

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



2010

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 2010 (October 1, 2009 – September 30, 2010)

Superintendent Dan Kimball

Deputy Superintendent Keith Whisenant

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BACKGROUND

Everglades A Biologic Park

Practically without exception, areas that have been turned over to the National Park Service (Service) as national parks have been of superlative value with existing features so outstanding that if the Service were able to merely retain the status quo, the job was a success. This will not be true of Everglades National Park (EVER). The reasons for even considering the lower tip of Florida as a national park are 90 percent biologic 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 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 and 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

EVER 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. Although best known for these natural resources, EVER is also home to hundreds of significant cultural resources.

Dry Tortugas a Unique Marine and Cultural Resource

Dry Tortugas National Park (DRTO) is managed by a Site Manager but park operations are overseen by the Superintendent of Everglades National Park. The management team at EVER assists the staff at DRTO in all areas of park management including concessions, contracting & procurement, budget, personnel, safety, public relations, interpretation, visitor & resource (cultural and natural) management and maintenance, planning and design and compliance. Staffing and operation of the Motor Vessel Fort Jefferson, the supply boat for DRTO, is funded out of the EVER budget. Since the management and accomplishments of EVER and DRTO 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" provided De Leon's ships with fresh meat, but there was a struggle for survival as there was no fresh water in the area, the tortugas were and continue to be 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 never completed as 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. This year marked the 75th Anniversary of this proclamation. The area was redesignated as Dry Tortugas National Park in 1992 to protect both the historical cultural and natural features.

2010 Superintendent's Office - Major issues faced by park management

Gulf Oil Spill The BP Deepwater Horizon oil spill in the Gulf of Mexico was arguably the most significant management challenge faced by both DRTO and EVER in fiscal year 2010. Though no oil ever reached either park, the resource assessments and preparations conducted for the threat significantly impacted park operations. The Superintendent was assigned as the DOI representative and Joint Incident Commander on an interagency Incident Command Team that oversaw the peninsula of Florida's federal response and coordinated with the Unified Command in New Orleans, LA, closer to the spill. The Deputy Superintendent took over the Superintendent's duties in addition to his during the four month period. In addition to regular park operations the Deputy was the agency liaison for a NPS type 2 team put in place to coordinate the oil spill incident response for the 5 national park units on the peninsula of Florida that may have had potential impacts. There is no question that this incident significantly increased the workload on much of the parks key staff who became part of the incident team, including public relations, science, cultural resources, law enforcement, and maintenance.

Weather Events The FY10 hurricane season was an unusual and highly active season with 19 named storms, though none hit the United States. Damages and loss of life were far below what one would expect from so much activity. The year is most remembered for what didn't happen, as luckily a full fledged hurricane did not slice into the BP Deepwater Horizon oil spill, nor did a devastating hurricane cause massive loss of life in Haiti's vulnerable earthquake zone. It was the 5th year in a row that Florida did not receive a major hurricane strike.

Planning efforts The compliance division of EVER provides support to both parks. Funding reductions eliminated a planned staff addition this year, challenging the division's ability to meet the growing compliance demands of the parks. Work continued on the EVER General Management Plan (GMP)/East Everglades Wilderness Study Environmental Impact Statement (EIS). After years of planning and public meetings a preferred alternative was selected and the region and WASO were briefed. Additional public input was collected in June and July to strengthen this Draft GMP/EIS. The Flamingo Masterplan was further developed in 2010 and shared with the public. A significant accomplishment this year was implementation of a pilot Snake Bight Pole/Troll Zone was implemented and well received by the public. This was developed in cooperation with the fishing community who had expressed a variety of concerns at proposed changes to NPS management of Florida Bay.

Personnel Staffing DRTO positions continues to challenge management as the remoteness and split and limited housing of the park are not for everyone and hinder staff recruitment and retention. EVER Resource and Visitor protection has also struggled to keep positions filled in FY10 due to a number of staff transfers to other parks and length of recruitment time this year. Visitor services overall are somewhat reduced due to budget constraints that have left the park with a number of positions on the organizational chart left vacant for years. Centennial funding improved the ability of Interpretation, Resource Protection, and Maintenance to improve visitor services through centennial seasonal staff, but these are a temporary fix.

Invasive Exotics Species in the park Public interest in invasive exotic species in EVER continued to escalate, primarily due to continued media coverage of the Burmese population in the park. Media from around the world have continued to pursue stories on this topic since the sensationalized image of an alligator in python in 2003.

Due to the significant workload that this media interest posed on science over the past few years and the lack of new information to release, the public affairs officer took over managing response to these inquiries. Generally the PIO offered interviews with her or the Superintendent and b-roll images instead of time intensive shadowing interviews of the few scientists working on this. This strategy was not always accepted and some media attempted to sidestep the park and go to Washington to get the interviews they wanted. The park PIO coordinated with the Washington and Regional office in Atlanta who supported the park decision which helped manage this message better than in years prior. The park PIO is concerned of the significant messaging impact this coverage has had, linking the park to pythons instead of the many other resources significant in EVER. State resource management agencies also assisted in response to these inquiries. The story continues to appear on various local, national, and international venues.

The park worked with other agencies to develop management and public education programs. EVER implemented an authorized agent program for a small group to assist in removal of pythons in the park and turning them into the park herpetologist as a pilot to remove some of these invasive pests. This program continues, though the media attention to this group is increasing and posing unique challenges to the PIO.

Safety The Safety Officer duties at both parks were handled by a Collateral Duty Safety Officer in FY 10 who also worked as a concessions management specialist. 34 accidents (all EVER except 1 at DRTO) were reported in SMIS that reflect the hazards of working outdoors on land and water. There were no incidents involving serious injury or fatality that were reported during the year.

Congressional The park PIO manages response to congressional tour/briefing requests and organized a number of congressional and senior agency leadership visits to EVER and DRTO. The Superintendent hosted a number of these in FY10 including, Nancy Sutley, Chairperson CEQ, Bert Frost NPS Assoc. Director Natural Resource Stewardship and Science (to DRTO), Gary Machilis and NPS Director Jarvis, Congressman Mario Diaz Balart, DOI Secretary Salazar who attended a groundbreaking for the Tamiami Trail bridge project, Regional Director David Vela, NPS Assoc. Director Mickey Fearn, and others throughout the year, cooperating with the south Florida Water Management district and other public agencies on transportation logistics such as helicopters and airboats to provide a broader view of the EVER ecosystem. The PIO continued to maintain and develop relationships with the Florida delegation and local elected officials' staffs.

Dignitary and International Visitors EVER and DRTO get a great deal of attention from high level national and international leaders, both elected and appointed, due to the broader everglades ecosystem restoration program and its unique biologic properties and management challenges that go along with a park the size of Everglades and as remote and rich with pristine cultural and natural resources as the Dry Tortugas. In addition to U. S. leaders the PIO organized special briefings and tours for international dignitaries through the State Department and local international liaison organizations. Generally these are international leaders in environment, natural resource protection, park management, and other natural area management agencies and NGOs from around the world interested in NPS policies and programs in Florida.

In FY10 international visitors included Dame Fiona Reynolds Director General of the UK National Trust, small groups of government leaders in environment and land management organizations from Camaroon, China, Germany, Thailand and Japan. A large group of over 30 from the Pacific Island Nations toured the park and met with park scientists to discuss climate change impact on coastal resources. An 11 nation African continent interested in park management and reaching out to the surrounding community and the Bahamas National Trust a park partner sent a group of key staff for a week long training program to better understand our parks to help them develop their evolving organization.

The Secretary General of the Ramsar Convention from Amsterdam and the Ramsar America's representative from Panama visited the park for the first time and were provided a briefing and tour by the Superintendent, Director of SFNRC, and the PIO to better understand this Ramsar site. The PIO also traveled to Wisconsin this year to represent the park at the bi-annual US Committee for Ramsar meeting and provided the committee a presentation on the park as a Ramsar Site. Following this meeting, at the request of this committee, the PIO provided a training session on RAMSAR at the park's annual interpretive training to increase awareness of this international designation.

NPS Director's "Road Show" With a new president and new NPS Director, the NPS Washington Directorate launched a national program to better understand the NPS communities and gather information to inform plans to improve relevance of parks in their communities. The Director and his staff came to south Florida early in this program because of the 4 national park units and highly urbanized environment of south Florida. The EVER PIO coordinated this effort for all 4 parks with NPS Asst Communication Director to hold 3 public forums for the NPS Director to gather input from target audiences. Each of the forums had a different invitation list and focus – elected officials, teachers, and environmental NGO's. The NGO's luncheon was the best attended followed by the elected officials then the teachers. They were held in various easily accessible public locations around the county and scheduled to encourage participation.

Adjacent Land use concerns continued to take up park staff time and effort; as the SFNRC adjacent lands staff person left toward the end of FY09 and this position remains vacant due to budget cuts. In spite of this vacancy other park staff commented on various developments proposed in the area, particularly those proposing to move the Urban Development Boundary further west and closer to the park. Everglades and Biscayne National park staff are following the potential impacts of proposed changes to nuclear capacity at Turkey Point, very near the park. FPL proposed a land swap for a strip of land they own in the east everglades. This project continues to go through the compliance and planning process with the Denver Service Center and the region providing support.

Commercial Filming in both parks has become part of the Special Use Permit coordinators responsibility to manage. These regular requests to use the park as backdrop for everything from five star movies to documentaries to student research efforts can take up a good bit of staff time. 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. In response to the news organizations expanding their coverage to the internet Everglades and Dry Tortugas are developing a more up to date and focused protocol having all news organizations film requests funneled through the PIO and others to the Special Use Permit Manager.

Media coverage There are hundreds of requests each year from media outlets in the U.S. and around the world for interviews, images, story suggestions, and staff tours that are managed by the Public Information Office. This office handles both DRTO and EVER inquiries. This fiscal year there was a great deal of interest in the impacts to the parks from the Gulf of Mexico BP oil spill. Other media coverage of the park ran on all local networks, PBS, National Geographic TV, Animal Planet, Univision, Miami Herald, Sun Sentinel, Keys publications, Airline Travel Magazines, FODOR and other Travel guides and a host of other magazine from the U.S. and around the world. Stories ranged from resource information, to highlighting volunteers in the park and new family camping program.

Social Media This is a relatively new communication technique for parks that has been emphasized as important by the new administration, though implementation support has vacillated from do it – to stop we're not ready. These two parks ventured into the new communication venues of social media by setting up twitter accounts and installing webcams to provide virtual access to these unique locations. In FY10 the public affairs office was funded for 6 months to implement a broader social media presence and update the park's web pages under a new content management system (CMS) launched in June 2009. The asst. PIO helped clean up park web pages and to develop a presence on facebook Flickr, twitter, and YouTube. The Environmental and Interpretive divisions' videographer

assisted in populating YouTube and developing additional video programs on the web in addition to podcasts made available on park websites and iTunes as part of this new communication effort.

Climate Change Climate change and how it relates to the management of public lands continues to be a significant topic of interest to the general public and to the media as more and more studies and documents are published related to this issue. The impact of potential sea rise to the state of Florida, particularly the southern tip has been the subject of many magazine and newspaper articles. The Superintendent continues to be a member of the Florida Climate Change Task Force as they meet and discuss strategies that should be put in place now to reduce potential impacts of sea level rise in the future. The SFNRC has staff working on this issue for Everglades and responds to the many inquiries on what we are doing about this.

Everglades Restoration CERP and Science Everglades ecosystem restoration continues to take up a significant amount of the Superintendent and the South Florida Natural Resource Center's time, and at times that of other staff throughout the park. The Superintendent was elected to fill the federal co-chair position for the South Florida Ecosystem Restoration (SFERTF) Working Group and the Director of the SFNRC regularly participates in the SFERTF Science Group. The restoration program is evolving and coordination with the many federal and state partners requires a significant commitment of resources.

DRTO Research Natural Area - The Research Natural Area, or RNA, added a new layer of protection for the marine resources of Dry Tortugas National Park. The RNA is a 46 square-mile no-take ecological preserve that provides a sanctuary for species affected by fishing and loss of habitat in this region of the Gulf. The RNA also provides opportunities for boaters, divers, snorkelers, and researchers to explore and study the significant marine environment protected within Dry Tortugas National Park. Park staff is working towards implementing a science plan completed in 2007 that will provide an assessment of how the RNA has helped the resources in this area that will inform the state review of this arrangement due in 2012.

Migrant Landings at DRTO and Everglades 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 and Everglades 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 or along the remote coastal areas of Everglades 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 duties. 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 and logistical challenges. In addition, the escalating land costs in south Florida exacerbate housing at Key West for staff when off island. All of these factors affect the ability of the park to recruit staff. Communications and housing are a significant challenge for park management and staff.

2010.1 Planning & General Management Plan - Planning and Compliance Branch

The Planning and Compliance branch is responsible for providing planning and environmental compliance services for EVER and DRTO National Parks. These responsibilities are accomplished through the planning and compliance programs. The branch is also responsible for providing planning and environmental compliance services for EVER and DRTO. These responsibilities are accomplished through the planning and compliance programs. An overview of key FY10 accomplishments follows.



FY2010 1.1 Planning Program

Overview The planning program focuses on activities to support park legislative and policy requirements, mission goals, and long-term goals, and is designed to provide the framework for management actions and decision-making. The principles that guide park planning activities are:

- prepare high quality work products for all tasks that would satisfy all audiences, both internal (within NPS) and external (stakeholders and other agencies)
- foster teamwork in all aspects of work by encouraging broad involvement and seeking consensus
- provide strong customer service so that products and services are responsive to each audience engaged in the process
- apply sound project management skills so that tasks and products developed by the GMP team can be delivered timely and with desired results
- provide effective communication on all project elements whether focused towards NPS staff or managers, the public, or project stakeholders/partners
- accomplish work in a manner consistent with applicable laws and policies including NPS Management Policies and Director's Orders 2 and 12

In FY10 the park planning program was involved in a wide-range of short and long-term planning efforts that enhanced park resource management and visitor use goals, and strived to improve relationships between the park and neighboring communities on issues of mutual interest.

2010 1.1.1 Everglades General Management Plan/East Everglades Wilderness Study/EIS

- Significant progress was made on the EVER GMP including:
- Developing the GMP Preferred Alternative through a 3-day GMP Team workshop (Nov. 2009)
- Southeast Regional Director briefing (February 2010) and NPS Directorate briefing (May 2010) gained support for the Preferred Alternative for inclusion in the Draft GMP/EIS.

- EVER GMP Team review and comment period (June-July 2010), integrating comments from 25 park staff/managers totaling more than 1400 comments in order to strengthen the Draft GMP.
- Washington Office GMP Policy Review (Sept. 2010).



2010 1.1.2 Flamingo Master Plan

- Organizing project start-up briefings and site visits for the DSC and consultant teams working on the Master Plan (October 2009)
- Coordinating/gathering project data, writing/reviewing/commenting on sections of the plan, and organizing comments from plan team members from EVER and Southeast Regional Office during two draft plan cycles (December 2009, February 2010)
- Writing and editing of Final Plan and Executive Summary brochure
- Developing/distributing project press release and PowerPoint presentation highlighting Master Plan features to stakeholders and posting on park website

2010 1.1.3 Snake Bight Pole/Troll Zone

Fred Herling and Dave Hallac (SFNRC) led the planning, public outreach and compliance for the pilot pole/troll zone project. Accomplishments included:

- Coordinating public scoping including preparation of meeting materials and press release, website and PEPC (Oct – Nov 2009)
- Coordinating the NEPA process and working with agencies to secure required permits (Feb-Jul 2010)
- Developing design and content for project signs and brochures (Jun – Sep 2010)
- Preparing scopes of work, and working with Facility Mgmt. and Contracting Divisions to award sign production and sign installation contracts (Aug-Sep 2010)
- Fred Herling and Dave Hallac received STAR awards for their work on the pole/troll project and GMP.

2010 1.2 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 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.

2010 1.2.1 Compliance Projects

ARRA Projects

Branch staff coordinated planning and compliance requirements for six ARRA projects at EVER and DRTO including the \$9 million Cape Sable Canals Dam Restoration Project. The complex Cape Sable environmental assessment (EA) and two FONSI's were completed on an aggressive schedule to successfully meet funding obligation deadlines.

Tamiami Trail Spreader Swales EA

The park worked closely with the Corps of Engineers to complete the Spreader Swales EA and an NPS Finding of No Significant Impact (FONSI). This project was subsequently suspended due to funding shortfalls.

NPS / Florida Power and Light Potential Land Exchange / Environmental Assessment

In 2007 the Department of the Interior, NPS and Florida Power and Light began discussing a potential exchange and relocation of a corridor of FPL property in the Everglades National Park Expansion Area. In July 2008, the NPS and FPL signed an agreement to exchange lands contingent on Congressional approval of the agreement and mandating the exchange. Legislation drafted by DOI to implement the exchange agreement and mandate the exchange was introduced in Congress in August 2008. In March 2009 the President signed legislation which authorized, but did not mandate, an exchange subject to terms and conditions deemed necessary by the Secretary of the Interior.

In June 2009, FPL filed applications for state and federal permits for the proposed expansion of its Turkey Pt power plants and transmission lines and the NPS initiated an environmental assessment (EA) for the potential land exchange pursuant to the National Environmental Policy Act (NEPA). Following public scoping for the EA in the summer of 2009, the NPS started conducting impact studies as part of the preparation of the EA. In particular, the NPS completed studies to analyze potential impacts to birds from the proposed action and also consulted with the U.S. Fish and Wildlife Service and other resource agencies related to these potential impacts. After careful consideration of public and agency comments and the issues and analyses developed during the EA process, a number of potentially significant environmental impacts associated with reasonably foreseeable transmission lines on the exchange lands were identified; and the NPS decided to prepare an environmental impact statement (EIS) for this project and discontinue the EA.

The proposed exchange is controversial due to the potential construction of the transmission lines and uncertainty about the nature, extent and severity of potential impacts. Potential adverse effects of the construction and operation of transmission lines on the exchange lands or FPL's existing land in the Park could include impacts to endangered wood storks and other birds, scenic resources, wilderness character, visitor experiences and water flow characteristics in the Expansion Area and adjacent Everglades wetlands. Based on the review of available information, the NPS determined that implementation of the proposed NPS/FPL land exchange, and the reasonably foreseeable construction and operation of transmission lines on lands conveyed to FPL, could potentially result in significant impacts on the human environment. Therefore, in accordance with NEPA regulations, the NPS

initiated the EIS process to more fully examine the potential impacts of the land acquisition alternatives.

Fire Management Plan/EA

The environmental assessment for the Fire Management Plan (FMP) remained on hold in FY 10 pending completion of required revisions of the draft FMP. Compliance and South Florida Natural Resources Center staff assisted fire management staff in developing the revised FMP and hazardous fuels management plan. Accomplishment included:

- Researching other park FMPs as models to guide development of an EVER fuels plan (Nov 2009).
- Coordinated meetings with park, Southeast Region, Washington Office and U.S. Fish and Wildlife Service staff to achieve consensus on the approach for developing the EVER fuels plan, restarting the EA, and completing Endangered Species Act compliance.
- Prepared extensive comments and revisions for the draft FMP/fuels plan (June 2010).
- Provided technical assistance to fire management staff to complete a programmatic wilderness minimum requirements analysis for the FMP which could avoid the need for annual minimum tool determinations over the life of the FMP.
- Worked with Southeast Region staff to extend the period of performance for the consultant's contract for the EA.

Flamingo Seawalls Rehabilitation/EA

The Park initiated an Environmental Assessment for the rehabilitation of deteriorating seawalls at Flamingo in 2008. The project remained on hold pending resolution of funding issues and completion of a Historic Structures Report for Flamingo.

