurred between July 30 and Aug. 7, 2007. During visit one, 67% (n=41) of nests were high and intact, 15% (n=9) were partially flooded, 8% (n=5) were completely flooded, 7% (n=4) were false nests and 3% (n=2) were old. Banded eggs were found in 85% (n=52) of nests visited, 2% (n=1) contained only non-banded eggs, and 13% (n=8, 4 old, 2 false, and 2 flooded/washed out) did not contain eggs. 1494 eggs were found and clutch size ranged from 2 to 48, with a mean of 28.7 eggs. Banding status was determined in 98% (n=1468) of the 1494 eggs examined, 97% (n=1418) of which were banded, 3% (n=50) were not.

Third nest visits were conducted between Sept. 5 and Sept.7, 2007 and a final (4<sup>th</sup>) nest visit was performed on Sept. 17<sup>th</sup> to determine status of several nests that still appeared to contain viable eggs not yet hatched. The cause of the delayed hatching observed is not known but may have been due to high water levels early in the nesting season and relatively cool summer temperatures extending the incubation period. Ultimately, 74% (n=45) of the nests monitored were successful (at least one egg hatched), 15% (n=9) failed (no eggs hatched). Eleven percent (n=7) of total failures were due to flooding and one percent (n=1) to predation.

Nest flooding accounts for most egg mortality in ENP. 2007 had little nest flooding (the lowest percentage since 2000) and high success (also highest since 2000). Water depths were at or near peak levels during the onset of nest building and only two nests not recorded as fully flooded on nest visit one ultimately succumbed to complete flooding. There was no observed negative change in nest status between visits one and two negating the need for ground visits. Predation has not been a significant cause of mortality to alligator nests in ENP and loss due to predation was typically negligible in 2007

**American Crocodile** . The American crocodile (*Crocodylus acutus*) is a primarily coastal crocodylian that occurs in parts of Mexico, Central and South America, the Caribbean, and at the northern end of its range south Florida. As with other species of crocodylians, hunting (for hides, meat, collections, and out of fear) and habitat loss (direct and/or due to degradation) have made the American crocodile endangered throughout its range. In Florida, habitat loss, due to development required to support a rapidly growing human population along coastal areas of Palm Beach, Broward, Miami-Dade, and Monroe Counties, has been the primary factor endangering the United States population of the American crocodile. This loss of habitat principally affected the nesting range of

crocodiles, restricting nesting to a small area of northeastern Florida Bay and northern Key Largo by the early 1970's. At one time most of the remaining crocodiles (about 75% of known nests) were located in Florida Bay in EVER.

There are more crocodiles in more places today than there were in 1975 when crocodiles were declared endangered. Crocodiles now occur in most of the habitat that remains for them in south Florida. Most of the remaining habitat is currently protected in public ownership or on private properties engaged in energy production. In these areas, destruction of habitat has not been an issue. However, questions of potential modification of habitat through continued alteration of freshwater flow due to upstream development and potential curtailment of the range of crocodiles needs to be addressed.

In 2007, University of Florida personnel located 117 nests, 115 nests were in EVER. Sixty-three percent (72) were successful, 34% (39) were depredated by raccoons or other small mammals and 3% (4) failed for unknown reasons. One successful nest was located at Snapper Creek canal in Biscayne Bay and another on Lower Matecumbe in the Florida Keys. A total of 617 hatchlings were captured, of which 565 were from nests in EVER, 19 from Snapper Creek Canal, and 31 from the nest on Lower Matecumbe in the Florida Keys. Twenty-one nests were reported at the Florida Power and Light Turkey Point facility and seven nests were found at CLNWR.

Fifty-five individual crocodile survey/capture events were completed. Survey areas included Key Largo, Key Biscayne, and most accessible coastal and estuarine shorelines from Everglades City around the coast to the mouth of the Miami River. Core areas of high crocodile activity were surveyed once each quarter; additional capture events were conducted in these areas. Surveys resulted in 295 crocodile observations, 66 alligator observations, and 200 indistinguishable eyeshines. One hundred-thirty one captures of 121 individual non-hatchling crocodiles were captured during surveys of EVER, Biscayne Bay, and the southwest coast of Florida. Of the 131 captures, 84 were recaptures with eight individuals captured twice and one three times. Personnel at the Turkey Point Power Plant originally marked seven of the recaptured crocodiles, FWC marked 10, and the University of Florida originally marked the remaining 67.

The 2007 crocodile-nesting season continued as in the past two years, with high nesting effort, although the increase was much greater than in the past. A total of 565 hatchlings were marked in EVER during the 2007 nesting season, higher than the previous record of 377 marked in 2005. The primary reason for these recent record breaking years is the explosive trend of nesting activity documented on the levee north of the East Cape Canal plug and along the Homestead Canal. Thirty-five nests were located along East Cape Canal and 10 along Homestead Canal, the most recorded for this area.

Following the loss of nest sites to reconstruction of the East Cape Plug in the early 1980's, crocodiles began nesting along the banks of East Cape Canal, north of the plug. Several hundred meters of berm with marl soil and adequate elevation for nests comprise this area. There has been an increase in the number and size of crocodiles observed in the East Cape Canal and surrounding creek areas, as well as an increase in nesting activity observed in East Cape Canal past the plug. The increase in crocodile and nesting activity has been observed both during surveys for crocodiles and patrols by rangers. There has also been an increase in nesting at beach locations. This year nine nests were found along Clubhouse beach and 15 were located along Middle Cape.

Increased nesting effort and success mean little to crocodile populations unless hatchlings survive to reproduce successfully. Mortality of hatchling crocodiles has been associated with the distance that hatchlings have to disperse to find nursery habitat. Nursery habitat can be defined as areas that are protected from wind and wave action, have a low to intermediate salinity regime, abundant food, and refugia from predators. Historically in EVER, most hatchlings come from shoreline or island nests often located kilometers from nursery habitat. The increase in nesting effort and success north of the East Cape Canal plug may contribute to greater hatchling survivorship due to the close proximity of nursery habitat (Homestead Canal and the extensive associated creeks and lakes). While encouraging, determination of adult recruitment from these nests; through continued mark and recapture, is essential to evaluate the significance of this area to continued recovery of the species in Florida.

West Lake and the associated network of creeks and lakes flowing out to Garfield Bight provide important habitat for hatchling and juvenile crocodiles. While no nests have been located in the area of Alligator Creek, there exists enough elevation in this area to support nesting and there have been increased captures of yearling and juvenile animals. Buttonwood Canal has been an important area for nesting and nursery habitat for many years. Buttonwood Canal has daily use by motorboats, canoes, and kayaks during the winter season. The increased use of these areas by crocodiles for nesting shows that as long as humans do not directly harass or threaten crocodiles, crocodiles and humans can coexist.

In northeastern Florida Bay, EVER, lower aquatic productivity has been associated with elevated salinities caused by the diversion of freshwater for drainage and flood control. Although faster growth decreases exposure to the threat of predation by non-crocodilian predators, it also shortens the time it takes a crocodile to become a sub-adult, and hence, a threat to adult crocodiles. When a population of crocodiles has high nest success and adequate hatchling survival, mortality and dispersal of older juveniles and sub-adults become the most likely factors to limit population numbers.

In recognition of this damage, several poorly documented attempts were made to plug the canals and ditches affecting Cape Sable culminating in the 1980's when the NPS and the Army Corps of Engineers plugged Buttonwood, East Cape, and Homestead canals, using what was thought to be a more permanent design. Corresponding with these simple acts of ecosystem restoration, the American crocodile responded exactly as predicted. Because of a lack of any control over this natural experiment a direct cause and effect relationship is not assumed, but these data strongly confirm existing hypotheses for crocodile responses to ecosystem restoration. Although, the plug in Buttonwood Canal has remained intact, the plug in East Cape Canal has been breached to the point of compromising the complex interaction between water levels and salinities that benefits crocodiles (and Spoonbills as well). The breach causes fresh water to drain out quicker and salt water to intrude faster resulting in higher salinities. Higher salinities make habitat less suitable for crocodiles and should diminish their growth and survival. Crocodile biologists urgently recommend a timely response to the current situation to avoid further degradation of an area of crocodile habitat that has been critical to recovery of this endangered species.

**Manatees.** In 2006, several activities focused on West Indian manatees (*Trichechus manatus latirostris*) in Everglades National Park. In February, the park participated in the

statewide manatee synoptic survey. Aerial surveys over park waters counted 202 manatee adults, 16 manatee calves, and 17 dolphins. This year, several days of cold temperatures and clear, sunny weather with light winds provided good conditions for conducting the survey. The Florida Fish and Wildlife Conservation Commission reported a preliminary total count of 3,116 manatees statewide.

In 2007 park staff continued support of a USGS/Florida Integrated Science Center project of major importance to the recovery of the manatee population in Southwestern Florida. The USGS project focuses on habitat use and movement patterns to understand the role of manatees in the ecology of the Everglades, and to assist managers in developing sound management practices in the region. While previous work focused on the Ten Thousand Islands (TTI) area, this effort focuses on tagging manatees in the southern portion of EVER, with manatee tagging and tracking activities focused on Whitewater Bay and the associated rivers of the southern Everglades.

Telemetry data, field observations and environmental data collected during this study are critical to understanding manatee activity patterns in the southern EVER, such as the extent of migrations and scale of local movement patterns. Research and observations of manatees in the TTI and EVER region has shown that manatees make frequent movements up tidal creeks to obtain freshwater for drinking and to find thermal refuges during cold weather. Alteration of the freshwater and estuarine ecosystems associated with restoration of the Everglades is likely to affect this manatee population. In addition, because manatees feed primarily on submerged aquatic vegetation (SAV) in estuarine and near-offshore areas, they are excellent barometers of the health of these communities. By providing baseline data on these communities, this research will be important to future monitoring of the Everglades ecosystem. Telemetry data from tagged manatees provide a valuable means of documenting the response of manatees to fluctuations in freshwater inflow and changes in distribution, abundance, and type of SAV.

