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Shoreline

August 2008

Governmental Affairs Update

By Debbie Flack



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the opportunity to thank either of them personally, please do so. This inlet component of statewide beach management should have an extremely positive impact on Florida's program.

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US Army Corps
of Engineers

USACE Jacksonville District: Nassau County Shore Protection Project

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Nassau County Shore Protection Project

By Erik J. Olsen, P.E.

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Fort Zachary Taylor State Park Beach Nourishment

By Paden E. Woodruff and
T. K. Blankenship, P.E.

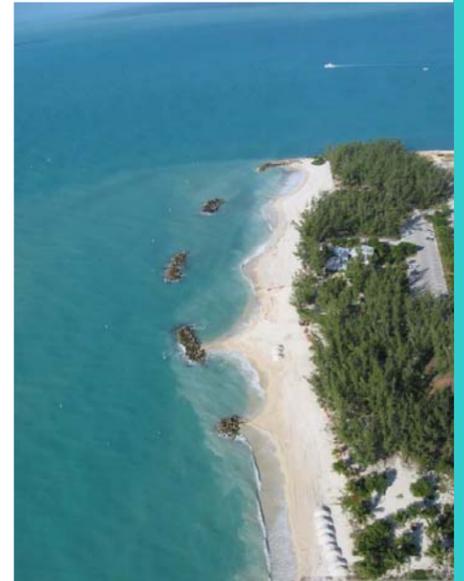
Fort Taylor was one of the seacoast defense posts constructed as part of the Third System of fortifications to protect strategic harbors following the War of 1812. Funding was appropriated by Congress in 1844 and construction began in 1845. Fort construction was difficult due to the remote location requiring materials and the work force to be shipped from the mainland. Work crews were hampered by numerous outbreaks of Yellow Fever, the subtropical climate and storms. Congressional appropriations were sporadic which caused repeated suspension of work.

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Governmental Affairs Update

By Debbie Flack
Director of Governmental Affairs

The Governor signed CS/HB 1427, Inlet Management, into law on June 30. We have Representative Stan Mayfield and Senator Dennis Jones to thank for passage of this FSBPA legislative initiative. If you have the opportunity to thank either of them personally, please do so. This inlet component of statewide beach management should have an extremely positive impact on Florida's program. Unfortunately, it comes at a most challenging time in terms of funding at both the state and local levels. All of us will need to be patient as the Department of Environmental Protection prepares for its implementation, which is not likely to fully occur until FY 2010-11. I hope the exception is the jump start of, or revisions to, a number of critically-important IMPs (inlet management plans). The good news is HB 1427 represents a major recommitment to addressing the erosion of our beaches caused by inlets, and will be a significant part of Chapter 161, F.S., Florida's Beach and Shores Preservation Act.

You may recall the FY 08-09 General Appropriations Act (Specific Appropriation 1748) included proviso language calling for a working group to be formed in order to formally review the effectiveness of Florida's beach management program, specifically:

1. The responsiveness and timeliness of the permitting process for beach nourishment projects
2. Project selection and funding procedures, contract management, and expenditure accountability
3. Post-construction monitoring requirements
4. Regional mitigation plans (with a pilot in southeast Florida) and a balanced mitigation strategy for projects declared to be in the public interest

The group must submit a report to the Governor and Legislature by January 15, 2009 with recommendations regarding beach management planning improvements, possible changes to Chapter 161 and associated rules, and a formal project review mechanism with external review team.

The proviso details by subject the make-up of this 10 member working group. Secretary Sole has just appointed the committee and notification/confirmation is in progress. Be assured, as intended, local government is well-represented with five specified individuals representing the Counties (FAC, Diana Ferguson), the Cities (League of Cities, Scott Dudley), FSBPA (Debbie Flack/Lisa Armbruster), a local government representative (Steve Boutelle, Lee County and FSBPA's current Chair), and a local government representative with extensive contract management experience (Don Donaldson, Martin County). The other five members of the working group include the Secretary (Mike Sole) or his designee (Janet Llewellyn), a university expert (Dr. Bob Dean), a biological expert (Craig Kruempel), a coastal engineer (Al Browder), and an environmental stakeholder (Gary Appelson, the Caribbean Conservation Corp.). This is a group I hope you will have great confidence in. I know I look forward to working with each and every one of them, and to tackling the challenges ahead.

I think the group will begin work, in earnest, early next month. FSBPA has surveyed our BeachWatch members with program experience to insure their meaningful input during the review exercise. Lisa has summarized this survey information and I anticipate it will be invaluable to the process. At the appropriate point in time, we will share with you the working group's concerns and recommended actions.