Verizon Cell Tower/EA

Compliance staff participated in a meeting with Verizon representatives regarding a proposal to construct a 250' tall cellular tower at the Robertson building grounds. The meeting resulted in the need for Verizon to provide substantial additional information in a revised application. Upon receipt of a complete and satisfactory application, ENP and Verizon will work to complete an environmental assessment and NPS decision.

South Florida and Caribbean Parks Exotic Plant Management Plan / Environmental Impact Statement

The park worked with the WASO Environmental Quality Division (EQD) to complete the Final plan/EIS and a record of decision in FY 2010. The EPMP is a model multi-park resource management plan and will guide exotic vegetation management at EVER and DRTO for years to come.

Categorical Exclusion Level Projects

In FY 2010, 23 projects were completed as documented Categorical Exclusions, 13 as Categorical Exclusions without documentation, and 1 at the Memo-to-File level. Each project was screened by an interdisciplinary team and many required a site visit and/or consultation with regulatory agencies. All projects were completed in a timely manner. Administrative records and the Planning, Environment and Public Comment (PEPC) database were maintained according to standards.

Wilderness Projects:

Branch staff participated in monthly Wilderness Committee meetings and completion of 20 minimum tool determinations as part of the NEPA process.

2010.2 Cultural Resource Stewardship

Fiscal year 2010 marked the fourth year of the integrated Cultural Resource program for Everglades and Dry Tortugas National Parks. Cultural Resources worked closely with all other divisions to incorporate cultural resources and museum collections into research, resource management, park operations and interpretation.

While the South Florida Collections Management Center is also a critical part of the Cultural Resource Division, their organization and accomplishments will be covered in a separate chapter.

2010 2.1 Cultural Resource Stewardship

Staff for FY 2010 included Chief of Cultural Resources Melissa Memory, Seasonal STEP Archeologist Mance Buttram, and SCEP Archeological Technician Paul O'Dell, with substantive contributions by staff of the South Florida Collections Management Center (SFCMC). While permanent staff did not increase for the program, project funds, and student temporary employees, Cooperative Ecological Study Unit (CESU) Partners, volunteers, contractors, the NPS Submerged Resource Center and Southeast Regional Office personnel contributed greatly to make significant progress in all areas of the Cultural Resource program. Efforts by other divisions at EVER and DRTO also contributed greatly to the protection, preservation and interpretation of cultural resources in both parks. The Mississippi Deepwater Horizon Oil Spill re-appropriated the emphasis of the program for the spring and early summer to pre-assessments and resource advisor roles on the incident. Melissa Memory served as the lead cultural resource advisor for all South Florida Parks at the onset of the incident.

Melissa Memory also served as the Cultural Resource representative on the National Park Service's Wilderness Leadership Council as well as the interdisciplinary Wilderness Character Integration Team. She also served on the NPS Archeological Performance Measure Working Group, the Interagency Everglades Restoration Cultural Resource Working Group, and is a collaborator in the Florida Coastal Everglades Long Term Ecological Research Human Dimensions Sub Group.

2010 2.2 Archeological Resource

EVER

One archeological survey was conducted in EVER pursuant to Section 106 obligations for proposed impacts along the old Tamiami Trail by Southeastern Archeological Consultants working for the South Florida Water Management District. This survey resulted in the documentation of the Old Tamiami Trail Bridge Site (EVER 249). Cultural Resource staff also completed the preliminary documentation of two submerged prehistoric dugout canoes (EVER 253) and began planning to further document, recover and preserve them. The addition of these two sites resulted in an increase in documented archeological resources in EVER to 225.

As part of the pre-assessment phase of the Mississippi Deepwater Horizon Oil Spill, condition assessments were conducted on a total of 25 sites.

DRTO

Cultural Resource staff continued the partnership with the NPS Submerged Resources Center to conduct current condition assessments on known submerged cultural resources in the Park. Most sites had not been monitored since their discovery in the 1970's and 1980's, and implementation of the DRTO Research and Natural Area (RNA) Submerged Cultural Resource Strategy called for baseline documentation and monitoring. The goals of the project were to gather baseline data on all sites and implement a subsequent monitoring program. The NPS Submerged Resource Center led the condition assessments as well as provided training to park divers to develop internal capacity to continue site monitoring. In addition to the primary project goals, additional funding allowed additional investigation of magnetic anomalies discovered during magnetometer surveys by the SRC in the 1990's.

The project achieved its primary goals by completing condition assessments to all six sites listed in the NPS Archeological Sites Management Information System (ASMIS) including verifying or correcting location data. In addition, 5 previously undocumented sites were added to the ASMIS data base. Other project accomplishments included capturing numerous high quality digital and video images of RNA cultural and natural resources, as well as Park operations that will be available for publications and outreach efforts. The project also provided an opportunity for the DRTO/EVER to refine their submerged cultural resource monitoring and documentations skills that were introduced in FY2009.

In conjunction with the Submerged Cultural Resource Condition Assessment project, one maritime archaeologist from South Africa continued her training in underwater field methodology, along with an intern from Our World Underwater Scholarship Society. Melissa Memory and Michelle Williams of the Florida Public Archeology Network co-authored a paper on the results of the 2009 Public Archeology Excavations at Fort Jefferson for the Florida Anthropological Society Annual Meeting in Ft. Myers Florida.

2010 2.3 Cultural Landscapes

EVER

A draft Cultural Landscape Inventory was completed by contractors Wiss, Janney, Elstner Associates of the Flamingo Mission 66 Cultural Landscape. Wiss Janney, Elstner also completed a draft CLI for the HM-69 Nike Missile Site.

Volunteer Laura Marquardt continued extensive research and developed interpretive tours on Royal Palm, designed by pioneer tropical landscape architect William Lyman Phillips and built by the CCC.

DRTO

Cultural Resource and SFCMC staff continued to support the Cultural Landscape Report for Garden Key research and report revisions being conducted by Susan Hitchcock, Historic Landscape Architect in the Southeast Regional Office.

2010 2.4 Ethnographic Resources

EVER

Working with the Cooperative Ecological Study Unit, EVER continued an Ethnographic Overview and Assessment with Dr. Laura A. Ogden from Florida International University. Based on the work done so far on the overview, another study was awarded to FIU to study the ethnographic landscape of the East Everglades Addition.

Everglades hosted Park NAGPRA Training and park management and museum staff participated as well as resource managers and superintendents from other regional parks.

2010 2.5 Historic Structures

EVER

Cultural Resources continued to work closely with interpretation and facility management to continue the second season of tours of the Nike Missile Site during the 2010 season. The tours continued to be the most popular ranger led tours in the park.

Working closely with the Southeastern Regional Office drafts were completed for the Historic Structure Reports for Flamingo Mission 66 structures and the Nike Missile Site. .

DRTO

Preserve Fort Jefferson Phase 2 - Dry Tortugas National Park initiated a multi-phased, multi-year preservation project to stabilize Fort Jefferson. The scope of this project was designed to carefully remove the existing brick surrounding the embrasure (cannon) openings on the lower level in order to gain access to the original iron elements. Bricks are documented, cleaned, and set aside for reuse. In 2007, the park began Phase II of this project that continued through 2010 at a cost of \$13.2 million to stabilize fronts four and six. The work included the removal of all original iron elements and reconstruction and tuck pointing of the scarp from the waterline to the terreplein. In addition, the upper tier embrasure openings were stabilized by repointing the mortar joints.

Engineers Officers Quarters - A Preservation Plan for the Engineers Officers Quarters was submitted and reviewed by the Southeast Regional Office and the Florida SHPO. After some slight revisions, the plan was finalized. A preservation maintenance crew under the leadership of Glen Simpson from Bandelier National Monument began implementing the plan, primarily masonry repointing on the lower levels of the structure, with the award of a Cultural Cyclic project.

Loggerhead Lighthouse - To complete the work that began in 2009 to replace the roof of the lighthouse, a historically accurate finial and rod back were installed to protect it from lightning strikes and restore its historic character.

A Historical Structure Report was completed by contractors Lord Aeck and Sargent for the Loggerhead Light House and associated structures. These reports were published by the Southeast Regional Office and distributed via the Park History Website. The treatment recommendations were approved by the Florida State Historic Preservation Office, and planned in the Facility Management database.

2010 2.6 Wilderness Management

The EVER Wilderness Management Team continued to refine best practices and SOPS. A Wilderness Unit Workshop was conducted in July of 2010 at EVER by Tim Devine of the Carhart Wilderness Training Center and Mark Kinzer, SERO Regional Wilderness Coordinator. A subsequent Wilderness Planning workshop was facilitated by Peter Landres of the Aldo Leopold Wilderness Research Center, Suzy Stutzman, Intermountain Regional Wilderness Coordinator, and Wade Vagias, of the WASO Wilderness Stewardship Division and his cadre of SCA Wilderness Fellows. EVER Wilderness Fellow Alicia Burtner was introduced at this meeting and continued working on the development of a wilderness

foundation statement and wilderness character measures and indicators for the remainder of FY 2010.

2010.3 Administration - Major budget and personnel issues, concessions, contracting, and volunteer program

This section summarizes the major budget and personnel issues that came up over 2009, in addition to a discussion of concession, contracting, and volunteer program activities.

2010 3.1 Personnel

EVER

- 81 Positions Filled
- 1254 Personnel Actions Processed

DRTO

- 20 Positions filled
- 60 Personnel Actions Processed

2010 3.2 Budget

EVER FINANCIAL SUMMARY FY 2009 & 2010

ONPS BUDGET		
Division	Total 2009	Total 2010
Park Management	1,822,449	2,026,382
Administration	2,247,511	1,595,480
Interpretation	2,021,855	1,951,466
Visitor Protection	3,311,905	3,292,034
Maintenance	5,221,841	5,388,003
Research	2,819,167	2,910,735
Initial Allotment	17,444,728	17,164,100
Other Funding:		
	Total 2009	Total 2010
CESI	3,849,000	3,870,000
CERP	4,587,100	4,789,000
Task Force	1,303,000	1,320,000
VIP	17,000	27,900
Training	71,699	7,891
Cyclic	36,502	2,699,161
Haz Mat	217	69,011
Air Quality	10,500	21,720
Collections Management	293,615	110,540
Donations	578,810	382,266
Emerg/Storm Damage ERFO	2,618,750	14,875
Misc Program Centennial	258,918	328,501
LIC Contingency	4,287,156	1,828,239
Total ONPS Other	17,912,267	15,469,104

Fees Collected		
	Fiscal Year 2009	Fiscal Year 2010
CUA	49,375	80,800
Commercial Film	15,446	10,450
Campground Fees	158,206	210,038
Daily Admission	1,108,338	986,556
Commercial Tours	25,385	23,124
Interagency Senior Pass	49,220	46,775
Boat Launching	44,253	42,174
Backcountry Fees	36,981	48,023
Contractor Campground Sales	91,609	62,306
Park Interagency Annual Pass	34,581	72,577
Location Fee	11,400	5,570
Park Annual Pass	58,210	72,577
Concession Fees	297,455	405,335
Total Fees Collected	1,980,459	2,043,436

EVER FTE Actual		
	2009	2010
Park Management	20.28	17.18
Administration	20.84	14.15
Interpretation	34.97	36.10
SF Task Force	6.63	5.74
Visitor Protection	46.37	44.96
Maintenance	55.99	67.18
Research	70.01	31.92
Total FTE Usage	255.09	217.23

DRTO FINANCIAL SUMMARY FY 2009 & 2010

	2009	2010
Park Management	161,429	141,792
Interpretation	107,559	92,791
Rangers	234,739	228,869
Maintenance – Bldg	5,955	54,981
FOJE Stabilization ¹	197,526	279,083
Maintenance OPN Support	49,989	51,269
Maintenance OPN Utilities	121,421	83,493
Maintenance OPN Waterways	56,004	89,118
Operations – Bldg	50,286	15,504
Operations – Grounds	5,955	2,778
OPNS Centennial Seasonal	14,551	72,307
Operations – Support	34,214	- 0-
Operations – Sanitization	4,382	1,955
Operations – Utilities	19,966	44,018
Operations – Waterways	4,435	35,041
Operations – Admin & Support	121,015	48,833
NR Mgmt – Healthy Ecosystem	396,720	401,778
Administration	50,239	52,434
Cultural Resources	14,259	20,356
Change of Stations	9,777	-0-
Initial Allotment	1,660,421	1,716,400
Other Funding:		
Special Use Permit	337,468	503,088
Cyclic	232,283	396,379
VIP	11,900	3,200
Partial WASO Assessment	29,900	0
Equip Replacement	24,800	0
LIC Cont	540,278	1,294,471
Total Other Funding	1,176,629	2,197,138
Fee Collected		
	FY2009	FY2010
CUA	250	501,888
Commercial Film	1,400	8,880
Campground Fees	12,682	11,219
Daily Admissions	168,229	165,372
Interagency Annual Pass	380	155
Location Fee	650	7,000
Total Fees Collected	183,591	694,514
DRTO FTE Actual		
	2009	2010
Administration	2	3.15
Interpretation	1.36	1.29
Rangers	3.63	3.47
Maintenance	3.28	4.29
Research	1	2.27
Total Usage	11.27	14.47

2010 3.3 Contracting

Total Procurement actions for (includes: Contracts, Purchase, Delivery & Task Orders):

EVER:	387	\$12,084,894.53
DRTO:	36	\$699,931.89
Total	423	\$12,784,826.42
SFNRC:	58	\$1,744,773.10
ADMI:	18	\$314,936.92
MAINT:	89	\$5,990,274.25
LE:	47	\$210,872.01
CESI:	56	\$556,148.22
CERP:	26	\$2,079,347.47
SUPT:	50	\$958,657.32
INTERP:	20	\$107,436.52
FIRE:	23	\$125,386.41

Total dollar value Awards (includes Contracts, Purchase, Delivery & Task Orders)		\$9,533,710.08
Assistance Agreements Actions	65	\$3,251,116.34
Awards/actions (including agreements)	423	\$12,784,826.42

2010 3.4 Information Systems Technology Management

The IT Branch provides information technology (IT) and information management (IM) support for Everglades National Park (EVER) and Dry Tortugas National Park (DRTO). The IT Branch is responsible for reporting to the AO under the Administration Division. The branch provides computer and telecommunications support to all Everglades National Park, Dry Tortugas National Park, MABO, SHRO, BioLan, Task Force, USGS, SFWMD, Fish, CERP, CESI, SFNRC, and other agencies. In addition to basic help desk support the branch also hosts and manages all Video Teleconference events. The branch is also responsible for supporting all the computing needs of the SFNRC scientific and technical community. Moreover, the branch has been short staffed for over 2 years all the while as new requirements for support come in; like establishing a SharePoint Server for the MABO, SHRO.

The IT Branch manages a staff of approximately 10 subordinates who provide support in four distinct areas: Network and Systems Management, and Information Management. The incumbent acts as the senior manager of information technology for Everglades and Dry Tortugas National Parks, and provides expert technical advice to management on all IS issues. The IT specialists on staff perform a variety of functions (IT Disciplines/Competencies) that ranges from installing applications to designing complex computer networks and information databases. A few of the duties that the EVER / SFNRC IT specialists perform may include data management, networking, engineering computer

hardware, database and software design, as well as management and administration of entire systems.

Information technology requirements and resources at the park have morphed further than conventional networks; more and more overhead is placed on the network to integrate other technologies such as the use of Voice over IP, Video Teleconferencing, POS machines, SharePoint, Web Cams, Microwave and wireless systems. To keep pace with this expansion, the life cycle replacement, and data storage requirements we have under gone a network redesign; replacing most critical systems with fail over and redundant systems. All the while, remarkably complying and exceeding DOI energy wise standards.

The Branch has a total of 10 positions with 1 vacant GS-12 Supervisory position. These positions fill support over 450 users that are within the SE region. They mainly include users at EVER, DRTO, Task Force, MABO, SHRO, biological scientists, physical scientists that cover a wide variety of fields, like software developers, GIS specialists, project managers and administrative support staff. The Branch supports offices / users that are located inside Everglades National Park, Dry Tortugas National Park, Virgin Islands, Key Largo, Loop Road, Gulf Coast, Tamiami, East Ever, Homestead airport, and Loxahatchee National Wildlife Refuge.

Funding for this program has been drastically cut; and DOI is transforming the IT departments and support structure. If you would like to read more check out this link: <http://oneinterior.doi.net/ittransformation/index.cfm>.

Challenges Ahead

- Oil Spill Data: The collection and chain of custody with the Deep Water Horizon oil spill data
- Staffing levels vs Business Requirements: With the additional workload coming from the MABO, SHRO, and Task Force it will be a challenge to support all users and systems in the future. As a result, the IT Chief is looking at opportunities to minimize the impacts to systems and users.
- If the IT Branch loses Elizabeth Ross (IT Supervisor) to DRTO, AO, or a Deputy position the IT branch will be severely impacted as the division will not be able to fill that position due to a DOI IT hiring freeze.

IT Projects

- A series of IT projects have been funded in 2010 to replace end-of-life systems
- The wiring of new buildings at Flamingo, and Key Largo with phone and computer connections.
- SharePoint Migration to new server; old one is over utilized and requires robust processor, upgraded SQL server, and OS, larger Hard Drive Space.
- HQ's network redesign with core, distribution and access switches; this is a standard across hierarchical infrastructure.
- Tsunami fail-over, and redundancy configuration
- Consolidate servers, and start the DOI virtualization plan

2010.4 Facility Management, and Professional Services

The Division of Facility Management is responsible for the condition and operation 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 (4 visitor centers, park headquarters, maintenance and utility buildings, research facilities, and two environmental education centers). 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 construction and rehabilitation of existing facilities for both EVER and DRTO. This branch is supported by two facility management systems analysts who develop asset documentation to assist in determining work priorities and to support funding requests.

2010 4.1 Facility Management, Operations and Engineering

Selected examples of the Division's significant accomplishments during FY 2010 include the following:

This office provided oversight for park operations, maintenance and engineering with a combined annual budget of \$5,388,000. Requested and received additional project funding through SER program managers or other sources.

Housing Management

- Completed a Housing Needs Assessment for DRTO

Motor Vessel Fort Jefferson

- Provide support for research trips (four) on a cost reimbursement basis
- Provided oversight for park dive plan and operations

Telecommunications

- Initiated a contract, installation of fire monitoring equipment at the Dan Beard and Bill Robertson Centers, park headquarters and Coe Visitor Center buildings.

Professional Services

The professional services branch provided architectural and engineering and construction management support for new construction and rehabilitation projects for both EVER and DRTO.

Contract documents were generated for more than 12 major projects. The staff met the 2010 SCC deadline for project funding requests, documenting millions of dollars in deferred and cyclic maintenance needs which are supported in the FMSS.

Facility Management Software System Branch Accomplishments

Completed the deletion of most facility legacy PMIS projects and submitted replacement projects through the PST.

2010 4.2 Everglades Professional Services

Specific tasks related to the accomplishments of the Professional Services Branch include;

PROJECTS:

- Completed Flamingo lift station rehabilitation- \$209,000
- Completed repair of West Lake boardwalk- \$115,000
- Completed construction of Shark Valley Comfort Stations, shade structures and entrance kiosk- \$610,000
- Demolished South Reef Comber building- \$49,988
- Completed Phase 2-year 3 stabilization work at Fort Jefferson, \$6,000,000
- Completed exterior cyclic maintenance projects; painting, door/window replacement, general repairs; Flamingo Visitor Center, marina store, fish cleaning station, campground comfort stations, Gulf Coast Visitor Center

District Maintenance Operations

- Installed touch less lavatory fixtures in all public restrooms
- Installed energy efficient lighting improvements throughout the park
- Initiated repairs to backcountry docks and chickees which will continue in 2011

Work In Progress

The completion of district assigned special projects and deferred maintenance remains an overwhelming challenge

- Trail/Vista clearing
- General building maintenance
- Effective custodial operations
- HVAC preventive maintenance
- Marine fleet management
- Capturing complete costs in asset management program

2010 4.3 Dry Tortugas Facility Management

The maintenance division on Dry Tortugas operated and maintained critical utility, building, mechanical, and marine systems to support day to day business operations for visitors, NPS employees, and other cooperators from multiple outside agencies, and contractors who performed project work within the park throughout the year.