These data will be utilized by several agencies and research efforts including 1) the USGS development of a spatially-explicit, individual-based model that will predict manatee response to different restoration scenarios, 2) comprehensive assessment of EVER manatee use for the park's General Management Plan, and 3) manatee over-wintering strategies and dynamics of passive thermal refuges. This research will augment previous telemetry studies conducted by the USGS in the TTI and enable a combined field effort over a 7-year period, which will constitute the first comprehensive manatee movement and related ecological resource assessment for the entire western Everglades region.

Data for this project are collected via Argos satellite telemetry, field observations of tagged individuals, and tracking of individuals using specially designed Global Positioning System (GPS) tags. The GPS tag provides accurate locations (approx. 10 m) which are collected every 30 minutes and stored to memory. To remotely monitor tagged manatees, satellite-based transmitters incorporated in the tags relay GPS locations and environmental data via the Argos system. These Argos-linked GPS tags provide region-wide, long-term coverage suitable for revealing general patterns of habitat use, with the GPS data shows fine details of travel pathways and time spent in specific areas. Periodic field observations of tagged manatees are made by radio tracking from boats and by EVER aerial tracking teams.

Three manatees initially tagged in EVER during 2006 were tracked into 2007. One adult manatee rescued due to red tide exposure and rehabilitated for a short time was tagged

and released in the TTI/northern EVER. To instrument additional manatees, three capture operations were conducted in southern EVER during 2007, each involving experienced personnel from several state and federal agencies, including Everglades National Park.

During 27-30 March 2007, four manatees (4 males) were captured in the northern region of Whitewater Bay and fitted with satellite-monitored GPS tags. In Whitewater Bay, the use of inland creeks by tagged manatees and small numbers of manatees seen in the open bays may have been indicative of the exceedingly dry spring of 2007.

Seven manatees (5 males, 2 females) were captured in Coot and southern Whitewater bays during 14-17 August 2007, which increased the number of actively tracked manatees to twelve. Although most remained in Whitewater Bay, one individual moved north to the Chatham River. One male traveled repeatedly between foraging areas in western Florida Bay and the Shark River.

Manatee captures during 16-19 October 2007 resulted in seven manatees tagged (4 males, 3 females), which brought the number actively tracked to 16. One new tagged individual moved from its tagging location in Whitewater Bay to Everglades City and Indian Key Pass. Despite several tag detachments typical of this attachment method, we tracked nine manatees into winter within EVER.

Data from manatees newly tagged in 2007 documented local movements within Whitewater Bay and Coot Bay, as well as forays outside this region. There was a significant shift in use to the north/northeastern part of Whitewater Bay in the dry season (late fall/winter). Tracking data for all tagged manatees showed an increase in use of Coot Bay and southeastern Whitewater Bay during the early wet season (early summer). Movement, water temperature, and salinity data recorded by sensors in the tag assembly will be used to parameterize the manatee/hydrology model. This project is on-going, with plans for continuing to monitor tagged manatees in EVER during 2008 through tag replacements.

To extend the current USGS study into eastern EVER, two additional manatees were tagged and tracked in the upper Florida Keys and Biscayne Bay in 2007. GPS tracks on these individuals identified freshwater access sites and use within eastern EVER and Biscayne Bay NP.

***Additional USGS findings related to Manatee Populations in the Park for 2007 include:***

1. Development of a heat transport formulation for the TIME hydrology model, based on field collected energy budget data, produced a realistic calibration. The formulation of the heat budget terms has been greatly facilitated by information available from field sites in the area. The newly incorporated bulk formulas for latent and sensible heat transfer have used coefficients evaluated from field-measured heat flux data with success. Experimentation with the numerical model has allowed improvement in the way measured wind speed is used to represent convection in these formulations. The incorporation of soil heat storage underlying the wetlands was found to be an essential component in the proper representation of heat transport.
2. Initial comparison of the heat transport model to manatee winter distribution data indicated a reasonable correlation. Simulations indicate that during the coldest periods,

only small isolated areas along the Everglades National Park coast retain enough heat to be good manatee refugia. This corresponds well to the manatee behavior observed in the same time periods from manatee telemetry data.

3. Telemetry data from previous and recently tagged manatees provided insights on manatee movement and site-specific habitat use in the southern Everglades. These included identification of previously unknown winter use sites and seasonal migration patterns, as well as major variability among individuals in site fidelity, home range size, and movement among habitat types (offshore, inshore bays, and rivers). These movement patterns have been successfully analyzed with multi-state, capture-recapture statistics to quantify transition probabilities. The transition matrices have been implemented within the manatee individual based models.

Beginning in 2005 and continuing into 2007, Everglades National Park worked with and funded the USGS to compile and evaluate existing datasets on manatees for Everglades National Park for use in the park's General Management Planning (GMP) effort. The manatee databases analyzed include: aerial surveys, radio telemetry data, and carcass recovery data. The analyses and summaries of datasets describe how manatees make use of the waters of EVER. Management-related issues are discussed including the relative importance of different areas to manatees within the park. Qualitative evaluations were made of how these areas might be affected by ecosystem management, park operations and management, and park visitor use. Gaps in available information were identified and recommendations made for future research to better address these gaps. The final draft report was received for park comment in November 2005. Review and revision of the report continued through 2006 and the final product was delivered in 2007. As a subset of this park-wide effort, the USGS provided detailed assessments of manatee use in the vicinity of Chokoloskee Island, Collier County, to assist the EVER staff in addressing the Area of Inadequate Protection (AIP) at this location. Analysis of manatee data, primarily from GPS movement and density plots, provided insights on manatee activities associated with the AIP and facilitated management proposals to resolve the AIP designation.

Everglades National Park cooperated with the Florida Fish and Wildlife Conservation Commission and others, to investigate a manatee mortality event along the park's west coast. Since 9 November 2006, 27 manatee carcasses suspected to have been killed by exposure to brevetoxin (red tide) were verified in EVER, between the Broad River and the Monroe-Collier County line. National Park Service rangers continue to look for carcasses during regular patrols, as do wildlife technicians during monitoring overflights. Park rangers have been instrumental in the verification and recovery of carcasses during this unprecedented incident. The incident remains open and future updates will be provided if anything changes.

### ***Freshwater Fisheries Monitoring***

Everglades National Park has a history of project specific freshwater fisheries monitoring efforts dating back to the 1960's. Much of what is known about the freshwater fishes of the southern Everglades has been collected from the *Eleocharis* spp.-dominated wet prairies of Shark River and Taylor sloughs. Since 1999, sampling efforts have been expanded into the shorter-hydroperiod wetlands of the Rocky Glades to examine the patterns in fish assemblage dynamics and to relate characteristics of the fish assemblage to patterns of hydrology. Understanding the influence of habitat and hydrology on fish

assemblages will help provide the knowledge needed to guide restoration programs in Everglades National Park.

In addition, exotic species have become an increasing component of the freshwater fish assemblage of Everglades National Park. Exotic fish species present a significant challenge to natural resource management in Everglades National Park. Seven new species of exotic fish have been observed or collected within park waters since 2000. All of these species were established within south Florida canals outside of park boundaries prior to observations in EVER. The increased rate of introductions corresponds with recent changes in water management beginning in 2000. Although not all 7 species are considered established in EVER, a few of the new species were more common in 2007 than in previous years. The African jewelfish (*Hemichromis letourneauxi*) has continued to expand its range and was collected in slightly more than half the freshwater area of EVER and some headwater creek areas. Spotfin spiny eel (*Macrogathus siamensis*) continues to be observed more frequently within the Taylor Slough area of EVER. 2007 marked the first collection of Asian swamp eel in EVER. This species has been established in the C-111 canal outside of EVER since the late 1990's and was collected by cooperators working in the C-111 panhandle area of EVER.

In addition to exotic fishes, the exotic apple snail, *Pomacea insularum* (formerly thought to be the channeled apple snail, *P. canaliculata*), was first collected in 2005 in the Old Tamiami Canal at Shark Valley and has been monitored since. In 2006, there was an increase in both the number of egg masses collected and the spatial distribution of this population. In 2007, the numbers of eggs removed decreased from the 2006 levels. Overall, the recent increased rate of invasion by exotic species emphasizes the need to develop a robust monitoring program that provides for both early detection of exotic species and an ability to track their establishment to better inform management decisions.

## **Vegetation Management**

**Monitoring plant species of management concern.** Vegetation management staff, in collaboration with the Institute for Regional Conservation, are in the process of collecting baseline geographic and biological information on the 59 plant species of management concern (SOMC) that occur in Everglades National Park. These species include one federally listed threatened species, six species that are candidates for federal listing and a variety of other regionally rare species. Monitoring of pineland plant SOMC continues to evaluate the impact of future hydrological restoration actions on those populations. Additional effort is now being directed to the coastal areas of the park. Twenty-five of the 59 plant SOMC in EVER occur in coastal habitats and are extremely susceptible to impacts from sea-level rise. Most coastal plant communities are at elevations of less than 3 ft. and are likely to be inundated by 2100. Unfortunately, the distribution, population size and status of coastal plant SOMC populations are poorly documented. This lack of information greatly hinders understanding of the likely effects of climate change on these SOMC and the ability to make meaningful management decisions. Surveys conducted in 2007 and 2008 have resulted in the discovery of two previously unrecorded species of park flora. In addition, four plant SOMC thought to be extirpated from EVER were relocated and one species new to the U.S. flora was discovered. Surveys have also led to the documentation of 72 occurrences of plant SOMC, providing information needed to develop and prioritize management actions, given limited resources.

**Long term plant community monitoring.** Long term monitoring of plant communities in EVER was carried out in 2007 and 2008. Vegetation transects in Taylor Slough were remonitored. These transects were originally established in 1979 and have been monitored periodically since then. Data indicate that between 2003 and 2007, wetland plant communities in Taylor Slough moved toward species compositions indicative of a shorter hydroperiod. This trend likely reflects recent drought conditions in south Florida that have persisted since 2006 and demonstrates the rapid response of wetland plant communities to changes in water availability. Interestingly, in the longest hydroperiod wetlands adjacent to the water control structure S332 in northern Taylor Slough, a shift from sawgrass (*Cladium jamaicense*) to cattail (*Typha domingensis*) occurred since 2003. Apparently, cattail has been moving south from the structure outlet and now forms a nearly monocultural stand for approximately 500m. The S-332 has not functioned since 1999, but this change may reflect a long term impact from previous operations. This condition is currently being investigated.

