

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 2006

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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 not 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.

2006.1.1. Superintendent's Office - Major issues faced by park management, Congressional relations, and public relations

Weather Events Fiscal year 2006 was a relatively inactive hurricane year for both parks, with the only storm that required the Incident Command process to kick in was Ernesto in August, though the parks received no significant damage from this storm, the park was closed for a short period of time. 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 work on completing park General Management Plan (GMP), including refining draft alternatives, zoning documents, and maps to prepare for park SERO and WASO review/approval. In addition, there was an East Everglades Wilderness Study component added to GMP in 2006. Public meetings were held to gain input on this additional section of the GMP.

In light of the hurricane damage to the Flamingo area of the park and the tremendous public interest in this part of the park, a Flamingo Commercial Services Plan proceeded concurrently but separately from the GMP through a consultant team in 2006 including initial data gathering, project kick-off meetings and planning for public involvement (developing and publishing newsletter, planning for 4 public workshops).

Staff The public information officer and chief of external affairs both retired during 2005 and the position was combined, advertised and filled in 2006. Filling this position in August of 2006, which serves both parks, was an important service gap to fill for two parks with such significant programs in place, including Everglades restoration and the RNA, both that garner significant media and congressional attention. Other positions filled include -

Public interest in invasive exotic species in the park escalated in 2006. The increase of Burmese python populations in the park and a documentary by the National Geographic Organization caused intense interest from reporters around the world. This topic aired on radio and television shows from Germany, France, Great Britain, Japan, and states as far as Texas and Washington State. The PIO fielded requests for interviews and tours from many international as well as national reporters, along with those in the local area. In order to provide equal access to this information and the parks lead scientist on this topic a press conference was held in September of 2006. 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.

Congressional The Superintendent and PIO participated in briefings on intergovernmental congressional briefings in Washington DC on the restoration of the Everglades ecosystem. Park staff coordinated with the state of Florida, the South Florida Water Management District, the Army Corp of Engineers, and the Fish and Wildlife Service on these activities.

The Swamp Michael Grunwald, former reporter for the Washington Post, who had written a number of articles on the Everglades Restoration program, published a book about the history and politics surrounding this effort. A number of park staff and other USDO staff were discussed and quoted in this book.

Adjacent Land use concerns continued to take up park staff time and effort including participating in a BISC- team looking at the potential impacts and providing comments to the State of Florida on Florida City annexation and a development of regional impact (DRI) on the site called Florida City Commons. Other development oriented issues included staff participation on the South Dade Watershed Study and commenting on other developments proposed in the area. 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

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.

CERP and Science Everglades ecosystem restoration continues to take up a significant amount of the Superintendent and the South Florida Natural Resource Center 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, adds 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.

Opening of interagency Ecodiscovery Center in Key West. The national park service partnered with NOAA and the Florida Keys National Marine Sanctuary in supporting this important visitor information center in Key West that will provide information and education on the environment and public lands in the lower keys.

2006.2.1 Planning & General Management Plan - Planning and Compliance Branch

The Planning and Compliance branch is responsible for providing planning and environmental compliance services for and DRTO, and for managing the South Florida Collections Management Center, a museum collection, library and archives serving, DRTO, BISC, BICY and DESO. These responsibilities are accomplished through the planning, compliance and museum programs.

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

In FY06 the 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 general management plans; strategic plans; implementation-level plans; resource-specific studies; community planning activities; projects that extended beyond park boundaries that required coordination with local, state and federal agencies, and private interests in order to insure that impacts to resources in/adjacent to the park were adequately considered.

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.

Planning Program capacity and consequences - Staff responsibilities for the park planning program in 2006 largely fell to three employees. 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 -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 adjacent lands planning. At Dry Tortugas, 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.

FY06 Planning & Compliance Projects and major accomplishments; anticipated work in FY07		
Plans and Projects	FY06 Accomplishments	Major activities in FY07
General Management Plan/EIS	Served as park GMP coordinator/manager – including work to develop draft alternatives, zoning documents, maps. Project manager for East Everglades Wilderness Study component added to GMP in 2006; coordinating staff and public involvement, developing project newsletter, gathering needed data and maps for analysis, integrating results into GMP Worked through SERO and WASO/DOI review and approval process for the draft management alternatives	Conduct public and agency involvement on draft alternatives Select draft preferred alternative Begin preparation of draft GMP/EIS
Flamingo Commercial Services Plan	Served as project manager developing the proposal, scope of work and cost estimates for the project, secured funding and hired a consultant team. Continued working with consultant in 2006 including initial data gathering, project kick-off meetings and planning for public involvement. Coordinated with SERO and FL SHPO offices to identify and seek solutions to potential Mission 66 National Register of Historic Places issues and their possible impact on future planning and redevelopment of Flamingo	Conduct public scoping Develop preliminary alternatives, Prepare draft CSP/EA for public review and comment, Conduct public involvement on draft CSP/EA, Finalize CSP/issue, FONSI Begin implementation
Biscayne – Everglades Greenway	Facilitated meetings, events and project coordination efforts 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	Finalize Feasibility Study with additional public workshop Participate in design charrette with project partners and the public for key

FY06 Planning & Compliance Projects and major accomplishments; anticipated work in FY07		
Plans and Projects	FY06 Accomplishments	Major activities in FY07
	<p>Developed state and federal grant proposals for design and construction of the Greenway</p> <p>Planned for and facilitated public workshop to discuss the draft plan and seek public input</p>	<p>features of the Greenway. Work with project partners on management and implementation actions and strategies</p> <p>Pursue funds for Implementation</p>
Adjacent Lands Planning	<p>Participated in BISC- team looking at potential impacts of Florida City annexation and DRI on the site called Florida City Commons and drafted correspondence describing NPS concerns.</p> <p>Participated in project team meetings for NPS-USGS project that will design a GIS-based toll for assessing impacts to BISC and from adjacent land development proposals.</p>	<p>Continue monitoring Florida City Commons and other DRIs potentially impacting the park; with the PIO as the lead, assist on NPS team(s) to raise issues and work on responses related to future development proposals impacting park resources</p>
East Everglades Archeology Study	<p>Ongoing management of SEAC agreement and coordinated finalization of the SEAC report to support GMP, Interim Airboat Plan, and long-term understanding of East Everglades cultural resources.</p>	<p>Integrate project results into draft GMP/EIS</p>
East Everglades Airboat Trail Inventory/Assessment	<p>Ongoing management of University of Georgia agreement</p> <p>Coordinated with University of Georgia and park staff to complete fieldwork and finalize report for use in GMP and Interim Airboat Plan.</p>	<p>Conduct project closeout</p> <p>Integrate project results into draft GMP/EIS</p>
GMP alternative transportation study	<p>Work on hold in 2006 until SERO/WASO review and approval of draft alternatives</p>	<p>Project consultant will be contributing to the draft GMP/EIS process</p>
Manatee Study	<p>Ongoing co-management of agreement with USGS to integrate historic and current manatee data and assess future issues and concerns for species protection</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 draft GMP/EIS</p>
Florida Bay aerial survey of boating/fishing activity	<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</p>	<p>Project work continues with approx. 65 flights anticipated in FY07</p> <p>Work with cooperator on developing draft and final products</p> <p>Seek additional funds (\$75,000) to complete year of flights for year-round analysis</p> <p>Integrate results into draft GMP/EIS</p>
Florida Bay seagrass assessment	<p>Ongoing discussions with potential project cooperators to conduct high resolution aerial photography of 16 high priority sites</p>	<p>Integrate results into draft GMP/EIS</p>
East Everglades	<p>Coordinated process involving the park, Army Corps of Engineers, South Florida National Parks Trust, and a private</p>	<p>None anticipated; SFNRC staff now</p>

FY06 Planning & Compliance Projects and major accomplishments; anticipated work in FY07		
Plans and Projects	FY06 Accomplishments	Major activities in FY07
Site Restoration	rock mining company related to restoring disturbed sites in the East Everglades. Facilitated meetings among all parties that led to a program to initiate site restoration of the highest priorities	managing the project
No-motor zone access, research and analysis	Assessment of marine waters zoning successful elsewhere in Florida for state and federal waters Working with FDOT, Monroe County and other agencies to identify opportunities to replace lost non-motorized access along the 18-mile stretch of US 1.	Integrate options and results into draft GMP/EIS Coordinate with FKNMS and USFWS (cooperating agencies) on zoning application to meet resource management and visitor experience goals
East Everglades hunting camps survey/analysis	Initial work completed in 2005	Incorporate project results into draft GMP/EIS Work with SERO to initiate NRHP DOE
DRTO GMP Implementation	Assisted in reviewing and commenting on draft documents associated with DRTO RNA rulemaking	Work on the VERP Plan development and implementation
Bahamas National Trust – Park Planning Assistance	Participated in several conference calls in 2006 to identify potential partnership projects for the future.	Workload unknown at this time.
South Florida Public Area Managers	Attended 1 meeting in FY06 and assisted in developing and distributing the inter-agency parks brochure, “South Florida Nature Guide – Discover the Hidden Treasures”.	Workload unknown at this time.

Environmental Compliance Program

Overview The compliance program is responsible for ensuring that 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 the 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 06, the branch contributed significantly to completion of final special regulations for Dry Tortugas National Park. The culmination of an extensive general management planning process that began in 1998. Staff also made progress on two environmental assessments (EA's) two environmental impact statements (EIS's), completed documented categorical exclusions for 20 projects, completed NHPA compliance for 26 projects, participated in 18 wilderness minimum

tool determinations, and coordinated reviews of 10 outside agency and NPS projects. These figures were down from FY 2005 due to impacts of Hurricane Wilma in October – November 2005, the transfer of the compliance program manager to BISC in May 2006, two tropical storm shut-downs in the summer of 2006, and time lost due to staff illnesses. In addition, staff increased proficiency with the Planning, Environment, and Public Comment (PEPC) web-based program for review of NPS planning and compliance documents.

Compliance Program capacity and consequences. The parks' ability to complete compliance and thus accomplish projects is limited by current funding and staffing levels. FY06 compliance staffing consisted of one full-time compliance specialist supplemented by two part-time student interns and 60% of the branch chief's time. Total FTE in FY06 was about 2.2. The existing and anticipated compliance workload far exceeds staff capacity to accomplish in a timely manner. This has resulted in a high level of stress-related illnesses, a backlog of compliance projects, and implementation of programs and projects 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' #3 OFS priority.

Compliance Projects

Dry Tortugas Special Regulations The park and the Department of the Interior (DOI) worked with the NPS regulations program and the State of Florida to complete final special regulations for the park in accordance with the *Florida/Department of the Interior Submerged Lands Management Agreement*. Promulgation of regulations to implement the 2001 Dry Tortugas Final General Management Plan was delayed pending resolution of a submerged lands dispute with the State. Under the agreement, approved by the Governor and Cabinet and DOI in August 2005, the NPS agreed to consult with the Florida Fish and Wildlife Conservation Commission (FWC) and obtain concurrence of the State's Board of Trustees of the Internal Improvement Trust Fund (Governor and Cabinet) with the proposed regulations.

The FWC approved draft regulations at its February 2006 meeting. DOI published the draft regulations in the Federal Register on April 7, 2006 initiating a 60-day public comment period. The NPS received 5,238 responses including letters, emails and verbal comments at a public meeting in Key Largo, FL in May 2006. Ninety-nine percent of respondents supported the regulations including implementation of a research natural area zone that will be closed to fishing and anchoring in order to replenish severely depleted fisheries and protect sensitive marine habitats. The FWC approved the final regulations and the NPS obtained the concurrence of the 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.

Dry Tortugas Research and Monitoring Memorandum of Understanding In accordance with the submerged lands agreement, the NPS and the FWC began work on a memorandum of understanding to implement a collaborative program for research, inventory and monitoring of the park's marine ecosystem. This program will be coordinated with similar efforts by the Florida Keys National Marine Sanctuary. The NPS will provide a status report on the marine fisheries at least y five years to the Board of Trustees.

Exotic Plant Management Plan/Environmental Impact Statement Park resource management and compliance staff have a key role in the development of this multi-park exotic vegetation management plan and EIS. In November 2006, the WASO environmental quality division and consultants released the draft management plan and EIS for public review and comment. Completion of the exotic plant management plan/EIS and a record of decision are expected in FY 2007.

Fire Management Plan/Environmental Assessment This EA is being prepared in-house and several important steps were completed in 2006. Compliance staff facilitated impact analysis and completed 60% of the draft EA text. Staff changes slowed progress on completing this EA. Completion of this EA is a FY 2007 branch priority.

Temporary Airboat Concessions Contracts/Environmental Assessment Parallel development of the Army Corps of Engineers 3rd supplemental EIS for modifications to U.S. Highway 41 (Tamiami Trail) to enhance water flows into the park, resulted in a management decision to suspend the airboat EA until completion of the Corps' EIS and record of decision.

Background: The NPS had proposed to issue temporary concession contracts to three commercial airboat operations within the East Everglades addition of the park. The contracts would allow the operators to conduct airboat tours, consistent with NPS laws, regulations and policies, until completion and implementation of the park's General Management Plan/EIS and Record of Decision (ROD) anticipated in FY 2008. The GMP/ROD would determine whether, or to what extent, commercial airboat tours would be authorized long-term. Status: Compliance staff completed public scoping for the airboat contracts EA (disrupted and rescheduled due to hurricanes) in December 2005. Staff analyzed public comments and coordinated an alternatives development/impact analysis workshop in May 2006. The NPS had requested that the Corps' EIS include alternatives that would allow the airboat companies to remain in business until completion and implementation of the park GMP. However, the Corps has determined that keeping two of the operators in business is not feasible as the costs of protecting them from higher water levels would likely exceed the costs of buying the properties in fee and would be prohibited by Corps regulations. Elimination of two airboat companies would have a significant adverse effect on the businesses, their employees, regional eco-tourism and park visitation. These effects would require NEPA analysis in an EIS rather than the airboat concessions EA. For these reasons, park management has decided to work with the Corps to complete the Tamiami Trail EIS/ROD and fold decisions on any remaining airboat tour operations into the GMP/EIS/ROD.

Project Tracking #	Project Name	Status	Target Completion Date
FY02-009	Everglades General Management Plan/ EIS	Alternatives development and newsletter stage	FY 2009
FY02-004	S. FL & Caribbean Network Exotic Vegetation Management Plan / EIS	WASO EQD responding to comments on draft EIS	FY 2007
FY02-024	Fire Management Plan / EA	Preparing draft EA	FY 2007
FY02-075	Temporary Airboat Concession Contracts / EA	Suspended due to proposed actions in Tamiami Trail EIS	N/A
FY05-027	Dry Tortugas Special Regulations	Published in Federal Register 12/20/06	Dec 2006

NEPA Categorical Exclusion projects Compliance staff lead 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 2006, 20 projects completed NEPA compliance as Categorical Exclusions with documentation, 6 were completed as Categorical Exclusions without documentation, and 4 were completed at the Memo-to-File level. Twenty-three active projects rolled over into in FY 2007.

NHPA projects - Twenty six projects completed compliance with Section 106 of the NHPA. These projects were referred to cultural resource advisors in the Southeast Regional Office (SERO) and/or the Southeastern Archeological Center (SEAC) to review the branch's determination of effect on historic resources. Six projects required consultation with the State Historic Preservation Office.

Completed NHPA & NEPA Categorical Exclusion / Memo to File Projects - FY 2006				
	Project #	Project Name	NEPA Completion Date	NHPA Completion Date
Categorical Exclusions with documentation				
1	FY05-033	Exotic Tree Removal on Garden Key	10/14/05	PE 10/14/05
2	FY05-043	Demolish hurricane damaged Flamingo bldgs.	10/14/05	PE 10/14/05
3	FY05-040	C-111 Geotechnical Investigations	12/02/05	PE 12/02/05
4	FY06-007	C-111 land exchange	12/02/05	SC 01/26/06
5	FY05-019	Dr. Richards Research Permit 2005	12/15/05	PE 12/15/05
6	FY06-003	Demolish Hurricane Wilma damaged structures at Flamingo	12/30/05	N/A
7	FY06-015	Repaint Garden Key Harbor Light	04/01/06	PE 04/10/06
8	FY06-002	Dredge Flamingo Marina Basin	04/07/06	PE 03/13/06
9	FY06-010	Install desiccant wheels, museum HVAC	04/07/06	PE 04/07/06
10	FY06-018	Install Wayside Exhibits	04/12/07	PE 04/12/06
11	FY05-038	Native Planting and Mowing Reduction	04/26/06	N/A
12	FY05-039	Install Scopes & Arrowhead, Flamingo VC	04/28/06	SC 02/07/06
13	FY06-019	Replace buried cables, Shark Valley	05/16/06	PE 05/16/06
14	FY06-016	Replace Damaged Wood Elements on three historic structures, Loggerhead Key	06/16/06	SC 04/17/06
15	FY06-022	Replace Roof on Old Service Station, Flamingo	07/11/06	PE 07/03/06
16	FY06-009	Replace roof, abate asbestos, Nike Base	07/14/06	SC 06/09/06
17	FY06-004	Replace Key Largo Dock	07/20/06	PE 07/19/06
18	FY06-005	Tamiami Trail bridges geotechnical testing	07/21/06	SC 01/31/06
19	FY06-028	Replace Satellite Systems parkwide	08/17/06	PE 08/17/06
20	FY06-032	Loop Road EEC Deer Exclusion Fence	08/23/06	PE 08/23/06
Categorical Exclusions without documentation				
20	FY06-037	FL Bay Algal Bloom Monitoring Permit	CE w/o doc	N/A
21	N/A	Dr. Saunders Research Permit 2006	CE w/o doc	PE 12/15/05
22	N/A	Dr. Ross Research Permit FY06	CE w/o doc	PE 02/16/06
23	N/A	Dr. Gardinali Research Permit 2006	CE w/o doc	PE 03/01/06
24	N/A	Dr. McCormick Research Permit Addl. Site	CE w/o doc	SC 04/28/06
25	N/A	Dr. Gaiser Research Permit 2006	CE w/o doc	PE 08/17/06
Memos to File				
26	FY06-012	Reuse of HM-69 pesticide building	Memo to file 02/14/06	N/A
27	FY03-041	Everglades Trail Kiosks (project revision)	Memo to file 09/07/06	PE 01/08/04
28	FY05-038	Shark V. Native Planting / Mowing Reduction	Memo to file	PE 04/28/06
29	FY05-038	. City Native Planting /Mowing Reduction	Memo to file	PE 04/28/06

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 interdisciplinary 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 18 projects in FY 2006. The compliance program manager also played a key role in coordinating and hosting the NPS National Wilderness Steering Committee's annual meeting at in April 2006.