FY 10 the park was able to slightly mitigate a chronic staff shortage that has hindered the division productivity over the past 3 years with the selection of a local candidate to fill the WG-07/09 Maintenance position. The park filled the position with a SCEP appointment that allows the employee to study part time while gaining on the job experience during the transition to a full time staff member. The park chose to concentrate on a waste water treatment plant study track, since a large part of the time spent on the job for this position is operating the Garden Key package plant. The new hire currently is enrolled at Sacramento State University (CA) with the hope that the employee will reach full promotion potential within two years. Another vacant position, the WG-05 Maintenance position, continues to be vacant due to lack of funding.

This division was also impacted by the Gulf of Mexico oil spill that threatened the coastal areas of Florida. Staff supported outside groups and agencies working on various assessment and protection projects within the park. The BP oil spill incident was particularly

taxing throughout the summer of 2010, as regular staff duties expanded to manage housing, mechanical support to incident vessels, loaded / unloaded supplies with heavy equipment, arranged delivery and conducted re-fueling and re-watering operations for a multitude of boats, and otherwise stood watch waiting to assist as needed for state and federal damage assessment teams.. Similar assistance was also given to other work groups as well, such as the Phase 2 cultural resources stabilization project, the annual project work donated by the Homestead 482nd Civil Engineering Squadron, the park-wide buoy installation project, and the various RNA study groups including USGS, Nature Conservancy, state of Florida FWC, and NPS Submerged Cultural Resources dive teams.

One success story completed this year was the rehabilitation of the Loggerhead Key photovoltaic system, which was crippled the previous year by a massive lightning strike. The park spent approx. \$13,000 to replace system components including controllers and dc/ac inverters. At fiscal year end, the alternative energy system to 2 residences and island support structures was up and running again, but the island reverse osmosis desalinators was out of service due to lack of funding to replace membrane filters.

Continuing in a push to improve future park housing for employees and other outside cooperators, the park at year end began a rigorous housing assessment process by requesting a housing audit conducted by the WASO housing office. Site visits were made by WASO staff and the contractor to develop future housing needs based on projected staffing and current housing availability, both in Key West and on the islands. This A-123 study was ongoing at fiscal year end with a final report expected during mid-FY11.

Staff worked with EVER Contracting to develop a Memorandum of Understanding between the NPS and United States Coast Guard for developing an annual maintenance schedule for maintaining the 17 large boundary buoys that surround the park. The USCG buoy tender servicing our buoys visits the area 2 times a year to service the buoys and hardware attachments and the MOU simplifies work details and follow-up invoicing for payment by NPS.

Ranger Vessels

The protection rangers have two vessels to conduct patrols of the park. At the time of this report, rangers have dealt and are still dealing with major problems with both vessels. The first vessel, a T-top Safeboat has been at DRTO since 2003. The front flap protecting the bow has been ripping since 2008; in addition, it has electrical troubles where at times the power is lost to the navigational equipment while trying to start the motor. This is occurring because there are too many systems tied into too small of batteries. This issue has been reported numerous times but yet to be solved. The Safe boat is the protection divisions most used asset on the water. Due to its small size, lightness and planes easily, plus the rubber sides, the Safe Boat is ideal to operate in all types of seas and making boat contact to contact interactions.

The second vessel is the 26' Edgewater that sank shortly after arriving to DRTO in 2008. The Edgewater is a strong patrol presence in clam flat to moderate wave seas. In high seas the vessel is too hard to control and maneuver.

The vessels that the rangers are using to enforce the natural and cultural protection of DRTO need to be well maintain. DRTO does not at this time, or over the past numerous years, have in its staff a Boat Mechanic. DRTO is a water-marine based environment with no staff member certified to work on Yamaha motors. This is training that needs to be obtained by our maintenance staff to keep not only the Protection vessels but the other three vessels with Yamaha motors at DRTO are working in proper order.

Communications

The remote island park is a beautiful and unique resource that requires a staff presence to perform protective, facilities management, and interpretive park service functions. Due to the remote location communication is limited between Everglades, park cooperators as well as the coordination of visitor access. Voice communications are achieved using a satellite serviced voice over IP phone (VOIP), a radio phone and a satellite phone. The VOIP competes with data from the South East Region and is often garbled. There is also a long delay between speakers further exacerbating communication. Data transmission has been reliable and is DRTO's main link.

The radio phone is dependent on multiple relays, one of which is situated on an abandoned Air Force Tower between Key West and DRTO. This is the clearest and most used system. Maintaining the system among other things requires a quarterly 60 mile round trip by boat where the 60 foot tower is then climbed and fresh water is replaced in the batteries.

The satellite phone is expensive. The Iridium system of satellites is also on its eighth year of a projected seven year functional life. Consequently there is a high call drop rate as well as a high call failure rate. However, it serves its function as a backup system for short conversations.

Housing

This year DRTO was slated to replace two permanent housing units at Fort Jefferson. These would be free standing within the casemates and not physically attached to the historic structure. This significantly reduces impacts to the historic structure and is part of the agreement with the SHPO. DRTO submitted their updated housing plan that identifies all units presently occupied and needed to house staff. The number exceeds the 1998 housing assessment. As a result the housing plan was not approved and the substandard housing was not replaced.

Providing enough housing at DRTO for park personnel, volunteers, contractors, special project crews and other agency personnel continues to be a challenge. New programs, initiatives, base increases and ongoing programs compound the need for additional housing. Funded positions have been lapsed due to the lack of an available housing unit. The park has relied upon filling as many positions as possible through dual career opportunities. Historically, there have always been more positions than number of housing units. Presently, there are 12 units to accommodate 19 positions which include Centennial and other seasonal staff. Two are slated to be demolished to meet the 1998 ceiling. There are 14 permanent positions.

Employees also require housing on shore for days off as well as to conduct park business. Employees duty stationed at Key West include the crew of the Vessel Fort Jefferson, The Exhibit Specialist and the three people assigned to the Interagency Discovery Center through an agreement with NOAA. Housing in Key West is prohibitively expensive where a two bedroom condo rents for \$2300 a month not including utilities. Units 1644 C and D that were lost due to storm damage were rehabilitated this year. In order to meet the ever increasing needs of the park and improve the living conditions for staff, the park must build two new apartments and replace five existing substandard apartments at Dry Tortugas.

2010.5 Natural Resource Management

2010 5.1 Everglades National Park

2010 5.1.1 South Florida Natural Resources Center

The South Florida Natural Resources Center (SFNRC) is the natural resources management division at Everglades (EVER) and Dry Tortugas (DRTO) National Parks. In addition to traditional inventory and monitoring and natural resources management activities, the SFNRC is responsible for National Park Service scientific and technical participation in Everglades restoration. The SFNRC, while administratively located at EVER, provides support to Biscayne National Park and to Big Cypress National Preserve on Everglades restoration projects.

The SFNRC has a total staff of 75, including biological scientists and physical scientists in a wide variety of fields, GIS specialists, project managers and administrative support staff. Offices are located inside EVER (mostly field staff), Key Largo (Florida Bay and DRTO biologists), city of Homestead (Everglades restoration staff), and Loxahatchee National Wildlife Refuge (water quality staff).

SFNRC technical activities are organized into four program areas. Our Inventory and Monitoring Program tracks the status and trends of key natural resources: hydrology and climate, vegetation, aquatic resources, and important indicator species of wildlife (e.g., wading birds, alligators, Florida panther, Bald Eagle). The Natural Resources Management Program includes activities to control exotic species and to restore areas that were altered by development prior to park establishment. The Applied Science Program includes science activities to address information gaps for Everglades restoration, and is funded primarily via the Critical Ecosystems Studies Initiative (CESI). Our Restoration Assessments program includes participation on interagency restoration project design teams, and scientific and technical contributions to restoration projects and programs. Technical activities include development and use of hydrologic and ecological models and development of numeric hydrologic and ecological performance measures to quantify the effects of alternative restoration designs.

Funding for SFNRC science and restoration activities comes from the Everglades Restoration and Research budget line. Further description of SFNRC activities, as well as technical reports and other publications, is available at www.nps.gov/ever/naturescience/

Major Accomplishments of SFNRC in FY2010

Applied Science:

- Construction of the Key Largo Interagency Science Center facility was begun, including an up-to-date laboratory and dormitory space for visiting scientists.
- Seven science projects selected during a request for proposals in FY09 were initiated in FY10, including a synthesis of Everglades freshwater research, studies of exotic fish, and climate change studies.
- The electronic archive of applied science reports and documents available to EVER/SFNRC staff was organized and increased to over 80,000 documents.

Inventory and Monitoring

- EVER long-term biological and hydrologic databases were updated and maintained, and are beginning to be accessed more frequently by Everglades restoration staff for use in assessments of restoration projects.

Natural Resources Management

- The Cape Sable Canals plugging project NEPA compliance requirements were finalized in FY10. The construction contract was awarded and work begun. This is one of the largest projects in the NPS to be funded using American Recovery and Reinvestment Act funding.
- The Ingraham Highway culvert project, located on the Old Ingraham Highway in EVER and funded by the U.S. Fish and Wildlife Service Fish Passage program, was substantially advanced, re-establishing water flow between the marshes from the north to the south of the highway.
- A Fisheries Biologist position was created and filled at DRTO, and an NPS-staffed fisheries and natural resources management program begun.

Restoration Assessments

- Construction, funded by the NPS Modified Water Deliveries Project, proceeded on a 1-mile bridge on the Tamiami Trail, which is intended to improve water flow into Northeast Shark Slough in EVER.
- The Tamiami Trail Next Steps project NEPA compliance requirements were completed and the project has been highlighted as a major priority for the Department of the Interior.
- Construction proceeded on the C-111 Spreader Canal project along the eastern border of EVER, funded by the South Florida Water Management District. This project is intended to slow unnatural seepage of water out of the park, and allow this water to be retained in the park for the benefit of fish and wildlife.
- In-house ecological and hydrologic modeling programs have produced a number of models that the SFNRC can use to analyze the effect of restoration assessments on EVER, BISC, and BICY water and resources. These include an ecosystem-wide vegetation succession model currently undergoing peer review, an established model of BISC hydrology and salinity, and a hydrologic model of the eastern side of EVER.

Challenges Ahead for Restoration and Resources Management at EVER and DRTO

- Inventory and Monitoring: The number of base funded (ONPS) staff to carry out standard monitoring activities, particularly physical monitoring, is too low. The data obtained by the I&M program are the foundation of all work in Natural Resources Management and Restoration.
- Natural Resources Management: Invasive exotic plants and animals will continue to be a major threat to park resources, and will require constant attention of staff and investment of resources. Given the proximity of EVER to the metropolitan area of south Florida, this will be a continuing and likely increasing need over the next decades.
- DRTO faces challenges in the implementation and growth of the recently created fisheries and natural resources management program.

- Continued funding of the Everglades Restoration and Research budget at current levels is essential for the SFNRC to carry out the NPS mission within the context of Everglades restoration.

2010 5.1.2 Exotic Burmese Pythons & Other Invasive Wildlife in South Florida

The Burmese python (*Python molurus bivittatus*), an invasive snake that reaches 15-20 feet in length, has become established in the Everglades. This non-venomous species, native to Asia, is common in the exotic pet trade. Burmese pythons subdue prey by biting followed by constriction. While attacks on humans are rare in the native range, most fatal attacks on snake keepers by giant constrictors in the United States are by Burmese pythons.

Until 2000, only about a dozen pythons had been documented in Everglades National Park. From 2003 to December 2010, more than 1637 pythons were removed from the park and adjacent lands. Animals in excess of 17 ft (5.2 m) have been captured in the Southern Everglades. Only a small fraction (0.1-5%) of pythons present in the park is detected: though little more than an informed guess, estimates of population size range from 5,400 to 140,000. Breeding in the natural Everglades has been established conclusively. Pythons eat a wide variety of prey and pose a risk to many resources, including State and Federally listed threatened and endangered species. A recently published USGS large constrictor snake risk assessment suggests the range of pythons could notably increase in Florida and the southern United States, posing additional threats in the future. This same document concludes that there is a high risk of establishment in south Florida for five species of giant constrictor snakes and a medium risk for four other species of giant snakes. Working with cooperators the park successfully evaluated and published in *Biological Invasions* the results of the impact of the historic cold snap on Burmese pythons.

The U.S. Fish and Wildlife Service (FWS), National Park Service (NPS), and U.S. Geological Survey (USGS) are working with many state partners and NGOs to address this concern; however, available funding is limited. FWS and NPS have cost shared an agreement with USGS to complete a biological synopsis and risk assessment to help define the nature of the threat. The recently published risk assessment contains information that has broad application for the control of pythons and other large exotic constrictors in the United States.

Outreach and research to understand the habits of these species in their new environment are critical to develop effective management/eradication strategies. Current research is underfunded but includes trap development, trap deployment at the entrance to the Florida Keys, and research on python behavior and ecology in the Everglades. Outreach activities include a reporting hotline, educational programs with the pet industry and potential owners, signage (release is a crime), and public and school education campaigns. Permanent outreach displays focused on the issue of invasive exotic animals were developed and installed in four south Florida visitor centers (Everglades National Park, Big Cypress National Preserve, Miami-Dade County Deering Estate, and Miami-Dade County Marjory Stoneman Douglas Biscayne Nature Center).

The State of Florida recently enacted regulations severely limiting the ownership of large exotic constrictors and monitor lizards. The State has also hosted several Pet Amnesty Days, during which exotic pet owners can turn in unwanted pets, no questions asked. Recently it has become apparent that another large constrictor snake, the Northern African Python, may be established in a checkerboard of private and public lands immediately adjacent to the northeast corner of Everglades National Park. While Federal, State, and local resources are working to coordinate a response, it is apparent that the State lacks the funds necessary to coordinate early detection and rapid assessment and response to incipient exotic animal invasions.

The FWS received a request in June 2006 from the south Florida Water Management District to list pythons as an injurious species under the Lacey Act. Such listing would prohibit importation and interstate transport. The Lacey Act designation has not yet been completed, though progress is being made by the FWS, and both the House and the Senate have introduced legislation that would ban the

importation of large constrictor snakes. Lacey Act designation does not prohibit intrastate transport or possession of the snakes within states, and would not help with the eradication, control, or management of already established populations. As a result, addressing the threat posed by pythons will require a host of different strategies.

The Department of Interior lands of south Florida are threatened by a number of exotic animal species that are present on adjacent lands and in adjacent waters. To address these threats, and especially prevent new invasions, will require broad partnerships and substantial resources.

Challenges Ahead for Exotic Burmese Pythons & Other Invasive Wildlife in South Florida

There has been considerable news coverage and education regarding the Burmese python, which has served to bring the issue of invasive exotic animals to the attention of both the general public and decision-makers. However, dedicated effort and funding is needed in the following areas, if the threat of pythons is to be controlled and the potential for invasion of additional exotic species is to be reduced:

- **Legislative arena:** Legislation is pending that could change the Federal role in preventing invasive species, providing the FWS with authorization and resources to screen wildlife imports for invasive species.
- **Coordinated actions with the State of Florida:** Facilitate and support state-wide responsible pet ownership and disposal (hotlines/website); support statewide early detection network and rapid response teams. Eradicate incipient populations of animal invaders (such as Northern African pythons, Sacred Ibis, Nile monitors, and Black and White tegus).
- **Coordination with the pet industry:** NPS has recently signed a memorandum of understanding to fully implement Habitattitude, a program for responsible pet ownership and disposal. However, the NPS needs funding to fully implement the program in parks.
- **Investments in research:** Conduct risk assessments for species; study invasive species ecology to find weaknesses and exploit them for control; support research, development, and implementation of control programs for priority species (Burmese pythons, Nile monitors, and Purple Swamp Hens).

Probably the most significant accomplishment for Everglades National Park for the year was the successful funding and initiation of the following cooperative projects: (1) working with Auburn University to investigate the use of python detection dogs, (2) working with The Nature Conservancy to advance Python Patrols: Expanding early detection and rapid response teams for large bodied snakes, (3) working with the University of Georgia to develop and maintain Everglades invasive animal web and mobile reporting, (4) working with the Florida Fish and Wildlife Conservation Commission to develop and maintain the Nonnative Pet Amnesty Program: Events, trailer, and pet adoption hotline, and (5) working with the USGS to conduct studies in support of Python control, ecological impact assessment, visual searching, and monitoring protocol development.

2010 5.1.3 Invasive Exotic Fishes in Everglades National Park

The introduction of exotic fish species into Everglades National Park (EVER) is a significant resource management challenge. A recent increase in the number of exotic fishes violates the mandates of and indicates adverse conditions for the restoration of EVER.

EVER was established to preserve "intact...the unique flora and fauna...in this area" (1934 Everglades Establishment Act) and to "maintain natural abundance, diversity, and ecological integrity of native plants and animals" (1989 Everglades National Park Protection and Expansion Act). The introduction, deliberate or accidental, of exotic species into the park ecosystem is in direct conflict with these mandates.

Prior to 2000, a total of nine exotic fish species were found in EVER. Since 2000, seven new exotic fish species have been collected within EVER. The canal systems of south Florida are the likely source for most of these species: 15 of the 16 exotic fish species in EVER were known to have been established in the canal system adjacent to park boundaries prior to their collection inside the park. Several of the species found since 2000 have established reproductive populations, and continue to expand their range and increase in abundance within EVER. Natural Everglades marshes in close proximity to canals are often found to have higher populations of exotic fish than do natural marshes in the interior of the park.

A cold snap in January 2010 demonstrated both the sensitivity and resilience of exotic fishes in EVER. The exotic fishes of south Florida are of tropical origin and are relatively more sensitive to cold water temperatures than the native freshwater species. Water temperatures reached lows within the lethal range of most of the exotic freshwater fish species occurring within EVER during the January 2010 cold snap and a cold weather fish kill was observed. Subsequent surveys suggest the number and distribution of exotic fishes within the marshes distant from canal inflow points decreased. However, water temperatures in canals and ditches, particularly along the eastern boundary of EVER and in some natural habitats (e.g., solution holes) remained above the lower lethal temperature limit of most exotic fishes. Exotic fish abundance in marshes in close proximity to canals remained high. Lessons learned from this cold snap may lead to a better understanding of how to manage and prevent the establishment of exotic fishes in EVER.

Challenges Ahead Invasive Exotic Fishes in Everglades National Park

- *Modifications to the Park's Water Delivery System:* Everglades restoration projects are engaged in modification of the water management system adjacent to the park, with the goal of restoring natural hydrologic characteristics to the area. Some proposed water management actions, particularly those which may cause a direct connection of surface waters from canals to EVER marshes, pose the threat of additional introductions of exotic fish. Park staff is engaged in the restoration process to ensure that restoration project designs consider potential impacts on the spread of exotic species into Everglades marshes.
- *Gaining Consensus among State and Federal Agencies regarding management actions is a challenge.* The State of Florida manages a state-wide fishery that includes exotic species. State mandates and objectives regarding exotic fishes contrast with those of the National Park Service for management of wilderness in Everglades National Park. Management of exotic fishes in the more confined artificial water bodies outside of EVER (canals, borrow pits) is more feasible than attempting control efforts within the natural marshes of the park; however, these areas do form part of the Florida freshwater fishery. Increased cooperation and consensus is needed to meet the management goals of EVER.
- *ECISMA - A New Partnership of State and Federal Agencies Formed to Coordinate Management Actions for Invasive Exotic Species in Florida:* the Everglades Cooperative Invasive Species Management Area (ECISMA) is a formal partnership of State and Federal agencies that coordinate management actions, science, and funding for control of invasive exotic species. Although still in its infancy (formed in 2007), this group may provide the needed forum for reaching consensus among management agencies.
- *Investments in research:* Research support needs to be directed at identifying ways to prevent future invasions, control priority species, and to assess the potential impacts of established exotic fish populations.