Monitoring plots are also being established in hammock communities throughout EVER to assess long term trends in hammock vegetation dynamics. In 2007, a total of 15 plots were established in five rockland hammocks throughout the pinelands in Long Pine Key. In 2008, a total of 15 plots will be established in five of the mahogany (*Swietenia mahogani*) dominated hammocks adjacent to Mahogany Hammock. Ultimately, plots will also be established in coastal hammocks and shell mounds over the coming years. These plots will be remonitored at 5 year intervals or immediately following hurricanes, fires or other events with significant influence on the hammock vegetation being monitored.

### **Mapping of propeller scars in Florida Bay**

Propeller scarred seagrass beds and their related impacts have been identified as natural resource management challenges in Florida Bay, Everglades National Park. These challenges, identified recently by park managers and the public as part of the General Management Plan (GMP) process, include the perceived increase in prop scarring observed in the park in recent years, the potential adverse impacts this scarring may have on the health of park natural resource conditions, and the destruction of these legally-designated submerged marine wilderness resources. To quantify prop scarring extent in Florida Bay, we analyzed 1: 24,000 scale aerial photography and detected 11,751 individual scars ranging in length from 2.1m to 1,680m and totaling 524,978 m. When compared with finer scale photography, substantially more scars were detectable. As a result, scars mapped in this study are considered to be a minimum estimate of scarring intensity and distribution in Florida Bay. Grid-based analysis indicated that scarring densities range from 0.0 to 0.25 m/m<sup>2</sup>. Analysis of 1999, 2004, and 2006 photography suggests that scarring at three locations in Florida Bay has not fully recovered and has increased in all of the mapped sites since 1999. Analysis of seagrass cover from a propeller dredged channel also showed increased scarring from 1995 to 1999 to 2004. As part of the GMP process and related natural resource management efforts, there should be focus on the most densely scarred areas in Florida Bay; therefore, the top 10% of scarred areas was used for logistic regression analysis with proximity to physical and visitor use factors. Regression results suggest that decreasing proximity to shorelines, proximity to marked and unmarked channels, amount of boating activity, and decreasing water depths were significant predictors of scarring density. Proximity to marine facilities at Flamingo (the park's major visitor use destination) and the Florida Keys was weakly and positively associated with increased scarring. Proximity to all channels versus marked navigational channels had a similar relationship to scarring density. Physical and visitor

use factors, as associated with propeller scarring, are discussed in the context of management strategies that may be considered to reduce seagrass scarring in heavily scarred areas, allow scars to recover, and prevent additional scarring in unscarred areas.

### **Floristic Inventories and plant list**

Vegetation management staff continued to conduct floristic inventories throughout EVER in an effort to update the existing plant list. Areas of focus include disturbed areas, shell mounds and other coastal plant communities that have been poorly surveyed. Since 2007, 21 previously unlisted species have been added to the 2004 list. The total number of native and naturalized plant species recorded from EVER now stands at 992.

### **Mapping of imperiled butterfly host plants**

Pineland croton (*Croton linearis*) is the sole food source for two butterflies, the Florida leafwing (*Anaea troglodyta floridalis*) and Bartram's hairstreak (*Strymon acis bartrami*). These butterfly species are endemic to the pine rocklands in southern Florida and are candidates for federal listing. Due to recent range contractions in the Florida Keys, both species are now almost entirely restricted to the Long Pine Key area of EVER.

Quantitative information about the distribution of the host plant in Long Pine Key was generally lacking. In an effort to fill this information gap, surveys were carried out by EVER vegetation management staff and park volunteers throughout Long Pine Key. Geographic coordinates were collected at 481 locations where pineland croton plants were observed. Plants were also examined for leafwing and hairstreak larvae and sight records of adult butterflies of both species were recorded. This information adds to our understanding of the potential distribution of both butterfly species and contributes to the known range of both species in EVER. Data are now available as a baseline for determining the impacts of fire on pineland croton and will be used to inform decisions related to prescribed fire in the pine rocklands of EVER.

### **Other vegetation management activities**

Vegetation management staff also provided technical and logistical support to projects carried out by University of Florida, Florida International University, and the U.S. Geological Survey. These studies include an analysis of vegetation in plant communities occupied by the federally endangered Cape Sable Seaside sparrow (Dr. Mike Ross, FIU), a characterization of the marl prairie/slough gradient in EVER (Dr. Mike Ross, FIU), a reconstruction of historical plant communities in Cape Sable Seaside Sparrow habitat using pollen history (Dr. Deb Willard, USGS), and an assessment of the use of fire as a management tool for exotic species control (Dr. Todd Osborne, UF). Vegetation management staff regularly provides input and recommendations for Endangered Species Act consultation and National Environmental Policy Act compliance.

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## **Dry Tortugas National Park**

***Exotic Vegetation Management*** Bush and Long Keys. Hand pulling and chemical treatment of crowfoot grass (*Dactyloctenium aegyptium*) was conducted on Bush and Long Keys in October 2007. Hundreds of crowfoot grass plants were treated and follow-up treatment and monitoring will be needed. This project was conducted by National Park Service Staff.

Loggerhead Key. Loggerhead Key was surveyed for crowfoot grass (*Dactyloctenium aegyptium*) in October 2007. One plant was found and was hand pulled. Loggerhead will need to be monitored each year for crowfoot grass (*Dactyloctenium aegyptium*).

## **Everglades National Park**

### ***Exotic Vegetation Management***

**Background:** Everglades National Park encompasses 1.5 million acres of which 1.3 million is designated as the only subtropical wilderness in the continental United States. Non-native exotic plants are a significant threat to the native plant communities of Everglades National Park. Approximately 1,000 plant species have been recorded in the park. Of these, over 200 species are exotic. Due to limited funding only a small number of these exotic plant species are targeted for treatment. Systematic treatments address 10 to 15 species. The most commonly targeted exotics are Brazilian pepper (*Schinus terebinthifolius*), melaleuca (*Melaleuca quinquenervia*), Australian pine (*Casuarina equisetifolia*), seaside mahoe (*Thespesia polpunea*), latherleaf (*Colubrina asiatica*) and lygodium (*Lygodium microphyllum*). Observations from biennial reconnaissance flights estimate that Brazilian pepper affects over 125,000 gross infested acres, melaleuca and Australian pine each affect 7,000 gross infested acres, latherleaf affects over 5,000 gross infested acres and lygodium affects more than 10,000 acres. Overall, these species are estimated to affect approximately 200,000-250,000 acres of the park.

**FY 2007 Current Status:** Annual expenditures on treatment and removal of exotics in the park over the past 5 years have ranged from \$240,000 to \$1.6 million. The majority of the funding is donated by partners. Currently there is a small operating budget that varies from year to year that supports exotic vegetation treatment (\$10,000 – \$45,000). Consequently, treatment efforts rely on the frequency and amount of donated funds. Donors often prioritize exotic species that have the ability to invade quickly and displace native vegetation. In some cases, exotic plants threatening areas of special concern, such as the habitat of the endangered Cape Sable Seaside Sparrow, have been specifically funded.

Over the last 18 years, funds for the park's exotic vegetation management program have come from state, county and other federal agencies, including the South Florida Water Management District, Florida Department of Environmental Protection, Miami-Dade County Department of Environmental Resource Management, and the Army Corps of Engineers. Everglades National Park has provided funding when possible. Since 1998, the National Park Service's Florida and Caribbean Exotic Plant Management Team has also provided funds. Thanks to these partners, Everglades National Park's exotic vegetation management program has been able to treat initially over 100,000 acres in the East Everglades Acquisition Area. However, funding for re-treatment efforts is not guaranteed and is crucially important in order to ensure restoration success. In order to not lose the progress made to this point, dedicated park funding for the exotic vegetation program is essential.

In FY2007 Everglades National Park's Exotic Vegetation Management Program obtained funds from the South Florida Water Management District (SFWMD), The Miami-Dade County's Wetland Mitigation Trust Fund, which is managed by the Special Area Management Planning Committee (SAMP), the Florida Department of Environmental

Protection (FDEP), the National Park Services Exotic Plant Management Team (EPMT), Everglades National Park South Florida National Resources Center (SFNRC) and the National Park Service Southeast Regional office (SER) for the treatment of invasive exotic plants. Provided in Table 1 is a summary of the agency donations and the districts where they were used.

Table 1. Summary of agencies providing funding for exotics removal in Everglades National Park in fiscal year 2007.			
Project Location	Agency	Gross Infested Acres Treated	Costs
East Everglades District (Initial Treatment)	SFWMD	1,775*	\$ 135,000
East Everglades District (Initial Treatment)	FDEP	1,532	\$275,000
East Everglades District (Initial Treatment)	EPMT	1775*	\$100,000
East Everglades District (Re-treatment)	SFNRC/EVER/SER	45,000**	\$340,000
East Everglades District (Re-treatment)	SAMP	45,000**	\$45,000
East Everglades District (Re-treatment)	EPMT	45,000**	\$60, 000
Gulf Coast District	FDEP	~ 13 Keys on the west coast	\$87,000
Flamingo-Lygodium Aerial	FDEP	264 (~950 sprayed)	\$153,000
Total			\$1,195,000
*SFWMD and EPMT combined acres in East Everglades, **SAMP/SFNRC and EPMT combined acres in East Everglades.			
<u>Federal Sources</u>			
National Park Service's Exotic Plant Management Team (EPMT)			
United States Army Corps of Engineers (ACOE)			
Department of Interior's Cooperative Conservation Initiative Fund (CCI)			
Department of Interior's Land and Water Conservation Fund (LWCF)			
South Florida Natural Resource Center (SFNRC)			
<u>Non-Federal Sources</u>			
Florida Department of Environmental Protection (FDEP)			
South Florida Water Management District (SFWMD)			
Miami-Dade Department of Environmental Resource Management (DERM/SAMP)			
Miami-Dade Department of Environmental Resource Management (DERM/ACOE)			

**East Everglades Acquisition Area (East Everglades).** Everglades National Park acquired the East Everglades Acquisition Area (EEAA) in 1989. Australian pine and melaleuca were already present at that time. Both species had colonized the short hydroperiod wetlands (rocky glades) comprised mostly of muhly grass (*Muhlenbergia capillaries*) and sawgrass (*Cladium jamaicensense*). Melaleuca had also established in the relatively longer hydroperiod tall sawgrass prairies of Shark River Slough. Brazilian pepper was abundant but scattered, primarily restricted to bayheads, tree islands and disturbed sites. Treatment efforts to control these exotics (particularly melaleuca) have been ongoing since the area was acquired. Consequently melaleuca was unable to successfully establish outside of the EEAA because a quarantine strategy was typically applied to the treatment of melaleuca. Treating target species systematically from west to east removes them from the areas of least concentration in the western portions of Everglades National Park towards the higher concentrations nearer the eastern park boundary. This approach quickly restores the relatively undisturbed western habitat and allows for a focused effort to suppress the denser concentration of exotics along the eastern park boundary. However, historically funding has not been commensurate to the magnitude of the problem in the EEAA. Since 2002, ENP has received funds sufficient to complete the systematic initial treatment of approximately 95% (102,000 acres) of the

roughly 107,652 acres in the EEAA. This section of the report reviews the work accomplished in the East Everglades in 2007.