External projects and reviews – Branch staff reviewed 10 environmental and planning documents produced by other agencies or parks to determine conflicts or support of areas or programs where the NPS has an interest by either jurisdiction or expertise. Staff assessed the adequacy of project impact analysis on the park's natural, cultural and recreational resources and prepared written comments for signature by the Superintendent as appropriate. A table of external projects follows.

External Park and Agency Plans / Projects Reviewed - FY 2006					
Project #	Project Name	Action Taken	Date	Status	
1		USACE Tamiami Trail RGRR 2nd SEIS	Reviewed, sent cmts	Oct 2005	Complete
2	FY06-011	BICY Evapotranspiration monitoring network	Reviewed, sent cmts	3/10/06	Complete
3	FY06-018	Miccosukee Reserved Area 404 Permit Application	Reviewed, provided comments to SFNRC	Mar 2006	Complete
4	-	Miami-Dade county proposed urban development boundary changes	Reviewed, provided cmts to Supt.	Mar - Apr 2006	Complete
5	FY06-020	Tamiami Airport Runway Extension EA	Reviewed, sent cmts	5/02/06	Complete
6	-	Florida City Commons development of regional impact;	Reviewed, sent comments	various	Ongoing
7	FY06-024	Homestead Air Base, F-16 squadron expansion, EA scoping notice	Reviewed	May 2006	Ongoing
8	FY06-014	NPS Management Policies Revisions	Participated	Aug 06	Complete
9		FDOT Krome Ave N. widening study	Reviewed, sent cmts	08/10/06	Complete
10	FY06-031	Tamiami Trail Real Estate 3rd SEIS	Reviewed, sent cmts	various	Ongoing

2006 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

--34 vacancy announcements were issued through Delegated Examining Unit (DEU) authority.

--25 merit promotion vacancy announcements were issued.

--18 WASO seasonal announcements requested

Total: 77 vacancy announcements issued/requested

Hires

Permanent – 63 (34 or 53% were female/minority)
Temporary/Term – 26(19 or 73% were female/minority)
Seasonal – 35 (20 or 57 % were female/minority)
Total – 124 (73 or 58% were female/minority)

Training

--New Records Management and Privacy Act training – all employees received.
--Annual IT Security Awareness Training – all employees received.
--Sponsored Assistance Agreements for Assistance Representatives – 24 hours – 17 employees trained.

Awards

-- 39 employees received monetary awards to total \$35,329.
-- 4 employees received a Quality Step Increase (QSI).
-- 20 employees received time-off awards to total 492 hours.
-- 15 employees received Excellence in Service gift awards

DRY TORTUGAS

Recruitment and Placement

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

Hires

Permanent – 4 (1 or 25% were female/minority)

Training

--New Records Management and Privacy Act Training – all employees received.
--Annual IT Security Awareness Training – all employees received.

BUDGET

EVER FINANCIAL SUMMARY FY 2006

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
ELEDPStipend	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 2006:

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

TOTAL FEES COLLECTED 1,146,123.80

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 2006

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

219 Awards \$3,710,323
(includes contracts, purchase orders, delivery orders, task orders)

34 Assistance Agreements \$3,432,459

INFORMATION MANAGEMENT

Specifications developed for installation of a new VoIP telephone system for park headquarters.

Contract awarded to Coleman Technologies Inc. in the amount of \$235,366.26.

2006 4.1 Facility Management, and Development

Facility Design, Operations and Maintenance

The Division of Facility Design, Operations and Maintenance is responsible for the condition of the built environment of the park. These include:

82 miles of surfaced roads, 156 miles of trails (including canoe trails), 5 miles of surface trails, and 3 miles of elevated boardwalk trails; responsibilities also include 2 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 (5 visitor centers, Park Headquarters, maintenance and utility buildings, research facilities, and 2 Environmental Education camps). The division operates two central wastewater treatment plants, 14 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):

In addition, the Division provides architectural and engineering design services for new projects and rehabilitation work for both and DRTO. A significant role is also to provide liaison with cooperators and contractors in developing specifications and providing technical review of progress and of completed work products.

Selected examples of the Division's significant accomplishments during FY 2006 include the following:

Construction/Rehabilitation

Three line item construction projects for the replacement of water and wastewater treatment facilities at Flamingo and Pine Island were completed in 2006. packages 191A, 191C and 191RO received final inspections in March 2006. Total value of the projects is approximately \$13,000,000. Completion of packages 191A and 191RO will satisfy the conditions of a consent order with the Florida Department of Environmental Protection and release the park from fines.

Packages 191A and C (wastewater treatment) are being evaluated, to modify the plants post construction. The treatment capacities and process must be adjusted to meet treatment requirements as a result of the loss of facilities during the 2005 hurricanes, which have significantly reduced flows to the plants.

General renovations of park assets included continued rehabilitation of the Flamingo campground restrooms, rehabilitation of the Northwest District boat basin bulkhead, installation of new signs and campground equipment at various sites, rehabilitation of five potable water systems, roof replacement and cyclic painting of housing, visitor and administrative facilities, the replacement of hurricane shutters on the headquarters and Coe Visitor Center buildings, installation of fencing at the Loop Road Environmental Education Center, rehabilitation of infrastructure and reopening of the Chekika visitor area for day use, installation of backcountry signs and waterways markers, installation of electrical transfer switch gear at the headquarters, Dan Beard and Bill Robertson centers to allow for emergency standby electric service, and the replacement of main electrical switch gear on Garden Key at DRTO. Total value of these projects is approximately \$1,400,000.

Engineering and Professional Services

The park achieved all milestones for the implementation of FMSS. The initiation of a FMSS work order system to track labor was implemented in October. Design work was completed for the replacement of three employee housing units, two Superintendent's quarters and the Garden Key finger piers at DRTO. Plans to rehabilitate the Dan Beard/Bill Robertson Centers' water systems have been completed and work is scheduled in 2007. A park wide storm water survey was completed and an application filed for an NPDES permit. Plans were partially completed for the replacement of the Shark Valley comfort station and shade structure. Specifications were completed to award a contract for the replication and installation of 17 Totten shutter assemblies at Fort Jefferson. The office completed the revision of the parks sign plan and ordered signs for the East Everglades area. Plans were completed to rehabilitate two Poinciana housing units in Key West and install fire suppression systems in eight units. Statements of work, plans/specs and NEPA compliance documents were generated for more than thirty major projects. Total value of the engineering projects when constructed is \$2,600,000. The staff met the 2006 SCC deadline for project funding requests, documenting millions of dollars in deferred and cyclic maintenance needs which are supported in the FMSS.

Hurricane Repairs

Numerous contracts were completed to repair assets throughout both parks. Common repairs included the replacement of roofing, screens, fencing, and signs. Park staff continued to make repairs to housing and administrative facilities in Flamingo. Dredging of the Florida Bay boat basin and site restoration was completed, as was the replacement of the Key Largo dock facility. The Sandfly Key boardwalk was replaced and the facility

opened to the public in early January 2007. A mini-value analysis was concluded for the replacement of docks, housing, visitor campground facilities and maintenance shops and office. The housing and maintenance building replacements have been identified for DAB review and will be managed by DSC. Special purpose equipment, which was destroyed by hurricanes Katrina and Wilma has been replaced.

2006 5.1 Resources Stewardship - Everglades Restoration and Supporting Science

Modified Water Deliveries Project (MWD) The Everglades National Park Protection and Expansion Act of 1989 authorized the addition of 109,600 acres of Northeast Shark River Slough to the park. The Act directed the US Army Corp of Engineers (COE) to improve water deliveries to Everglades National Park and, to the extent practicable, take steps to restore the natural hydrologic conditions in the park. COE recommended increased conveyance of water from water conservation areas south into the park's largest drainage basin, the Shark River Slough. Northeast Shark Slough is critical for restoration of water flow to the park. Restored water flow will bring significant benefits to park plant and animal life and may be critical to the survival of several endangered species, including the Cape Sable Seaside Sparrow. The project consists of four general components: 8.5 Square Mile Area Flood Mitigation, Conveyance/Seepage Control features, Tamiami Trail (U.S. 41) modifications, and Osceola Camp. Due to changes in the scope of the project as well as unforeseen increases in market prices for real estate and construction materials in January 2005, OMB approved a baseline cost change from \$190 Million to \$398 million.

Status of the 8.5 Square Mile Area Component The COE original 1992 General Design Memorandum (GDM) for the MWD Project provided for the construction of a mitigation canal and levee, with land acquisition only to meet the needs of constructing these project features. Subsequently, the COE, with the USFWS and NPS participating as cooperating agencies, completed a General Reevaluation Report (GRR) and Supplemental Environmental Impact Statement (SEIS). Based on the new GRR/SEIS, the COE also signed a Record of Decision (ROD) in December 2000 on the new federally selected flood mitigation plan for the area. This plan (Alternative 6D) uses a combination of land acquisition and flowage easements, coupled with structural features to accomplish the required mitigation. In addition, pump station S-357; designed to remove seepage water from the 8.5 SMA, has been relocated on the south side of the area in lieu of its previous position on the north side. This will allow for the seepage water to now be discharged into the C-111 Project, where a Storm water Treatment Area (STA) will be constructed.

Benefits to the ecosystem through the implementation of the modifications to the 1992 GDM flood mitigation plan for the 8.5 SMA are substantial. Based on the hydrologic analyses conducted by the NPS and USFWS, ecological performance was significantly improved in more than 20,000 acres in Northeast Shark Slough (NESS) with the revised mitigation plan when compared to the original design.

Land acquisition was initiated in FY 2004 and is currently 78% complete. The remaining tracks are either in the process of condemnation (82 tracts) or are public, utility, or roadway Right-of-Way tracts (107 tracts). For the latter, Miami Dade County will transfer the titles to roads in the project area when titles to all other project lands are held by the

government. Florida Power and Light is coordinating with the COE on the transfer the utility corridor tracts.

The construction contract for pump station S-357 was issued in September 2005 and the Notice to Proceed issued on November 2005. Pre-construction and mobilization activities were completed in January 2006. The contract options for the levee/seepage canal and the flow-way/storm water treatment area will be awarded no later than May 2006. It is estimated that the construction will be completed in February 2007.

Status of Conveyance and Seepage Control Component Subsequent to the completion of the 1992 GDM, additional scientific and engineering data analyses, in conjunction with improved hydrologic and ecologic modeling, indicate modifications to the selected project features are warranted in order to better meet the original objectives of the project. The structures identified in the 1992 GDM for restoring the hydrologic connection between WCA-3A, WCA-3B, and NESS were analyzed subsequently through detailed hydrologic modeling that occurred in an inter-agency evaluation process over approximately a one-year period during 1999 and 2000. As a result of this process, the COE completed a Value Engineering (VE) Study in January 2001 that recommends replacing the original 1992 design conveyance features in the L-67A levee (S-345's and S-349's) and constructing three additional weirs in the L-29 levee to augment the flow of the existing L-29 conveyance structures, S-355A and S-355B. The VE Study also recommended eliminating the L-67C canal and levee. A re-evaluation of the conveyance features subsequent to the decision in the 2003 GRR for the Tamiami Trail will be required to fully assess the benefits and potential impacts in order to identify a final recommended plan and complete the required NEPA documents for these components. These analyses will be conducted as part of the Combined Structural and Operational Plan (CSOP), a project currently underway that will identify the final configuration of the structural and operational features of the MWD Project and a sister project, the C-111. The final NEPA document for the CSOP operating plan is scheduled for completion in May 2008.

Status of the Tamiami Trail Component The Tamiami Trail provides a vital transportation link from Miami-Dade County west to Monroe County and Collier County, Florida. Under the 1992 GDM, increased flows from WCA-3B to NESS are assumed to pass through the existing culverts beneath the road and only a small portion of the main roadway along Tamiami Trail is elevated. As additional scientific and engineering data have become available and incorporated into hydrologic models, it has been recognized that the original plan may not be the most optimal solution for providing the increased conveyance capacity and connectivity required to meet the goals and objectives of the MWD Project. Based on the MWD project's proposed modifications to the upstream conveyance features within the WCAs as well as the increased conveyance requirements associated with CERP implementation, the quantity of water ultimately discharged under Tamiami Trail will be increased substantially over the quantities originally anticipated in 1992. Additionally, these increased flows required for restoration of NESS will result in higher water levels in the Tamiami Canal (L-29), immediately north of the roadway. The resulting high-water condition will periodically saturate the roadway sub-base and under extreme conditions might overtop the roadway in some locations. There is now a high degree of certainty that the current elevation of the 10.7-mile portion of Tamiami Trail between the S-334 and S-333 structures must be increased. The COE completed a GRR and SEIS in December 2003. This document underwent the required review periods and was published in the Federal Register. The 2003 GRR Recommended Plan (Alternative

7A) specifies building a 3,000 foot bridge and raising the remaining portion of the road surface. Concerns with the plan were expressed by Florida Department of Transportation (FDOT), based on safety, and by the National Park Service, based on environmental performance. Based on these concerns, DOI and the COE reconsidered the 2003 GRR Recommended Plan. A thorough evaluation of the benefits and impacts of the DOI recommended plan for Tamiami Trail was documented in the revised GRR and FWCAR.

The Final Revised General Reevaluation Report and Second Supplemental Environmental Impact Statement were completed on January 9, 2006. Public comments were considered and addressed and a Record of Decision was signed on January 25th, 2006. The alternative chosen features a 2-mile bridge west and 1-mile bridge east. Both bridges will be constructed to the south of the existing roadway to maintain two-way traffic flow during construction. The un-bridged sections of the 10.7-mile project area would be raised up to 2ft and widened. After bridge construction has been completed, the adjacent existing Tamiami Trail roadway embankment would be removed to provide natural water flow under the bridge. Implementation of this plan will require acquisition of lands or easements associated with private property interests adjacent and south of Tamiami Trail. The COE will complete a real estate supplement to the 2006 Supplemental EIS in 2007. Following public review, construction is planned to begin in 2008.

Status of Osceola Camp The Osceola Camp is a Miccosukee Indian village located on the south side of Tamiami Trail within the NESS portion of EVER. The area is occupied by approximately a dozen family members residing in trailers and using customary tribal facilities constructed on an area of raised fill material to prevent flooding of these facilities under the current (pre-project) hydrologic conditions. It is anticipated that the increases in water levels associated with the implementation of the MWD Project will increase the risk of flooding of these facilities. A detailed topographic survey was completed to establish the current elevation of the fill material, with the expectation that the MWD Project would raise the camp to mitigate for the increased flood risk. Based on this information and the expectation that water levels within the area could increase by more than two feet during extreme events, EVER, in collaboration with the COE, has initiated the studies and consultation needed to fulfill NEPA and permitting requirements to raise the camp. As part of completing the NEPA requirements, consultation with the tribal residents has been initiated but no formal agreement has been reached. Should an agreement with the Osceola family members not be completed in a timely manner, construction of the mitigation features could be delayed and also delay the ability to introduce the additional water into NESS needed to accomplish the goals of the MWD Project.

The Comprehensive Everglades Restoration Plan (CERP) The park, through the South Florida Natural Resources Center, supports National Park Service involvement in the Comprehensive Everglades Restoration Plan (CERP). The NPS is a major partner in this combined state and federal effort to restore Florida's Everglades, including Everglades National Park, Biscayne National Park, and the Big Cypress National Preserve. The Comprehensive Everglades Restoration Plan proposes large-scale modifications to the water management infrastructure of south Florida, with implementation led by the COE and the South Florida Water Management District. CERP has a targeted completion date of 2038, estimated cost exceeding \$8.6 billion; projects affecting NPS lands and waters are subcomponents spread throughout the implementation timetable. Critical factors affecting completion dates are funding streams approved by Congress and the Florida Legislature, land acquisition, project sequencing, and technological uncertainties.

The NPS role in the planning and design of CERP has focused on projects that are essential to restoration of Federal interest lands in south Florida. The State of Florida "Acceler8" program created a \$1.6 billion bonding program to speed up implementation of several CERP project components. The National Park Service is aligning its efforts to support restoration efforts by actively participating in the associated CERP project development teams. Additionally, the NPS, in cooperation with other Federal, State, and local partners, is implementing a Monitoring and Assessment Plan for CERP, which will provide the information to determine the ecological effects and overall restoration success of CERP projects. Finally, the NPS participates in RECOVER (REstoration COordination and VERification), an inter-agency scientific group charged with system-wide assessments of planned and completed projects as well as with programmatic level activities.