2010 5.1.4 Exotic Vegetation Management Program

Fiscal Year 2010 Exotics Projects

In FY2010, the Everglades National Park Exotic Vegetation Management Program (EVMP) obtained funds from the National Park Service Florida and Caribbean Exotic Plant

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Management Team (FLCEPMT), the Department of Interior Burned Area Rehabilitation (BAR) project, and the Everglades National Park Fire Management hazard fuel reduction fund to complete several projects (Table 1).

Table 1. Summary of fiscal year 2010 exotic vegetation treatment projects in Everglades National Park.				
Project Location	Funding Source	Gross Infested Acres Treated	Canopy Acres Treated	Cost
East Everglades (Tamiami Trail Culvert)	NPS-SFNRC	158	52	\$300,000.00
East Everglades (Melaleuca re-treatment)	NPS-EVER	2,170	195	\$50,320.00
Shark Slough_L-67 Canal-Shark Valley	EVER Fire Management & FLCEPMT	30,000	100	\$166,000.00
East Everglades Melaleuca re-treatment)	BAR	245	42	\$50,000.00
East Everglades (Melaleuca re-treatment)	FLCEPMT	5,280	158	\$158,000.00
East Everglades District (re-treatment)	EVER FIRE	333	124	\$50,000.00
In-house work (Interns, VIP, and NPS staff)	NPS	~300	200	\$35,001.00
Saline Glades (Australian pine treatment)	FLCEPMT	~4,000	120	\$24,000.00
Federal Sources National Park Service Florida and Caribbean Exotic Plant Management Team (FLCEPMT) South Florida Natural Resources Center (SFNRC) Everglades Fire Management Program (EVER FIRE) Burned Area Rehabilitation (BAR)				

East Everglades Expansion Area (EEEA)

Initial treatment in the East Everglades/Shark Slough

No initial treatment projects were conducted in the East Everglades in FY2010.

Re-treatment in the East Everglades/Shark Slough

Tamiami Trail Project - For fiscal year 2009 funding through Everglades National Park and the U.S. Fish and Wildlife Service was provided for this project. A total of \$300,000 was obligated however only \$57,397.81 was spent in fiscal year 2009. In fiscal year 2010 the remaining \$242,602.19 was spent. A contractor was awarded the task order focused on the removal of non-native vegetation, mostly Brazilian pepper (*Schinus terebinthifolius*), from the vegetation halos around the culverts on the south side of Tamiami Trail, between the L-67 extension canal and the L-31 North canal.

Everglades National Park - Discretionary Funds - For fiscal year 2009, Everglades National Park obligated \$50,320 in funding. The field work was completed in Fiscal Year 2010. Approximately 2,170 gross acres infested acres (195 canopy acres) of melaleuca were re-treated in the EEEA.

Shark Slough Project (Ground and Aerial Treatment) - For fiscal year 2010 funding through the Everglades National Park Fire Management Hazard Fuel Reduction fund and the Florida and Caribbean Exotic Plant Management Team (FLCEPMT) of \$166,000 was used to treat approximately 30,000 gross infested acres (100 canopy acres) of melaleuca. This project was conducted using a helicopter to fly crew members out to the area between the L-67N canal and the Shark Valley Tram Road. In areas where the helicopter could not land, a spot spray device was attached to the helicopter allowing for a targeted individual treatment of melaleuca trees.

Burned Area Rehabilitation (BAR) - For fiscal year 2010 funding through the BAR of \$50,000 was used to re-treat approximately 245 gross infested acres (~42 canopy acres) of melaleuca in the EEEA.

FLCEMPT Funded Project - For fiscal year 2010 funding through the FLCEPMT of \$158,000 was used to re-treat approximately 5,280 acres of melaleuca in the EEEA.

ENP Fire Management (Hazard Fuel Reduction) - For fiscal year 2010 funding from the Everglades National Park Fire Management Program for Hazard Fuel Reduction of \$50,000 was used to re-treat 333 acres of melaleuca in the EEEA.

Saline Glades Australian Pine Treatment

For fiscal year 2010 funding through the National Park Service Florida and Caribbean Exotic Plant Management Team (FLCEPMT) of \$30,000 was used to treat approximately 4,000 gross infested acres (120 canopy acres). This project was conducted using a helicopter. A spot spray device was attached to the helicopter allowing for targeted individual treatment of Australian pine (*Casuarina equisetifolia*) trees. This project will need to be closely monitored for the next year or two, given that early monitoring indicated that some of the treated Australian pines have re-sprouted.

In-house Work Conducted in FY2010

In addition to the projects accomplished by the contractors mentioned above volunteers, interns, and park staff treated exotic vegetation along the Main Park Road, Shark Valley, Chekika, East Everglades, Royal Palm, Pine Island, Everglades City, Key Largo, Flamingo, Watsons Place, and in scattered isolated remote areas. Exotic plant species targeted by volunteers, interns, and park staff include: Brazilian pepper (*Schinus terebinthifolius*), arrowhead vine (*Syngonium podophyllum*), pothos (*Epipremnum pinnatum*), Old World climbing fern (*Lygodium microphyllum*), lather leaf (*Colubrina asiatica*), and seaside mahoe (*Thespesia populnae*).

Challenges Ahead for the Exotic Vegetation Management Program

Although contractors, volunteers, interns, and park staff were able to treat some exotic vegetation in all districts of Everglades National Park, invasive exotic plant problems still occur in all of the park districts. For example, *Lygodium* is established in the sparsely wooded coastal marsh areas along the western coast in both the Gulf Coast and Flamingo Districts. *Lygodium* was first recognized in the park in 1999. Treatment efforts have been effectively treating large dense stands, but the plant continues to persist.

In terms of sheer magnitude, Brazilian pepper is the most widespread. Brazilian pepper is particularly abundant along the fringes of the mangroves. In some instances there are individual stands of Brazilian pepper that cover 4,000 to 6,000 acres. At this time, a cost

effective strategy for systematically removing Brazilian Pepper from the park, outside of the Hole-in-the-Donut project, has not been identified. Treatment of this plant is done sporadically as a part of broader exotics projects and in discreet areas that have been identified as resource management priorities.

Although a great amount of progress has been made in the EEEA treating melaleuca and Australian pine, there is still a great need for finishing the remaining initial treatment (~1,650 acres) and continuing re-treatment efforts. Re-treatment efforts are very important in order to maintain the progress already achieved. Funding for re-treatment efforts are not guaranteed and are crucially important in order to insure restoration success. In order to not lose the progress made to this point, dedicated funding for the exotic vegetation program is essential.

With current levels of funding, it is unclear when or how the park will be able to address these problem areas. The park is already optimizing the use of available funds and has made every effort to seek additional funds.

2010 5.1.5 Everglades Restoration and Supporting Science Foundation Projects

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

Everglades Water Quality: Consent Decree Compliance

Settlement of the Everglades water quality lawsuit in 1991 resulted in a Consent Decree issued in 1992. The Department of Justice represents the United States, and a Federal judge and special master oversee compliance with this Consent Decree. The Decree required implementation of agricultural best management practices, phosphorus load reductions for the A.R.M. Loxahatchee National Wildlife Refuge and the entire Everglades, and the creation of more than 45,000 acres of constructed wetlands called Stormwater Treatment Areas (STAs) to remove nutrients from agricultural runoff before discharge into the Everglades. The Decree established interim and long-term phosphorus requirements for the refuge and Everglades National Park (EVER).

For the park, water samples are collected monthly at structures and/or pumps that discharge into the park. Mean total phosphorus concentrations are calculated from these samples and are compared to a long-term limit which varies depending on hydrology. Although tracked monthly, the Consent Decree requires that only the rolling average total phosphorus concentrations for a twelve-month period ending September 30th are evaluated for Consent Decree compliance.

The 1992 Consent Decree resulting from the Everglades water quality lawsuit established interim and long-term (December 31, 2006) total phosphorus levels and limits for the A.R.M.

Loxahatchee National Wildlife Refuge and EVER. Interim and long-term levels for the refuge have not been met several times since 1999, with the most recent excursion occurring in June, 2009. The State of Florida has admitted that the most-recent excursion, coupled with a previous excursion in November, 2008, constitutes a violation of the Consent Decree. As stated in the Special Master's Report, January 4, 2011, page 103, the most recent exceedance of the long-term limits for the park is for WY2008. Subsequently, the Technical Oversight Committee agreed that this exceedance was due to error and did not constitute a Consent Decree violation.

However, there is a concern that concentrations entering the park are higher than anticipated under the Consent Decree. The WY 2008 exceedance is consistent with Consent Decree compliance results over the past several years. The long-term Consent Decree limits at Shark River Slough are at or near the 90th percentile of total phosphorus inflow concentrations for the 1978-1979 baseline total phosphorus concentrations through the S12 structures. The measured flow-weighted-means were close to the limits in WY2006-WY2010. If objectives of the long-term Consent Decree limits were achieved, the data should be close to the 50th percentile of the compliance total phosphorus concentrations instead of the 90th percentile. The long-term flow-weighted-mean total phosphorous concentration should be close to 8.0 parts per billion (ppb) as compared with 9.9 ppb in the most recent 5-year period (WY2006-2010).

In addition to concerns regarding Shark River Slough, Everglades biologists have discovered relatively recent occurrence and expansion of cattails in upper Taylor Slough, just south of the decommissioned S-332 pump station. Preliminary technical analyses have suggested that changes in water management operations associated with the construction of the detention areas have resulted in increased water flows and total phosphorus loads to upper Taylor Slough. These results are relevant to other water management changes underway and planned for the future which may increase water flows to the park before water quality goals are achieved.

Challenges Ahead for Everglades Water Quality: Consent Decree Compliance

- Improving agricultural best management practices to reduce the inflow nutrient loads to STAs, thereby increasing their nutrient-removal performance.
- Increasing the treatment area in STAs to insure that their waters discharged to the Everglades are in compliance with the Consent Decree without decreasing the amount of water flowing into the Everglades.

Water Quality Status in the Everglades Protection Area

Notable progress has been made in reducing total phosphorus and other nutrient inputs into the Everglades Protection Area. Despite this progress, additional work is needed to provide water of sufficient quality to prevent harm to Everglades plants and animals. In particular, additional Stormwater Treatment Area acreage and improved agricultural best management practices are needed.

The Everglades ecosystem developed as an oligotrophic (nutrient-poor) ecosystem with surface waters low in nutrients and other substances. Today, the Everglades ecosystem is about one-half of its original size, but is the most ecologically important subtropical wetland in the United States. Pre-development Everglades plants and animals were adapted to extremely low concentrations of soil and water phosphorus -- an essential nutrient. The

ecosystem changes dramatically with very small increases in this and other nutrients. Years of scientific research and regulatory consideration has concluded that water containing more than 10 parts-per-billion (ppb) total phosphorus in the Everglades has been associated with altered ecosystem structure and function, including conversion of sawgrass stands to dense cattail.

The State of Florida classifies the A.R.M. Loxahatchee National Wildlife Refuge, and EVER as Class III waters with water quality standards established to protect recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife. These standards include a total phosphorus concentration criterion of 10 ppb. The refuge and park also are classified as Outstanding Florida Waters. In addition to the requirements of Class III water quality standards for these areas, no degradation of water quality beyond what existed during a base period from 1978-1979 is allowed.

To improve the quality of water discharged into the Everglades, the State of Florida built five constructed wetlands called Stormwater Treatment Areas (STAs), and the USACE constructed one. To date, the STAs have removed a significant amount of nutrients from surface water discharges into the Everglades. During a drought throughout the 2010 Florida water year (WY2010, May 1, 2009 - April 30, 2010), more water and phosphorus were delivered to the Everglades Protection Area than during previous years. As a consequence, STA total phosphorus load discharged to the refuge was greater in WY2010 than in WY2008 and WY2009. The total phosphorus outflow concentration during WY2010 of all STAs (33.0 ppb) was lower than the period-of-record performance (40.0 ppb). In WY 2010, outflows from five STAs (STA-1E, STA-1W, STA-2, STA-5 and STA-6) did not achieve the Everglades Forever Act, Interim Effluent Limit. Outflows from four STAs (STA-1E, STA-2, STA-5 and STA-6) did not achieve the Everglades Forever Act, National Pollutant Discharge Elimination System, Administrative Order, Annual Interim Effluent Limit.

The State also promulgated a regulatory rule that established best management practices by farmers in the Everglades Agricultural Area. To date, this program has reduced by a significant amount the nutrients flowing into STAs, thereby decreasing the amount of phosphorous that must be removed by STAs. However, the combination of best management practices and nutrient removal in STAs has not reduced phosphorus concentrations low enough to prevent downstream impacts to Everglades plants and animals.

Two other water quality compliance requirements include compliance with the Class III total phosphorus standard in the Everglades Protection Area, and compliance with the Federal Consent Decree resulting from the Everglades water quality litigation. In WY2010, all impacted areas of the Everglades were not in compliance with the four-part test, while unimpacted areas were in compliance. Compliance with the Consent Decree is covered separately. The Class III criterion for dissolved oxygen was not met at several of the refuge interior stations during WY2010.

Challenges Ahead for Water Quality Status in the Everglades Protection Area

- Increasing the treatment area in STAs to insure that waters discharged to the Everglades meet the 10 ppb criterion needed to protect Everglades plants and animals.
- Improving agricultural best management practices to reduce the inflow nutrient loads to STAs, thereby increasing their nutrient-removal performance.

Modified Water Deliveries to Everglades National Park Project

The U.S. Army Corp of Engineers (USACE) was directed by Congress in the 1989 Everglades National Park Protection and Expansion Act to modify the Central and Southern Florida (C&SF) project to improve water deliveries to Everglades National Park (EVER) and, to the extent practicable, take steps to restore the park's natural hydrologic conditions. The project consists of three major structural components: (a) 8.5 Square Mile Area (SMA) Flood Mitigation component, (b) Conveyance and Seepage Control (C&SC) component, and (3) Tamiami Trail (TT) Component.

The current status of each component is described below:

- The purpose of the 8.5 SMA component is to provide flood mitigation to an agricultural and urban area adjacent to EVER due to higher water levels in the area expected to result from construction of the project restoration features. This component includes a perimeter levee, an internal canal and levee system, a pump station and storm water treatment area, and the acquisition of lands adjacent to the EVER boundary and west of the perimeter levee. Construction of all of the component structural features was completed and operational in FY11. The only remaining actions are to implement an interim operational plan for the pump station and to transfer the lands acquired within the 8.5 SMA to the National Park Service (NPS) or the local sponsor, the South Florida Water Management District (SFWMD).
- The purpose of the C&SC component is to convey water through reservoirs upstream of EVER into the Shark Slough drainage basin of EVER to be more consistent with historic hydrologic conditions. In addition, these project features will return project-induced increased seepage from the project area in order to maintain flood mitigation to adjacent areas. Some of the features of this project component have been completed: the S-356 pump station, back-filling of the lower 4 miles of the L-67 extension canal, and construction of the S-355 structures in the L-29 levee. Due to a financial constraint imposed by the NPS and water management constraints imposed by the State of Florida, the remaining, un-built, conveyance features of the project will not be constructed.
- The purpose of the TT component is to modify the existing highway consistent with the selected plan identified in the USACE 2008 Limited Reevaluation Report and Environmental Assessment/Finding of No Significant Impact (LRR/EA/FONSI), which specified implementation of a 1-mile bridge within the affected 10.7-mile highway corridor and raising the remainder of the highway section. Construction continues and is on schedule to be completed in 2013. Congress authorized immediate implementation of the plan in the 2009 Omnibus Appropriations Act.

Challenges Ahead for Modified Water Deliveries to Everglades National Park Project 8.5 SMA Component

- The major obstacles to the implementation of the 8.5 SMA component have been associated with operations of the S-357 pump station and associated Storm Water Treatment Area. When pumping was initiated last year, groundwater seepage from the area immediately downstream of the pump station adversely affected water levels within developed portions of the 8.5 SMA. Through a combination of structural modifications, additional monitoring and hydrologic modeling, and implementation of

an interim operational plan, the pump station should be operational for the purpose of transfer to the SFWMD by the end of FY11.

- The only significant challenge ahead is to develop the final operating criteria for the 8.5 SMA features when the remainder of the Modified Water Deliveries (MWD) features are identified and implemented.

Conveyance and Seepage Control Component

- The C&SC component features are scheduled for alternative evaluations beginning in 2009. The selected plan should include the required modifications to the internal canal and levee systems, including the L-67A/C, L-67 extension.
- Implementation of these features is likely to be delayed by litigation. The Miccosukee Tribe has indicated their intention to litigate operation of the S-356 pump, due to concerns with the effects of pump operation on tribal and natural resources in Water Conservation Area 3A.

Tamiami Trail Component

- The 2009 Omnibus Appropriations Act directed the USACE to immediately implement the LRR/EA selected plan. The contract award was made in October 2009 and a groundbreaking scheduled for December 2009.
- Construction of the LRR selected plan was initiated in 2010. Significant progress has been made in the completion of the 1-mile bridge; however, the roadway modifications have been significantly delayed due to the location of the utilities within the corridor.
- The USACE, in conjunction with the Florida Department of Transportation, Everglades National Park, and the utility companies have identified a solution to allow the modifications to proceed. The solution involved acceptable changes to the original plans and specifications for the utilities but will still cost an estimated \$11.2 million in the contract cost for the component, putting serious constraints on the amount of available contingency monies made available for the project. If the modifications are awarded and the contract amended, the project would still be completed by the end of FY13.
- The USACE proposed a pilot project to construct spreader swales immediately south of two culverts located along a 10.7-mile stretch of the Tamiami Trail at the northeastern boundary of EVER as part of broader proposed modifications for the Tamiami Trail that are documented in the 2008 LRR/EA. The purpose of this project is to determine if pilot spreader swales would increase flow into EVER and if so, determine the percent increase in flow. These data will provide decision-makers with sufficient information to decide whether construction of additional swales on EVER land is worth the financial cost and potential environmental effects. The Swale Pilot Environmental Assessment (EA) was completed with the issuance of a Finding of No Significant Impact (FONSI) in March 2009. The selected plan identified in the FONSI consists of a collaborative hydrologic modeling effort by EVER, USACE, and SFWMD followed by implementation of two pilot swales should the modeling results indicate flow improvements. However, the Spreader Swale Pilot Project was terminated due to funding limitations imposed on the MWD project by the NPS.

Operational Plan Development

- Completion of the final structural components of the MWD project will culminate in the need for the development of an integrated operational plan for the project

features and those of the C-111 project. For this reason the plan is referred to as the Combined Operational Plan or COP.

- Based on processes used for the development of prior operational plans, this will involve potentially contentious discussions among the interested and affected state and federal agencies as well as the general public. Therefore, an extensive amount of time and resources are budgeted for this plan development.
- The USACE initiated the scoping process for the plan development in June 2011 and the plan is scheduled to be implemented by the end of FY13.