**Initial treatment in the East Everglades.** In fiscal year 2007, funding from three different sources; South Florida Water Management District (SFWMD), the National Park Services-Exotic Plant Management (EPMT), and The Florida Department of Environmental Protection (FDEP) were combined to initially treat an estimated 3,307 acres (Figure 1) in the East Everglades Acquisition Area. The South Florida Water Management District (SFWMD) contributed (\$135,000) in funding for this project. The National Park Service Exotic Plant Management Team (EPMT) contributed (\$100,000) and The Florida Department of Environmental Protection (FDEP) contributed (\$275,000). Applied Aquatics Inc. was awarded the contract. The project started in January 2007 and was completed in June of 2007. Crew size was approximately 13 to 34 individuals. Airboats and helicopters were used to transport supplies and materials.

**Re-treatment in the East Everglades.** For fiscal year 2007 three funding sources from SAMP, EPMT, and SFNRC/EVER combined to re-treat a total of ~45,000 acres (Figure 1). The Miami-Dade County's Wetland Mitigation Trust Fund, which is managed by the Special Area Management Planning Committee (SAMP) provided (\$45,000) of the funding for this project, the National Park Service Exotic Plant Management team (EPMT) provided (\$60,000) towards the project and Everglades National Park-South Florida Natural Resources Center (SFNRC) and Everglades National Park contributed (\$340,000). Applied Aquatics Inc. was awarded the contract. The project began in June of 2007 and worked continued until January of 2008. Crew size ranged from 15 to 22 individuals. (See figure 1). A helicopter was needed for transportation. The contractor treated both melaleuca and Australian pine.

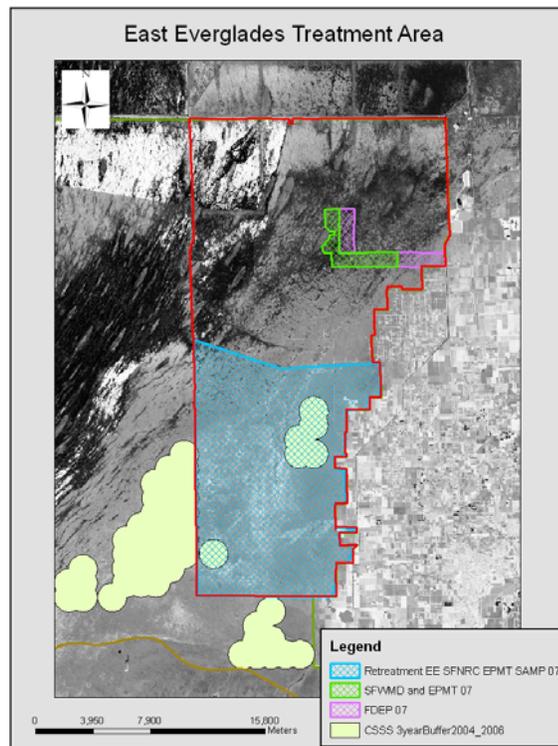


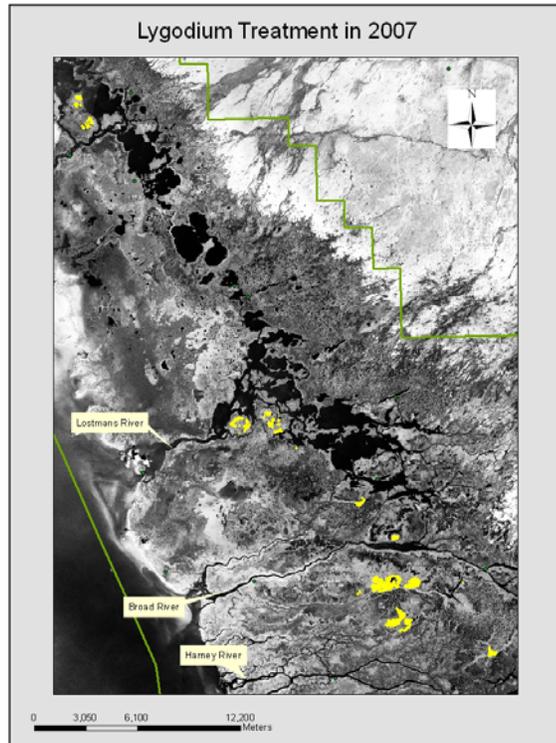
Figure 1. Area treated in East Everglades in FY2007.

**Other District Projects in Everglades National Park**

**The Old World Climbing Fern Project (*Lygodium microphyllum*).** The funding for treating lygodium was provided by the Florida Department of Environmental Protection (FDEP) (\$153,000). Helicopter Applicators was awarded the contract. The contractor staged out of Everglades City General Airport to treat the northwestern sites and then relocated to Sisal Pond to treat the lygodium sites located in the central and southern portions of the park. Lygodium grows pred **Figure 2. Lygodium treated in FY2007** park in both the Flamingo and Gulf Coast Districts ranging from Cape Sable to Everglades City. It is most commonly found scattered in the Sawgrass (*Cladium jamaicense*), *Spartina*

(*Spartina bakeri*), and *Juncus* (*Juncus roemerianus*) prairies along the west coast. The contractor sprayed approximately 950 acres equaling approximately 268 acres of gross infested area of lygodium.

Lygodium in the East Everglades Acquisition Area is generally not abundant (<1% cover) but has become widely distributed. Mitchell's Hammock was the exception. In Mitchell's, lygodium was found growing in the dead melaleuca stands at 3-5% cover. Up to this point, the treatment of lygodium in the EEAA was accomplished with funds that were primarily intended to target melaleuca and Australian pine. However, funds specifically requested to locate and treat lygodium in the EEAA may now be necessary in order to keep it from reaching harmful density levels.



**Ten Thousand Islands.** The funding for this project was provided by the Florida Department of Environmental Protection (FDEP) (\$87,000). Applied Aquatic Management, Inc. was awarded the contract. The first treatment started on May 8, 2007 and ended on June 14, 2007. There were 23 working days. The contractor treat the Gulf Coast area of the Ten thousand area of Everglades National Park including work at the Ranger's Station, Sand Fly Island, Indian Key, Picnic Key, Tiger Key, Kingston Key, Jack Daniels Key, Comer Key, Rabbit Key, Turtle Key, Jewell Key, Pavilion Key, Mormon Key and New Turkey Key.

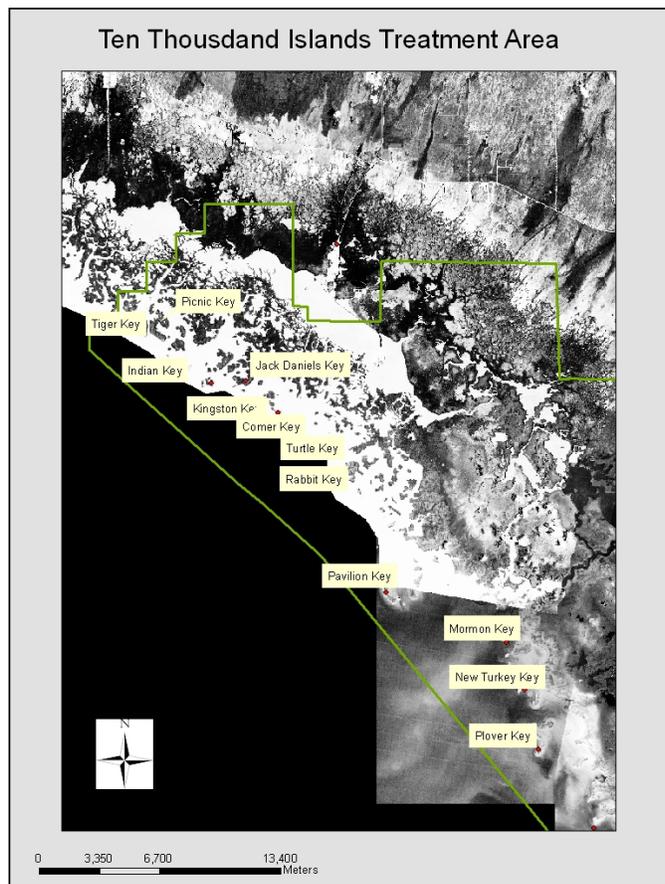


Figure 3. Area treated on west coast of Everglades National Park in FY2007.

## ***2007 6.1 Resource protection, law enforcement, visitor safety and security, fire and aviation management, fee collection***

### **EVER - Resource and Visitor Protection**

The Division of Resource & Visitor Protection (R&VP) is responsible for the protection of the park's visitors and resources. These responsibilities are accomplished through education and information, law enforcement, emergency medical response, emergency search and rescue operations, prescribed/wildland fire management and aviation management. The Division also has primary operational responsibilities for fee collection, campground management, and special park uses.