With respect to CERP implementation, in FY 2006, the NPS:

- Contributed to the Guidance Memoranda and Interim Goals and Targets specified in the Programmatic Regulations
- Supported NPS participation in ecosystem restoration projects such as the Biscayne Bay Coastal Wetlands Project, Everglades National Park and L-31N Seepage Management, the Everglades Agricultural Area Reservoir, the C-111 Spreader Canal, Decompartmentalization, and Florida Bay and Florida Keys Feasibility Study;
- Supported monitoring network for water levels; flows; rainfall; salinities; wading birds; alligators; deer; periphyton; fish and aquatic communities; and vegetation;
- Participated in a leadership role in RECOVER, including participation in the Leadership Group, as technical team chairs, in the evaluation of the system-level effects of project alternatives, and the production of the first System-Wide Status report for the CERP.

The Critical Ecosystems Studies Initiative (CESI) The FY2006 CESI budget remained at approximately \$4 million. To organize the FY2006 funding cycle, a joint Broad Agency Announcement, including the USGS Priority Ecosystem Studies (PES) program, and the NPS administered CESI program, was released in July 2005. In September 2005, the proposals received were reviewed by a DOI Science Panel including representatives of, BISC, BICY, USGS, and the FWS (Ecological Services and Refuge representatives.) The announcement was oriented toward FY06 and FY07 priority science needs identified in the DOI Science Plan. Nine proposals were identified via this process for receipt of CESI funding in FY06; of these, five are cost-shared between PES and CESI. Funding emphasis for FY06 new CESI starts was oriented toward the southwestern part of the South Florida ecosystem. A number of ongoing projects approved in previous years were also examined for progress, and recommended for funding appropriately. All 22 CESI projects approved by the Superintendent in FY2006 can be categorized into Basic Research, Monitoring, Simulation Modeling, and Assessments.

In FY2006, CESI also contributed directly to moving forward science to support the development of CERP Interim Goals. The CERP Interim Goals process is designed to assist in periodic evaluation of progress toward restoration of the South Florida ecosystem. A subset of the technical recommendations put forth by RECOVER in February of 2005 have been used to date in the development of a draft Interim Goals agreement to be signed by DOI, the U.S. Army Corps of Engineers, and the State of Florida. There is a need for further technical and scientific work on quantification of some

of the interim goal indicators, to strengthen estimation of interim and final targets for restoration.

The DOI Science Panel recognized this need in 2006, and recommended setting aside approximately \$350,000 of CESI funding for a supplemental BAA to fund science related to quantification and estimation of interim goal indicators. This recommendation was approved by the Superintendent, and the Broad Agency announcement for this effort was released in the fall of 2006.

Land and Water Conservation Fund Congress authorized the Department of the Interior to reprogram approximately \$10.5 million in FY 2004 Land and Water Conservation Funds to support NPS needs. The reprogrammed funds have been distributed to specific science needs that are not being addressed by any other funding source.

A major area of focus for the reprogrammed funds is water quality. A 2003 GAO report to Congress indicated that contaminants in the Everglades, other than nutrients and mercury, have not been adequately addressed. Lack of funding support in this critical area has the potential to hinder the availability of adaptive management tools required for restoration of south Florida ecosystems. Information available to assess CERP project designs largely consists of hydrological and ecological data and analyses, not water quality data. For this reason, one third of the projects funded by the reprogrammed dollars address water quality and contaminant issues.

Other research areas supported with reprogrammed funds include the removal of exotic plants in the East Everglades, avian species restoration in the pine Rockland areas of Everglades National Park, and determination of the hydrologic requirements of aquatic slough vegetation.

Between FY04 and FY06 approximately \$9.8 million of the original funding has been obligated to research projects. Agreements have been executed and work is currently underway. In general, the projects are directed towards establishing water quality and ecological baselines from which to compare future trends resulting from restoration efforts. Funding has been invested in research and monitoring toward understanding the impacts of nutrient enrichment on the ecosystem and the origin and fate of contaminants; assessing the current and continuing responses of the Everglades wetlands to nutrient inputs from cultural eutrophication; determining maximum levels of nutrients that will not cause imbalances in natural populations of aquatic flora and fauna; and determining acute and chronic effects in fish and invertebrates from pesticides and trace metals, as a probabilistic risk assessment.

Water Quality 2006 Active litigation continued in 2006 related to the Everglades water quality lawsuit and the federal judge's June 2005 order finding that the state of Florida had violated the terms of the 1992 Consent Decree. The Special Master held hearings related to causative factors of these past water quality exceedances in the A.R.M. Loxahatchee National Wildlife Refuge. In July, 2006, the Special Master issued his report to the judge, agreeing with the judge's order that violations of the Consent Decree had occurred. The Special Master recommended active court oversight of state projects intended to reduce the chance of future water quality exceedances. The federal judge has not yet acted in response to the Special Master's report.

Negotiations among state and federal parties were conducted in 2006 regarding the Consent Decree and the design and location of the water quality monitoring network to assess compliance with the state's new Class III water quality standard for total phosphorus. Park management and representatives to the Consent Decree's Technical Oversight Committee (TOC) participated with other federal parties during these negotiations.

Activities of the TOC during 2006 included: development of a water quality monitoring plan for a maintenance dredging pilot project at S-12D; investigation of potential laboratory analysis differences among state laboratories analyzing total phosphorus; developing questions to the TOC Principals regarding the Consent Decree's charge to TOC to determine which is lower – the Consent Decree's levels and limits, or the state's new Class III standard; evaluation of stage gage discrepancies within the Refuge; and a final vote on the "which is lower" question, which resulted in no consensus within the TOC. This last TOC issue was then passed on to the TOC Principals for further consideration.

Analysis of the interim water quality limits established for the park in the Consent Decree indicated that the park achieved its target inflow total phosphorus concentrations for the 12-month period ending in September 30, 2006. The actual average concentration of 8.7 ppb in the Shark River Slough Basin was less than the interim limit of 10.3 ppb established for that year. The actual concentration of 8.7 ppb also was just below the long-term limit (8.8 ppb), which will come into effect as of December 31, 2006. The Taylor Slough and Coastal Basins have no interim limit, and the long-term limit will come into effect as of December 31, 2006.

Research conducted via cooperative agreements with Florida International University continue to suggest the very early stages of nutrient enrichment just west of water detention areas built on the east side of the park. These detention areas, designed to prevent over-drainage of the eastern side of the park, may represent a future area of concern with respect to nutrient enrichment within the park's boundaries. Other research is being conducted by cooperators on: water quality and ecological status in the Shark River Slough Basin; methods best suited to determine nutrient concentrations in park inflows; the role of water flow on the Everglades ecosystem; performance of the Stormwater Treatment Areas in removing nutrients; and the distribution and chronic effects of contaminants on park biota.

2006.5.2 Resources Stewardship

DRTO 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.

Coral Reef Benthic Communities The continued substantial decline in stony corals, especially the Endangered Species Act (ESA) listed and major reef forming *Acropora* spp., is the most ecologically significant and arguably challenging DRTO resource stewardship issue. The loss of live stony corals is due mostly to disease, hypothermic events (strong cold fronts), bleaching, and hurricanes. For example, there were 478 hectares of staghorn

coral dominated reefs in the park in 1976; but, it is estimated that there are currently at most only a few hectares of live staghorn thickets, a >99% loss. Most of the loss in the late 1970s and 1980s was caused by hypothermic events and disease. More recently, staghorn coral and other species losses have been due to disease, bleaching, and impacts resulting from five major hurricanes in a 14-month period in 2004 and 2005. From 1999 to 2004, there was a greater loss in stony coral cover in the Tortugas than in the rest of the Florida Keys.

The 2005 (October) and 2006 (September) data collection for the long-term Coral Reef Benthic Communities Assessment Project was performed in FY06. Hurricane Wilma impacted the park in October 2005, after the 2005 data collection. Data collected in 2006 are still being analyzed by our cooperator; however, a qualitative assessment found that Wilma had substantial effects on DRTO coral reefs. The effects were greater than those of the other 2005 storms and, in some locations such as the Little Africa area, greater than the effects of Hurricane Charley in 2004. The 2005 project monitoring, conducted after hurricanes Dennis, Katrina and Rita, found that these storms had only minor impacts on stony corals. A project to inventory and map ESA-listed *Acropora* coral species was initiated in September 2006. Staghorn coral, *Acropora cervicornis*, was once very common in the park, but is now rare. The last such survey was conducted in 1976.

Coral Reef Fishery Resources The decline in reef associated gamefishes, primarily grouper and snapper species, is a major DRTO ecological resource stewardship issue. It had long been thought that gamefish species abundances and individual sizes were decreasing because of heavy fishing pressure within the park and throughout the Tortugas. 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. This study also concluded that the DRTO reef fishery is in worse condition than the rest of the Tortugas region, and that increased regional fishing pressure over the previous 30 years is likely an important factor in these declines. In 1995, NPS prohibited “head” or “party” recreational fishing vessels (large, high density recreational charter fishing boats) from operating in DRTO. This significant management action likely caused a substantial reduction in fishing pressure. The abundances of key reef gamefish species in DRTO either did not decrease or, for a few species, increased between 1999-2000 and 2004. However, a 2006 DRTO reef fishery assessment, based on data collected from 1999 to 2004, concluded that over 80% of reef gamefish species, and over 90% of grouper and snapper species that could be analyzed, are overfished. Biennial coral reef fish monitoring was conducted in May 2006 and an assessment report will be produced by our cooperator in 2007.

Seagrass Communities Annual monitoring for the Seagrass and Associated Benthic Communities Assessment Project was performed in July 2006. Data were collected at only shallow (< 3 meters deep) sites due to insufficient funding and the fact that the park does not have an active SCUBA program. Significant declines in seagrass and echinoids, important invertebrate grazers, were detected at more exposed sites due to the 2005 hurricanes. However, there was some seagrass recolonization at sites affected by Hurricane Charley in 2004. A larger scale qualitative assessment of aerial photos taken by park staff found substantial losses to shallow seagrass meadows around East, Bush, and Loggerhead Keys due to the 2005 hurricanes. There was insufficient funding to take and quantitatively analyze georectified photography.

EVER Natural Resource Stewardship and Science

WILDLIFE MANAGEMENT AND MONITORING

Wading Bird Abundance (Foraging and Nesting) Methods: Systematic reconnaissance flights (SRFs) were performed monthly between December 2005 and May 2006. The area covered included Everglades National Park and the southern region of Big Cypress National Preserve. The area was surveyed using transects oriented E to W and separated by 2 km (Figure 1). Wading birds were counted, identified, and geographically located using GPS units. Changes in surface water patterns (hydro-patterns) were also recorded. Five categories were used to describe the hydro-patterns: DD, or absence of surface water and no groundwater visible in solution holes or ponds; WD, or absence of surface water but groundwater present in solution holes or ponds; DT, or ground surface area mostly dry but small scattered pools of surface water present and groundwater visible in solution holes or ponds; WT, or ground surface area mostly wet but small scattered dry areas; and WW, or continuous surface water over the area. Results: During the survey period (December 2005 – May 2006), the abundance of wading birds for all species combined was observed to be 18% greater than in the previous year (Figure 2).

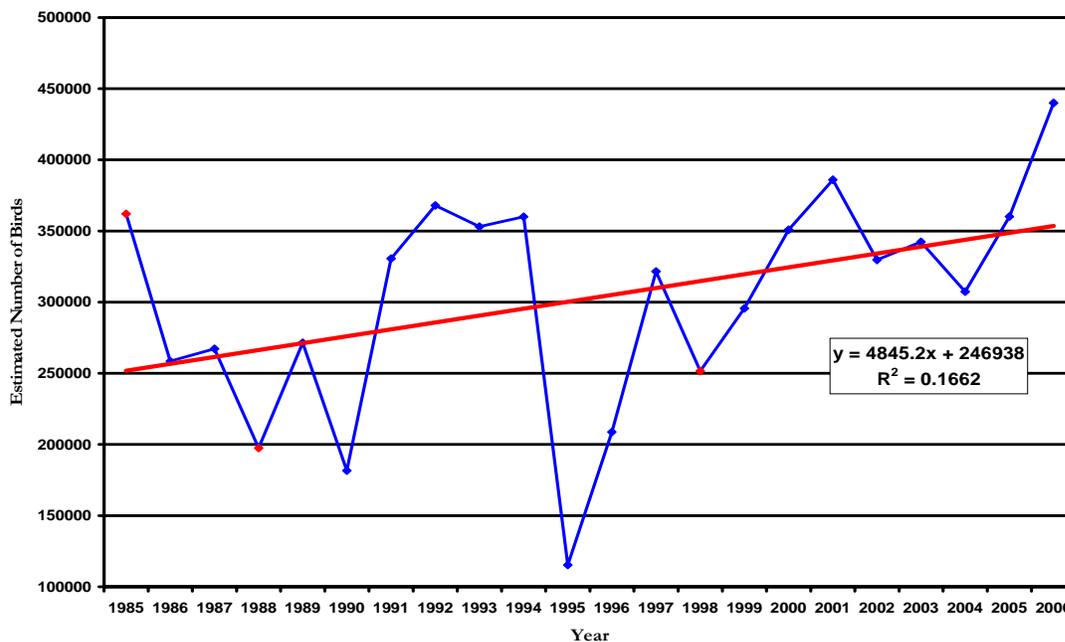


Figure 2. Estimated number of wading birds (all species pooled) observed from the months of Dec-May from 1985 to 2006. Red marks represent years with estimated missing data for one month.

(Figure 3) shows that seven of the nine species of birds increased their numbers compared to those observed in 2005. Small Dark Herons (SMDH) increased 31%, Great White Herons (GWHE) 27%, White Ibis (WHIB) 23%, Small White Herons (SMWH) 18%, Great Blue Herons (GBHE) 15%, Great Egrets (GREG) 13%, and Wood Storks (WOST) 9%. Roseate Spoonbills (ROSP) decreased 9% and Glossy Ibis (GLIB) 7%. Figure 3 also shows the annual estimates of the number of birds by species from 1985 to the present. Although this type of analysis can provide some idea of the general trends in the number of individuals observed for each species or groups of birds through those years, additional

studies and more data analysis will be necessary to evaluate the significance of these observations and their relevance to the wading bird populations occurring in Everglades National Park.

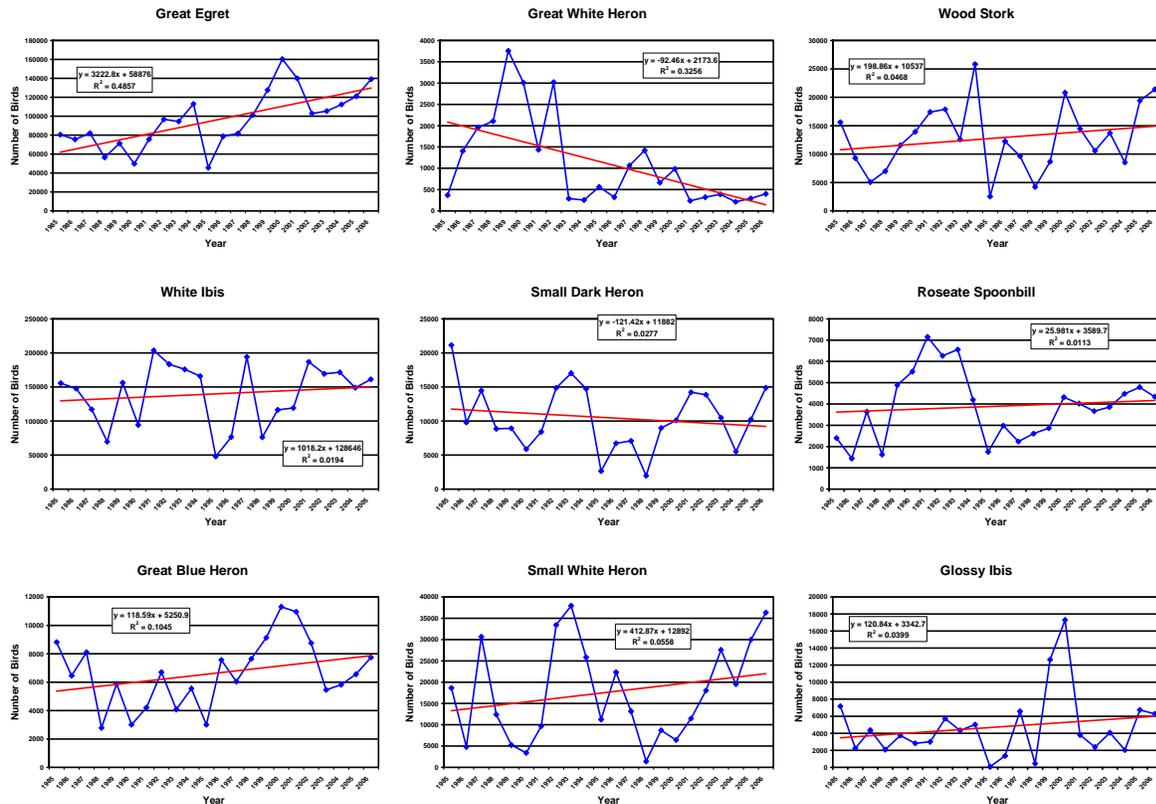


Figure 3. General trends in wading bird populations based on the total number of birds estimated during the surveys performed each year in the Everglades National Park from 1985 to the present.

The maximum density of birds occurred this year during the month of January (Table 1). During January, the highest numbers of GREG, WHIB, GBHE, and WOST were observed. Other species such as SMWH and GLIB reached their maximum numbers in December and April, respectively, while ROSP, SMDH and GWHE peaked in the month of May. The months of March and April were the months with the least number of birds observed. It was during these months that the lowest numbers of birds occurred for all the species, except GLIB and GWHE, which showed the minimum numbers of birds during December.