Real Estate Acquisition in the Everglades National Park (ENP) Expansion Area

- When Congress passed the 1989 ENP Protection and Expansion Act, this legislation also authorized the acquisition of approximately 109,000 acres of land within the area referred to as Northeast Shark Slough.
- To date, approximately 99% of these lands have been acquired with the only remaining acquisition consisting of three commercial airboat facilities, two radio towers, and a corridor of land owned by Florida Power and Light.
- All of these remaining acquisitions must be completed, or action taken to allow for the use of the lands, prior to the implementation of the COP and restoration of the area.

Tamiami Trail – 2009 Omnibus Appropriations Act Evaluations

A LRR/EA was completed in October 2008 for the Tamiami Trail component of the MWD project. The selected plan includes the construction of a 1-mile bridge within the 10.7-mile highway corridor and the raising of the remainder of the highway to allow water levels within the adjacent L-29 canal to increase from the current 7.5 feet to 8.5 feet. The report also acknowledged that other alternatives would provide higher levels of benefit but at costs beyond the capability of the MWD project. In December 2008, the Department of the Interior (DOI) elected to transfer \$1 million to the USACE for the completion of a feasibility report addressing the need for additional modifications to the Tamiami Trail needed to accommodate water levels and flows associated with full restoration.

The 2009 Omnibus Appropriations Act directed the Secretary of the Interior, acting through the NPS, to immediately evaluate the feasibility of additional bridge length, beyond that to be constructed pursuant to the MWD project, including a continuous bridge, or additional bridges or some combination thereof, for the Tamiami Trail to restore more natural water flow to EVER and Florida Bay and for the purpose of restoring habitat within the park and the ecological connectivity between the park and the Water Conservation Areas. The language of the 2009 Omnibus Appropriations Act also specified the completion of a “feasibility report” with one year of enactment.

Challenges Ahead for Tamiami Trail – 2009 Omnibus Appropriations Act Evaluations

- Six alternatives, in addition to the No Action Alternative, were evaluated in the Environmental Impact Statement (EIS). These alternatives provide an increase in bridging ranging from 1.01 miles to 5.5 miles in addition to the 1-mile bridge to be built as part of the MWD project. The amount and the length of the bridging associated with these alternatives was constrained due to DOI guidance to allow for access to the existing facilities within the corridor as well as to comply with a 0.5-mile buffer requested by the Miccosukee Tribe.

- The Draft Environmental Impact Statement (DEIS) as well as a Summary of Findings Document were completed in May 2010 and identified the NPS preferred alternative as Alternative 6E, which recommended an additional 5.5 miles of additional bridging.
- The Final Environmental Impact Statement (FEIS) was completed in December of 2010 and selected the preferred plan specifying the additional 5.5 miles of bridging. NPS responded to numerous comments for additional bridging stating that this is the maximum amount of additional bridging that can be constructed within the remaining un-bridged portion of the corridor while adhering to the project constraints.
- A Record of Decision (ROD) was published in the National Register in April 2011 to formally identify Alternative 6E as the NPS selected plan. Estimated final project costs, which include funding for the remaining lands within the ENP Expansion Area, are \$310 million.

Rock Mining Seepage Management Pilot Project (Miami-Dade County Lake Belt Plan)

Limestone rock mining is an important economic activity in south Florida. However, rock mining in the Everglades has adverse environmental impacts that include removal of wetlands, increased seepage from adjacent natural areas, and potential water contamination problems. Everglades National Park (EVER) is participating on a technical committee with the industry and other stakeholders to develop seepage management techniques that the industry could employ as mitigation for their rock mining activities.

In the early 1990s a consortium of limestone mining companies formulated the "Lake Belt Plan." The focus of the plan was to obtain a long-term permit for their mining activities, to ensure that the supply of raw materials would be available to justify expansion of their processing infrastructure. The State of Florida agreed with this concept and formed a planning committee consisting of the industry and various government and non-government stakeholder groups. The initial phase of the Plan allows for expansion of mining activities and environmental studies to address issues such as increases in groundwater flow out of the natural system due to the removal of the aquifer material and the effect of this loss on listed species as well as potential effects on the County's largest water supply well field. The initial phase also established a mitigation fee for wetland impacts and a separate fee for impacts directly related to seepage from EVER. In recent years the situation has been complicated by litigation that has remanded the Clean Water Act section 404 permitting back to the U.S. Army Corps of Engineers to complete a new Environmental Impact Statement (EIS) that addresses concerns raised by the Federal judge.

One of those concerns was the mitigation plan for increases in seepage losses of water from EVER. It is estimated that the rock mining adjacent to EVER is responsible for approximately 10 percent of the seepage loss from this area of the park. EVER technical staff has been involved in a process to develop a viable seepage mitigation plan that is acceptable to all parties involved.

The mining industry completed a 1,000 foot test wall in 2009 and conducted tracer tests during the 2010 wet season. Unexpectedly, the tracer injected behind the wall appeared to go through or under the wall much faster than anticipated. Further investigation revealed that the structural integrity of the wall was not consistent from top to bottom. Due to stratification of the cement, the bottom of the wall never hardened to provide the necessary and expected seal in the aquifer.

The mining industry feels confident that the construction issues with the test wall can be corrected and is under pressure to obtain mitigation credits in the near term. As a result of these circumstances and based on simulation analysis of the seepage barrier, the industry has proposed installing a 7-mile wall to a depth of approximately 30 feet. At this depth, the depth of the wall will exceed the depth of the canal, but will not cut off flow to the aquifer zone that the public water supply draws from.

NPS analysis largely agrees with the industry analysis and we are supporting their efforts to obtain concurrence from the members of the mitigation committee. If the seepage management project is successful, EVER has, for the first time, a viable opportunity to reduce seepage losses from the rock mining excavations as well as from the canals of the Central and Southern Florida Project in return for mitigation credits to the industry.

Challenges Ahead for Rock Mining Seepage Management Pilot Project (Miami-Dade County Lake Belt Plan)

- The industry is engaged in obtaining permission from the Lake Belt mitigation committee to install 7-miles of sub-surface barrier in exchange for wetland mitigation credits.
- The final challenge will be applying the seepage management concept to mitigation for wetland habitat impacts. This is a novel concept in the arena of environmental mitigation and will require substantial analysis to obtain buy-in from key stakeholders.

Comprehensive Everglades Restoration Plan and the National Academy of Sciences Review (CISRERP)

- The Water Resources Development Act of 2000 authorized the Comprehensive Everglades Restoration Plan (CERP) and included a provision for independent scientific oversight on progress in restoring the natural system. The National Academy of Sciences has been charged with this review. The most recent NAS committee to review the CERP is the Committee on Independent Scientific Review of Everglades Restoration Progress (CISRERP) which produced reports in 2006, 2008, and 2010.
- The Committee's 2006 report concluded that the interagency scientific program accompanying the restoration efforts "has been of high quality and comprehensive." Important scientific questions still remain to be addressed; however, the Committee concluded that scientific understanding was sufficiently advanced so that "no significant scientific uncertainty should stand in the way of restoration progress." Positive comments in the 2006 report centered on progress shown by the State of Florida in the Kissimmee River restoration, in reducing phosphorus loads by constructing water treatment wetlands and in moving forward a subset of the CERP projects, termed Acceler8.
- In their 2008 and 2010 reports, the Committee was concerned about lack of progress and serious schedule delays on projects that are central to restoring the fundamental characteristics of the ecosystem (sheetflow), such as Modified Water Deliveries and the WCA Decompartmentalization Project. The Committee called for the attention of senior managers and policy makers to problems with the level of federal funding and issues with the planning process. They noted that restrictions in federal funding mean that federal interests are unlikely to be addressed in a timely way, and that the restoration planning process is easily stalled by unresolved scientific uncertainties.

Also noted was the fragile nature of the stakeholder consensus holding the CERP plan together.

Challenges Ahead for Comprehensive Everglades Restoration Plan and the National Academy of Sciences Review (CISRERP)

The CISRERP Committee is in the process of planning and information acquisition for their 2012 report, which is focusing heavily on the issues of restoring water flow while maintaining and improving water quality in the Everglades. The implementing agencies (USACE and the SFWMD) and the DOI are participating in the committee meetings to answer questions and provide the technical and planning information requested by the committee.

Critical Ecosystems Studies Initiative (CESI)

The Critical Ecosystem Studies Initiative (CESI) was established in 1997 as the primary investment by DOI to provide scientific information to advise restoration decision making, and to guide its own land management responsibilities for south Florida Ecosystem restoration. CESI funding has focused on: (1) understanding how the original natural system functioned, (2) identifying ways it is now impaired, and (3) defining viable options for ecosystem restoration.

In 2003, the National Research Council (NRC) reviewed the CESI program and concluded that “The CESI program has been an important resource to help address the immense science information needs of the Everglades restoration.” In particular, the NRC concluded that:

- CESI research on the linkage between ecological and hydrological processes provides a strong scientific foundation for future decision making so that scientists and planners can respond to new and emerging concerns.
- CESI’s gap-filling approach represents an effective strategy to meet complex and changing science needs.
- The fundamental purposes and objectives of the CESI research program should remain intact (emphasis on ecosystem research, model development, and environmental assessments).

Within the interagency restoration process, the Army Corps of Engineers and the South Florida Water Management District are relying on DOI to track restoration success on DOI lands. The Monitoring Plan for the Comprehensive Everglades Restoration Plan specifically incorporates CESI-sponsored monitoring of DOI lands and resources. Additionally, the Corps and South Florida Water Management District are relying on DOI (CESI funding) to monitor restoration benefits related to ongoing restoration projects such as the Modified Water Deliveries and the C-111 Projects.

CESI is also a primary source of funding for water quality research and monitoring activities related to compliance with the federal Consent Degree entered in *United States vs. South Florida Water Management District* (see water quality briefings). The CESI program supports work related to setting of water quality standards and determining compliance within EVER and the A.R.M. Loxahatchee National Wildlife Refuge.

CESI funding also supports multiple ecosystem restoration and coordination activities in support of the South Florida Ecosystem Restoration Task Force (Office of the Executive Director). These program funds include work on comprehensive exotics control strategies,

restoration planning, National Academy of Sciences peer review, and support for south Florida science symposia and workshops.

The largest portion of CESI funds have been used to support research through universities and external contractors, to bring outside expertise into the restoration process. In addition, the USGS has received over 1/3 of all CESI funding, through cooperative research projects that are funded jointly with their \$8.5 million Place-Based Initiative in south Florida.

The NPS, as the principal manager of Federal lands in south Florida, has worked in close cooperation with other Federal and State agencies to focus CESI funds on the most important monitoring, assessment, and research projects that are directly related to ongoing restoration needs. The NPS role in managing CESI funding is tied to our responsibility as the manager of approximately 2.5 million acres of federal-interest lands in south Florida, as well as a primary recipient of the environmental benefits provided by CERP and related restoration projects.

Science projects initiated with CESI funding in FY10 include the following:

- “A synthesis of freshwater Everglades research”
- “Assessing the impact and potential for containment of non-native fishes across Everglades habitats”
- “Interactive effects of water management and vegetation”
- “Submerged aquatic vegetation and water quality monitoring and nutrient source pools in the mangrove lakes.”
- Refinement of species-habitat models and development of climate envelope models for evaluation of potential effects of climate change on threatened and endangered species in south Florida”
- “Predicting impacts of sea level rise on rare plants and coastal habitats in Everglades National Park”
- “Recommendations for adaptive management of apple snails and snail kites”

Challenges Ahead for Critical Ecosystems Studies Initiative (CESI)

- Continued funding of the CESI within the Everglades Restoration and Research budget at current levels is essential for DOI to acquire the science needed to guide the restoration process.
- Thus far the CESI program has been very successful in coordinating funding with other agencies to acquire needed science for restoration. Anticipated funding cuts for science and monitoring at other State and Federal agencies in south Florida will have an effect on this strategy.

Science Communications

The Science Communications Team supports the development of park science information and dissemination to managers, policy makers, scientists, other park divisions and units, our visitors, and the general public. By doing so, the Science Communications Team helps to ensure that park policy and management decisions are science-based and understood by our partners. Our work includes the production of a variety of reports and fact sheets published in hard copy and to the web, the development and maintenance of the South Florida Natural Resources Center and Nature in Science sections of the Everglades and Dry Tortugas websites, efforts to foster internal communication through seminars and bi-weekly reports, and the development of a wide range of outreach products and in-person programs.

FY10 Activities & Accomplishments

During the last year, Science Communications assisted in the development and production of two important Center reports: the Dry Tortugas Research Natural Area 3-Year Report and the Tamiami Trail Modifications Summary of Findings Report. In keeping with NPS and Center policy, the team also managed the formal peer review process for a report evaluating potential impacts of proposed Florida Power and Light Company transmission power lines on avian resources in Everglades National Park.

The Science Communications Team produced a number of fact sheets, including several on invasive species and on Critical Ecosystem Science Initiative (CESI)-funded water quality projects. We also worked together with the interagency Science Working Group to produce three 4-page fact sheets on climate change, restoration science, and invasive animals to aid in informing the Southeast Ecosystem Restoration Task Force on critical management issues. In all, during FY10, over 16,000 Center-produced publications were distributed to target audiences. All Center publications are available through the Everglades National Park website (<http://www.nps.gov/ever/naturescience/sfnrcpublications.htm>).

In support of internal communications, we hosted seven seminars on a broad range of topics, from pineland birds to Biscayne Bay water quality, and successfully worked to expand the content provided in our Center bi-weekly reports.

In addition to maintaining and adding to the Center portion of the Everglades website, the Science Communications Team worked to expand content under the Nature and Science sections of both Everglades National Park's and Dry Tortugas National Park's websites. As an indication of the reach of our website content, in FY10, the approximately 200 individual pages within the Nature and Science section of the Everglades website, logged over 589,000 individual page views.

We worked on a variety of outreach efforts related to invasive species issues in FY10. We collaborated with the U.S. Army Corps of Engineers on a public service billboard campaign, translated our popular Florida Invaders document to Creole and made it available on-line, supported the outreach efforts of the interagency Everglades Cooperative Invasive Species Management Area (ECISMA), including the development of a set of exotic reptile field identification cards, and developed permanent outreach display units and placed them at the our Miami-Dade County partners' Deering Estate and Crandon Park visitor centers.

In addition, Science Communications staff facilitated both in-park and outreach opportunities to various VIPs, student groups, cooperators, and general visitors. Many of these offerings were presented in collaboration with partner organizations such as Fairchild Tropical Botanic Garden and the Everglades Foundation. In FY10, these programs introduced over 1,000 participants to various aspects of park science.

Challenges Ahead for Science Communications

Budgetary constraints prevent recruitment to refill our now vacant document production position, crucial to generation of technical reports. We are working to build document production skills in our remaining team members in order to continue to produce a high-quality, high-profile technical report series and supporting fact sheets, however, our efficiency is likely to be impacted at least for the near-term.

Cape Sable Canals Dam Restoration Project

- This project replaced two failed sheet pile dams across the East Cape and Homestead Canals on Cape Sable. These two canals were dug in the 1920s and first plugged about 1960 but the dams failed several times allowing marine water into formerly fresh to brackish marshes and flushing freshwater to the sea. Canal banks eroded rapidly, the remnant dams were a safety hazard for boaters, and the open canals allowed illegal access into wilderness areas.
- Several canals were constructed in the Cape Sable area between 1900 and the 1930s, prior to the establishment of the park. The purpose of these canals was to drain water and make the area useful for agriculture and commerce. Saltwater intrusion through these canals, sea level rise, and several hurricanes has hastened the conversion of freshwater marshes north of Lake Ingraham to shallow marine habitat. Tidal flushing has eroded the canals and deposited significant amounts of sediment in Lake Ingraham. The smaller interior Homestead and East Cape Extension Canals were plugged with earthen dams to minimize these impacts. However, these dams failed during the early 1990s and were replaced by sheet-piling dams in 1997. The sheet-pile plugs in turn failed within a few years.
- The canals and the failed dams appear to have adversely influenced general ecological conditions, including critical wildlife populations such as American crocodiles, a federally listed species, and wading birds. Collapse of freshwater marshes in the Cape Sable area was observed by University of Miami and Everglades National Park staff in 2005, a change which is likely related to salt water intrusion from the Cape Sable canals and sea level rise. The breach of the sheet-pile dams also allowed illegal access to designated wilderness by fishermen and others using motorized watercraft and created conditions that were unsafe for canoeists and other boaters, especially during periods of high tide.
- The project was funded by the American Recovery and Reinvestment Act (ARRA) of 2009 and was managed by the NPS Denver Service Center (DSC). An Environmental Assessment for the project was completed and the Finding of No Significant Impact (FONSI) signed by the Regional Director on August 14, 2009. A contract for project design and permitting was signed by URS Corporation on August 7, 2009. Design documents and drawings suitable for permit request were delivered by late November 2009 and permits were requested in early December 2009. Construction drawings and specifications were completed in late February 2009 and permits from the U.S. Army Corps of Engineers and the South Florida Water Management District were secured in late June 2010. The DSC awarded the construction contract to Jay Cashman and Associates, and the construction management contract to HDR in July 2010. ARRA provided ~\$7.264 M, EVER ~\$353 K, and the USFWS ~\$117 K to complete the project.
- This project was particularly challenging because the construction sites are very remote, accessible only by boat or shallow draft barge, and because work on Cape Sable was allowed only between October 1 and March 31, outside the crocodile nesting season. Mobilization of equipment and materials began in August 2010 at the Key West staging area and site clearing began on October 1. Construction of the two dams was simultaneous and progressed by first constructing an upstream sheet pile wall across the canals into the banks on either side then placing rip-rap to protect upstream banks and sheet pile "wing" walls. After walling off the upstream boat ramp, the downstream curtain wall, wings, and ramp enclosure were built 100 feet downstream. The East Cape structure was filled with sand by mechanical means but the Homestead structure was filled by hydraulic pumping across Lake Ingraham from a barge at the east end of the lake. Boat ramps, docks, mooring piles, and walkways were installed at both sites and native vegetation was planted on the dams and disturbed banks. The project was substantially completed on March 31, 2011.

2010 5.2 Dry Tortugas Natural Resource Management

2010 5.2.1 Research Natural Area Science Plan

Developed in 2007 by the NPS and the Florida Fish and Wildlife Conservation Commission (FFWC), the goal of the DRTO Research Natural Area (RNA) Science Plan is to assess the conservation efficacy of the RNA

(<http://www.nps.gov/ever/naturescience/technicalreports.htm>). The plan is organized into six topic areas:

1. Quantify changes in the abundance and size-structure of game fish species within the RNA relative to adjacent areas.
2. Monitor the immigration and emigration of targeted game fish species in the RNA.
3. Monitor changes in species composition and catch rates of reef fishery species throughout the surrounding region.
4. Evaluate the effects of RNA implementation on marine benthic biological communities.
5. Assess reproductive potential of reef game fish species by evaluating egg production and larval dispersal.
6. Incorporate social sciences into the research and monitoring program.

A variety of science projects are underway by NPS units and other agencies and universities. As established in the Memorandum of Understanding between the NPS and the FWC, we completed a three year report on these projects in February 2010. This report summarized the progress of implementation of the essential activities whether funded or not. Work is progressing on all 6 major topic areas, and a total of 18 projects are underway, including some supplemental activities. The three year report can be found here: <http://www.nps.gov/ever/naturescience/featuredpublication.htm>

2010 5.2.2 DRTO Natural Resource Projects

DRTO National Park provides vital habitat to a variety aquatic and terrestrial organisms. The park is a critical resting area for both migratory and nesting birds. These seven keys serve as the only significant nesting sites for Brown Noddies, Sooty Terns, Magnificent Frigatebirds, and Masked Boobies in the contiguous United States. The federally threatened Roseate Tern also nests within the park. In addition, the Dry Tortugas National Park contains over 2,100 acres of coral cover and over 17,000 acres of seagrass beds. These reefs, seagrass beds, hard bottom areas, and sand bottoms are all home to an abundance of marine life.