The R&VP staff supports other divisional and parkwide projects including resource management's control and removal of invasive & exotic species, backcountry waterway and trail maintenance, and critical assignments on the park's hurricane incident team.

In FY 07, park visitation continued to rebound from the impacts of the 2005 hurricanes: Katrina and Wilma. All areas of the park were opened. Both Flamingo and Long Pine Key campgrounds were fully operational, although Flamingo was still operating on limited commercial services.

The Division continued operating with an authorized level of 33 commissioned park rangers, 33 fire positions, 6 dispatchers, 3 administrative positions, 1 fee program manager and 9 visitor use assistants. Seasonal law enforcement and VUA's supplemented the permanent staff from November through April. Throughout the fiscal year, the Division experienced a higher-than-normal vacancy rate in each of these areas due to transfers, retirements or funding shortages.

Despite the challenges, the Division continued to support other law enforcement and fire management jurisdictions by participating in numerous out-of-park fire assignments and several law enforcement details. The park's Communications Center continued to provide 24 hour/7day-a-week dispatch services for, DRTO, BICY and BISC.

### ***Summary of Accomplishments/Significant Activity for 2007***

***Law Enforcement.*** On January 06, 2007, the Chekika Recreation Area located in the East Everglades District of the park was reopened after being closed for 8 years. The R&VP Division played a significant role in the re-opening by securing volunteer groups to help clean up the area, securing 2 volunteer host couples to help with maintenance and interpretation, providing oversight and management of the area. The area closed for the season in May 2007.

On February 24, 2007, (CI-07-0460) 46 Cuban migrants landed in the Flamingo District of EVER on Middle Cape. It was an alleged human smuggling event. No suspects or vessels were located. All migrants were transported by boats to the Flamingo Ranger Station where they were turned over to U.S. Border Patrol.

In July 2007, Everglades National Park entered into an agreement with the U.S. Fish & Wildlife Service which cross-designated Everglades law enforcement rangers to enforce

**Interagency Cross Designation Agreement for the Conservation and Protection of Manatees.** This agreement closed a manatee protection gap for USFWS by providing enforcement in an area located in close proximity to EVER Gulf Coast Ranger Station, but well beyond the areas patrolled by USFWS refuge officers. From the time this agreement went into effect, Gulf Coast Rangers were responsible for issuing 56 violation notices and over 200 written warnings for manatee violations in the Chokoloskee Island area. According to the USFWS, those numbers far exceeded the number of cases made by the State Florida Fish and Wildlife Conservation Commission for manatee violations statewide.

Due to extreme staffing shortages and significant Cuban migrant activity at DRTO, EVER rangers provided additional law enforcement support throughout the year. The support was elevated from May 2007 through several months into FY 08. EVER rangers rotated through 2 week details (some longer). On August 01, 2007, a group of 9 Cuban migrants landed on Loggerhead Key. One male migrant was uncooperative and became combative. Due to the aggressive nature of the migrant, the ranger used his TASER on the individual. He was arrested and turned over to Border Patrol for prosecution. This Cuban migrant later testified in court against the alleged smugglers.

On August 27, 2007, Flamingo rangers discovered a bale of cocaine on East Cape. The bale contained 257 individual "bricks" of cocaine. Immigration and Customs Enforcement (ICE) helicopters flew over the area and found empty plastic packaging similar to what covered the found bale. No suspects were located and the cocaine was turned over to ICE.

The Law Enforcement staff hosted 2 law enforcement in-service training courses assuring all LE rangers met annual refresher qualifications. Semi-annual firearms qualifications were also met by the entire staff. Several park rangers received advanced training at the FLETC. Training included: Firearms Instructor, TASER Instructor, and Motorboat Operator Instructor Training.

The Division also coordinated and hosted one Emergency Medical Technician refresher, one Motorboat Operators Certification Course (MOCC) and one Motorboat Operator Instructor Certification Course (MOICC).

**Other Law Enforcement Statistics include**

- 21 search and rescue incidents in the park, 0 fatalities
- 18 emergency medical incidents, including 9 trauma, 5 medical, 1 cardiac life support and 3 first aid.
- A total of 12 Part I Offenses (11 citations/arrests for larceny/theft)
- A total of 308 Part II Offenses included: 7 DUI's, 54 liquor law violations, 79 disorderly conduct violations, 132 weapons violations, and 24 drug violations
- 3499 boating and 900 traffic incidents
- No documented violations of the Archeological Resources Protection Act (ARPA), Antiquities Act or other statutes protecting archeological resources.

**Fee Collection.** A Fee Program Manager (FPM) was hired to oversee the fee collection programs at both EVER and DRTO in November 2006. The first order of business for the FPM was to plan and implement the entrance fee increase as mandated by the NPS. The park hosted 2 public meetings in April 2007. Participation was minimal and in addition the

park received approximately 25 comments via email and mail. Most of the feedback was in support of the increase, but not at the NPS proposed rate of \$40 (current fee is \$25). EVER & DRTO prepared a formal request to WASO, recommending an increase to \$15 at the main entrance station and remaining \$10 at Shark Valley. The park recommended a \$2 increase to the \$5 per person rate at DRTO.

The increases were never approved due to a suspension of all fee increases by the Washington Office. This was prompted by a nationwide opposition to the fee increases.

The FPM also was tasked with decreasing the park's cost of collection(COC). The high COC was due mainly because of the main entrance station being staffed 24/7. The FPM reduced the COC by reducing hours, not filling vacant permanent positions and utilizing seasonal and temporary employees.

**Special Park Uses.** FY 07 saw the merger of all permits (with the exception of research permits) into a Special Park Uses program administered by the R&VP Division. The Chief Ranger's Office employed a GS-6 permit examiner who reviewed and prepared commercial use authorizations, film and special use permits for both EVER and DRTO. This program also implemented a fee schedule to recoup the costs of administering and managing this program.

In EVER for the fiscal year, 333 CUA's were issued for guide fishing, 23 CUA's for other tours and programs, 29 film permits and 31 special use permits.

For DRTO, 30 CUA's were issued for a variety of activities, including: guide fishing, snorkeling and SCUBA diving, birdwatching, transportation and seaplane operations. Three film permits and 9 special use permits were issued.

## Fire Activity Summary

Calendar year 2007 was a highly active fire year in Everglades National Park. Acreage inside the park totaled 26998 burned in 42 separate incidents. There were an additional 29 suppression fires that the Park responded to within the Mutual Response Area immediately adjacent to the Park boundary, with a total of 223 acres burned. Fire management personnel were able to significantly improve the prescribed fire and wildland fire use acreage, while limiting the amount of acres from wildfires in comparison to 2006.

Suppression Fires	Prescribed Fires	Wildland Fires
Total: 37	15 burns inside ENP	19 Fires
8 inside ENP – 1,548 acres	37,507 acres	3,234 acres
29 MRA – 223 acres		

**Frog Pond Rx/ Fire.** Frog Pond Fire began on March 8, 2007. Initially, this was a Water Management prescribed burn conducted by Department of Forestry. DOF then requested a Park engine for assistance on the Rx burn. The area of the burn was directly adjacent to the south east corner of the Park. At approximately 1400, the Rx burn spotted across the canal and into Everglades National Park, threatening the Cape Sable Seaside Sparrow. At this time it became a wildfire. The ground crews immediately began to work the fire, but due to limited access and the extreme conditions of the fire (15-20 foot flame lengths

and approximate size of 100 acres within the hour), progress was slow. Aerial resources were ordered to assist the ground crews with suppression while E-606 was staged to hold Main Park Road if the fire were to reach there. The first Single Engine Air Tanker (SEAT) arrived on scene and was conducting water drops by 1615. The second SEAT was on scene at 1730 and assisted with several drops. The following morning crews were flown in to the remaining hot areas, which they worked until the fire was called contained late that day. The fire was declared controlled on the afternoon of March 10<sup>th</sup> at 454 acres. Unfortunately this fire did burn through part of the CSSS population and further research needs to be done to determine the short and long term effects of this.

***Miccosukee Fire.*** The Miccosukee Fire was reported on August 5, at about 1610 by a local resident. The daily Incident Commander Type 3 as well as an engine were immediately dispatched to the area while a Shark Valley Ranger was requested to do a general size up of the fire. Upon arriving, the Ranger was able to give the approximate size of 1 acre but with extreme potential to threaten residences along Miccosukee strip. 4HH was dispatched, and engines from DOF, Miami-Dade and Big Cypress were requested. Resources began arriving on scene to find tribal police engaged in structure protection with garden hoses. Ott took control of the fire as ICT3 and began to set up parameters for structure protection, assigning resources based on priorities. Additional local personnel were ordered to form handcrews/squads. 4HH arrived on scene at 1745. A brief recon was conducted and it was concluded that the fire had grown to approximately 80 acres. 4HH began bucket work on the west flank and was soon joined by a Miami-Dade type 2 helicopter. Structure protection continued throughout the night as thunderstorms continuously forced the fire in various directions. With the release of resources late that night, fire personnel had save 42 structures and more than 60 outbuildings. Early the next morning crews were on scene to work the remaining hot spots on the Miccosukee Fire. With the help of bucket work from helicopter OHH over the next few days, the fire was declared controlled on August 7th at 207 acres.



***National Fire Plan Incident Assistance and Outreach.*** 2007 was a busy fire management year throughout the United States, and an extremely busy year for the southeast region. The majority of the fire staff in Everglades National Park is funded nationally, thus in response, our program supports the national fire management efforts any time possible. In 2007, Everglades fire personnel were able to respond to 36 national incidents. On approximately half of these incidents more than one individual was sent to assist.