Table 2 shows the distribution and abundance of wading birds in the different drainage basins. The Shark Slough (SS) basin contained the highest number of wading birds (25%), followed by Shark Slough Mangrove Estuary (SSME) with 20% and East Slough (ES) with 12%. These three basins combined made up 57% of the total number of birds observed during the entire season. In contrast; the basins with the lowest number of birds were Eastern Panhandle Mangrove Estuary (EPME) with 1%, and Northern Taylor Slough (NTS) and Eastern Panhandle with 2% each. Most birds were concentrated in SSME and Southern Big Cypress (SBC) during December. By January, most birds were still concentrated in SSME. However, as the water receded, a great increase in the number of wading birds was observed in Big Cypress Mangrove Estuary (BCME) and East Slough (ES). As water levels declined during February, SS became the basin with the largest

number of birds, followed by SSME. SS continues with this increasingly trend from March until the end of the season, followed by ES.

Considerable changes in hydro-patterns and bird distributions were observed throughout the season as shown in Figure 4. The greatest changes in the area covered by the different hydro-patterns took place at the extreme categories. From December to May, the extent of the area covered by WW was reduced from 45% to only 12% (1,596 km²) by the end of the season, while the DD area experienced an increase from 3% to 33% (1,452 km²). Despite the magnitude of these changes, they occurred gradually from month to month. Intermediate categories such as WT and WD showed moderated changes, from a 35% to 22% (632 km²) decrease and from a 6% to 17% (576 km²) increase, respectively. Finally, fairly small fluctuations occurred in the middle category, DT.

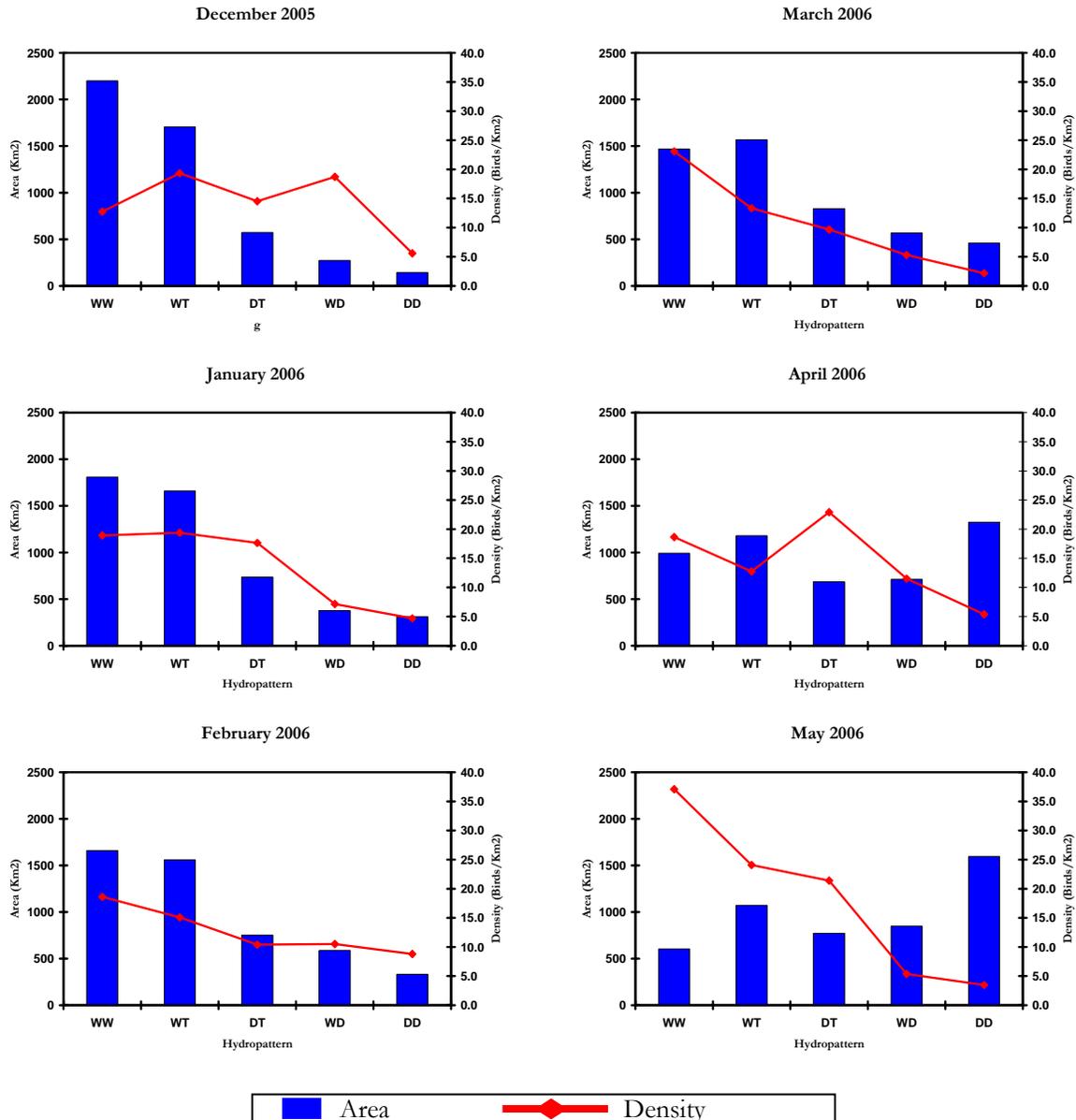


Figure 4. The areal extent and density of wading birds (all species pooled) in each surface water category. WW = continuous surface water; WT = mostly wet with scattered dry areas; DT = mostly dry with small scattered pools of water; WD = dry with water only in solution holes; DD = dry surface.

During the month of December, the highest densities of birds were observed mainly in the WT and WD categories, respectively. By January, as water receded, some of the birds began foraging in the WW areas, which made this hydro-pattern, and WT and WD, the hydro-patterns with the highest densities of birds. As water depth continued to decrease during the following months, densities at the WW, WT, and DT continued to increase. Despite the fact that the WW area was covered completely by water, overall low water levels made these new territories accessible to foraging birds.

Table 1 - Estimated abundance of wading birds in the Everglades National Park and adjacent areas, Dec 2005- May 2006.

Species	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Total
GREG	24,349	24,836	24,332	20,580	21,936	23,075	139,108
GBHE	1,147	1,676	1,540	813	1,187	1,375	7,738
SMDH	2,517	3,119	2,199	1,915	1,635	3,482	14,867
SMWH	9,315	4,869	6,373	3,806	4,304	7,674	36,341
WHIB	32,749	42,943	34,473	36,617	29,040	33,749	209,571
GLIB	67	855	968	976	3,006	406	6,278
WOST	4,357	4,615	4,591	1,842	2,778	3,197	21,380
ROSP	721	590	537	222	574	1,694	4,338
GWHE	0	28	63	63	88	156	398
TOTAL	75,222	83,531	75,076	66,834	64,548	74,808	440,019

Table 2. Estimated abundance of wading birds (all species combined) for the different drainage basins in the Everglades National Park, Dec 2005 – May 2006.

Month	SBC	BCME	SS	NESS	ES	SSME	NTS	LPK/STS	EP	CS	LPK/STS M	EPME	Total
Dec-05	10,556	8,092	4,985	919	3,384	23,778	1,254	1,813	3,674	6,297	8,470	2,000	75,222
Jan-06	8,905	11,963	10,041	1,456	9,649	22,857	3,108	2,963	1,946	4,355	5,180	1,108	83,531
Feb-06	3,640	5,794	23,125	3,108	4,640	17,462	2,962	2,514	767	2,534	7,977	553	75,076
Mar-06	3,775	3,163	26,236	2,523	9,800	5,956	1,157	4,680	1,462	2,149	5,457	476	66,834
Apr-06	5,194	4,986	20,754	3,361	10,719	6,690	462	4,647	844	645	6,137	109	64,548
May-06	849	8034	26,891	3,761	13,067	11,150	34	1,610	282	2,398	6,711	21	74,808
Total	32,919	42,032	112,032	15,128	51,259	87,893	8,893	18,227	8,975	18,378	39,93	4,267	440,019
SBC	= Southern Big Cypress (South of US 41)					BCME	= Big Cypress Mangrove Estuary (South of US 41)						
SS	= Shark Slough					NESS	= Northeast Shark Slough						
ES	= East Slough					SSME	= Shark Slough Mangrove Estuary						
NTS	= Northern Taylor Slough					LPK/STS	= Long Pine Key / South Taylor Slough						
EP	= Eastern Panhandle					CS	= Cape Sable						
LPK/STSM	= Long Pine Key / South Taylor Slough Mangrove Estuary												
EPME	= Eastern Panhandle Mangrove Estuary												

Wading Bird Colonies Mainland Areas - February – July 2006 Methods - Aerial colony surveys were conducted monthly (February through July) by one or two observers using a Cessna 182 fixed-wing aircraft (~30 person hours). Survey dates were: 2 and 28 February, 22 and 28 March, 17 and 28 April, 26 May, 5 and 22 June, and 19 July.

Results - Wading bird nesting activity increased dramatically this season compared to previous seasons. There were more colonies seen within the park and more nests seen within many of the colonies. We observed a total of 10,140 nests within 39 active mainland colonies in Everglades National Park.

The initiation of nesting was late, but overall it appears that conditions were nearly perfect for successful nesting, despite vegetation damage within many colonies from hurricane Wilma and heavy rains that occurred before young birds had fledged. Park staff were concerned that the rainfall events near the end of fledging would result in abandonment of nests, however, it appears that birds were able to successfully fledge. Several flights were conducted approximately 1-3 weeks after rain events, but staff could not see dead young or abandonment of nests within colonies. Staff noted that juvenile birds continued to stand on nests and did not appear to be weak (unable to stand), therefore, it was assumed the young were able to fledge. Flapping young birds on and near nests and fledged young flying in and around the colonies were observed later.

Of the 39 colonies seen within the park, only four colonies failed for reasons unknown: three transient Great Egret colonies (“GREG 14, 16 and 17”) and a new mixed species colony in lower Taylor Slough (“Madeira”). However, the majority of colonies successfully fledged young.

An ominous discovery within one of the failed transient egret / night heron colonies (“GREG 14”) was the sighting of an exotic 10-ft Burmese python. The python was seen, but not captured, by park research cooperators. At the time the python was seen, the colony was still active. We do not believe the python caused the abandonment of nests at this colony, however, it was the first documented record of a Burmese python seen within an active wading bird colony. This colony may have failed due to its poor location within the East Everglades. The area around the colony completely dried down, which would have forced the adult birds to travel long distances to find food for the young.

SELECTED COLONY SUMMARIES

Alligator Bay (previously called “2004 New Colony13”) This colony was much larger in 2006 than in 2004 and 2005, and appeared to successfully fledge hundreds, if not thousands, of White Ibis and Snowy Egrets. We also noted approximately 200 Great Egret nests. In addition, we saw many Tri-colored Heron young flying about the colony; however, the number of Tri-colored Heron nests could not be estimated due to the thick vegetation. During one of the flights we followed flight lines of egrets and ibis flying from this colony to the west. Many birds landed among large feeding flocks of mixed waders and White Pelicans in mangrove creeks and flats.

Broad River (previously called “2004 New Colony7”) This colony has increased each year since it was initiated: from 80 nests in 2004 to 150 nests in 2005. In 2006, we counted a total of 445 nests. Species nesting here included Great Egrets, White Ibis, Snowy Egrets, and Roseate Spoonbills. Tri-colored and Little Blue Herons also nested, but we could not estimate numbers from the air.

Cuthbert Lake This colony remained stable despite se damage to the island vegetation from Hurricane Wilma. The west half of the island's mangroves were toppled and killed; however, there was enough live vegetation and structure left to support nests and nest numbers were slightly higher than in previous seasons.

Otter Creek (previously called "2004 New Colony8") This colony increased in size rather dramatically from 600 nests in 2004, to 450 nests in 2005, to 1400 nests in 2006. Like the previous seasons, this colony contained a mix of species, including White Ibis, Snowy Egrets, Great Egrets, Roseate Spoonbills, and Tri-colored and Little Blue Herons. Wood Storks also nested in this colony during the 2004 season and were seen again in 2006. Twenty nests with incubating adults were seen (and photographed) but the nests were later abandoned for reasons unknown. The aforementioned species in this colony fledged young. Flapping and flying young were seen during later surveys.

Paurotis Pond Nest numbers increased in 2006 at this colony, but most notable was an increase in Wood Stork nests compared to previous years. Previous stork nest numbers ranged from about 100-200 nests, however, this year we counted approximately 500 stork nests. In previous years, storks mostly nested on the mangroves at the far west side of the pond. This year they also nested on the center island.

Rodgers River Bay Prior to 2006, this Wood Stork and Great Egret colony nested on a small exposed mangrove island in Rodgers River Bay. However, after Hurricane Wilma damaged much of the island's vegetation, most of the colony appears to have moved north of the island to the nearest land peninsula. Total nest numbers were similar to previous years, but the colony was divided into the two nesting areas, island and peninsula.

Rookery Branch (renamed from "2004 New Colony9") This colony has increased from a Great Egret colony of 60 nests in 2004 to a mixed species colony of 815 nests in 2006. We counted 310 Great Egret nests, 500 White Ibis nests, and five successful Wood Stork nests. Tri-colored Herons, Little Blue Herons, and Black-Crowned Night Herons also nested, but staff could not estimate numbers for these species.

Frank Key A formal wading bird aerial nesting survey was not conducted in Florida Bay, however, nesting activity at the large Frank Key colony continues to be monitored. The colony at Frank Key was active throughout the season, but the birds' nests appear to have failed. Nesting observed from March through the end of May included Great Egrets (~100 nests), Snowy Egrets (~100 nests) and White Ibis (~200 nests). Birds were seen incubating and brooding, as well as some nests with eggs and small young. However, during subsequent checks in June and July, it appears the birds have abandoned most nests. Also observed were a few Great Egrets incubating a second time in June, but by July they were gone. During the same July check, a few White Ibis still appeared to be sitting on nests. Brown Pelicans and Double-crested Cormorants were observed with large young and it appears were able to fledge some young this season.

The vegetation within this colony, like many others in the park, was damaged by Hurricane Wilma. Most mangroves and other vegetation on the island were thinned out and much of the vegetation within the colony nesting area toppled and died. The nests were quite visible from the air and probably more exposed to both heat and predators. Vultures were observed roosting within the colony during several of the survey flights.

Pineland Bird Restoration The pine rock lands are a globally unique subtropical forest ecosystem considered "critically imperiled." 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. These 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. and the Ecostudies Institute have been addressing this information gap through a long-term study of the avifauna of the pine rocklands. Information included here is results from the second year of a three-year project. The objectives of this project include: 1) the ongoing evaluation of 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 30 Brown-headed Nuthatch territories were located in 2006, slightly lower than 2005 (37). Breeding nuthatches were successful in 50% of the territories and produced 1.45 ± 0.38 juveniles/breeding territory. The 2006 breeding population of Brown-headed Nuthatches consisted of 61 adults and 31 juveniles. The preliminary PVA indicates that the population appears to be well established, and is predicted to continue to grow in size. Barring any environmental catastrophe, the likelihood of extinction for this population is quite low.

Eastern Bluebird 6 Eastern Bluebird territories were located in 2006, down from 18 in 2005. Six territories (38%) nested successfully, producing 18 juveniles. The primary cause of nest failure appears to be nest predation. Video camera systems detected five predation events: one by an American Crow (*Corvus brachyrhynchos*), one by a snake (*Elaphe* sp.), and 3 by Red-bellied Woodpeckers (*Melanerpes carolinus*). As in previous years, at least one juvenile was killed after being struck by a vehicle on Research Road. The preliminary PVA results indicate the Eastern Bluebird population is drifting towards extinction. The population is predicted to decline at a rate of up to 20% per year, if vital rates remain at current levels. Population growth rate is most influenced by low survival and fecundity.

Improving juvenile survival and breeding productivity of Eastern Bluebirds should be an immediate focus of management efforts. Reducing Eastern Bluebird mortality, particularly of juveniles, from motor vehicle collisions on Research Road is important to the recovery of this species. Recommendations for actions that could support this and have not been implemented include: reducing and enforcing posted speed limits and informing employees and cooperators on the road mortality issue. In 2007, nest restrictor plates at the entrance of accessible Eastern Bluebird nest cavities will be implemented to deter predation and improve productivity.

Additional monitoring of bluebirds beyond the currently funded project (2007) is warranted given the high likelihood of extinction over the short term. Monitoring should include an increased effort to band and re-sight adults and juveniles so that survival – generally the most important component of population growth rate – can be estimated with greater accuracy and precision. Evaluation of cavity restrictor plates at the end of 2007 will inform

recommendations for this management action. Although Brown-headed Nuthatches appear secure, similar efforts to improve estimates of survival for this species will also prove valuable in crafting management strategies to ensure the long-term stability of this population.

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 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 was monitored through standardized camera surveys and habitat use through radio-telemetry. Based on information from camera surveys, radio-tracking, and staff observations, the second release of turkeys into Long Pine Key has been successful. Minimum population size is 19 adults. Individual bred successfully, as 24 poults were detected in August. Radio-telemetry results indicated that home range estimates in this study (mean = 16.9 km²) were higher than estimates from other studies and that turkeys in Long Pine Key almost exclusively used pine and prairie/marsh habitats, especially in the core of their home range. Given the high survival of released birds and the unexpected successful reproduction, the population is expected to increase substantially in 2007. Fire management has agreed to delay burning in the core of the Wild Turkey habitat area until after 1 July 2007 to minimize fire-related nest mortality. 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, sampling vegetation, and collecting fire and hydrological data from established survey stations at two pine rockland sites (which vary in stand age, physiognomy, composition of the plant community, and fire and logging history), will provide data to analyze 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 this data that can then be used to guide habitat management.