The Dry Tortugas National Park provides vital habitat to a variety aquatic and terrestrial organisms. The park is a critical resting area for both migratory and nesting birds. These seven keys serve as the only significant nesting sites for Brown Noddies, Sooty Terns, Magnificent Frigatebirds, and Masked Boobies in the contiguous United States. Over 20,000 pairs of sooty terns, 2500 pairs of brown noddies, and 100 frigate birds nested in 2010. The federally threatened Roseate Tern also nests within the park. In addition, the Dry Tortugas National Park contains over 2,100 acres of coral cover and over 17,000 acres of seagrass beds. These reefs, seagrass beds, hard bottom areas, and sand bottoms are all home to an abundance of marine life.

As a result of the park's plentiful natural resources, a wide variety of natural resource projects are conducted. The park's biological technician assisted with many of these projects including: bird banding and nest observation, sea turtle nest surveys, sea urchin assessments, coral health and damage studies, and sea grass assessments.

The federally threatened Roseate Tern (*Sterna dougallii*) nested historically in the park, though nesting was undocumented for several decades. Therefore, six years ago, the park implemented a plan to use decoys and a sound recording of the species to socially attract the birds and reestablish nesting. The program has been successful with 30-40 nesting pairs annually in recent summers. During June and July of 2010, Roseate Terns were monitored weekly to assess nesting activity. An estimated 67 eggs were laid throughout the season and several chicks were banded.

The islands are also a hot-spot for sea turtle nesting. Beaches were walked regularly to monitor nesting activity throughout the nesting season, with surveyors documenting a total of 369 turtle nests, a park record. Of these nests, 181 (49.3%) were identified as being Loggerhead Sea Turtle nests (*Caretta caretta*) and 186 (50.7%) were identified as Green Sea Turtle nests (*Chelonia mydas*). This is the largest number of green turtle nests recorded by researchers in the Tortugas to date, surpassing the 2000 record by 85 nests. It also marks the first time in park history that green turtle nesting exceeded loggerhead turtle nesting. The vast majority of both green turtle and loggerhead nesting in Monroe County occurred within DRTO with over 90% of the counties green nests in the park and over 70% of the loggerhead nests in the park. From nest excavations, an estimated 13,455 hatchlings entered the Gulf of Mexico this season from the Dry Tortugas excavated nests this season.

Many of the aquatic projects assess the effectiveness of the Research Natural Area (RNA) which was established in 2007. This no-take marine reserve was designed to restore ecological integrity by minimizing human impact. A mooring-ball system was implemented to eliminate anchoring in the RNA, though the moorings eventually had to be decommissioned due to safety concerns. Studies to assess current visitor damage on corals were conducted to serve as a baseline. Coral cover was also monitored for signs of recovery following the 2004-2005 storm seasons.

The long-spine sea urchin, *Diadema antillarum*, is often considered one of the most important herbivore on coral reefs in the western Atlantic and Caribbean basin, keeping algae from overgrowing the reef. However in 1983, a massive die-off of these urchins changed reef ecosystems throughout the Caribbean. *Diadema* have recovered slowly since, with widespread monitoring projects conducted throughout the keys, including at the Dry Tortugas.

These research projects and others, including nurse-shark mating behavior studies, sea turtle tagging, and fish stock assessments, aid in the understanding of this important ecosystem.

2010 6 Resource and Visitor Protection

2010 6.1 EVER - Resource and Visitor Protection

OVERVIEW

The Division of Resource & Visitor Protection (R&VP) is responsible for the protection of the park's visitors, employees and resources. These responsibilities are divided among 4 different program areas within the division. These programs are; law enforcement (including dispatch), fire and aviation management, fee management, and special park uses.

Although the primary objective of the law enforcement program is the detection, apprehension and deterrence of criminal violators and activity, park rangers at EVER are trained in and respond to medical emergencies, search and rescues, visitor assists and resource management incidents. The law enforcement program is also responsible for the operation of the Communication's Center which supports 24/7 dispatch services for the areas 4 national park service units. Four of the 6 permanent full-time dispatcher positions were encumbered. In FY 2010, the law enforcement staff consisted of 24 of the authorized 33 permanent full-time law enforcement rangers positions identified on the division's organizational chart. Six positions continue to be unfunded/vacant. Six seasonal law enforcement rangers were hired under the centennial seasonal program and 2 seasonal law enforcement rangers were hired from a donation account to conduct boat patrol in Florida Bay. All seasonals worked during the park's high visitation season from December 2009 through April 2010.

The park's fire and aviation management program is one of the largest and most active in the service. The program supports a proactive prescribed fire program as well as a qualified, response-ready suppression staff. The staff actively supports the national fire plan by providing human resources at all levels of incident management. In addition to fire management, the aviation branch provided year-round support to parkwide programs including; research and resources management projects, VIP tours, search and rescue efforts and law enforcement patrols. In FY 2010, there were approximately 31 permanent employees in the fire and aviation branch.

The fee program consists of a permanent full-time fee program manager, who supervises 7 permanent VUA's (entrance station fee collectors) and approximately 8 seasonal VUA campground fee collectors. The campgrounds are staffed from November through March.

The special park uses program consists of one full-time Special Park Uses Program Manager and a part-time permit examiner. This position oversees the issuance of film, special use permits and commercial use authorizations.

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

ACCOMPLISHMENTS

Fee Management Visitation through fee revenue decreased in FY 2010 with the revenue totaling \$1,579,428. This was a \$27,357 decrease over FY 2009. Cost of collection increased from 36% to 37%. Although a continual reduction in operating hours of the park's main entrance station from 16 hours per day to 13 hours per day, personnel costs continue to rise due to long time employees step increases. The 13 hour schedule is the most we can cut in order to receive fees from the recreational and guide fishermen who usually enter the park around 5 a.m. and regular visitation until sunset.

The park participated in 11 fee free days; including Veteran's Day, Lands Day and 9 other days identified by the NPS to promote visitation during the economic hardship.

Campground revenue increased from \$249,815 in FY09 to \$272,546 in FY10.

Park passes sold in	2010	2009	INCREASE/DECREASE
Senior	4930	5600	(670)
Access	350	500	(150)
Interagency	1550	900	650
EVER annual	2960	2840	120
Boat	400	225	175

FY 09 Fee Revenue	FY 10 Fee Revenue
1,606,785	1,579,428

Law Enforcement In CY 2010, the park documented 23 Part I offenses (with the majority being larceny from a motor vehicle), 205 Part II offenses (with the majority being possession of a loaded firearm and disorderly conduct). There were 1907 boating incidents and 1647 traffic incidents. The park had 2 fatalities and 54 EMS incidents.

Training

The Law Enforcement staff hosted 2 law enforcement in-service training courses assuring all LE rangers met annual refresher qualifications. Semi-annual firearms qualifications were also met by the entire staff. Several park rangers completed their basic LE training at FLETC during this time.

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

Significant Incidents/Activities

M/V REBEL YELL - On December 04, 2009, the park entered into a settlement agreement with Mr. David Marlow in the amount of \$295,000 for damages to Florida Bay caused by the grounding of his vessel, the M/V Rebel Yell. On February 13, 2006, the Rebel Yell, a 72' motor yacht ran aground on Arsenic Bank in Everglades National Park. Damage to the bay bottom was significant. The park filed a civil lawsuit under the Park System Resource Protection Act (16 USC 19jj). The park's success was due to the tenacity, perseverance and cooperation from the Department of Interior's Solicitor's Office in Atlanta, GA and the Department of Justice in Washington D.C. This was one of the largest settlements the NPS has received using 16 USC 19jj. The funds are being used to actively restore the damaged site.



M/V Rebel Yell aground on Arsenic Bank

Tamiami Trail Bridge Groundbreaking Ceremony - December 11, 2009.

After many years of planning, the park joined with its many partners in celebrating a major step forward in the Everglades Restoration Program by breaking ground for a new one-mile bridge along the east side of the Tamiami Trail. Representative attending the ceremony included Col. Pantano from the Army Corp of Engineers, Florida Secretary of the Department of Environmental Protection (FLDEP) David Sole, Florida Fish & Wildlife Conservation Commission (FFWCC) Regional Director Chuck Collins. The keynote speaker was Secretary of Interior Ken Salazar. The event took place at the SFWMD canal structure S334/356 on the north side of the Tamiami Trail. Even though the event took place out of the park, Everglades National Park rangers took the lead in coordinating the security for the event. FFWCC, FLDEP, Miami Dade PD and rangers from EVER and BICY patrolled the perimeter in airboats, ATV's, marked vehicles and on foot. NPS rangers also assisted the U.S. Park Police in providing security for the Secretary of Interior.



EVER park staff with Secretary of Interior Salazar at the Tamiami Trail Bridge Groundbreaking Ceremony

“AIP” - In April 2010, after 4 years of stops and starts, Everglades National Park completed the installation of speed zones in the Chokoloskee Bay area of the park to enhance manatee protection. In 2001, several areas throughout the state of Florida were designated “Areas of Inadequate Protection” (AIP) by the U.S. Fish & Wildlife Service as part of a settlement agreement that was reached between the USF&WS and The Save the Manatee Club. The AIP in Chokoloskee Bay fell within the boundaries of Everglades National Park. The park engaged in a detailed planning process that included several proposed alternatives, 2 public meetings and public feedback. The park was required to have signage, regulations and enforcement in place before the designation would be vacated by the U.S. Fish & Wildlife Service. The park received a generous donation by Turrell, Hall and Associates, a marine and environmental consulting firm, who offered to oversee the installation of the markers and signs with donated funds.

Deepwater Horizon Oil Spill – On May 3, 2010, in response to the oil spill in the Northern Gulf of Mexico, Everglades National Park’s Type III incident team was activated to coordinate a multi-park effort in planning for a potentially unprecedented incident. The majority of this team are employees of the Resource and Visitor Protection Division. EVER

FMO Rick Anderson was designated Incident Commander for 28 days. Other R&VP personnel played key roles in the local incident management team and assisted the regional Type 2 team that came to take over. Robert Trincado was the Deputy IC. Chief Ranger Bonnie Foist was Liaison Officer, Law Enforcement Specialist Bruce Gantt was Operations Chief and Tim Woody was Deputy Operations Section Chief. Aerin Land was deputy Planning Section Chief, with Colleen Holland, Tristan Holland and Jenn Adams working with her in the Planning unit. Jack Weer was the Logistics Section Chief. Stefanie Garcia was the Finance Section Chief. Gary Carnall was the Aviation Branch Director. Under the direction and leadership of the Type III team, natural and cultural resources assessment teams conducted baseline condition assessments in EVER, BISC, BICY, DESO, DRTO, and CANA. There were a total of 15 EVER fire management and ranger staff in key general and command staff positions. Outside of these positions, almost everyone in the fire and law enforcement program assisted when needed with logistics, planning, finance or operations. Several employees carried out their roles through the summer, until the South Florida incident was wrapped up in September of 2010.

EVER Superintendent Dan Kimball was asked by Tom Strickland, Assistant Secretary for Fish & Wildlife and Parks, to serve as the lead DOI official at the Unified Command Center in St. Petersburg, later moved to Miami.

On May 23 to July 14, 2010, the Intermountain Region's All Hazard Type II team replaced the park's Type III team. The Type II team continued to coordinate the multi-park assessments and manage the separate "Tarball Incident" and logistical challenges at DRTO.

From July 26 through August 09, 2010, the command staff was downscaled and managed by hiring AD (administratively determined) personnel. Although no oil ever reached the shored of DESO, EVER, BISC, BICY and CANA the baseline assessments were completed, incident documents and financial records were compiled in accordance with the US DOI Deputy Solicitors Directive issued May 04, 2010.

Special Park Uses In FY 10 the Special Park Used program coordinated the issuance of film and special use permits and commercial use authorizations (CUA's) for EVER and DRTO. Both parks implemented an approved revised fee schedule for CUA', which was based on a tiered structure of number of activities conducted, number of vessels, and number of employees.

Special Park Uses permits issued in EVER

	FY 10	FY09
Film	31	38
SUP	46	46
CUA (guide fishing)	307	336
CUA (other)	38	35

The special use permits included a variety of activities, including; non-profit educational activities, boundary marking by Miami-Dade County, organized bike events, fishing tournaments, Easter sunrise service, and ACOE construction easement.

Other CUA activities included: Outward Bound, canoe and kayak tours, Elder Hostel and Bird watching tours.

In FY 10, an application process was initiated to select a provider for a seaplane service to Dry Tortugas National Park. The park was seeking seaplane service for both the public and park employees. The special park uses program manager worked closely with the NPS regional aviation manager and the DOI Aviation Management Directorate in establishing an aircraft rental agreement, required to transport government employees. Three applicants responded. Their applications were reviewed by a panel and as a result, a two year Commercial Use Authorization for seaplane service from Key West to Dry Tortugas National Park was signed with Key West Seaplane Adventures, a company which is new to South Florida but has extensive service in the Alaska market and has worked with The US Forest Service in that venue. Their start date for service was April 27, 2010. The aircraft used is a DEHAVILLAND DHC-3, Single Turbine Otter Aircraft which carries ten passengers for a maximum of six trips per day (to comply with number of visitors allowed/allotted by DRTO General Management Plan).

The special park uses program manager made a trip in July 2010 to monitor service and ensure all conditions of CUA and aircraft rental agreement are being met.



Key West Seaplane Adventures Seaplane that services DRTO.

The DRTO CUA's awarded in 2008 expired December 31, 2009. The park's general management plan limits the number of CUA's issued to 30 and are valid for 2 years. They are awarded through a competitive process. The special park uses program manager worked diligently in early FY 10 to have new CUA's awarded and in effect on January 01, 2010. On January 01, 2010, 28 CUA's were awarded. The CUA's issued included: 13 CUA's for guide fishing, 10 for wildlife viewing, 5 for diving/snorkeling and 2 reserved for a one-time use.

Fifteen special use permits and 6 film permits were issued in FY 10 for DRTO. Activities that required a special use permit included private aircraft landings, large vessel anchoring, nonprofit educational visits, and one wedding (which ended up not happening as the bride-to-be got "cold feet" on the island).

2010 6.2 Fire and Aviation Management

In FY2010, wildfires burned 217 acres inside the Park boundary. Two of these fires were human-caused and one lightning caused. Everglades Fire Management personnel responded to an additional 11 fires within the Mutual Response Zone with Miami-Dade and Florida Division of Forestry. Wildland fire responses in the Mutual Response Zone adjacent to the Park boundary totaled 479 acres in the Wildland Urban Interface. Everglades Fire collaborated on six prescribed fires conducted by local partner agencies. Nine planned ignitions were conducted within the park totaling 6,523 acres.

<u>TYPE</u>	<u>#</u>	<u>ACRES</u>
Unplanned Ignitions	3	217
Planned Ignitions	9	6,523
Chemical Treatments		20,200
Mutual Aid	11	479
False Alarms	0	
Smoke Checks		23
RX assists	6	
Mobilizations	22	
Totals		29,219

Interagency Assists

- In FY2010, 28 EVER fire personnel deployed off park on 22 incidents throughout the Nation.
- In FY2010, EVER fire personnel assisted on prescribed fires at Key Deer National Wildlife Refuge (NWR), Loxahatchee NWR, Big Cypress National Preserve, Florida Panther NWR, Ocala National Forest, Great Smokey Mountains, South Florida Water Management District and Florida Division of Forestry, as well as National Interagency Prescribed Fire Training Center

Projects:

2009 Shark Valley Prescribed Fire and Media Event – “How to safely report on wildland fires”

The Shark Valley Prescribed Fire was conducted on December 16th, 2009 with the objective of reducing hazardous fuels within the Shark Valley Tram road, and educating local media on how to cover a prescribed or wildfire safely. The participants were introduced to the Incident Command System (ICS), allowed to film the burn, view a wide range of firefighting equipment, and interview wildland firefighters. Katie Budzinski, Everglades’ firefighter and Rudy Evenson, South East Region Fire Communication and Education Specialist, coordinated with Everglades Interpretive Staff and other qualified Public Information Officers (PIO’s) to bring in members of the local media. Participants represented print, televisions, and radio media outlets. This allowed reporters an intimate look at the benefits of prescribed fire at a National Park that is adjacent to a major Metropolitan area. The burn took place in the interior of the Shark Valley Tram Road loop. It was a successful burn completed with help from Everglades National Park Interpretative staff, Florida Panther NWR, Loxahatchee NWR, Florida Division of Forestry and Seminole Tribe fire crews.



Fire crews from Everglades NP & Florida Panther NWR light a test burn while local reporters film the process.

Exotic Species Treatment Projects

In FY10, Everglades Fire Crew chemically treated over 20,000 acres of *Melalueca quinquenervia* and *Schinus terebinthifolius* in the Park. Two of these units are located in the wildland urban interface (WUI) and the third in the pinelands. These areas are now available for prescribed fire treatment in 2011. These projects were completed in conjunction with the Everglades National Park Exotic Vegetation Management Program.

Coastal Prairies Prescribed Fire Projects

Two prescribed burns were conducted in the Coastal Prairies with the objective to reduce the *Lygodium* biomass. These projects were completed in conjunction with the Exotic Vegetation Management Program. A total of 2,800 acres were burned in the Coastal Prairies in FY 2010.

Hole-in-the-Donut Prescribed Fire Projects

Three prescribed burns were conducted in the Hole-in-the-Donut (HID) restoration area in FY 2010. Fire crews from Florida Panther NWR and Ding Darling NWR assisted with these burns. Everglades Fire Management collaborated with researchers and students from the University of Florida in an ongoing soil study in the restored areas. A total of 1,150 acres were burned in the HID area in FY 2010.



Firefighters lighting off University of Florida research plot

Heck House Prescribed Fire Project

The Heck House Prescribed burn was conducted in FY 2010 in a WUI unit along the eastern boundary of the Park. This unit was a follow-up burn after being treated for *Melalucea quinquenervia*. Fire crews from Florida Panther NWR, Ding Darling NWR, Loxahatchee NWR, Seminole tribe, and Florida Department of Forestry assisted with this burn totaling 2,350 acres.



LeRoy Yeates , Seminole tribe firefighter assisting Everglades National Park with a prescribed fire in the Wildland Urban Interface.

Training

- In FY2010, fire personnel completed a total of 23 position taskbooks, including but not limited to: Incident Commander Type 5 (ICT5), Incident Commander Type 4 (ICT4), Firing Boss (FIRB), Fire Effects Monitor (FEMO), Aircraft Dispatcher (ACDP), Faller A (FALA), Faller B (FALB), Helicopter Crewman (HECM), Taskforce Leader (TFLD), and Prescribed Fire Burn Boss 2 (RXB2)
- In FY2010, fire personnel initiated a total of 20 position taskbooks, representing several skilled positions such as, Field Observer (FOBS), Public Information Officer 2 (PIO2), Engine Operator (ENOP), Support Dispatcher (EDSD), Geographic Information System Specialist (GISS), Division Group Supervisor (DIVS), and Prescribed Fire Burn Boss 1 (RXB1).
- In FY2010, Everglades's fire staff hosted a total of 12 training sessions with participants from the park and varying agencies and Universities including Florida Department of Forestry, US Fish and Wildlife, USGS, State & County Parks, and Seminole Tribe.