The fire season began early in the southeast region, and burned for an exceptionally long period of time. Perhaps the most notable assistance we were able to provide outside the park was in response to the BICY Complex in our neighboring Big Cypress National Preserve. This incident consisted of several fires that burned together to create the complex, and throughout the month of May, 17 individuals were able to assist in a variety of functions. In fact, for the first few weeks of the incident, Everglades fire personnel made up approximately 1/3<sup>rd</sup> of the personnel assigned to the fires. Later in May and into June, a total of 13 staff members were dispatched to the Bugaboo Fire and Big Turnaround Complex, two fires that burned together to create one of the largest fires in modern day history at well over 500,000 acres. As the western fire season began to heat up, and on throughout the summer, Everglades staff responded to several of the ongoing large fires in the west such as the Rattlesnake Complex, the Ahorn, and the Sawmill Complex. Staff was also able to assist in assignments all over the country and to backfill against crews and engines away on fires.

Fire education and prevention outreach activities included several school presentations, including both classroom and school wide presentations. This resulted in better than 1000 attendees total. Other fire education sessions were conducted in the park with school

groups and various scout troops. Everglades National Park was able to provide personnel and displays throughout the course of the Miami-Dade county fair where hundreds of people were able to ask questions and view exhibits. Staff members also attended the Homestead Rodeo and other community events where local individuals had the chance to learn more about the Everglades and the role fire plays in the Park. The fire program was also able to provide prevention assistance for the annual fireworks display presented for the Miccosukee Tribe of Indians.

**Staffing.** The majority of Everglades Fire & Aviation positions were staffed throughout 2007. There were limited vacancies for a small portion of the year, represented in suppression, prescribed, and fire effects. When needed, additional resources were brought in, (primarily from the Great Smoky Mountains National Park), to meet additional staffing needs and assist in burn projects. Interns and volunteers were also utilized in the Fire Effects Monitoring staff, both for their own advancement and to assist with heavy work loads.

**Training.** Everglades National Park was able to offer 8 fire and aviation training courses attended by 186 students. Some of these courses were S130/190, S-215, Rx-300, and CPR/First Aid. Students included staff from Everglades, Biscayne, Big Cypress, interagency cooperators, and local individuals interested in getting a start in fire. Additionally the program was able to send instructors out of the area to teach a variety of courses including the ATV training course, S-271, and S-130 which were able to have personnel instruct in Spanish for Puerto Rican fire crews. We also sent Henry del Valle, one of our staff members to Guatemala, where he instructed an S-190 course that those Guatemalan crews had been unable to receive elsewhere. The prescribed fire position was filled in April.

In addition to all of the training provided by Everglades National Park and its fire staff, the program was able to participate in courses sponsored throughout the United States. All together, fire staff personnel attended more than 30 different courses offered outside the Park. They spanned a wide range of basic, intermediate, and advanced fire management skills and qualifications.

**Taskbooks:** 23 taskbooks were initiated in throughout the course of 2007. These ranged from beginning Firefighter Type 1 and Helicopter Crewmember, and on through Division Supervisor, Incident Commander Type 3, 4, and 5, and several more. A total of 20 taskbooks were completed by staff members throughout the year including line and overhead positions.

**Fire Effects Monitoring and Fire Ecology.** The Everglades National Park fire monitoring program continued to evolve in 2007 as the methods for reading the standard plots were refined to better meet the needs of South Florida ecosystems and park objectives. In the Pine Rocklands, monitoring of the host plants for rare butterflies continued and new insect diversity, shrub, and rare herbaceous plant monitoring studies were implemented in 2007. The crew archived several thousand photo-monitoring slides from previous years' reads. Our fire effects monitors continued to serve as advisors to the Pine Rockland Working Group, an international, multi-agency effort which has been effective at making recommendations and taking action to protect this imperiled ecosystem. In December, Fire Effects monitors organized the 7<sup>th</sup> annual 2007 Cape Sable Seaside Sparrow symposium (Fire Management Strategy of Occupied Cape Sable Seaside Sparrow Habitat).

The Fire Effects staff served on prescribed fires, wildland fires and out of park fire assignments. Collaboration between the Everglades Fire Effects team continued with the prescribed fire crew at Big Cypress. The Fire Effects staff along with one of the Prescribed Fire Technicians coordinated with the Exotics Coordinator and the Hole in the Donut Restoration Coordinator to develop prescribed fire objectives and combined monitoring efforts for the 2008 exotics areas burn plan.

Hillary Cooley, Maya Vaidya and Aerin Land (Lead Monitor, Fire Effects Monitors) represented Everglades National Park at the Archibold plant biologists meeting in April 2007. Aerin Land represented Everglades National Park at the Southern Forest Insect Work Conference in July 2007 and the Entomological Society of America conference in December 2007. Current data regarding fire effects on the candidate butterfly species for the federally endangered species and their host plants were presented at the meeting and conferences.

A new draft Fire Monitoring Plan including the adaptive management approach was written by Maya Vaidya (Assistant Lead Fire Effects Monitor) and Rick Anderson (Fire Ecologist). Aerin Land (Fire Effects Monitor) contributed to the writing of a NEPA compliance letter to the Fish and Wildlife Service regarding candidate butterfly species for the federally endangered species list living in Everglades National Park.

### Fire Effects Plot Workload 2007

Park	Monitoring Unit	Total plots installed to Date	Type of Plot (FMH, photo point, other)	Pre-burn	Immed Post	Postburn (1-20 yrs)	Total Plots
Canaveral National Seashore	Pinus elliottii (Slash Pine Flatwoods)	10	FMH Forest plot	0	0	10	10
	Pine Rockland	27	FMH Forest plot	0	7	10	17
Everglades National Park	Short-hydroperiod Prairie	28	FMH Brush plot	0	5	8	13
	Long-hydroperiod Prairie	11	FMH Brush plot	1	1	1	3
	Coastal Prairie (Coastal Marsh)	18	FMH Brush plot	1	1	12	14
	1970's photo point relocation	225 (relocated 26)	Photo point	N/A	N/A	N/A	0
	Butterfly host plant	2	Host-plant monitoring	N/A	N/A	N/A	24
	Shrub monitoring (pilot)	6	Tagged individual shrub monitoring plot	7	1	N/A	8
	Insect monitoring (pilot)	6	Insect monitoring	N/A	N/A	N/A	36
	Phenology (pilot)	8	Phenology monitoring	N/A	N/A	N/A	13
<b>Total</b>		<b>94</b>		<b>2</b>	<b>14</b>	<b>41</b>	<b>138</b>

In 2007, the Everglades Fire Effects team conducted reads of 57 FMH plots, 47 reads in Everglades National Park and 10 reads in Canaveral National Seashore. Other monitoring included 24 butterfly host plant plot reads, 36 insect plots visits, 13 phenology plot reads and 8 shrub (Non-FMH) plot reads.

**Aviation.** During the calendar year of 2007, Everglades National Park flew 350 helicopter hours and 315 fixed wing hours. There were 2 Safecoms filed. The first involved a bucket on a long line impacting a tree while conducting operations. As a result the pilot punched the load, damaging the bucket but nothing more. The second Safecom was the result of a bird striking the wing of an airplane. The pilot took evasive measures which enabled the bird to hit the edge of the wing rather than come through the windshield. There were no other incidents with potential, injuries, or damages that were reported during the year.

**Wildland Fire Use** The Everglades fire management was able to utilize 19 wildland fire use fires, the largest of which was 397 acres. The largest was the Cane Mill Fire Use, which started on 7/22/07 at 1830 and burned all the acres that evening. The most significant was the block J Fire Use which burned 337 acres in the planned pineland prescribed fire Block J.

**Prescribed Fire.** The Everglades fire management was able to utilize prescribed fire to burn a total of 37,507 acres. Wildland Urban Interface (WUI ) treatments totaled 13,719 and non WUI treatments totaled 23,788 acres. The largest and most significant was the NE Slough burn which contained several blocks that provided a fuel break along the north eastern boundary of the park.



### ***Issues***

***Fire Management Plan.*** We are currently without a current General Management Plan and a Fire Management Plan. The Fire Management Plan was edited to reflect program and policy changes that had occurred since the 2005 draft was completed. The EA has been contracted out and is waiting on finalization. Expected completion of the Fire Management plan is FY09.

***Frog Pond fire effects.*** There is a need for research to determine the short and long term effects of fire in the cape sable Seaside Sparrow habitat.

### **DRTO Resource and Visitor Protection**

At the start of FY 2006 the R&VP division at Dry Tortugas National Park consisted of three permanent GS-0025-09 Protection (Law Enforcement) Rangers and the Site Manager who also holds a Type I law enforcement commission. A fourth protection ranger with Type II law enforcement commission was hired and arrived in January, awaiting a training date for the Federal Law Enforcement Training Center (FLETC). One of the permanent protection rangers was away at FLETC and the Field Training and Evaluation Program (FTEP) for approximately 9 months. Also during FY 2006, one of the permanent protection rangers transferred to another park. The net staffing level for much of the fiscal year was one protection ranger on each 8-day shift, with the Site Manager or a detail ranger for backup when available.

Protection rangers at Dry Tortugas National Park are often the sole source of assistance and emergency services in this remote location in the Gulf of Mexico. Protection staff must provide a full range of all-risk services, broadly including law enforcement, emergency medical services, search and rescue, and fire management in both terrestrial

and marine environments. Protection staff ensures the safety of park visitors and protects the cultural and natural resources within the park.

FY 2006 began with the landfall of Hurricane Wilma on October 23. This completed a string of nine tropical storms or hurricanes affecting the park within a 14-month period. After Hurricane Wilma, the park was closed for several weeks in order to allow park staff to repair damages and prepare the park for the return to normal operations. During this period protection rangers worked to repair patrol boats and ready them to be returned to service, as well as prepare an enclosed casemate area near the headquarters office to serve as a dedicated office for the protection staff (this project later failed due to structure leakage). Protection rangers also assisted other park staff and incident personnel in a wide variety of projects, including retrieval of picnic tables, Cuban refugee boats and finger piers from the Fort Jefferson moat, removal of debris and downed vegetation, inspection and photographing of storm damage, re-installation of swim buoys, and various repairs. Rangers also managed a Cuban refugee incident that occurred during the weeks following Hurricane Wilma. Shifting sands from the storm season also created shallow waters in the government finger piers and fueling dock area, causing ongoing damage to patrol vessels and presenting a significant challenge to protection staff. Finger piers remained damaged and partially unusable for the entire fiscal year.