Future monitoring should be extended beyond the currently funded project (2007) to monitor the population trends of the two reintroduced landbird species, Brown-headed Nuthatch and Eastern Bluebird and to support a study evaluating the effects of fire on landbirds throughout the range of pine rocklands in southern Florida. This 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 Nesting Surveys are currently in progress for the 2006-2007 nesting season. Most recent survey dates: Jan 23-24 (Florida Bay), Feb 2 (Whitewater Bay and West Coast) Number of active bald eagle nests found to date = 20 (Osprey nests have not been tallied.)

Alligator Nesting The Systematic Reconnaissance Flight (SRF) to locate alligator nests was conducted. A 20% sample of the total estimated number of nests found were ground checked to track outcome of the nests. Ground checking to count eggs and determine overall status of the clutch and nest was conducted. Subsequent aerial nest checks were flown to determine the outcome of nests –hatching, flooding, predation, etc. Number of

nests found during the SRF survey = 72. Based on the number of nests found, the estimated number of nests in the survey area = 288.

Visited nest outcomes:

- Sample of nests visited on ground = 57
- 27 nests hatched (47%)
- 26 nests were completely flooded (46%)
- 3 nests were predated, mostly likely by raccoons (5%)
- 1 nest didn't hatch for reasons unknown (2%).

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 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 2006, University of Florida personnel located 52 nests, 48 nests were in EVER. Sixty-five percent (31) were successful, and 35% (17) were depredated by raccoons or other small mammals. One successful nest was located at both Ocean Reef and on Lower Matecumbe in the Florida Keys and one failed nested was located each at Deering Bay and the Montgomery Property along the Biscayne Bay shoreline. A total of 425 hatchlings were captured, of which 371 were from nests in EVER, 45 from Crocodile Lake National Wildlife Refuge and 9 from the single nest at Ocean Reef.

Thirteen individual crocodile survey/capture events were completed. Survey areas included Key Largo, Key Biscayne, and most accessible coastal and estuarine shoreline 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 94 crocodile observations, 75 alligator observations, and 97 indistinguishable eyeshines. Thirty-two individual non-hatchling crocodiles were captured during surveys of EVER, Biscayne Bay, and the southwest coast of Florida. Twenty-two of the non-hatchling crocodile captures occurred in EVER, 10 in Biscayne Bay (including Card and Barnes Sounds and Lake Surprise). Of the 32 captures, 20 were recaptures. Personnel at the Turkey Point Power Plant originally marked three of the recaptured crocodiles, FWC marked one, and the University of Florida originally marked the remaining 16.

The 2006 crocodile-nesting season continued as in the past two years, with high nesting effort and success. A total of 371 hatchlings were marked in Everglades National Park during the 2006 nesting season, just under the 377 marked in 2005, in spite of locating fewer nests. 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. Six nests were located along the 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 compose 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 six nests were found between Cape Sable and Middle Cape and for the first time since monitoring began, a nest was documented at Highlands Beach. The Highlands Beach nest represents the furthest north nesting effort in Everglades National Park.

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 Everglades National Park, 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 and nesting activity may further increase as a result of the Park Service's recent clearing of Brazilian pepper along the levy. 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, Everglades National Park, 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 COE 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 been permanent, 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). Fresh water drains out quicker and salt water intrudes 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 manatees 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 FWC reported a preliminary total count of 3,116 manatees statewide.

In 2006 park staff continued support of a USGS project of major importance to the recovery of the manatee population in Southwestern Florida. The USGS project focuses on West Indian manatee (*Trichechus manatus latirostris*) 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 anticipated tracking in 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 ATLSS 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 studies conducted by the USGS 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 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. Two types of technologies are used to acquire remote geographic locations from tagged manatees. Satellite-based Argos transmitters provide four to eight location fixes per 24-hour period. The GPS tag provides locations which are much more accurate than the Argos data (approx. 30 m vs. ≥ 150 m) y 15-30 minutes. In combination, the Argos data provides region-wide, long-term coverage suitable for revealing general patterns of habitat use, while the GPS data shows fine details of travel pathways and time spent in specific areas. EVER primarily uses newly developed Argos-linked GPS tags, which relay GPS locations as sensor data through the Argos satellite link, enabling detailed tracking data to be acquired remotely. Periodic field observations of tagged manatees are made by radio tracking from boats and by EVER aerial tracking teams.

Two capture operations were conducted in 2006, each involving experienced personnel from several state and federal agencies, including Everglades National Park. During June six manatees (4 males, 2 females) were captured in the Coot Bay region, and fitted with satellite telemetry tags. October captures conducted in northern Whitewater Bay resulted in five tagged manatees (2 males, 3 females). Movement, water temperature, and salinity data recorded by sensors in the tag assembly will be used to parameterize the manatee/hydrology model. Tracking data for all tagged manatees showed high use of Coot Bay and southeastern Whitewater Bay during the late dry season/early wet season (late spring/early summer). There was a significant shift in use to the north/northeastern part of Whitewater Bay in the late dry season (late fall/early winter). Data from manatees newly tagged in 2006 documented local movements within Whitewater Bay and Coot Bay, as well as forays outside this region. This project is on-going, with plans for instrumenting additional manatee in EVER during 2007.

Additional USGS findings related to Manatee Populations in the Park for 2006 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 in 2006, 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 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 is expected in 2007.

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.

Planting Native Plants for Butterflies in Developed Areas at Shark Valley and Everglades City Public interest in butterfly gardening and in the use of native plants in landscaping has increased significantly in recent years. Staff planted two butterfly gardens near the Shark Valley visitor center and added additional trees and shrubs used by butterflies in four other regions of the parking area. At the Gulf Coast Visitor Center/Ranger Station trees and shrubs characteristic of coastal hammocks, some species characteristic of offshore islands, and species typical of coastal roadside plants that butterflies use for nectaring were planted in various locations. The hundreds of trees, shrubs, perennials, and groundcovers used in the plantings included species used by butterfly caterpillars as host plants or by adult butterflies as nectar plants. In addition, all plants used are native to the specific area of the park planted. This project reduced nonnative turf grasses and maintenance costs by reducing area that had previously been mowed. A large area at the Gulf Coast entrance to the park has returned to a more natural state with native wildflowers and grasses and species of trees and shrubs from adjacent natural areas are seeding in the un-mowed area.

The South Florida National Parks Trust (SFNPT) provided some funding for this project, with the remainder a carryover from the 2005 butterfly planting project at Flamingo. The 2005 Flamingo planting was largely destroyed by Hurricane storm surges from Katrina and Wilma. Representatives from many park divisions participated in the effort.

Freshwater Fisheries Monitoring Exotic fish species present a significant challenge to natural resource management in Everglades National Park. Six (6) 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 6 species are considered established in EVER, a few of the new species were more common in 2006 than in previous years. The African jewelfish (*Hemichromis letourneauuxi*) has continued to expand its range, although at some sites, catches seemed to decrease from 2005 to 2006. Spottfin spiny eel (*Macrogathus siamensis*), the most recent exotic collected, continues to be observed more frequently within the Taylor Slough 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. These introductions and expanding populations indicate a need for increased monitoring and management of exotic species.

The fish assemblage in EVER provides a useful indicator of changes in hydrologic conditions. The recent increased rate of invasion by exotic species emphasizes the need to develop a robust monitoring program that provides both the early detection of exotic species and the ability to track their establishment to better inform management decisions.

Marine Fisheries Fishing activity and harvest of marine game fish from Everglades National Park (ENP) have been monitored nearly continuously since 1958, and is reportedly the longest on-going survey of its kind in the world. The monitoring is conducted by interviewing anglers at the conclusion of their weekend fishing trips as well as processing monthly fishing-guide logbook reports. The objectives of the marine fisheries monitoring project in ENP are to estimate the catch/harvest per unit effort (CPUE/HPUE - also known as catch/harvest rate), relative abundance, age structure, total catch/harvest, total estimated catch/harvest, and boating and fishing activity. This monitoring program was initiated because of concern over increased fishing pressure resulting from the construction of a highway, marina facilities, and an access canal to Whitewater Bay in 1958. The first 11 years of the park's fishery monitoring program (1958-1969) were conducted through the University of Miami's Institute of Marine Science and were directed at evaluating only the sport (recreational) fishery out of Flamingo. Guide and commercial fishermen began reporting their total catches in 1965, and their effort was reported monthly in 1970. Beginning in 1972, ENP managed the data for the program, and in 1973, and later in the mid-1980s, conducted aerial surveys to estimate total fishing/boating activity. In 1980, interviews at Chokoloskee-Everglades City (lower Ten Thousand Islands) boat ramps were included on a routine basis. In 1985, commercial fishing was eliminated from ENP, and only recreational and guided anglers were permitted to fish within park waters. Integration of the commercial/recreational data set into the park's South Florida Natural Resources Center ORACLE web database system was initiated in the 1990s.

Currently, ENP marine fisheries staff are involved in a collaborative effort with the Florida Fish and Wildlife Conservation Commission (FFWCC) to assess the condition of snook, red drum, and spotted seatrout stocks throughout south Florida. ENP port samplers interview anglers to determine snook size (released and/or harvested) and take biological samples (otoliths, gonads, and fin clips) in order to determine snook stock condition. Size estimates of released fish will help to determine the size of snook, and in the near future, spotted seatrout, and red drum, that remain in park waters. A 5-year status report on snook activities was completed by FFWCC/FWRI stock assessment biologists, R. Muller and R. Taylor, in January, and entitled "The 2005 Stock Assessment Update of Common Snook, *Centropomus undecimalis* in Florida" using, in part, ENP creel data. Although trends suggest snook stocks are static and/or increasing in some areas of the state, fishing mortality rates are increasing. A Snook V Stock Assessment Workshop hosted by FFWCC and multi-fishery resource agencies was held at St. Petersburg's FFWCC center in February. A poster was presented by ENP fisheries staff entitled, "Common Snook Catch and Harvest Rates, Total Catch and Harvest Estimates, and Relationships between Catch Rates and Environmental Conditions in ENP, 1999-2004." Symposium recommendations included: lower bag limits on the Atlantic Coast, close the month of May to harvesting, and increase the minimum size to 27 inches to prevent further overfishing based on Spawning Potential Ratio estimates. A 2005 red drum stock assessment report was updated to include ENP creel data. A 2006 spotted seatrout stock assessment report was completed by M. Murphy using, in part, ENP creel information. Other collaborative, interagency (NOAA/NMFS) activities involve developing ENP standardized catch rates for the first federally endangered fully marine species, the smalltooth sawfish. Park waters serve as centers of abundance for monitoring of recovery activities for smalltooth sawfish. A multi-fishery resource agency Smalltooth Sawfish Recovery Team Plan was updated and completed this year. A joint NOAA/ENP poster was presented at the American Society of Ichthyologists and Herpetologists/American Elasmobranch Society Annual Meeting in New Orleans, LA, entitled, "Monitoring the Recovery of Smalltooth Sawfish, *Pristis pectinata*, Using Standardized Relative Indices of Abundance." A paper authored by J. Carlson (NOAA), and park fisheries staff is forthcoming in the journal of Biological Conservation. In addition, the development of draft CERP southern estuaries performance measures to monitor the long-term recovery/restoration of key recreational species based on salinity using park survey data is underway for feasibility studies planned in Florida Bay and the Ten Thousand Islands. As part of the ENP effort, a mandatory guide logbook reporting system was implemented at DRTO.

ENP is a multi-species fishery and we have seen individual species trends that have fluctuated overtime. Overall, however, status and trends, based partially on our survey results (presented in our Annual Fisheries Reports) as well as collaborative research and monitoring reports, suggest the park fishery is stable and is able to withstand increased recreational and guided fishing pressure. To further assess the potential effects of increased fishing/boating activity, an aerial survey to update boat and trailer counts in park marine waters was implemented using a cooperative agreement with the University of Miami/RSMAS. Our monitoring program thus provides valuable information to use in assessing boating activity and the status of marine game fishes within ENP for years to come.

Pythons Reports of non-native exotic snakes in EVER include regular, and increasingly frequent, sightings of Burmese Pythons (*Python molurus bivittatus*). Pythons in the south Florida environment are a result of unwanted, intentionally, and perhaps accidentally,

released exotic pets. The Burmese python, native to Southeast Asia, can reach a length greater than twenty feet. This python is a long lived (15 – 25 years) behavioral, habitat, and dietary generalist, capable of producing large clutches of eggs (8 – 107). Pythons in EVER have been observed along the main park road, in Long Pine Key, at Shark Valley, along Tamiami Trail, on the eastern park boundary, along canal levees, and in the remote mangrove backcountry. The non-native python's diet in the Everglades includes raccoon, rabbit, muskrat, squirrel, opossum, cotton rat, black rat, domestic cat (kitten), bobcat, house wren, pied-billed grebe, coot, white ibis, limpkin, and American alligator. In 2006, Dr. Secor, working in the lab at the University of Alabama, calculated that it takes about 3 kg of prey to produce 1 kg of python. So, for example, a python weighing 30 kg would have had to have eaten about 90 kg of food. A realistic, but hypothetical, 90 kg diet for this one 30 kg python might be: 72 deer mice, 30 cotton rats, 10 squirrels, 15 rabbits, 1 opossum, 1 raccoon, 15 wrens, 5 grebes, 8 ibises, 6 little blue herons, and 4 – 5' alligators. Sources of mortality include motor vehicles, mowing equipment, fire, and alligators.

As Python molurus is known to eat birds, and also known to frequent wading bird colonies in their native range, the proximity of python sightings to the Paurotis Pond and Tamiami West Wood Stork rookeries is troubling. In 2006, at least 170 pythons were removed, compared to 95 in 2005, 70 in 2004, and 23 in 2003. Multiple observations of individuals of different size-classes support the establishment of breeding populations of the Burmese python in EVER. The measured total length for snakes recovered ranged from 65 cm to 488 cm, including hatchling sized animals recovered in the summer of 2004, 2005, and 2006. In May of 2006, a nesting female python was found in the park with a clutch of 46 eggs (44 were fertile). Burmese pythons present a potentially significant threat to the successful ecological restoration of the greater Everglades. Pythons are now established and breeding in south Florida. Python molurus bivittatus has the clear potential to occupy the entire footprint of the Comprehensive Everglades Restoration Plan, adversely impacting valued resources across the landscape. Burmese pythons are widely bred in Florida and still imported from Southeast Asia as pets. Proposed management and control actions must include strategies for preventing their intentional release.

In July of 2005 an Invasive Snake/Reptile Management and Response Workshop was convened. Workshop participants recommended strategic actions in three broad areas; (1) python control, (2) rapid response to invasive amphibians and reptiles in south Florida, and (3) public outreach and education. Action plans are being drafted and funding pursued. One recommendation was to conduct limited radio tagging and tracking studies. A pilot project, involving the park, USGS, University of Florida, and Davidson College, was initiated in December 2005. In mid-December, four Burmese pythons were caught in the park, surgically implanted with radio transmitters, and released back into the park. The objectives of the first phase of the project included; (1) ensuring that staff could find, catch, and remove the pythons released, (2) learning if pythons are using habitats other than the road and canal levee corridors, such as tree islands away from roads, (3) and, assessing whether radio tagged pythons will lead staff to untagged pythons that can then be caught and removed. The objectives of the first phase of this pilot project were met in March of 2006. All radio tagged pythons were recovered from the wild; pythons were found to be using native tree islands and hammocks; and these four radio tagged pythons led researchers to 12 untagged pythons all of which were captured and removed. Additional radio tracking in 2006, supported by the South Florida Water Management District, revealed that under the right conditions pythons can move remarkable distances at

relatively rapid rates. More data analysis and capture and tagging work is scheduled for 2007.

VEGETATION MANAGEMENT

During 2006, EVER had no botanist, but vegetation management continued at a reduced level due to work by cooperators and park staff outside the vegetation program. Rare plant inventory and monitoring efforts focused on: (1) monitoring plant species of management concern and (2) establishing cultivated populations of species deemed to require augmentation or reintroduction to mitigate effects of human activities that severely reduced or eliminated them. In addition to continued monitoring of plots established in the past, additional long-term monitoring plots were established for six rare plant species. In preparation for augmentation or reintroduction, propagules were obtained locally for several plant species now being grown locally in culture.

The Everglades vegetation program supported a variety of National Environmental Policy Act and other compliance evaluations during 2006. Major efforts included the Wilderness feasibility evaluation for the General Management Plan and the Commercial Airboat Environmental Assessment.

Hole-in-the-Donut Wetland Restoration In this cooperative effort EVER works with Miami-Dade County to restore an area of non-native plants completely surrounded by natural habitat. Known as the “*Hole-in-the-Donut*”, this area – originally a wetland – was farmed from 1918 until 1975. When farming ceased, the area became dominated by the non-native tree commonly known as Brazilian pepper (*Schinus terebinthifolius*). County wetland mitigation bank funds are now used to restore the area to a marl prairie wetland vegetative community with its associated wildlife.

Large scale restoration efforts were temporarily halted during 2006 to resolve permit issues and to wait for additional funds to accumulate following the record 1007 acres restored in 2005. Permit modifications were submitted, to both the Army Corps of Engineers and the Florida Department of Environmental Protection, to expand the project slightly and authorize the extended storage of stockpiled soil and sell mitigation credits outside the boundaries of the area governed by the *Bird Drive-North Trail Special Area Management Plan*. A functional evaluation of the Hole-in-the-Donut restoration using the Uniform Mitigation Assessment Method (UMAM) was conducted to prepare for changes in the regulations governing in-lieu-of-fee mitigation arrangements that will require the project to assess the replacement of wetland functions provided by the restoration.