Aviation

Flight hours, Fixed Wing & Rotary FY2010:

During FY2010, 563 flights totaling 923.44 hours were flown in support of EVP resource and fire programs. These flights included:

- On-Call Fixed Wing: 184 flights for 371.43 hours

- On-Call SEAT: 3 flights for 3.77 hours
- Exclusive Use Rotary Wing: 358 flights for 427.8 hours
- On-Call Rotary Wing: 92 flights for 151.6 hours
- ARA Rotary Wing: 2 flights for 2.7 hours
- Helicopter Takeoff/Landings 3270

SAFECOMS:

There were 10 SAFECOMS filed during FY2010. 7 were for maintenance-related issues, 2 were for communications-related issues, and 1 was for a general hazard. None of these SAFECOMS resulted in injuries or damage to the aircraft or park property. All were resolved safely.

Fire Ecology / Fire Effects

The Everglades fire effects monitoring crew continued to collect data from Fire Monitoring Handbook (FMH) plots and refine methodologies in both Everglades National Park and Cape Canaveral National Seashore. Fire effects monitor Matt Smith came on in mid-November and Lyndi Kirkman came on in early January for a fully staffed fire effects crew for nearly the entire year, before she left in August for a job with Florida International University. Along with completing all the required plot work for the year, the fire effects crew assisted the fire program with several prescribed and wildfires, assisted the park with managing the oil spill incident and participated in several outreach programs.

Fire Effects Plot Workload FY2010

In 2010 monitoring efforts were started to investigate the effects of fire on two exotic plant species in Everglades National Park. The crew initiated *Lygodium microphyllum* monitoring in Coastal Prairie FMH plots and installed plots in the East Everglades Expansion area to monitor the effects of fuel reduction and prescribed fire treatments on *Melalucea quinquenervia*. Additional plots were installed in Canaveral National Seashore scrub jay habitat and in the Pine Rocklands, monitoring of imperiled butterfly host plants continued.



Everglades Fire Effects Crew and Canaveral staff install new plots at Canaveral National Seashore

Fire Effects Plot Workload (2010) and Total Plots Installed						
Park	Monitoring Unit	Type of Plot (FMH, photo point, other)	Pre-burn	Immed. Post	Postburn (1-20 yrs)	Total Plots
Everglades	Pine Rockland	FMH Forest plot	0	0	6	27
	Short Hydro-period Prairie	FMH grass plot	0	0	13	28
	Long Hydro-period Prairie	FMH grass plot	0	0	1	11
	Coastal Prairie	FMH grass plot	0	0	11	18
	Butterfly Host plant Monitoring	Host-plant monitoring	N/A	0	24	2
	Melaleuca Monitoring*		23	0	0	23
Canaveral	Slash Pine Flatwoods (<i>Pinus elliottii</i>)	FMH Forest plot	0	0	7	10
	Coastal Scrub	Photo Point	0	7	0	18
	Scrub Oak*	Photo Point, cover line	2	0	0	9
Total			18	11	51	145

Fire ecologist accomplishments and areas of focus

In 2010, the draft Fire Management Plan (FMP) was revised to include a multi-year fuels plan, resource description section and conform to the new interagency template. The bulk of time in 2010 was spent working on completing the 2010 draft Fire Management Plan and developing a multi-year fuels treatment plan. Fire ecology research, vegetation assessments and fire spread models were used to determine the desired fire return interval in Wildland Urban Interface (WUI) designated prescribed fire units and hazardous fuel reduction units. Fire effects fuel loading, time since fire and natural resource data was synthesized to determine unit treatment priorities and schedule treatment implementation in the WUI and Hazardous fuel reduction units throughout the park.

NEPA and Endangered Species

Compliance work is ongoing for the FMP and annual project specific proposals. In FY 10, Fire Ecologist, Maya Tupaj participated in several planning meetings and worked on the Environmental Assessment NEPA analysis and Endangered Species Act consultation with the USFWS. A categorical exclusion for NEPA analysis and consultation with the US Fish and Wildlife Service (USFWS) and the State Historic Presentation Office (SHPO) was

completed for the 2010 prescribed fire projects NEPA, section 7 and section 106 compliance for WUI treatments and Hazardous fuel/exotic plant reduction projects.

The Fire Ecologist continued to serve on several working groups and committees including the Everglades Wilderness Committee, Pine Rockland Working Group, Cape Sable Seaside Sparrow Working Group. Development and methodology of the multi-year fuels plan was presented at the 2010 Cape Sable Seaside Sparrow symposium.

The Fire Ecologist assisted with Park Environmental Staff with developing and implementing an inquiry based fire ecology learning program with teachers from Miami-Dade College.



Maya Tupaj working with student teachers as part of the PARK inquiry grant project.

Fire effects crew accomplishments and areas of focus

Fire effects monitoring of the butterfly host plant, *Croton linearis*, continued to be conducted monthly in the pine rocklands. Additional plots were installed in East Everglades to determine success of chemical treatments of hazardous fuel/exotic plants followed by prescribed fire. The crew also assisted the University of Vermont with a long-term fire effects study in the pine rocklands by monitoring 3 of their plots. Crew members continued to scan and digitally store FMH photo slides, using the external hard drive archiving system. Additional protocols were added to the coastal prairie plots to gather more information on the presence of *lygodium* across the landscape. Fire effects monitoring data was synthesized to determine unit treatment priorities and schedule treatment implementation in the WUI and Hazardous fuel reduction units throughout the park for the multi-year fuels plan and annual project specific proposals and compliance.

Collaborative efforts:

Everglades fire ecology and fire effects staff continued to assist and collaborate with other departments in ENP, as well as with other outside organizations. The staff continued to provide technical assistance to the University of Vermont, collecting data in pine rockland research plots. The fire effects staff provided input and expertise to Panther Wildlife Refuge biologist and field technicians. The staff continued to serve on several committees and working groups including the Everglades Wilderness Committee, the Imperiled Butterfly Working Group, the Cape Sable Seaside Sparrow Working Group and the Pine Rockland Working Group. Aerin Land assisted with the planning and organization of the 2010 Pine

Rockland Working Group Conference and the Cape Sable Seaside Sparrow Working Group Symposium. Aerin Land also served as a peer reviewer on the Joint Fire Science Program funding proposal review board.

Research Topics/Projects:

- Effect of fire on snag creation- field assistance, co-investigator
- Effect of fire on Mangrove ecotones in Coastal Everglades – proposal reviewer, co-investigator
- Long-term pine census, effects of fire and hurricanes in Everglades Pine rocklands, field assistance

Outreach:

The Everglades fire effects staff participated in a number of outreach events and projects in 2010. Everglades staffed an education station at the Biscayne National Park Bioblitz, teaching over 300 students about insect identification. Aerin Land presented several talks to the public at Fairchild Tropical Garden and to the North American Butterfly Association regarding candidate butterfly species fire effects and prescribed fire management practices.



Fire Effects crew identifying insects at the BioBlitz, Biscayne NP 2010

Presentations:

Fire effects crew members gave presentations at various venues in FY2010. Colleen Holland presented a poster at the 2009 International Fire Ecology and Management Congress and the 2010 Pine Rockland Working Group conference on monitoring fire effects on exotic plant populations.

Chemical fuels treatments:

The fire effects crew assisted with hazardous fuel/exotic plant fuels reduction and pre-burn prep treatment projects removing exotic *Melaluca quinquenervia* in the WUI, and *Schinus terebinthifolius* in the pine rocklands of Everglades National Park. In the WUI, approximately 20,200 acres were treated in 2010 that are now available for prescribed fire treatment in 2011. Exotic plant treatments in the pine rocklands are ongoing.

Fire Management:

The fire ecology and fire effects staff was involved in diverse wildland fire operational activities in 2010. The staff worked on 4 prescribed fires and 1 wildfire within ENP and went on 5 out of park assignments for prescribed fire, severity and helicopter details. Locally the staff assisted with staffing Fire dispatch, engines and the helicopter. Aerin Land served as

Deputy Planning Section Chief and Colleen Holland served as Documentation Unit Leader on the Deepwater Oil Spill Incident Management Team. Matt Smith completed a detail with Shenandoah National Park fire effects crew and Lyndi Kirkman detailed with Park marine biology staff in Key Largo. Matt Smith was signed off on his FEMO task book. Aerin Land earned her qualifications as Fire Effects Monitor and Radio Operator.



Fire Effects assisting with the Hole-in-the-donut Central Burn

2010 6.3 DRTO Resource and Visitor Protection

Rangers documented 179 case incidents, 52 of these were for emergency medical services, which included no fatalities. 47 cases were conducted at the basic life support level of care (BLS) by emergency medical technician basic (EMT-B). Several of the cases were for marine injuries including cuts, falls, and stings from jellyfish, and sea urchin spines. 5 cases involved life support, 1 traumatic, 2 medical and 2 cardiac all cared for by EMT-Bs. All of these life support cases (5) involved helicopter transport and at times 8 hours or more of patient care. Several patients would have benefitted from a higher level of care (park medic or EMT-I) considering the long helicopter response time needed to get a patient to definitive care.

Rangers responded to 14 Search and Rescue (SARs) incidents, including one fatality. 24 people were involved, 14 males, 3 females and 4 unknowns. 193 personnel hours were spent on SARs. Search areas including land and Open Ocean. Total cost for SARs including aircrafts, vessels, personnel hours, and supplies were \$47,974.24. DRTO has strong currents that take a victim out to sea. A turned over sea kayak or even a disabled motor boat poses a grave risk without ranger intervention.

The SARs above do not include the numerous visitor assists Rangers encounter, including but not limited to disabled vessels and dinghies, overdue vessels, swimmers having to be picked up for swimming in closed areas, directions for safe travel within the park, and weather updates.

DRTO responded to approximately 39 Type II offences. Many of the Type II offenses were for resource violations such as entering closed special protection zones, overboard discharge, wildlife violations, fishing violations, boat accidents and groundings. Other Part II offenses involved disorderly conduct, alcohol related incidents, possession of controlled

substances, and vandalism. During FY 2010, 3 vessel groundings occurred, included one that resulted in 19jj civil charges.

DRTO Research Natural Area Theft

Protection rangers monitor the Research Natural Area (RNA) daily for illegally activity. Rangers have witnessed 6 violations for fishing within the RNA for FY 2010. Rangers are also continually monitoring for further Lacey Act violations.

Rangers issue boating permits for every vessel that arrives at DRTO. The boating permit system gives rangers and administration a way to track and monitor activities within the park, as well as give protection rangers the opportunity to inform boaters of rules and regulations. On average rangers' issue 10 permits a day.

To better protect and enforce the RNA, other natural resources, and visitor areas for FY 2010 and on, Mooring buoys, Swim Area buoys, RNA border buoys and HUA (Historical Use Area) buoys were installed in the summer of 2010.

MS Canyon BP Deep Water Oil Spill

On April 20, 2010 BP's oil rig off the coast of Louisiana sustained a massive explosion killing 11 people and spilling million of gallons of crude oil into the Gulf of Mexico. It was the largest marine oil spill in US history. In anticipation of oil reaching DRTO and destroying essential marine life an Incident Command Team was established and remained at DRTO until the oil spill subsided and the well was determined "dead" on Sept. 20, 2010.

During this time Protection rangers and natural resource biologists conducted daily monitoring of all seven keys at DRTO and their waters. Numerous tar balls were found, however never determined if they were a result of the BP spill. No significant oil slicks were found.

Migrant Landings at DRTO

Rangers worked closely with the United States Coast Guard, Customs and Border Protection (C&BP), and Immigration and Customs Enforcement to resolve the illegal landings. Currently, DRTO has an agreement with the Department of Homeland Security C&BP for reimbursement costs relating to transportation and security. Unfortunately, this does not cover the other inherent costs such as chug disposal (handmade boats), medical supplies, garbage disposal, and fuel cleanup which are a part of every landing.

DRTO is significantly impacted by federal immigration policy. Due to the large Cuban population in Florida and many years of immigration issues the federal government passed a wet foot/dry foot policy. The very limited park staff available at DRTO has to respond to multiple migrant landings in chugs during the year. As this type of activity is not normally the responsibility of park service staff but meeting the needs of multiple groups of immigrants landing at DRTO continues to stress already limited resources.

DRTO rangers and staff detained, transported, provided emergency medical care, as well as basic humanitarian aid to 21 illegal, primarily Cuban immigrants in fiscal year 2010 to date. The illegal immigrants made 2 separate landings. DRTO expended 61 man hours on the landings and expended \$6,683.25.

The pattern and frequency of landings over the years is unpredictable and is difficult to program. Tomorrow the landing frequency could significantly increase and overwhelm DRTO's limited law enforcement resources. As a result the law enforcement profile and staff for these incidents would need to significantly increase.

While some illegal immigrants used homemade boats, others can be transported by human smugglers using fast boats. This method of smuggling has more inherent dangers as these vessels travel at high rates of speed, during the night, without lights or electronic navigation. Often times they are significantly overloaded and tend to dump their passengers in the water rather than coming into shore. Regardless of transport, Refugees typically arrive under cover of darkness. Protection rangers provided many hours of overnight supervision in addition to regular duty hours. This resulted in hundreds of hours of overtime and often exceeded daily hour work caps. This placed a strain on daily operations.

Transportation of refugees is made by U.S. Coast Guard cutters when available. When this resource is unavailable, which is frequent, it requires Protection rangers to escort the refugees to Key West aboard the commercial ferry or seaplane service for transfer to CBP. These escort details strip the park of emergency service providers for at least 24 hours leaving visitors with no emergency medical services and no law enforcement protection.

DRTO staff makes 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 incidents 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, destruction of endangered plants, wildlife disturbance and damage to government property.

Abandoned refugee vessels were relocated to Garden Key for disposal by salvage ship. Each vessel costs the park over \$600 for disposal. Efforts are made to cordon off refugee vessels to protect the visiting public from the hazards of these vessels. Hazards include spilled fuel, blood and other biohazards, sharp metal, unknown liquids in unmarked bottles, drugs and needles.

Ranger Staffing

DRTO protection division was staffed with two permanent Type I rangers and 4 seasonal Type II rangers over the fall/spring of 2009-2010. One permanent ranger transferred, with the other remaining as the Site Manager. The four seasonal rangers were in two person shifts, overlapping each week with 5 rangers covering DRTO.

In April 2010, three permanent Type II rangers were hired with one permanent Type I ranger serving as Chief Ranger already on staff. The number of rangers during the spring and summer 2010 brought on a much needed full protection division to cover and properly protect DRTO waters. Numerous illegal fishing and closure cases were handled due to having a full protection staff.

The net staffing level for much of the fiscal year was two protection rangers on each day. The Site Manager often filled the need as one of those rangers. There was an adequate ranger staffing presence for fiscal year 2010. Four rangers are needed to provide the minimum emergency services staffing of two rangers a day. However, with the site manager as one of the two on duty, their LE patrol is limited.

Protection rangers at Dry Tortugas National Park are the sole source of natural and cultural resource protection, visitor 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, as well as search and rescue in both terrestrial and marine environments. Protection staff ensures the safety of park visitors and protects the cultural and natural resources within the park.

2010.7 Interpretation, education, outreach and partnerships

2010 7.1.A Everglades

The Division of Interpretation and Visitor Services is responsible for creating opportunities for people to make intellectual and emotional connections to park resources, enhance understanding of the park, and foster an ethic of stewardship. The division operates five visitor centers and has the primary responsibility of developing and presenting informational and educational materials, publications, exhibits and interpretive programs for park visitors, surrounding communities, area schools, local and national media. Division staff also provides support and direction for Interpretive services at Dry Tortugas National Park. In 2010, the division of interpretation contacted 1,409,393 people including 489,519 visitors at the five visitor centers; 68,991 visitors attended 3,647 interpretive programs; 12,509 students participated in 344 curriculum based education programs; 570,594 people were contacted through 141 community outreach programs; and 316,434 publications were distributed. As a result of facility maintenance projects and staff efforts, Flamingo visitor center contacts increased by 25% from the previous year; interpretive programming increased by 10% and attendance increased 14%.

Special programs were developed and presented for Florida Archeology Month, including tours of a shell mound complex, tool making, and cast net demonstrations. New interpretive programs offered included; a longer canoe trip, botany walk, crocodile talk, and a living history program depicting characters influential in protecting Royal Palm. New bicycle tours were offered every Saturday evening. And a written translation of tram tours was developed for use by anyone with a hearing impairment.

Personnel In 2010, the Division of Interpretation and Visitor Services recruited and trained 33 temporary employees. One permanent GS-11 Supervisory park ranger position was recruited and filled. Two GS-5 and GS-6 Administrative positions were filled using SCEP authority. 6.00 FTE remained vacant due to budgetary constraints. Two GS-11 Supervisory Park Rangers, three GS-9 Park Rangers, and one GS-5 Bilingual Park Guide positions were partially backfilled by temporary staff.

An additional 6 FTE of the Division's 32.4 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 12,509 students, parents, and chaperons with only 20% of program funding coming from ONPS funds.

Centennial Seasonals As a result of Centennial funding the park offered an additional 1,203 ranger-guided programs contacting an additional 22,767 visitors. Centennial seasonal's contacted an additional 161,541 visitors through roving and visitor center

interpretation. For the third year Centennial Initiative funding enabled the Park to hire a GS-5 videographer.

Education Program In 2010, the Park's Environmental Education Program successfully continued its core programming of day and camping programs, teacher workshops, and the Miccosukee program. Education staff conducted a total of 349 programs for 12,509 participants. Another 46,910 students and educators were reached through alternative programming such as loan materials and online or broadcasted programs. The Education Program was supported by a total of 18 staff members, 15 of those were supported by a partner grant from Toyota USA Foundation, and three were paid for with ONPS funds. The Park continues to excite teachers about incorporating Everglades materials into their classrooms by offering teacher workshops on our curriculum materials. During the 2009-10 school year, we conducted 10 workshops for 191 local teachers from grades K-12.

Diversity Participants in the Everglades Education program reflect the full diversity of the multi-cultural South Florida community: Hispanic 68 %, White 14 %, African American 13 %, Haitian American 3 %, Other 1 %, and Native American <1 %.

Family Camping Pilot Program The pilot Family Camping program reached out to a new audience from our local community. Recognizing the need to introduce members of our diverse local community to the park and help them overcome their "fear" of the Everglades, we conducted two family camps. Following the National Park Service's Camping Adventure with My Parents (CAMP) model, park staff worked with community partner groups to recruit families who had never before been to the park and had never been camping.

Through partner community organizations, we recruited African-American and Hispanic families who had never visited the park before and never gone camping. For these families, we provided all the camping gear and food along with ranger-guided activities to introduce them to the park and ease them into camping. The response from these families was phenomenal. They were uncomfortable about visiting the park and wary of the whole experience, but they were willing to try everything. Two camping weekends were held during the winter season of 2010. Six families/24 people attended the CAMP program. Funding was provided by the Toyota grant through the South Florida National Parks Trust.

Junior Ranger Day We held Junior Ranger Day programs on April 3 at two locations in the park. Over 180 people attended in the Royal Palm program, and 66 participants at Shark Valley enjoyed a free tram ride. The event was advertised on the website, but many people were pleasantly surprised to arrive at the park that day and find such a variety of activities for their children.

Park Teachers Program - The National Park Foundation provided a grant allowing Education staff to partner with Fire staff, and Miami Dade College, to conduct a pilot Parks as Resources for Knowledge (PARK) teachers program in which pre-service teachers experience inquiry-based science learning in the park. The program combines pre and post classroom visits by park staff with an onsite field trip to the Pine Rocklands habitat of Everglades National Park. This partnership will allow for better teaching and classroom awareness of this endangered habitat.