The influx of Cuban refugees illegally immigrating to the Dry Tortugas continued heavily in FY 2006, presenting a significant challenge to the R&VP division and the park as a whole. Approximately 500 refugees, including men, women, and children, made U.S. soil in the islands of the Dry Tortugas by homemade "chug" boat or smuggler boat. Protection rangers took custody of the refugees and provided for basic needs such as food, water, and dry clothing until the refugees could be transferred to U.S. Coast Guard (USCG) or U.S. Border Patrol (USBP). Rangers also actively participated in the collection and exchange of intelligence with USCG and USBP. As refugees typically arrive under cover of darkness, protection rangers provided many hours of overnight supervision in addition to regular duty hours, incurring overtime costs to the park and placing a strain on daily operations. Transportation of refugees was made by U.S. Coast Guard cutter when possible; however, frequent unavailability of USCG resources required that rangers escort the refugees to Key West aboard the NPS motor vessel Fort Jefferson or commercial ferry/seaplane service for transfer to USBP. Occasionally, these escort details temporarily disabled the law enforcement and EMS functions of the division. Protection rangers and maintenance staff made every effort to remove refugee boats from Loggerhead Key and other sensitive areas as soon as possible to decrease natural resource destruction within the park. Typical damage resulting from illegal immigration included: vessel grounding, vessel sinking, discharge of fuels into park waters, discharge of human waste into park waters, littering of beaches, human waste on beaches, medical waste on beaches, illegal campfires, and damage of government property. Recovered refugee vessels were relocated to Garden Key for anticipated disposal by salvage ship; however, many derelict craft from FY 2006 still remain, littering the beaches of both Loggerhead and Garden Keys. Protection staff made a constant effort to cordon off refugee vessels and protect the visiting public from the hazards these vessels present. Protection rangers managed one fatality incident involving a Cuban refugee, completing body recovery and transport.

### ***Other accomplishments and documented incidents for FY 2006 included***

- Removal and transfer to DEA of narcotics discovered on Loggerhead Key
- 18 medical services incidents
- 1 vessel fire
- 7 vessel accidents
- 1 fatality
- 2 search and rescue incidents
- 102 total documented incidents:
  - 6 Group A
  - 10 Group B
  - 47 Group C
  - 39 Group D
- Assistance with entrance fee remittance, M/V Fort Jefferson manifest, transient housing, and other administrative duties in absence of an administrative aide
- Frequent assistance with operation of the Everglades Association bookstore in absence of an association employee
- Assistance with interpretive activities such as VIP tours, educational signage, and site bulletins in absence of an interpretation ranger

## ***2007 7.1 Interpretation, education, outreach and partnerships***

### **Everglades**

The Division of Interpretation and Visitor Services is responsible for creating opportunities for people to make intellectual and emotional connections to park resources, enhance understanding of the park, and foster an ethic of stewardship. The division operates five visitor centers and has the primary responsibility of developing and presenting informational and educational materials, publications, exhibits and interpretive programs for park visitors, surrounding communities, area schools, local and national media. Division staff also provides support and direction for Interpretive services at Dry Tortugas National Park

In 2007, the division of interpretation contacted 3,059,830 people including 407,884 visitors at the five visitor centers; 55,093 visitors attended 2936 interpretive programs; 9752 students attended 357 curriculum based education programs; 2,448,254 people were contacted through community outreach programs; and 77,214 publications were distributed.

The division of Interpretation is proud to report that it was accident free for the entire year—another indicator of the resilience and professionalism of the permanent and temporary staff alike

**Personnel** In 2007, 7.00 FTE in the Division of Interpretation and Visitor Services remained vacant due to budgetary constraints. Two GS-11 Supervisory Park Rangers, three GS-9 Park Rangers, and two GS-5 Bilingual Park Guide positions were partially backfilled by temporary staff. 14 temporary employees were hired, trained, coached, and evaluated. Ten employee submissions were certified by the national NPS Interpretive Development Program. Two permanent employees pursued graduate work in the Interpretive Development Program. Two new permanent employees were hired.

An additional 5.1 FTE of the Division's 24 FTE was funded from non-ONPS sources. These FTE supported 80% of the curriculum-based education program, 16% of visitor center staffing, 3% formal interpretation programming, 10% informal interpretive programs, and 63% of community outreach programs. In addition, 48% of non-personal services, publications and media, were supported by alternate funding sources. The curriculum-based education program reached 17,900 students, parents, and chaperons with only 20% of program funding coming from ONPS funds.

**Volunteer Support** In FY07, 70 volunteers worked for the Division of Interpretation donating 14,284 hours. Volunteers assisted in staffing 4 visitor centers, orienting visitors to park resources, roving trails, leading guided walks and talks, presenting community outreach programs, assisting in developing a library and video collection. Four volunteers at the two environmental education camps provided assistance to students, teachers and park staff throughout the school year. Six volunteers were Artists in Residents.

**Media/Planning** After 25 years, new interpretive waysides were installed along the Main Park Road. An additional 7 waysides were installed at Pa-Hay-Okee Overlook. Phase III planning of waysides continued.

Twelve episodes of an educational TV program called "Waterways" were produced in partnership with the Environmental Protection Agency and the Florida Keys National Marine Sanctuary. Waterways TV programs highlight issues and research activities in the South Florida's national parks and reaches a potential TV audience of over 600,000 in South Florida alone. Podcasting was begun with programs available on the park's web page. EVER's Long Range Interpretive Plan was started with HFC, including public scoping via the PEPC website, the 1st such application for a LRIP in the NPS.

**Outreach to Underserved Communities** Grant funding was used to support one full-time park ranger whose duty was to schedule and participate in community outreach activities. Between November 2006 and April 2007, this Community Outreach Ranger successfully reached 8,455 people across five counties through 116 scheduled activities. Of those contacts, 2,929 people participated in 46 formal interpretive presentations about the south Florida national parks, and 5,091 were contacted through 47 events such as parades, community celebrations, environmental fairs, and career days. A thousand "ranger badge" stickers were produced and handed out. Banners and vehicle mounted logos were produced and seen by more than 100,000 people. An additional 1,003,500 people were reached through 15 media outlets. Outreach to Spanish and Haitian communities was presented in those languages.

Outreach activities included library lectures, school programs, community organization meetings, boat shows, festivals, parades, career fairs, celebrations and teacher workshops. Media outlets included radio, television and newspaper interviews, magazine articles, exhibit displays, and publications distribution to 27 local businesses. The Outreach Ranger also facilitated two in-park events; the March for Parks at Big Cypress National Preserve, and the Retired Peace Corp Volunteers Annual Everglades Outing in Everglades National Park. Together these events drew more than 450 diverse individuals and groups to the parks.

Produced translations of Junior Ranger activity books in Spanish and Haitian Creole; one ranger appeared on Haitian-Creole television station, followed by a visit of Haitian-

American children to Shark Valley; participants earned Junior Ranger badges. Coordinated and hosted a special Junior Ranger day in the park in conjunction with National Junior Ranger Day. Through a Trust grant, over 8500 people heard about the south Florida national parks, many in their native language, through programs presented by a tri-lingual park ranger. Media: Generated several articles about Florida Bay that appeared in regional/statewide magazines & newspapers. Staff appeared on 22 radio shows in the Keys to discuss the General Management Plan, special closures and conditions in Florida Bay, etc. Multiple interviews with print, radio and television reporters were given by division staff. Over 30 special programs and tours were presented to various entities including dignitaries, university groups, special park friends, etc.

**Recognition** The Florida Native Plant Society and Everglades took first place for Ecosystem Restoration Landscapes for the Ernest Coe Visitor Center landscape project. Harpers Ferry Center's On-the-Media magazine recognized Everglades' efforts to design and translate bilingual wayside exhibits. The K-3 Activity Guide, Everglades-based curricula was recognized in the NAI Media Awards competition.

**Partnerships** Everglades Association: Scope of Sales Statements were drafted for both EVER and DRTO. A total of \$15,000 was received four of the south Florida parks in Aid to NPS. South Florida National Parks Trust: \$58,129.00 in grants was received. The final General Agreement was drafted and sign with the Trust. Fairchild Tropical Botanical Garden: Facilitated several in-park activities and the staff served as judges for the Fairchild Challenge. Everglades submitted a project for student-produced podcasts for the 08 competition. Eastern National: successfully negotiated to have this organization operate and staff the gift shop at the Florida Keys Eco Discovery Center. We brokered an agreement with WPBT television in Miami to show an episode of the Wild Florida series in the DRTO visitor center. We secured Miami Dade County Teacher Education Credit for park-conducted workshops to count toward continuing-education requirements for local teachers.

Alternate funding sources included two fee-based programs; bike hikes and slough slogs. Other alternate funding sources included: Ford Proud Partner Transportation Interpreter Program at Shark Valley; South Florida National Parks Trust supporting the Curriculum-Based Education Programs; Cost of Collection funds through the collection of wilderness fees; National Parks and Conservation Association support of Florida Bay related outreach and education, and the Everglades Association supported publications, seasonal training, the volunteer program, libraries, equipment, training and exhibits.

**GPRA Goals** In March 2007, four hundred Visitor Survey Cards were distributed to a random sample of visitors in four areas of Everglades National Park. The survey was conducted to measure the park's performance related to the national NPS GPRA Goals IIa1 (visitor satisfaction) and IIb1 (visitor understanding and appreciation). With the exception of the lodge and restaurant at Flamingo, all park facilities were open and accessible at the time of the survey. Nearly a third of all optional visitor comments refer to facilities at Flamingo. The response rate for this survey was 28%.

Goal IIa1: Visitor Satisfaction; 89% of park visitors were satisfied with park facilities, services, and recreational opportunities. Everglades National Park fell short of national GPRA Goal IIa1 by 6%. The park fell short of its internal goal by 4%. In FY06, 88% of park visitors were satisfied with park facilities, services, and recreational opportunities.