During 2006, the park initiated efforts to increase the ecologic diversity of the restored areas. The location of a hammock, cleared just prior to this area being added to the park, was identified and planting of appropriate hardwood trees to restore the former hammock initiated. The park also began developing methods to identify areas of the Hole-in-the-Donut that are suitable for restoration of Pine Rockland (a globally endangered plant community) and hasten the establishment of South Florida Slash Pine in these areas.

Monitoring of conditions in restored areas of the Hole-in-the-Donut indicates that the project remains successful at maintaining exotic plant control and restoring functional wetlands. The majority of plant species (61% to 73%) and plant cover on restoration sites were wetland plants (either obligate or facultative wetland plant species). This meets the regulatory requirement for cover by wetland plants. By comparison, 66% of species in adjacent natural vegetation and 27% of the species in unmitigated Brazilian pepper were

wetland-associated species. Since the initiation of restoration activities, 211 species of vertebrates have been observed. There were 24 species of fishes, 15 species of amphibians, 29 species of reptiles, 131 species of birds, and 12 species of mammals. Unmitigated Brazilian pepper had the lowest cumulative total (48 species) and restored sites had the highest totals (range of 93 to 154). Natural vegetation had 110 species. Higher species richness of restored sites was primarily due to a higher number of birds.

Restored sites have a higher abundance of fishes and selected aquatic macro-invertebrates (crayfish, grass shrimp) than undisturbed natural vegetation. This higher prey base on the restored sites supported higher numbers of wading birds and grassland-associated species, including federally endangered Wood Storks. The restored sites were also regularly used by up to 35 white-tailed deer, which attracted federally endangered Florida panthers (photographic record) during the dry season. Raccoon, marsh rice rat, marsh rabbit, and bobcat were also frequently noted.

Exotic Plant Control Non-native exotic plants (exotics) are the single greatest natural resource threat to the native plant communities of EVER. Approximately 1,000 plant species are recorded from the park, of these, over 200 species are exotic. Limited funding allows for routine control of only 10 to 15 of these exotics. The most commonly targeted are Brazilian pepper (*Schinus terebinthifolius*), Melaleuca (*Melaleuca quinquenervia*), Australian Pine (*Casuarina equisetifolia*), Seaside Mahoe (*Thespesia polpunea*), latherleaf (*Colubrina asiatica*), and the most recent addition, Old World Climbing Fern (*Lygodium microphyllum*). Observations from biennial systematic reconnaissance flights have estimated that untreated Brazilian Pepper affects 125,000 gross infested acres, while Melaleuca and Australian Pine each affect 12,000 gross infested acres. Latherleaf has affected over 5,000 gross infested acres and Old World Climbing Fern infests more than 10,000 gross acres. Overall, these species are estimated to affect approximately 200,000-250,000 acres in the park. The earliest efforts to treat exotics in EVER date back to the 1960s. Funding for exotic plant projects has always been problematic and has limited the duration and scope of systematic treatments. However, from the mid 1980s to the present, EVER has received generous support for the treatment of exotics.

In 2006 EVER's Exotic Vegetation Management Program obtained funds from the South Florida Water Management District (SFWMD), Miami-Dade County's Wetland Mitigation Trust Fund, managed by the Special Area Management Planning Committee (SAMP), and the Florida Department of Environmental Protection (FDEP) for the treatment of invasive exotic plants. Provided below is a table summarizing the agency donations and the districts where they were used. (The acreage data has not yet been summarized.)

Park Unit	Project Location	Agency	Gross Infested Acres Treated	Costs
Everglades NP	East Everglades District	SAMP		\$124,000
Everglades NP	East Everglades District	SFWMD		\$135,000
Everglades NP	East Everglades District	FDEP		\$500,000
Everglades NP	Gulf Coast District	FDEP		\$150,000
Everglades NP	East Everglades District	SFNRC		\$150,000
Dry Tortugas NP	Loggerhead	SFNRC	33	\$1,000
Total				

Cape Sable Canals Several canals were constructed in the Cape Sable area between 1900 and the 1930's, prior to the establishment of EVER. The purpose of these canals was to drain water and make the area useful for agriculture and commerce. Saltwater intrusion through these canals and sea-level rise have hastened the conversion of freshwater marshes north of Lake Ingraham to shallow marine habitat and mangrove forest. Tidal flushing has eroded the canals and deposited the sediments in Lake Ingraham. The smaller interior Homestead and East Cape Extension Canals were plugged with earthen dams to minimize these impacts and restrict access to the non-motorized wilderness area. However, these dams failed during the 1980's or early 1990s and were replaced by sheet-piling dams in 1997. The sheet-pile plugs have now also failed.

The dams appear to have influenced general ecological conditions, including critical wildlife populations in the area. In addition, there are visitor safety issues and access to designated wilderness continues to be a problem. The canals drain fresh water from the interior wetlands and permit salt water from the Gulf of Mexico to penetrate inland. This salt water intrusion is accelerating the change from freshwater wetlands to a more saltwater estuary ecosystem. By allowing salt water intrusion, the fresh water wetlands which consist of sawgrass and other wetland species have been transformed to mangrove forest. Tidal flushing of fresh water from the interior wetlands is also transporting organic material (i.e., peat and nutrients) causing a loss of organic soil, resulting in soil subsidence. As a result of this flushing through both East Cape and Middle Cape Canals, Lake Ingraham is filling in with marl sediment at a significantly accelerated rate. If this process goes unchecked, Lake Ingraham will soon become a tidal mud flat.

Dr. Harold R. Wanless and his PhD. student Brigitte Vlaswinkel, University of Miami, were funded by the NPS to study the coastal landscape, wetland, and tidal channel evolution affecting critical habitats of Cape Sable. In his final report of June 2005, Dr. Wanless documented the rapid filling of Lake Ingram and widening of the canals and natural channels in the area. A team of National Park Service geologists and hydrologists has reviewed and analyzed existing information, defined and evaluated alternatives, and made recommendations. A formal program management plan (PPM) for the Cape Sable Canals has been developed.

Park management and staff met with the representatives of the National Parks and Conservation Association, Audubon, several local fishing organizations, and interested citizens on May 25, 2006. As a result of this meeting Superintendent Dan Kimball received an open letter supporting park efforts to take action to block movement of motor boats and salt water past the failed plugs. The park applied for and received a substantial grant from The U.S. Fish & Wildlife Service Coastal Program to restore Cape Sable coastal wetlands by blocking saltwater intrusion through the failed canal plugs. A scope of work was developed in September 2006 for an engineering feasibility study addressing repair or replacement of the plugs.

INVENTORY AND MONITORING OF PHYSICAL RESOURCES

The mission of this program is to monitor the physical resources of EVER by collecting and managing high quality data from a network of marine and freshwater monitoring stations located throughout the park.

The program is mainly focused on operating and maintaining the hydrologic monitoring network throughout EVER. The network consists of 65 stations throughout the marsh and uplands of EVER as well as 35 stations in the marine and estuarine areas. Telemetry is included in almost all stations providing real-time data acquisition necessary for a variety of resource management activities and is transmitted daily to the USACE and the South Florida Water Management District for day-to-day operations of the local water control system.

In addition to programmatic activities, monitoring program staff has finished the rebuilding of the marine monitoring network destroyed by the hurricanes of 2005. Fortunately, 2006 was a mild hurricane season which allowed staff to catch up on needed maintenance and rebuilding. An equally significant accomplishment this year has been removal of all debris left from the stations destroyed by the hurricanes.

In addition, to the hydrologic monitoring network, the program is involved in several cooperative monitoring efforts. The following is a list of cooperative monitoring projects conducted during FY 2006:

- Air Quality Monitoring; in cooperation with NPS Air Resources Division
- National Atmospheric Deposition Network; in cooperation with the US Environmental Protection Agency (EPA)
- Ultra-Violet Radiation and Stratospheric Ozone; in cooperation with the EPA and the University of Georgia
- Surface water quality; in cooperation with the South Florida Water Management District
- Groundwater quality; in cooperation with the South Florida Water Management District.

Accomplishments for the Physical I&M program revolve around programmatic activities relating to maintenance of the monitoring and telemetry network and managing the high volume of data generated. Below is a listing of the major accomplishments for 2006.

- Reviewing and validating water level, rainfall, salinity, and water temperature data from all stations in the monitoring network. Data produced by the monitoring program are used on a daily basis by water management officials and resource managers, and researchers provide hydrologic information presented and analyzed in Project Assessment Reports such as the Interim Operational Plan (IOP) report produced as part of the Modified Water Deliveries program provide the foundation for measuring the status and trends of the hydrologic resources of EVER provide the hydrologic information necessary to gauge the success of various restoration projects including the Modified Water Deliveries Program, CSOP, and the CERP are used for fire management activities.
- Collecting monthly surface water quality samples throughout the main drainages of EVER. The surface water quality program provides information relating to the affects of upstream water management activities on the water quality entering EVER.
- Collecting quarterly groundwater quality samples in the C111 basin. This program monitors the impacts of the C111 detention areas on EVER.
- In cooperation with NOAA, EVER is participating in the Coastal Observation and Monitoring Network by installing satellite telemetry equipment at selected marine sites.

The future of the monitoring program is probably most influenced by the needs of the Comprehensive Everglades Restoration Plan, which is leading to significant increases in data requests, as well as requests to add more monitoring stations to the park. EVER expects a modest expansion in hydrologic monitoring to continue throughout the next few years.

2006 6.1 Resource protection, law enforcement, visitor safety and security, fee collection

RESOURCE AND VISITOR PROTECTION - EVER

The Division of 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 and 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 trail maintenance, and critical assignments on the park's hurricane incident team.

2006 was a time of recovery from the impacts of Hurricanes Katrina and Wilma. The Flamingo campground was closed until February 2006 and operated on a limited basis. District staff projects focused on trail and backcountry waterway clearing, replacing lost or damaged equipment and continued front and backcountry patrol functions.

The Division continued an authorized level of 33 commissioned park rangers, 34 fire positions, 6 dispatchers and 4 administrative positions. Throughout 2006, the Division experienced a higher-than-normal vacancy rate in each of these areas due to transfers, retirements or funding shortages. 26 positions became vacant or were already vacant in 2006.

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 2006

The Division of Resource & Visitor Protection received the 2006 Southeast Region's Award for "Outstanding Service in Natural Resource Protection".

On April 03, 2006, 39 Cuban migrants landed in the Flamingo District of EVER on Middle Cape. The suspect vessel, located on scene, ran out of fuel and was seized by Immigration and Customs Enforcement. The Cuban migrants were turned over to U.S. Border Patrol.

Law Enforcement hosted 2 law enforcement in-service training courses ensuring 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 FLETTC.

Training included: Physical Fitness Coordinators Training, Instructor Techniques for Non-Lethal Ammunition Training Program, and Advanced Physical Security Techniques.

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

Other Law Enforcement Statistics include

- 30 search and rescue incidents in the park, 0 fatalities
- 43 emergency medical incidents, including 12 trauma, 22 medical, and 9 first aid.
- 16 citations/arrests for illegal drug activity
- 4 arrests/citations for Part I crimes (larceny-theft)
- Part II crimes included 12 DUI's, 33 liquor law violations and 41 arrests/citations for disorderly conduct
- 3223 boating, 2 aircraft and 1018 traffic incidents
- No documented violations of the Archeological Resources Protection Act (ARPA), Antiquities Act or other statutes protecting archeological resources.
- One significant vessel grounding case referred to NPS/ERDAR to pursue recovery of funds from the responsible party for restoration to damaged resources (bay bottom, seagrass, coral and sponges).

Fire Activity Summary

Calendar year 2006 was an active fire year in Everglades National Park. Fire acreage inside the Park totaled 29, 392 acres burned in 39 separate fire incidents. There were an additional 19 fires that the Park responded to within the Mutual Threat Zone immediately adjacent to the Park totaling 482 acres.

Everglades NP also supported the National Fire Plan and national fire efforts by providing resources and overhead for 34 incidents. The summary of fire statistics for the year is as follows:

Suppression Fires: Total 28 9 inside - 14425 acres 19 in Mutual Threat Zone - 482 acres	Prescribed Fires: total 26 26 inside Everglades NP for 14871 acres	Wildland Fire Use: Total 4 4 WFU fires - 97.6 acres
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Calendar year 2006 continued a string of years of unusual weather patterns. Generally weather was dry, and multiple times we went for several weeks without significant rainfall. Those drought periods were often interrupted by a single large rainfall event, followed by another period of drought. These pulses occurred throughout the year in both the wet and dry seasons. This resulted not only in a short period of severity conditions in mid May, but surprisingly high drought index ratings in July, August and September. Total rainfall at the Dr. Bill Robertson Jr. center (CACHE RAWS) was 15% below the average per year of the last 35 years. In the East Everglades (CHEKIKI RAWS) rainfall was 25% below the average per years of the last 14 years. Meanwhile in the western edge of Shark Slough (TENRAW RAWS) total rainfall for the year was right at the average for the past 14 years.

The comparative rainfall for the year went like this: Jan=very dry / Feb=wet / Mar=very dry / Apr=very dry / May=avg / June=avg / July=wet / Aug=avg / Sep=very dry / Oct=very dry / Nov=very dry / Dec=avg.

The very dry conditions at the end of calendar year have carried into 2007. We have entered this year not only with a cumulative deficit of rainfall, but significantly, a drought going into the start of the “normal” dry season. This may have interesting results in 2007, especially if predictions for a return of La Nina in May or June come true.

As mentioned we had a brief period of severity and opened a special severity account with the Southeast Regional office. Using that account we ordered in a contract handcrew and a Single Engine Air Tanker to augment initial attack and extended attack capability. A single rainstorm dropping nearly 2 inches of rain on May 17 brought an end to the “severity” period, but fire danger ratings still remained high to very high. We had back to back major fires in June, the Chekika Rx and escaped Chekika Wildfire and the Airboat fire. Both are described in detail below.

In April Everglades Fire & Aviation supported Big Cypress National Preserve on their Six Pack fire, another major fire. We provided extended attack firefighters and overhead, helped Big Cypress transfer command of the fire to the Southern Area Type 1 Red Team, and continued working on the fire with the Red Team.

After the Six Pack Fire, with south Florida entering severity conditions affecting all our immediate cooperators, Everglades Fire & Aviation Management led the way in establishing a Type 3 Incident Management Team to serve all the needs of Everglades, Big Cypress and the Florida Panther Refuge for extended attack fires. Overhead for this team was drawn from each of these units and Biscayne National Park. The Everglades Fire Dispatch office coordinated the team roster daily, and each team member was committed if ordered for a 24 hour rotation. The team was n used, but each contributor thought it was a significant addition to the South Florida Fire Planning Unit.

Continued intermittent rainfall became problematic in trying to conduct prescribed burns in June and July. Although weather conditions precluded us from reaching the targeted acreage goals, quality prescribed burns were achieved that met management objectives.

Chekika Rx / Escaped Chekika Wildfire On June 5, 2006 a prescribed fire was ignited in the Chekika area of the East Everglades. The fire was burning under moderate conditions, but spotted across a paved road with mowed shoulders and a 30’ wide canal to the west. Spotting of such distance is unusual in grass prairies. Ground firefighters were limited in



access to the spots by the canal. The park helicopter was re-directed from another mission to transport and support firefighters on the spots with bucket work. Despite efforts the fire continued to drive to the east on west winds toward the Park boundary at SW 221 Ave. Florida Division of Forestry bombardiers and a Single Engine Air Tanker (SEAT) were ordered to assist engines that were holding along SW 221 Ave. The fire was contained the next day, June 6, utilizing several engines, the park helicopter and the SEAT. The fire was held entirely on NPS owned lands. The additional thousand acres that burned were scheduled to be prescribed burned within the next two weeks. Due to the Park boundary and some private property at risk, that burn was planned to be conducted on an east wind, hence the need to declare this fire a suppression action. The prescribed fire at Chekika, that spotted and caused the wildfire, was otherwise a successful treatment of 225 acres. The Chekika Wildfire was declared out on June 9 with a total of 1067 acres.

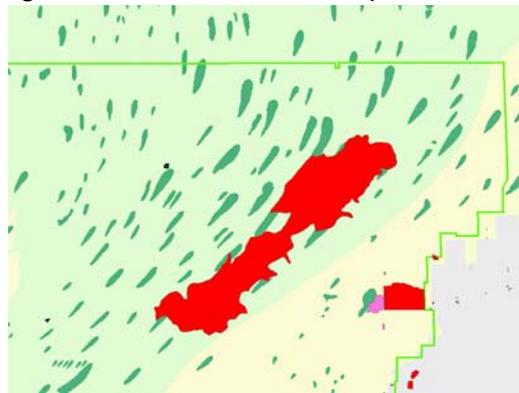


Airboat Fire, June, East Everglades The Airboat Fire was ignited by lightning on June 20, 2006, discovered at 4:30 PM. The fire ignited in the East Everglades portion of

Airboat Fire displays characteristic fire behavior in heavy sawgrass fuels.

the Park in Fire Management Unit 4

(FMU4). During initial size up performed by air that evening, the fire was burning in an area with considerable standing water and the fire was expected to self extinguish. The fire was burning in very sawgrass fuels, however, survive the night. The next was again sized up and the Situation Analysis (WFSA) initiated. A WFSA was management tool because, Fire Management Plan, is not permitted in FMU4. alternative in the WFSA an “appropriate response” strategy for this that emulated a Wildland Fire Use. Due to extreme conditions (flooded ground, high temperature indexes, afternoon thunderstorms) the decision was made to primarily monitor this fire until it threatened special values at risk or self extinguished.



the dense emergent and managed to morning the fire Wildland Fire process was selected as a under the current Wildland Fire Use The selected however utilized management suppression fire

The 13165 acre Airboat Fire was the largest fire in Everglades NP since 1989. This naturally ignited fire was managed using a monitoring and limited suppression strategy.