Teacher-Ranger-Teacher Pilot Program The Park hosted four local teachers as Teacher-Ranger-Teachers for eight weeks each. Three teachers split their time between

Interpretation and Education, and one partnered with the Fire Division and the Education Program. New IPA's were developed with Miami Dade and Sarasota County Schools to host teacher rangers. Both staff and teachers deemed this a successful pilot program. Teachers returned to their classrooms with greater depth of understanding of their local ecosystem.

Podcasting Program For the third year Centennial Initiative funding enabled Everglades National Park to hire a GS-5 videographer to continue to produce high quality digital videos for the park website and other media sources. This year the park completed and uploaded to the website eight new high quality and original 8-15 minute videos that are closed-captioned. This media program also archived a NPS first - creating captioning on video files that are able to be syndicated to iTunes.

Outreach to Underserved Communities The community outreach team contacted 570,594 local citizens through 176 scheduled activities, including staffing a major regional Fair. Local community members from underrepresented audiences were introduced to the four south Florida national parks by a grant funded Community Outreach Specialist. National Park Service banners and vehicle mounted logos were also seen by more than 100,000 people, and nearly one million people were reached through 11 media outlets. Outreach to Spanish and Haitian communities was presented in those languages. Outreach activities included library lectures, school programs, community organization meetings, boat shows, festivals, parades, career fairs, celebrations and teacher workshops. Media outlets included radio, television and newspaper interviews, magazine articles, exhibit displays, and publications distribution to local businesses.

2010 7.1.B Dry Tortugas

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 program oversees two visitor centers, two cooperating association bookstores, the interpretive efforts provided by the CUA ferries, a thriving VIP program, serves as liaison to several partners and cooperating associations, assists in maintaining the diverse IT infrastructure, etc.

The Division of Interpretation at Dry Tortugas reached in 192,588 visitors in FY 10. This figure reflects 142,470 visitors at the two visitor centers, 2,704 visitors attending formal programs and demonstrations, 55,625 visitors reached through informal interpretation, and 400 participants in the Junior Ranger program. 45,000 visitors viewed the park film, and more than 21,062 people were reached through the park webpage and new online underwater webcam.

FY 10 was an active year for Interpretation at DRTO sustaining programs initiated in FY 09. Beginning in late April, the single permanent Interpretive Ranger for the park was reassigned for three month to address the Mississippi Canyon Oil Spill Response. This hindered development of new programs, but with the assistance of seasonal employment, program goals and front line services were sustained. Standard priorities still remained supervising and managing interpretive efforts at the interagency Florida Keys Eco-Discovery Center, auditing CUA staff talks and updating and ordering park brochures. Additionally, two new brochures were created addressing the new park Mooring Buoy system, and kayaker safety.

Eco-Discovery Center staffing was sustained through Centennial Seasonal and SCA positions. SCA funding was possible only through a generous grant from the South Florida National Parks Trust. The operational staffing of the facility would not be possible without these positions, and at present is only allowing a 5 day a week operation. New recurring duties were added following the introduction in FY 09 of the joint Kent Denver School/DRTO underwater web camera. Also experimentation continued with the NPS Mediterranean Research Group on internet based roving ranger capabilities to stream tours interactively over the internet into classrooms, etc.

Along with these programs came greatly increased IT responsibilities for the interpretive position. Other significant accomplishments for the Interpretive division in FY 10 included serving as the liaison and DOI representative to the Coast Guard and BP during the oil spill, participating heavily with NOAA, Fish and Wildlife Services, the Florida Keys Marine Sanctuary, and local government in planning for oil response, serving as Assistant Park Dive Officer, revising the dive SPM, addressing resource issues like Lionfish spread, overseeing the implementation of the RNA permitting system, and assisting the cultural resources sources survey conducted by the NPS Submerged Resources Center. Significant time was also used in planning for the new concessions operation which will provide the bulk of DRTO's front line interpretation. Concurrently, plans and research continues for the new DRTO wayside exhibit.

DRTO GPRA Goals In April 2010 Visitor Survey Cards were distributed to a random sample of visitors to the park. All park facilities were open and accessible at the time of the survey, This survey was conducted to measure the park's performance related to NPS GPRA Goals IIa1 (visitor satisfaction) and IIb1 (visitor understanding and appreciation).

The NPS 5-year GPRA Goal IIa1 states that "95% of park visitors are satisfied with appropriate park facilities, services, and recreational opportunities." The NPS 5-year GPRA Goal IIb1 states that "88% of park visitors understand the significance of the park they are visiting."

Goal IIa1: Visitor Satisfaction = 93%

This year 93% of park visitors were satisfied with park facilities, services, and recreational opportunities, up from 80% the previous year. Dry Tortugas fell short of GPRA Goal IIa1 by just 2%. Most complaints stemmed from logistical issues such as the lack of public restrooms, noise from the park's diesel generators, etc. Park Service interpretive programs are available at best 30% of the year as there is only one position so there is not everyday coverage for the 7 day a week operation of the park. Additionally, the majority of visitors arrive on the commercial CUA ferries, and receive interpretive programs hosted by those cooperating associations. Significant improvement in Interpretive led programs is not anticipated until staffing is improved and a concessions contract is awarded. Non-personal interpretive media is slowly improving with new Visitor Center displays being emplaced after the survey period, improved and expanded multimedia, and a new park wide Interpretive Wayside plan is in development for upcoming years.

Goal IIb1: Visitor Understanding of Park Significance = 91%

This year 91% of park visitors understand and appreciate the significance of Dry Tortugas National Park. This year 91% of park visitors understood and appreciated the significance of Dry Tortugas National Park. The 2010 DRTO GPRA Goal IIb1 goal is also 88%. Dry

Tortugas National Park has exceeded both the national and internal 2010 GPRA Goal IIb1 by 3%. The response rate for this survey was 49%, up from 21% the previous year.

2010.7.2 Partnership programs, community involvement, cooperative activities

2010 7.2.1 Partnership Programs

Cooperating Association. The Florida National Parks & Monuments Association (aka Everglades Association) is a National Park Service Cooperating Association working in cooperation with the four south Florida national park areas to assist visitors and increase public understanding of the natural and historical values of the parks. At four park visitor centers, the Association sells high quality publications and educational materials to the public. Net proceeds from sales can be donated 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.

Due to poor business management the Association provided NO cash aid to the four south Florida parks in 2010. However orientation and information assistance provided by Association staff at park visitor centers was valued at \$80,000 for the four south Florida parks. An Operations Review of the Association was completed in June 2009. Many of the 100 suggested actions to improve Association operations were implemented in 2010, including recruiting a new Executive Director and purchasing a modern Point of Sales system to track inventory and expenses.

South Florida National Parks Trust The mission of the Trust is to advance, through private and non-profit sectors, the interests and missions of the parks and, in securing financial and other resources, to support and enhance the park's efforts. In 2010, the Trust awarded five new grants to Everglades National Park totaling \$114,855 to fund a community outreach specialist, a Nike Missile Site resource assistant, a volunteer lichen project, Florida Bay resource protection, and bus transportation for Everglades Education programs. An additional \$243,048 was donated to the park to support restoration of the Tower & Black sites in the East Everglades.

The Trust also serves as a fiscal agent holding other funds donated to the park. In 2010 the Trust served as the fiscal agent for a \$20,000 grant from the National Park Foundation in support of the Aventura Spanish language television program production. In 2005, through the Trust the National Parks Conservation Association gave a \$580,200 donation to the park to support enhanced law enforcement, research, and visitor outreach and education for Florida Bay. Working with the Trust in 2007, the Park received a \$639,550 grant from the Toyota USA Foundation for the Everglades Education program, FY08-10. In 2008 this was increased by \$375,000, bringing the total grant to \$1,014,550. These funds continued to support the parks efforts in 2010.

Partnerships A new partnership with South Florida Workforce was launched to bring Workforce Investment Act subsidized Title I youth interns to the park. Interpreters provided special tours, lectures and served as judges for the Fairchild Challenge through a partnership with Fairchild Tropical Gardens.

Fairchild Tropical Botanical Garden substantially increased outreach to the local community through six onsite programs for Garden members, and a lecture series at the Garden. The park entered into an agreement with the World Heritage Alliance to cooperate on outreach and education programs. The Alliance led to a partnership with Miami's Mandarin Oriental Hotel, a member of the World Heritage Alliance Together we launched a successful voluntourism program for hotel guests to tour the Everglades and give something back by volunteering. The Park also worked with partners such as the Florida Keys National Marine Sanctuary, Fish and Wildlife Service, and the South Florida Water Management District to operate the Florida Keys Eco-Discovery Center in Key West.

Toyota-Everglades Partnership Milestones For Fiscal Year 2010, the National Park Service (NPS) received \$124,000 in matching funding from the Park Partnership Projects (PPP) Grant Program to help cover the cost of the Everglades Education Program. This is the third year that the NPS has matched funds from the Toyota grant, thus extending the grant funds another ½ year. The original three-year grant now has a life of four-and-a-half years as a result of this matching funding. Having the Toyota grant funding in place through the South Florida National Parks Trust has made us eligible for these matching fund opportunities that otherwise might not have been possible.

The park hosted an orientation for the prestigious Toyota International Teachers Program. Thirty teachers from around the nation joined Education staff and the Teacher-Ranger-Teachers for an introduction to Everglades related curriculum and issues.

Developmentally Disabled We worked with Homestead Senior High school to provide a camping program for a group of Trainable Mentally Handicapped high school students. This local school is in the park's gateway community, the city that provides facilities to tourists visiting the park's main entrance. These students fully participate in scheduled camp activities from the wet hike to night and sunrise activities.

Economically Disadvantaged We partnered with the Return Peace Corps Volunteers of South Florida and Citizens for a Better South Florida to bring 133 underserved youth to the park, some from migrant farming families. Student groups and families were bused to the park and hiked two trails where they met rangers and other volunteer naturalists from a number of community partner organizations.

Spanish Language Programming Outreach to the local Hispanic communities increased significantly through several media programs. Supported by a grant from the National Park Foundation, the park partnered with Spanish language media giant, Univision Inc., to produce a Spanish version of the Into the Wild reality television show called Los Everglades: Aventura y diversion. Aventura was broadcast repeatedly in by Univision south Florida and Georgia commercial broadcast outlets. A State Department Public Television Program, Alto Voltaje, and Television Nacional of Uruguay, featured the park staff. The park was promoted on Telemundopre, a Spanish television station.

2010 7.2.2. Volunteers in Parks

Everglades

Volunteers contributed 13,143 hours to interpretation. 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. Ten volunteers were Artists in Residents.

Dry Tortugas

The VIP program at the Dry Tortugas National Park continued to make improvement in FY 10 over years past, despite the loss of volunteer opportunities at Loggerhead Key because of housing. The loss of the Loggerhead positions lead to the reduction in the number of volunteers by half. From 52 volunteers in FY 09 to 26 in FY 10. Total hours of service were down from 9,703.9 in FY 09 to 5,370 in FY 10. This reduction occurred due to the closure of the remote Loggerhead Key VIP position due to infrastructure challenges including lack of potable water and electricity on the remote island. Despite these issues, VIP recruitment for the Dry Tortugas has been so efficient that all standard positions are filled through 2011 and a significant reservoir of qualified candidates has been created. Volunteer positions in this remote location of the US is significant and as of the close of FY2010 VIP recruitment is on hold due to a paperwork backlog.

2010.8 Concessions Management and Visitor Services

2010 8.1 Everglades Commercial Visitor Services

Everglades National Park Boat Tours, Inc continued to provide services under the contract which became effective on December 23, 2008. Most of the required services at Flamingo were available, with the notable exception of a mobile food service trailer.

TRF continued to provide commercial visitor services at Shark Valley through a contract continuation, however, the Park working with the Regional Office began work on a new prospectus for commercial visitor services at Shark Valley. It is estimated that a new contract will be awarded in 2011.

2010 8.2 Dry Tortugas Commercial Visitor Services

Offers on the ferry service contract between Key West and Dry Tortugas National Park were evaluated by a NPS panel in October 2008. The contract award process continued through 2010 at the Regional and Washington Level.

Since the 30 Commercial Use Authorizations issued in FY 2009 had two year terms, no competitive selection process was necessary in 2010.

The Park determined that a concessions contract for seaplane services between Key West and Dry Tortugas National Park was not financially viable. Accordingly, an application package for a single CUA for seaplane services was released to the public and a CUA with a two year term was awarded to Key West Seaplane Adventures.

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

Offers on the ferry service contract between Key West and Dry Tortugas National Park were evaluated by a NPS panel in October 2008. The contract award process continued through 2009 at the Regional level.

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The Park determined that a concessions contract for seaplane services between Key West and Dry Tortugas National Park was not financially viable. Accordingly, an application package for a single CUA for seaplane services was released to the public.

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

2010.9 Collections Management

The South Florida Collections Management Center is the central museum service provider for five south Florida NPS units (Big Cypress, Biscayne, DeSoto Dry Tortugas, and Everglades), functioning as an integral part of each park's and preserve's operations and programs. It provides high-quality, professional museum collection management services, ensuring preservation and accessibility in the most responsive, efficient and cost-effective manner possible. It is located in Everglades National Park, and all museum staff are Everglades employees, so achievements for all units served by the Center are described in this report.

Everglades National Park continued to host the South Florida Collections Management Center (SFCMC), a multi-park repository which manages the museum collections for Big Cypress National Preserve, Biscayne National Park, De Soto National Memorial, Dry Tortugas National Park, and Everglades National Park. Combined, the SFCMC staff manages a collection which totals over 6 million objects, specimens, and archival documents, representing over 25% of the museum collections for the entire NPS Southeast Region.

Two key management actions occurred in FY2010 for the SFCMC. First, the second portion of the OFS base increase received through De Soto National Memorial to support the center's operations was received. As a result, the SFCMC Charter was amended to include a fiscal management plan for the center. Per the amendment, Everglades National Park continues to pay the GS-12 museum curator's salary. The museum OFS increase pays for all other salaries, as well as supplies and other recurring needs. In FY2010, the SFCMC's total base budget was \$436,000 and an additional \$535,251 in PMIS project funds was received.

The OFS increase enabled the center to be fully staffed for the first time in its history, and in accordance with the recommendations in the South Florida Parks Collections Management Plan. Base funded staff in FY2012 included a GS-12 museum curator, GS-11 archivist, GS-9 registrar (detail), GS-7 museum technician (term), and GS-7 archives technician (permanent, subject to furlough). The permanent registrar position will be filled in FY2011.

The second major management action consisted of undertaking a strategic planning process for the SFCMC. Utilizing lapsed salary monies, the SFCMC curator planned, organized, and implemented a facilitated strategic planning meeting to ensure that the center's additional resources will be put towards those areas which service its parks best. The meeting, held in August 2010, was attended by 40 people, including staff from the five parks, museum experts from the Southeast Region and Washington Office Museum Program, partners, and invited guests. The meeting re-examined the vision, mission, goals and objectives set forth in 2004, as well as identifying park-specific needs. The results of this 3.5 day meeting will be worked into a written strategic plan in FY11, which will include revised vision, mission, goals and objects, as well as park priorities and performance measures.

In addition to permanent and temporary staffing, the SFCMC hosted 5 student interns, hired two STEP employees, and a total of 3,729.5 volunteer hours was received in FY2010. The

SFCMC staff continued to conduct planning, backlog cataloging, and preservation projects for all five of the parks and the center as a whole. However, the information below is specific to Everglades and Dry Tortugas National Parks. In addition, the SFCMC staff responded to 348 research requests in FY2010.

Everglades National Park

The park's museum collection continued to be managed by the South Florida Collections Management Center (SFCMC). All required annual reporting was completed and submitted.

The SFCMC archivist and her staff made considerable progress towards cataloging the backlog of uncataloged museum archives. In FY2010, 43.6 linear feet of records from the superintendent's office was cataloged, as well as 15.6 linear feet of records from the Richard Cunningham Papers. These total represent approximately 94,720 items cataloged.

SFCMC staff supported the contractor preparing the park's administrative history, including providing review and substantive comments on drafts of research designs and proposed outlines, sharing knowledge of the collections and park history, helping prioritize research efforts on site, and providing direct access to the collections.

Funding was received for conservation treatment of several important museum objects. These include: the Bernard P. Thomas mural; five signs from HM-69, the Nike missile base in the park; photographs; and archival documents. Much of this work was completed in FY2010 but some continues into FY11 based on the complexity of the conservation treatments.

SFCMC staff prepared a temporary art exhibit at the Ernest Coe Visitor Center in December 2009. The exhibit, featuring artwork from the collection by artists such as Charley Harper, Sam Vinikoff, Walter Weber, and Edward Glannon, was viewed by 22,382 visitors.

Dry Tortugas National Park

The park's museum collection continued to be managed by the South Florida Collections Management Center (SFCMC). All required annual reporting was completed and submitted.

Considerable time, effort and funding were expended in FY2010 towards a project to mount a 25-ton Rodman cannon at Fort Jefferson on a full reproduction carriage. The SFCMC curator conducted historical research; coordinated archeological investigations; coordinated with the 482nd Civil Engineers Squadron of the U.S. Air Force to reconstruct the historic gun platform; purchasing supplies and equipment for platform construction; compliance needs; fabrication of a reproduction gun carriage; coordinating production of modern versions of the 19th century tools needed to move and lift the 25-ton carriage; and coordinated conservation treatment of the cannon before mounting. All of this work was done in preparation for the mounting of the 25-ton gun on the reproduction carriage in November 2010, as part of the park's 75th anniversary celebrations.

The SFCMC curator also coordinated completion of an alternative cannon mounting plan for Dry Tortugas, including reviewing the draft plan prepared by a contractor, and coordinating a value analysis on the proposed alternatives. The plan will be finalized in FY11 and sent to the Florida State Historic Preservation Office for concurrence.

The SFCMC archivist and her staff cataloged 24 linear feet of museum archives, including records from the tern project and other resource management records. This total represents approximately 38,400 items cataloged. The SFCMC curator also provided extensive review

and comment on the Fort Jefferson Cultural Landscape Report (in preparation by the Southeast Regional Office) and the DRTO waysides exhibit plan.

Funding was received for conservation treatment of many important museum objects. This include: a dozen or so artifacts recovered from Cuban chugs which landed at the park; an iron traverse rail; 16th century cannon; one 25-ton Rodman cannon; one 13-ton Parrott gun; 3 cannon balls; 2 projectiles; and 3 slide carriages. In addition, objects treated in previous years (e.g. top carriage piece, swivel gun, rudder, walkway brace, and photographs) were returned from the conservation lab to the SFCMC.

Funding was also received from the American Recovery and Reinvestment Act (ARRA) program to purchase new exhibit cases for the visitor center at Fort Jefferson. The SFCMC curator developed the conservation-grade specifications for the case and coordinated their construction. These new exhibits will be installed in FY11.

2010.10 Conclusions

As outlined in the reports of each park division at Everglades and Dry Tortugas National Parks and the SFCMC, that have been synthesized into one report, both parks and the museum continue to grapple with a myriad of diverse and challenging issues and building on opportunities to manage these significant and unique natural resources.

Everglades strives to coordinate and cooperate with the significant intergovernmental program for overall ecosystem restoration that they are a significant part of while also addressing the day to day demands of managing a park of this size and working to meet visitor expectations.

The management team and park staff has been creative in acquiring outside resources to enhance the visitor service, cultural resource, and natural resource programs in the park. Various grants, the Centennial program and park partners support this past year has made a significant difference in the ability for the park to improve these program areas.

The limited resources dedicated to Dry Tortugas have this park relying on additional support from Everglades. DRTO staff strives to make the visitor experience to this unique park one to remember, while at the same time protecting cultural and historic assets. Given the remoteness of this island park along with staff and communication challenges outlined in this report there are a number of areas posing unique and significant management challenges for this park.