Goal IIb1: Visitor Understanding of Park Significance; 92% of park visitors understood and appreciated the significance of Everglades National Park. Everglades National Park has exceeded GPRA Goal IIb1 by 6%. The park fell short of its internal goal by 1%.

## **Dry Tortugas**

### **Visitor Services and Interpretation**

The Division of Visitor Services and Interpretation is responsible for creating opportunities for people to make intellectual and emotional connections to park resources, enhance understanding of the park, and foster an ethic of stewardship. The division operates one visitor center and has the primary responsibility of developing and presenting informational and educational materials, publications, exhibits and interpretive programs for park visitors, surrounding communities, area schools, local and national media.

The Division of Interpretation reached 86,744 people including 56,029 visitors to the visitor center, 895 visitors attending formal programs and demonstrations, 7,500 visitors reached through informal interpretation, and 300 participants in the Junior Ranger program. 20,000 visitors viewed the park film, and 2,000 people were reached through community outreach programs.

A new Park Ranger Interpreter was hired in December 2006 after the position had been vacant for nearly a year. Media and non-personal interpretive services were the focus for FY07. Eight site bulletins were revised and reprinted, including the new publication "What Is the Research Natural Area?", a revised "Park Regulations" and Spanish translations of those bulletins. A new Unigrid site brochure was developed and arrived in early FY08. New bulletin boards were installed, replacement waysides were installed, and the research phase for new wayside exhibits began. The park newspaper was revised and research began toward a new park film. Ongoing duties included dealing with Cuban migrant issues, managing and working the bookstore, auditing concession ferry guides, serving on the DRTO dive team, and serving as the NPS liaison with the newly-opened Florida Keys Eco-Discovery Center.

After 10 years of planning, the Florida Keys Eco Discovery Center opened in Key West. This major visitor facility now provides the only mainland based visitor contact station for Dry Tortugas National Park. Park staff worked with the Florida Keys National Marine Sanctuary, Fish & Wildlife Service, and the South Florida Water Management District to open and operate facility. Park staff helped to establish operational protocols, program development, media content, landscaping plans, and hiring Student Conservation Association interns to serve as staff.

**DRTO GPRA Goals** In 2006, 400 Visitor Survey Cards were distributed to a random sample of visitors to the park. This survey was conducted to measure the park's performance related to NPS GPRA Goals IIa1 (visitor satisfaction) and IIb1 (visitor understanding and appreciation). Results for GPRA Goal IIa1: Visitor Satisfaction = 84% of park visitors were satisfied with park facilities, services, and recreational opportunities. The park fell short of its 2007 goal of 90%.

## **2007 7.2 Partnership programs, community involvement, cooperative activities**

**Everglades Association** The Association is a National Park Service Cooperating Association working in cooperation with the four South Florida National Park Service areas to assist visitors and increase public understanding of the natural and historical values of the parks. At park visitor centers, the Association sells high quality publications and educational materials to the public. Net proceeds from sales are returned to the parks to support scientific, educational, historical and visitor service programs of the National Park Service. The Association is a private, non-profit organization incorporated in the State of Florida.

In 2007, the Association provided \$15,000 in cash Aid to NPS to all four of the south Florida parks. Orientation and information assistance provided by Association staff was valued at approximately \$60,000. Everglades directly received \$712 in Aid to NPS. An additional \$6,000 was provided to print the collaborative newspaper serving the four south Florida parks. Funding for 6 seasonal positions, supplies, materials, and vehicle costs was funded by the Lattner Foundation through the Everglades Association.

**South Florida National Parks Trust** The Trust is chartered through the National Park Foundation. The mission of the Trust is to advance, through private and non-profit sectors, the interests and missions of the parks and in securing financial and other resources to support and enhance the park's efforts. In 2007, the South Florida National Parks Trust awarded five grants to Everglades National Park totaling \$58,129, to fund a community outreach specialist, a volunteer in park SCA intern, and the Waterways television program. The Trust is holding a \$25,000 grant in reserve to support reconstruction efforts at Flamingo. Through the National Parks Conservation Association, in 2005 the Trust gave a \$580,200 donation to the park to support enhanced law enforcement, research, and visitor outreach and education for Florida Bay. These funds continued to support these efforts in 2007. Working with the Trust, Everglades National Park received a \$639,550 grant from the Toyota USA Foundation for the Everglades Education program, FY08-10. (Note: in FY08 this was increased by \$375,000, bringing the total grant to \$1,014,550.) Other donations totaled some \$47,400 for projects such as e-field trips, exotic pet signage, trails maintenance at Flamingo, waysides ahead signs, waysides, and supplies for Cuban migrants. We partnered with the four south Florida parks and Trust to submit a Centennial Challenge Project Grant. \$13,400 was collected in donation boxes at three visitor centers.

A grant by the Edith and Curtis Munson Foundation through the Trust provided \$30,000. A portion of this was used to fund a Florida Outreach & Education employee who presented 23 teacher workshops contacting 271 teachers. The Everglades Junior Ranger program was translated and published in Spanish and Haitian Creole. This project was funded by a Challenge Grant from the National Park Foundation and Unilever and matched by the Trust. A *Don't Let It Loose* e-field trip was developed with funding provided by the Blank Family Foundation through the Trust.

## **Volunteers in Parks**

***EVER Volunteer in Park Program*** The parks volunteer program grew 13% over FY06. In FY07, 592 volunteers donated 44,194 hours in support of all park operations including 4 visitor centers, 2 developed campgrounds, 48 backcountry sites and a curriculum based environmental education program. Their accomplishments go a very long way in increasing visitor enjoyment of park resources. Their help was invaluable to park maintenance employees. Volunteers helped reduce resource impacts by assisting in the maintenance of 82 miles of surfaced roads, 156 miles of trails and 7 miles of interpretive trails and 6 creeks and channels in Florida Bay. Volunteers assisted in research projects pertaining to park hydrology, aquatic biology, fire management and the monitoring and reintroduction of threatened and endangered animal and plant species. Individual volunteers and volunteer groups participated in a large scale pineland and wetland prairie restoration projects; assisted in efforts to eradicate invasive plant species, worked in the recycling center, and completed a variety of facility and trail maintenance projects. The Artist in Residence in Everglades (AIRIE) program hosting six artists. In Florida Bay a team of VIPs constructed and installed markers in 7 highly used boat channels to prevent continued loss of resources. Interpretive

***DRT0 Volunteer in Park Program*** The Volunteers In Parks program had another successful year at Dry Tortugas National Park. Volunteers are integral to the daily operation of the park, and their contributions have made lasting improvements to the visitor experience. The park welcomed 15 volunteers who contributed a total of 6,145 hours of service in FY 2007; 751 hours in interpretation, 3,878 hours in maintenance, and 179 hours in resource management. Through the Garden Key Host program, volunteers provide campground orientations, campground maintenance, and general education and assistance to the visiting public. Many of these volunteers also share specialized skills to assist with maintenance projects in the park. Garden Key Hosts have been instrumental in the continued operation of the park bookstore in absence of an Everglades Association employee. Volunteers participating in the Loggerhead Key Keeper program perform all tasks associated with the daily maintenance of Loggerhead Key. These volunteers also greet visitors to the island and maintain daily watches for incoming Cuban refugees.

## **2007. 8. 1 Concessions Management and Visitor Services**

### **Everglades**

Flamingo continues to provide a challenge for both the Concessionaire (Xanterra) and NPS. As noted in last years report, Xanterra informed NPS that they would like to cease operating at Flamingo by the end of 2006. Although the Park worked diligently to find a temporary concessionaire to operate under a 3 year sole source contract, as allowed by law, we were unable to find an operator willing to take on the challenges of operating at Flamingo. In addition, issues remain relating to Xanterra's insurance coverage for the 2005 hurricanes, along with the settling the possessory interest Xanterra acquired when they built employee dorms in 1991. Both parties hope to resolve these issues in 2007. Xanterra continues to provide day use services including boat tours of Whitewater Bay, canoe and skiff rentals, and retail services (the marina store). Bicycle rentals were also offered by the end of 2006. Unfortunately, day use revenue was down from historical averages, although November and December 2006 were closer to historical averages than the rest of the year.

Staffing continued to be a challenge, with the division operating with only the Chief of Concessions Management (the GS-9 concessions specialist having left the park for a job at SERO November 2002). The Park developed a PMIS project late in 2006 to hire a part time (24 hours per week) term position to assist the Chief with concessions duties, including the development of the Flamingo Commercial Services Plan. The PMIS project still needed to be approved by SERO and WASO at the end of 2006.

## **Dry Tortugas**

During FY07 some progress was made in the development of a prospectus for ferry service to and from Dry Tortugas National Park. This project had previously been delayed due to other WASO concessions priorities (ex. expired contracts). Parts of the prospectus including the maintenance and operating plans were updated during this fiscal year. In addition, the NPS external consultant updated the financial feasibility analysis.

The DRTO General Management Plan specifies a total of 30 commercial use authorizations (CUAs) for commercial visitor uses including fishing, diving, sailing, and wildlife viewing. In accordance with this direction, the park also began working on a process to determine the allocation for the various types of commercial visitor services along with an evaluation process to determine which applicants could best provide these services. The administration of DRTO CIAs was transferred from the Chief of Commercial Visitor Services office to the Chief Ranger's office which provided additional consistency between EVER and DRTO

Staffing for commercial visitor services at DRTO continues to be provided by EVER staff.

### ***2007.9.1 Conclusions***

As outlined in the discussions of activity under each division at Everglades and Dry Tortugas National Park, both parks continue to grapple with a myriad of diverse and challenging issues and opportunities in managing these significant and unique natural resources. Everglades strives to coordinate and cooperate with the significant intergovernmental program for overall ecosystem restoration while also addressing the day to day demands of managing a park of this size and working to meet visitor expectations. The Dry Tortugas, which has a much smaller staff, strives to make the visitor experience to this unique park one to remember, while at the same time protecting cultural and historic assets and addressing the most unusual task of park staff to coordinate international immigration issues with Cuban migrants landing at the park seeking asylum. In addition, developing an implementation program for the DRTO RNA has taken up significant staff effort from both parks, and will continue to over the next few years.