The fire continued to burn for several more days with primary growth to the northeast and southwest. Eventually the southwest flank of the fire burned into Fire Management Unit 2 in Shark Slough where wildland fire use is an

acceptable management option. This SW flank was allowed to burn. Meanwhile the NE flank of the fire began to approach US Highway 41, and concerns for future smoke issues arose. On June 24 a decision was made to attempt to suppress the NE flank of the fire, and efforts were made to extinguish the fire using squads of firefighters supported by 2 light helicopters. There was no Single Engine Air Tanker available anywhere within the state of Florida. Attempts to suppress the fire that day were unsuccessful due to footing conditions, fire burning aggressively in heavy sawgrass fuels, and heat index ratings that were excessive for successful ground firefighting. A strategy was developed to attempt to stop northern spread of the fire using Florida Division of Forestry Rollagon engines to support a burn out along airboat trails generally running west to east about 2 miles south of US41. On June 25, as equipment was staging to implement this strategy a long overdue single rainstorm covered the fire and extinguished the fire. Total final acreage was 13165 acres.

Coastal Prairie Exotics Control Prescribed Fires

In conjunction with the Exotics Management Program of the South Florida Natural Resource Center, Fire & Aviation management continued to use prescribed fire as part of the efforts to reduce the encroachment of Old World Climbing Fern (*Lygodium* spp.) in the coastal prairie areas of Everglades NP. Nine prescribed fires were managed for a total of 8900 acres in this project. As seen in the photo below, fire is used to consume the organic remains of the ferns that have been chemically treated. The ferns climb over and entomb vegetation in a mat-like layer. Fire treatment eliminates the mats.



Besides the benefits of reducing Old World Climbing Fern infestations, these prescribed fires are also useful in reducing invasions of Brazilian Pepper (*Schinus* spp.) and Australian Pine (*Casuarina* spp.)

National Fire Plan Incident Assistance and Outreach

2006 was a very busy wildland fire management year throughout the United States. Since almost all Everglades Fire & Aviation staff members are salaried from national fire funds, the program continued its tradition of supporting the regional and national fire management efforts this year. All told the Park staff responded to 34 out of Park wildland fire incidents.



The fire season began early in January with support of multiple large wildfires that were in Texas. Several Everglades staff members participated during this Texas / Oklahoma severity mobilization which went on for several weeks. In April as mentioned previously we assisted Big Cypress NP with the Six Pack fire. Another noteworthy assignment was when FMO Bob Panko was asked to command the Sulphur Mountain Fire in the Ouachita NF in Arkansas as a Fire Use Manager Type 2. This 4000 acre fire was the first Wildland Fire Use fire on USFS lands in the Southern Region of the NF system.

The western fire season continued to heat up in July and several Everglades staffers were assigned to the "mega fire" Tripod Complex in the Okanagon NF in the state of Washington. In September multiple Everglades staffers were once again assigned to another "mega fire", the Day Fire in southern California. The Day Fire was the fifth largest wildland fire to burn in California.

Fire education / prevention outreach activities included 5 presentations, some conducted cooperatively with the Florida Division of Forestry. 68 people attended these presentations. Fire prevention assistance was provided for the Miccosukee Tribe of Indians during their annual fireworks display. Additional fire education sessions were done with Boy Scout and other groups in the Park. The FMO continued as a member of the statewide Arson Alert Board and participated in two statewide meetings of that group in 2006. The FMO also represented the NPS statewide as part of the state Multi Agency Group.

Staffing Most fire Suppression positions were staffed throughout the year. In prescribed fire, many of the funded positions were vacant for a portion of the year. Detailers from Great Smoky Mountains National Park were brought in to assist in prescribed fire implementation. Interns from the Student Conservation Association were used to augment some vacancies on the Fire Effects Monitoring staff.

The Fire and Aviation program began implementation of the interagency fire medical standards for both full time firefighters and collateral duty personnel. Fire personnel also attended a large amount of training in 2006, much of which was geared at assuring staff members would meet training and qualification requirements of the Interagency Fire Program Management Qualification Standards.

Training 11 fire and aviation training courses attended by 138 students were held in the Park in 2006. Courses included Strike Team/Task Force Leader (S330), Helicopter Management (S372), Portable Pumps and Water Use (S211), Chain Saw Operator (S212), Helicopter Crewmember (S271), Basic and Intermediate ICS and several others. Most courses were instructed by Fire and Aviation Management staff members. Attendees included staff from Everglades, Biscayne and Big Cypress, cooperators and other interagency participants.

Fire and Aviation staff members also attended 18 courses sponsored outside of the Park. These courses spanned a wide range of basic, intermediate and advanced fire management skills and qualifications.

Everglades staff members also participated in a wide variety of workshops and instructed at a number of courses at the regional or national level. Workshops included the NPS Fire Managers Workshop, the Southern Area Interagency Prescribed Fire Workshop and Landfire workshops. Instruction was provided for the state of Florida, primarily at the states Withlacoochee Training Center, and for federal partners in the Southern Area

(primarily instruction at 3 Fire Program Management (M581) courses held in the southern region.

Taskbooks 14 position taskbooks were initiated during 2006. These taskbooks included line and overhead positions such as Helicopter Crewmember and Helicopter Manager, Fire Monitor, Incident Commander Type 5 and Type 4, Engine Boss, Engine Operator, Single Engine Air Tanker Manager. Eight (8) position taskbooks were completed by staff members in 2006 and they included line and overhead positions such as Single Engine Air Tanker Manager, Engine Operator, Helicopter Crewmember, Helicopter Manager and Incident Commander Type 2.

Fire Effects Monitoring and Fire Ecology The Everglades National Park fire monitoring program, was able to successfully switch its Fire Effects Monitoring database from the FMH software to FEAT (Fire Ecology Assessment Tool) in 2006. Lisa McInnis and Brad Weissaupt from Natchez Trace Parkway visited in January of 2006 to assist with the database conversion. Efforts were continued to read plots, refine methodology and archive several thousand photo-monitoring slides. Monitoring of the host plants for rare butterflies continued in the Pine Rocklands. 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 and moderate the 2006 Cape Sable Seaside Sparrow symposium (Fire Management Strategy of Occupied Cape Sable Seaside Sparrow Habitat).

Collaboration between the Everglades Fire Effects team continued with the prescribed fire crew at Big Cypress. Fire Effects staff coordinated with exotic control efforts to treat *Lygodium microphyllum* (Old World climbing fern) in the costal Prairie. Fire effects staff were involved with the reconnaissance of infested *Lygodium* areas pre-treatment.

The Lead Fire Effects Monitor represented Everglades National Park and south Florida at the LANDFIRE Modeling Workshop for mapzone 56, held in Kissimmee, FL, July 18-19, 2006. After attending the workshop the Lead Fire Effects Monitor was tasked with building upon the existing Rapid Assessment models for 6 of the monitoring types found within Everglades National Park. These include Pine Rockland, Short-hydroperiod Prairie, Long-hydroperiod Prairie. Additionally, an effort was made to separate Mangroves and Coastal Prairie (Coastal Marsh) into two separate Biophysical Settings because they were lumped together in the Rapid Assessment.

Changes in the staff also took place in 2006, Shanna Ramsey left the program and two new Fire Effects monitors (Maya Vaidya and Aerin Land) were hired in the fall. A total of four Student Conservation Association Interns worked with us in 2006 (Jennifer Mellein, Elizabeth Adair, Madeline Andrews, and Kelly McKean).

Fire Effects Plot Workload 2006

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	1	3	7	11
Everglades National Park	Pine Rockland	27	FMH Forest plot	0	3	10	13
	Short-hydroperiod Prairie	28	FMH Brush plot	0	4	7	11
	Long-hydroperiod Prairie	11	FMH Brush plot	0	0	2	2
	Coastal Prairie (Coastal Marsh)	18	FMH Brush plot	0	3	3	6
	1970's photo point relocation	225 (relocated 26)	Photo point	N/A	N/A	N/A	26
	Butterfly host plant	4	Host-plant monitoring	N/A	N/A	N/A	22 visits to 4 different plots
Total		94		1	10	29	90

In 2006, the Everglades Fire Effects team conducted reads of 43 FMH plots, 32 reads in Everglades National Park and 11 reads in Canaveral National Seashore, including one new plot installation in Canaveral National Seashore.

Aviation Management During the calendar year of 2006 Everglades NP flew 330 helicopter hours and approximately 400 fixed wing hours. There were no SAFECOMS filed during 2006. Fire & Aviation instructed 4 Combination Helicopter and Fixed Wing Basic Safety (B3) courses with a total of approximately 60 students. There were no injuries, damages or other incidents with potential reported.

Fire Management Plan Update While the updated Fire Management Plan is complete, the Planning and Compliance office of Everglades National Park has yet to finalize the Environmental Assessment. An effort was made to have a SE Regional Office Planning and Compliance staff member complete this EA. He visited the Park in 2006, received a full briefing and took materials back to Atlanta to complete the work. Unfortunately other priorities arose and he was unable to complete the EA. Those materials were returned to the Park Planning and Compliance office, and Brien Culhane is continuing with the finalization.

Fire Management though used new procedures outlined appendices of the new Fire Management Plan to determine appropriate daily staffing levels, Wildland Fire Use implementation criterion and Prescribed Fire targets. These were used to test the validity of these new procedures for future changes.

Issues The sixth annual meeting of the Cape Sable Seaside Sparrow Fire and Research Working Group was also coordinated and held successfully in December by Fire & Aviation. This two day meeting was attended by 50 people representing 8 different agencies or academic institutions. During this meeting the participants were updated on the current status of this critically endangered species, briefed on the results of completed and on-going research projects and updated as to status of fire activities that were Sparrow related. As part of the consultation process the permissible and planned fire activities in and near CSSS habitat for the coming year was also agreed upon by all participating agencies and researchers.

Lapse and FIREPRO support funding was used to maintain fire dispatch center located in the Fire and Aviation main office in the Dr. Bill Robertson Center. This has alleviated work load at the Everglades Communications Center. Use of the ROSS system, the IQCS system, the FIRECODE system and implementation of a portion of the firefighter medical standards program was coordinated through this dispatch center. Fire Management Duty Officer worked directly with fire dispatcher to assure safety and efficiency of fire resource assignments. The fire dispatch center staff also consolidated other functions including daily situation reporting and daily lists of available in park and cooperator resources. The permanent fire dispatcher position funded at the Everglades Communications Center remained at that station, as the Comm Center is responsible for fire dispatching during evening hours.

DRT0 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

2006 7.1 Interpretation, education, outreach and partnerships

EVERGLADES NATIONAL PARK

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 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.

In partnership with the Environmental Protection Agency and the Florida Keys National Marine Sanctuary (and funded by the South Florida National Parks Trust in FY2005), Everglades National Park produces an educational TV program called "Waterways", which reaches a potential audience of hundreds of thousands, from South Florida to Washington State.

In 2006, the division of interpretation contacted 979,019 people including 348,510 visitors at the five visitor centers; 48,322 visitors attended 2472 interpretive programs; 9080 students attended 316 curriculum based education programs; 62,288 people were contacted through community outreach programs; and 60,350 publications were distributed. Numbers for the year are down considerably due to park closures, infrastructure damage, and resulting program cancellations from Hurricanes Katrina and Wilma. Facilities and operations at Flamingo did not come on line until February 3, 2006. In the meantime, interpretive staff operated an outside "visitor information station" from a picnic table in a Flamingo parking lot and offered guided walking tours of some areas of Flamingo deemed safe for entry with park staff supervision. The ability of all park staff and volunteers to be flexible, creative and patient with unhappy visitors made this stressful period (when many had suffered personal losses from the storms) a success. Furthermore, the Division is proud to report that it had only one employee injury, a poisonwood exposure, for the entire year—another indicator of the resilience and professionalism of the permanent and seasonal staff alike.

Through a grant from the South Florida National Parks Trust, a tri-lingual seasonal employee was hired who contacted almost 5,800 locals in either Spanish, French (for the Haitian Creole community), or English through 95 scheduled community activities and events. Another 1,600,000 were reached by this individual through 42 media outlets.

In 2006, 6.83 FTE in the Division of Interpretation and Visitor Services remained vacant due to budgetary constraints. An additional 5.1 FTE of the Division's 33 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. 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.

In FY06, 70 volunteers worked for the Division of Interpretation donating 10,398 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. Three volunteers were Artists in Residence.

Personnel Changes After 35 years, Education and Outreach Coordinator Sandy Dayhoff retired in April. Sandy received the Sequoia Award and a Distinguished Service Award in recognition of her professionalism and her pioneering work in curriculum-based education. Friends and co-workers from all over the Service, WASO, and the regional office attended a going-away party for Sandy.

Supervisory Park Ranger Allyson Gantt competed for and was selected for the Education and Outreach Coordinator position. Former seasonal employee Doug Vogel was selected for the Supervisory Park Ranger position that Ally vacated.

Park Ranger Susan Reece was selected for the Northwest District Interpreter position. Park Ranger Gail Fox, from Cape Hatteras, was selected for the Park Ranger position that Sue vacated.

Shark Valley Park Ranger Katie Bliss relocated to Indiana University under an Intergovernmental Personnel Agreement arrangement with Stephen T. Mather Employee Development Center. Park Guide Maria Thomson was selected for the Shark Valley Park Ranger position. Seasonal ranger Laurie Humphrey was hired into Maria's park guide position under the SCEP authority.

Key Largo District Interpreter David Szymanski was selected for and accepted the Bevinetto Fellowship and departed in January. Bob Showler was hired from Biscayne National Park into the Key Largo position in July.

Christi Carmichael, who was on LWOP from Zion due to her spouse's transfer from that park to Biscayne was hired into the vacant Park Ranger position in Flamingo.

Division Chief Cherry Payne completed a three month detail as acting superintendent at Cape Lookout National Seashore.

Unencumbered Positions Many positions continued to be unencumbered due to budget limitations. This has created a constant revolving door in the division with many projects not proceeding due to staff time dedicated to hiring and training an ever-changing team. From an operational efficiency perspective, it is a pennywise but pound-foolish solution to current budgetary woes.

In the Pine Island District, a GS-11 Supervisory Park Ranger, a GS-9 Park Ranger, and a GS-5 Bilingual Park Guide position were all partially backfilled by seasonal positions. All three winter seasonal positions were not filled. Two seasonal positions at Flamingo were not filled. In the Northwest District, a GS-11 Supervisory Park Ranger, a GS-9 Park Ranger and a GS-5 bilingual Park Guide were also partially backfilled by seasonal positions. Additionally, three winter seasonal positions were not filled.

In Education and Outreach, a GS-9 subject-to-furlough position and the administrative assistant position were partially backfilled by seasonals. All winter seasonal positions were funded through the South Florida National Parks Trust.

EVER GPRA Goals During March 2006, four hundred Visitor Survey Cards were distributed to a random sample of visitors in four areas of 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 Goal IIa1: Visitor Satisfaction = 88% of park visitors were satisfied with park facilities, services, and recreational opportunities. The park fell short of the 2006 NPS goal of 93%, no doubt due to facility damage and loss from hurricanes, as well as some areas of the park looking like nuclear winter due to dead vegetation from salt water intrusion and trees and shrubs stripped bare from hurricane winds.

Results for Goal IIb1: Visitor Understanding of Park Significance = 92% of park visitors understood and appreciated the significance of the park. Again, the park fell short of its target for this goal (93%) by one percentage point, most likely due to reductions in interpretive services. The response rate for this survey was 28%.

Underground Railroad Study Everglades National Park contracted with Dr. Rosalyn Howard, Ph.D. at University of Central Florida to conduct a literature and archival search, seeking information on use of lands that now fall within Big Cypress National Preserve and/or Biscayne and Everglades National Park that might have been utilized by enslaved persons pursuing self-emancipation. Dr. Howard has connected "Black Seminoles" who occupied an historical community near Tampa/St. Petersburg with their descendants who occupy parts of Andros Island, in The Bahamas. The big question was, how did they get there? In one case, she was able to document a person identified as Prince McQueen in both locales. She also knows that the group that he was traveling with congregated at Cape Sable, now in Everglades National Park, and at Cape Florida, which must be reached from the south by transiting waters now situated in Biscayne National Park.

Additional research has revealed the story of Abolitionist Jonathan Walker who attempted to take seven enslaved men by boat from Pensacola, Florida to the Bahamas. A first-person account exists of their exploits and includes reference to a key located in Florida Bay, in Everglades National Park.

We hope to complete a nomination to the Underground Railroad: Network to Freedom program using these two incidents in 2007.

Dry Tortugas National Park

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.

In 2006, DRTO lost its sole interpreter, Mike Ryan, who transferred to Fort Pulaski NM in January, 2006. The position remained vacant for the remainder of the fiscal year, filled by Billy Strasser in December, 2006.

Despite the lack of interpretive staff, the Division of Interpretation reached 33,440 people including 21,000 visitors to the visitor center, 5,600 visitors attending formal programs and demonstrations, 6,600 visitors reached through informal interpretation, and 240 participants in the Junior Ranger program. 18,000 visitors viewed the park film, and 100 visitors were reached through community outreach programs.

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 = 97% of park visitors were satisfied with park facilities, services, and recreational opportunities. The park exceeded its 2006 goal of 90%. Results for IIb1: Visitor Understanding and Appreciation = 83% of park visitors understood and appreciated the significance of the park. The park fell short of its goal of 85%.

2006 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.

During 2006, the Association provided \$104,343 in Aid to NPS to all four of the south Florida parks. \$58,221 of this donation is information assistance provided by Association staff. Everglades directly received \$14,200 in Aid to NPS, while DRTO received \$7493. An additional \$15,027 was provided to print the collaborative newspaper (Park Stories) serving the four south Florida parks.

The Association funded a variety of publications such as site bulletins as well as items such as bulletin cases, exhibits, equipment (spotting scopes, cameras), and materials. The Association provided staff support in three visitor centers, funded interpretive training,

housing costs for volunteers, and the supplies for the park's curriculum based environmental education program.

Special equipment purchases allowed staff to enhance the quality of their interpretive materials. Support was also provided for community outreach meetings. Research books were provided to the various parks and district libraries.

South Florida National Parks Trust The Trust is chartered through the National Park Foundation. The purposes of the Trust relate to advancing, 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 2006, the South Florida National Parks Trust awarded five grants to Everglades National Park totaling \$49,800, to fund a community outreach specialist, a volunteer in park SCA intern, radios for park volunteers, a butterfly garden at Shark Valley, and wildlife viewing scopes for the Flamingo Visitor Center breezeway.

An additional grant of \$101,200 supported the Everglades Education program for its 35th year. As in past years, this program serves a diversity of typically underserved audiences: 13% white, <1% American Indian, 9% African American, 75% Hispanic or Latino, 1% Haitian American, and 1% other. These statistics parallel the racial/ethnic demographic breakout of Miami Dade County.

Additionally, the Trust granted \$8,500 from the Ferris Greeney Foundation to support the development of a curriculum called Don't Let it Loose! to be used in Florida classrooms. It is designed to educate students and the public about the problems of exotic species on native ecosystems, including the release of unwanted pets on public lands.

The park was able to hire a "FLOE" Ranger (Florida Outreach for the Everglades), a seasonal employee, to provide teacher workshops on watershed curricula on the Everglades Ecosystem. This is a partnership with the Museum of Discovery and Science in Ft Lauderdale, and the Florida Aquarium in Tampa.

Another grant allowed Big Cypress National Preserve, Biscayne, and Everglades National Parks to print 18,000 copies of the joint parks' Junior Ranger program in English, to acquire 10,000 Junior Ranger badges for the parks, to develop and produce 1,000 Junior Ranger patches for participants who earned a badge for all three units, and to translate the Junior Ranger book into both Spanish and Haitian Creole. In 2007, the translated versions will be printed and deployed to the local community.

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 2006.

Finally, the park would be remiss to fail to acknowledge the considerable support that the Trust has provided to Dry Tortugas to support the needs of the more than 1,000 Cuban migrants who landed at that park in 2006. While some are brought by smugglers and swim or wade ashore to gain legal residence in the US under the current "wet foot, dry foot" policy, others arrive in open, homemade boats. These people arrive wet,

dehydrated, hungry and ill, often having spent up to 4 days at sea. The Trust has solicited and provided funds to clothe, feed, and attend to the medical needs of these people.

Partnerships – Cultural Resources FLMNH Cooperative Agreement FY2006 saw the initial implementation of the cooperative agreement (CA) developed between the SFCMC and the Florida Museum of Natural History (FLMNH) at the University of Florida at the end of FY2005. SFCMC staff supported implementation of this 25-year cooperative agreement by providing access to collections, programmatic support, data, and other information requests. The details of this project are discussed elsewhere in this report.

Fairchild Tropical Botanic Gardens Herbarium Scanning Project Under an ongoing cooperative agreement between the South Florida/Caribbean Inventory and Monitoring Network and Fairchild Tropical Botanic Gardens, museum herbarium specimens are being scanned and databased for the “NPS Virtual Herbarium.” Since October of 2005, Fairchild has imaged 1,363 specimens, 1,063 BICY specimens, 467 BISC specimens, 385 BUIS specimens, and 369 VIIS specimens. Staff at Fairchild also completed 1,000 minor repairs and 225 annotations for the specimens. I&M Network museum technician Cheri Vitez continues to coordinate implementation of this project.

Volunteers in Parks

EVER Volunteer in Park Program The park’s Volunteer in Park program is managed as a collateral duty by Interpretive Ranger Jackie Dostourian. In FY06, 712 volunteers donated 37,621 hours in support of all park operations including 4 visitor centers, 2 developed campgrounds, 48 backcountry sites and a curriculum based environmental education program reaching 17,900 students, chaperons and parents; 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.

Curatorial volunteers assisted with cataloging museum archives, rehousing photographic negatives and slides for cold storage, developing a slide scanning protocol and metadata standards for the images, and scanning slides for researcher access. These activities greatly enhanced the park’s ability to make its photographic images accessible while also ensuring the long-term preservation of the negatives and slides.

DRTO 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. 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.

In FY 2006 the park welcomed nine new volunteers to our ranks who performed general administrative tasks, maintenance projects, and Garden Key Host responsibilities. 35 volunteers contributed a total of 7,834 hours of service in FY 2006: 2,695 hours in interpretation, 3,680 hours in maintenance, and 1,459 hours in resource management. Volunteers at Loggerhead Key have been instrumental in repairing facilities and helping the island to recover after the severe 2005 hurricane season. Loggerhead is once again operational and looking beautiful. Volunteers at Garden Key have also played a part in storm recovery. The campground is fully operational, and enclosures constructed by VIP's have allowed vegetation to recover enough to provide modest shade for campers and day visitors. Volunteers also supported park staff during many Cuban refugee landings, manning the telephones and providing food, water, and clothing to the refugees.

Eloise Pratt, a long-term volunteer, achieved several milestones this year. For her consistent commitment of 500+ hours of service per year, Eloise was inducted into the Volunteers In Parks Master Ranger Corps. Eloise also brought her lifetime total of volunteer hours to over 5,000, a tremendous milestone for her and for the Dry Tortugas program. Eloise's accomplishments have also earned her both the Secretarial and Presidential Volunteer Service Awards.

Concessions Management for Everglades 2006

2006 was a "quieter" year in concessions management than 2005 due to an uneventful hurricane season in South Florida. Business for the Gulf Coast and Shark Valley Concessions operations was down for the first part of the year, but approached historical levels by the end of 2006.

Flamingo continues to provide a challenge for both the Concessionaire (Xanterra) and NPS. As noted in last year's 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.

Cultural Resources – DRTO

Cultural Resources Projects - In the absence of a Cultural Resources Management program, Compliance branch staff continued to handle many CRM responsibilities. These included Sec. 106 compliance, working with SERO and the SHPO to determine the eligibility of Flamingo Mission 66 structures for the National Register of Historic Places, coordinating the East Everglades Archeology Study, and preparing park comments on the Mud Lake Canal National Historic Landmark nomination. Mud Lake Canal was designated as an NHL in September 2006. A table of projects worked on follows. Branch staff had long advocated the establishment of a cultural resources manager position for both parks and a decision to establish the position was made by the Superintendent in FY 2006. The new Chief of Cultural Resources Management entered on duty in October 2007.

Cultural resources Projects – fy 2006				
	Project #	Project Name	Status	Date
1	FY06-006	Archeology Assessment, East Everglades Expansion Lands	Complete	10/2005
2	-	Emergency Cannon Conservation Treatment, DRTO	Complete	10/2005
3	FY06-001	Hurricane Wilma Archeological Damage Assessment,	Complete	02/07/06
4	FY06-007	Hurricane Wilma Damage Assessment Report, DRTO	Complete	02/07/06
5	FY06-040	Flamingo Post Hurricane Survey March 2006	Complete	03/08/06
6	FY06-005	Flamingo Cottages Determination of Eligibility	In progress	-
7	FY06-010	Flamingo Mission 66 Buildings Determination of Eligibility	In progress	-
8	FY06-035	Fort Jefferson Cultural Landscape Inventory	In progress	-
9	FY05-030	Mud Lake Canal NHL Nomination	Designated	09/20/06
10	-	Prepare/update Cultural Resources project requests in PMIS	Complete	10/2005
11	-	Prepare/update Cultural Resources budget request in OFS	Complete	10/2005

South Florida Collections Management Center (Cultural Resources) The SFCMC has been part of the planning and compliance branch since FY 1999. The FY 2006 SFCMC annual report, submitted under separate cover, documents extensive accomplishments for the museum program. In October 2007, administrative oversight of the SFCMC was transferred from the planning and compliance branch to the new Chief of Cultural Resources Management.

The development of a cultural resources program resulted in the reorganization of the SFCMC within the park's organizational structure. Supervision for the SFCMC curator position transferred from the chief of planning and compliance to the new cultural resource manager. As part of an overall cultural resource management program, the SFCMC is expected to continue its growth and development with the additional support of this new program.

2006 Accomplishments of the SFCMC During FY2006, the SFCMC formally expanded to include De Soto National Memorial (DESO) in Bradenton, FL. The SFCMC Board of Directors formally approved the addition of DESO at its December 2005 board meeting. The curator prepared Amendment 1 to the SFCMC Charter to incorporate DESO. This amendment was approved by all member parks. Most of DESO's museum collections are archeological and are housed at the Southeast Archaeological Center (SEAC). Other collections are on exhibit at the park. The objects previously stored in the maintenance building at the park were removed to the SFCMC for storage in 2006.

The projects below are those funded for the SFCMC parks in FY2006 through the PMIS process. These are project-specific accounts and the funds were expended towards accomplishing the specific projects only.

Park	Amount	Purpose	Comments
DRTO	\$44,000	Conserve Cannon	Combined with funds from SFNPT and ONPS base to conserve 3 cannon
DRTO	\$8,000	Conduct Park-wide Archives Assessment	Expended through SERO Museum Services Program
	\$35,000	Backlog Cataloging	Archivist & Museum Technician plus FY07 interns and supplies
	\$10,000	Preserve Preventive Conservation Plan	Contract awarded; project to be implemented in FY07
	\$21,000	Install Desiccant Wheel for Museum Archives	Contract awarded; project to be implemented in FY07

In addition, a \$45,000 Repair/Rehab project was funded to install an emergency transfer switch at the Daniel Beard Center. This project directly benefits the museum collection as it will provide emergency generator power during electrical outages.

SFCMC Volunteers and Interns A total of 1,745.75 volunteer hours were contributed to the SFCMC by interns and volunteers in FY2006. This figure represents 8% of the total volunteer hours for Everglades National Park during this period. The SFCMC tied the campground for the third highest amount of volunteerism at EVER, behind the Interpretation (43%) and Research (17%) divisions. The following table illustrates how SFCMC volunteer hours have increased since 2002.

Fiscal Year	Total Hours
2002	22
2003	423
2004	428.5
2005	522.75
2006	1,745.5
TOTAL FY02-06	3,142.75

NPS Interdependence

The SFCMC coordinates with the SERO and provides staff and technical support for projects throughout the region. The major interdependence projects undertaken at the request of the SERO Museum Services Program in FY06 are listed below.

- ⇒ **SERO Museum Storage Strategy** Participated in development of the Southeast Region Museum Storage Strategy in March 2006. The development team evaluated staffing, facilities and collections for all 67 SE Region parks, identifying appropriate clusters of parks for resource sharing, as well as pros and cons for each proposed repository grouping, by park, and assisting in compiling some results of the team meeting.
- ⇒ **South Florida Parks Collection Management Plan** The SFCMC Curator completed revision of the draft CMP, based on comments received from the parks. These were submitted to the SERO Chief of Museum Services in September 2005. The SFCMC Curator met with Carol Ash, Museum Curator with the SERO Museum Services Program in March 2006 to discuss outstanding issues. Final edits and unresolved issues are currently being completed. Following this work, the document will be sent out for a final 30-day review period. This review will include

both the park units and SERO cultural resource staff. It is expected that the final CMP will be approved in 2007.

- ⇒ **DRTO Archives Assessment** In August 2006, a park-wide archives assessment for DRTO was completed by the museum curator from the SERO Museum Services Program. All archives at Fort Jefferson and the park's shore office in Key West were assessed to determine which were potentially archival. The archives assessment report will be received early in FY07.

SFCMC Collection Growth & Management

Museum Accessions SFCMC park museum collections continued to increase in FY2006. The total multi-park collection size as managed by the SFCMC is 5,798,193. Table 1 provides information regarding the total size and the collection growth rates for each park unit.

FY 2006 SFCMC Collection Growth				
Park Unit	FY05 Total	FY06 Total	FY06 Increase	% Increase
BICY	2,295,459	2,301,705	6,246	0.003%
BISC	840,732	841,936	1,204	0.001%
DESO	89,806	93,580	3,774	4.2%
DRTO	113,975	101,494	(12,481) ¹	-10.9%
	1,799,935	2,447,604	647,669	35.9%

¹ The DRTO total size collection decreased due to correction of size estimates in the ANCS+ database and running verification reports.

The relatively small increases for BICY and BISC are a reflection of one large accession created for all the archives identified in the park-wide Archives Surveys for each park. As a result, both parks have already accounted for their archives, which tend to be the largest and fastest growing portions of SFCMC collection. Everglades, on the other hand, is accessioning its archives on a project-by-project basis as they become available. As a result, EVER will continue to see a significant increase in its collection each year. Moreover, SEAC adjusted the backlog of archeological artifacts for EVER, resulting in an increase of 100,000 objects.

Significant Accessions in FY2006 Although it is not possible to detail y new accession received in FY2006 here, brief highlights of new acquisitions for each park unit are as follows:

DRTO: oral history from a Cuban migrant that landed at DRTO; artifacts from Cuban 'chugs' (i.e. boats); artifacts from the post-Hurricane Wilma assessment; administrative history records; several donations of park-related memorabilia; Sonny Bass' research records on subjects such as the Florida panther, wading birds, mammals, etc.

Backlog Cataloging BICY, BISC and EVER received backlog cataloging funding in FY2006 to catalog the backlog of archival collections for each park unit. In addition, the Southeast Archeological Center (SEAC) continued to catalog the backlog of archeological artifacts for BICY, DESO, and EVER. The results of each park unit's GPRA 1b2D goal is presented in the table below.

Park	FY06 Goal	FY06 Result	Comment
DRTO	64,818	69,867	Exceeded
	579,489	1,140,271	Exceeded

It is anticipated that the DRTO park-wide archives survey report will significantly increase the collection size for that park. Although archives identified during the park-wide archives surveys for BICY and BISC have already been accessioned, those collection estimates will be refined as the collections are processed and cataloged in the coming years. Moreover, additional collections will continue to be generated, increasing the collection size for all five park units serviced by the SFCMC.

Conservation Treatment Projects

- ⇒ **DRTO hot shot furnace artifacts** In FY2005, DRTO stabilization base funds were obligated to fund conservation treatment of selected iron objects removed from the hot shot furnace during preservation and stabilization work. In FY2006, the twelve artifacts were packed and shipped to the Maryland Archeological Conservation Lab. The treatment of these artifacts is ongoing and the conserved artifacts will be returned to the SFCMC in FY2007. The untreated hot shot furnace artifacts that will be stored in microclimates will need to be rehoused appropriately in FY2007.

- ⇒ **DRTO Cannon Emergency Stabilization** A major early focus of SFCMC staff was the emergency stabilization of the cannon at DRTO impacted late in FY2005 by Hurricanes Katrina (August 2005) and Rita (September 2005). The ten cannon on the terreplein of Fort Jefferson were “sandblasted” by the storms, removing the paint systems and exposing the iron to corrosion. To combat this active corrosion, emergency stabilization was needed until full conservation treatment could be provided for each cannon. From October 4-10, 2005 a NPS team conducted the emergency stabilization. Six of the ten cannon were treated during a site visit. Of the four cannon that were not treated, it was decided not to treat one Rodman cannon as it was scheduled for full treatment in the near future, two other Rodmans require lifting before treatment and a fourth Rodman could not be treated for lack of time (but it was the lowest priority given its condition). It is hoped that this emergency stabilization will provide additional protection for the cannon for the next five years, until full conservation treatment can be funded.

- ⇒ **DRTO Cannon Conservation** In FY2006, a contract was awarded to begin conservation treatment of the ten cannon at DRTO. Through collaboration of funding from the South Florida National Parks Trust in FY2005, the DRTO Recreational Fee Demonstration Program, and the SFCMC curatorial base enabled the first three cannon to be treated. Tuckerbrook Conservation will conduct the pre-treatment site visit in October 2006 and treatment of the first cannon will begin in February 2007.

- ⇒ **Conservation Documentation** Efforts were made in FY06 to provide better organization and access to conservation treatment documentation at the SFCMC.

Museum Facility Issues

Daniel Beard Center Museum storage space continues to have mold problems associated with condensation on the HVAC ductwork and water seeping into light fixtures. This has resulted in health issues with staff working in that space. Efforts were made to reduce exposure, including using a portable filtration system in the technicians’ office and limiting time working in specific areas for sensitive individuals. In FY2006 funding was received for the installation of environmental control systems (desiccant wheels) will dry

the air before it gets into the duct work, preventing active mold growth. This project dovetails nicely with expected FY2007 funding which will permit the existing duct system to be removed, a hard ceiling installed, and new ducts installed in the conditions space. This work, to be completed in FY2007, will require moving the collection from the Beard Center

SFCMC space needs As this division grows space has become a critical issue and additional space is needed in FY07. In addition to a short-term acquisition of workspace, the SFCMC needs a new museum storage facility. Without additional space, it will be impossible for the SFCMC to continue the progress made to date to preserve the collections and to make them accessible.

2006.8.1 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.