We look forward to seeing many of you next month (September 10-12) at South Seas Plantation, Captiva Island. We have a good program and some very special award winners. What better place to pay respect to Alison, FSBPA's long-time board member and friend, with the dedication of the Alison Hagerup Beach Access, a special presentation by Steve Keehn (CP&E), and the formal recognition of her accomplishments as the recipient of the first Stan Tait Award. See you soon!

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USACE Jacksonville District Nassau County, Florida Shore Protection Project

Weeks Marine, Inc arrived with their 30-inch cutter head dredge in Nassau County on June 27th and began pumping beach quality sand onto the beaches at the northern end of Amelia Island, just south of the St. Mary's River. Between now and the project completion date this Fall, the dredge will pump 1.7 million cubic yards of sand onto 3.6 miles of shoreline starting at FDEP monument R-10 and working down to R-33. All of the sand for initial construction is coming from the South Channel Borrow Area (SCBA) and is being transported to the beach through pipelines. The SCBA makes up a three square mile area just south of the St. Mary's Entrance Channel. The waters around this area have been designated as Outstanding Florida Waters due to the historical and archeological significance of the area associated with Ft. Clinch Park. Measures are being taken to make sure that dredging does not have a negative impact on the area.

Initial construction of this project will build the berm crest up to 13 feet above mean low water and will extent the shoreline width 40 feet seaward on average. The interval between renourishments will be approximately five years as needed. It is expected that approximately 18 million cubic yards of sand will be needed throughout the 50 year life of the project. An average of 297,000 cubic yards per year had been eroding from this beach between 1972 and 1997. The entire shoreline being protected by this project is publicly accessible.

Federal funds will cover approximately 79% of the project and the local sponsor, the City of Fernandina Beach, will be responsible for the remaining 21%. The State of Florida typically contributes toward the local sponsor's share of the project costs.

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USACE Jacksonville District's Project Status:

Feasibility Studies:

- St. Johns County – Real estate data has been gathered for all reaches of the project area. This data will be used in combination with other Damage Element data for use in Beach-fx. Bathymetric surveys of offshore borrow areas are planned for mid-summer to refine borrow source delineations. The survey area is currently being defined.
- Volusia County - on hold. No non-Federal funding.
- St. Lucie County - cultural resources work and State Historic Preservation Officer coordination are being completed by the Corps. Field work was completed in early June. A summary report is expected by September. The non-Federal sponsor will be completing the remainder of the study work.
- Flagler County – Beach-fx data gathering has begun. Parking, public access, and shore protecting structure surveys will take place in July 2008. Beginning work to publish a Notice of Intent to prepare an EIS. Shoreline process data collection and modeling to begin this FY.

Other Major Planning Reports:

- The Brevard County Mid Reach General Reevaluation Report (GRR) is in the draft report preparation phase. The project team continues to address comments raised by USACE Headquarters during the Alternative Formulation Briefing (AFB) (November 2007) and prepare the draft report. The draft report is expected to be complete in July 2008 for internal review.
- The North Boca Raton Second Periodic renourishment revised final Limited Reevaluation Report was prepared in response to comments from the Corps' South Atlantic Division (SAD). The report package was returned to SAD in May 2008.
- Guidance has been requested from higher authority on the review process for the Draft Ft. Pierce Shore Protection project GRR completed by the non-Federal Sponsor. . The GRR seeks an additional 50-years of Federal participation in the project as well as the inclusion of groins to the project area.

Broward County Shore Protection project - Segment I (north county line to Hillsboro Inlet) - GRR and NEPA document - Initiation of preparation of the GRR and NEPA document for initial construction of this segment is awaiting Federal and non-Federal funds to be provided to the Jacksonville District. A Design Agreement was executed in 2006 with the city of Deerfield Beach in order for the Jacksonville District to initiate preparation of the document.

Other:

Brevard County, Florida Independent Coastal Expert Letter Report has been revised per SAD, HQ, and Planning Center of Expertise comments. The revised report is undergoing review at SAJ. Following this, the report will undergo final review at SAD then concurrent review by HQ and the Assistant Secretary of the Army for Civil Works. .

Borrow Site Investigations:

- Martin County and Sarasota County borrow area investigations are underway. Geotechnical field work is complete for both studies, and the bathymetric survey field work is complete for Martin County. In addition, the Corps is beginning to evaluate borrow area alternatives offshore of Martin and St. Lucie Counties. Bathymetric surveys for Sarasota will commence soon.
- The Pinellas County, Sand Key borrow area investigation is underway. Geotechnical work and surveys will be completed this Summer.
- Hard bottom mapping for Martin County is scheduled for this summer.

A revised version (per Headquarters comments) of the Dade County Letter Report – Alternative Borrow Source Investigation has been sent to SAD and to Headquarters. On 10 December 2007, the Assistant Secretary of the Army (Civil Works) sent a memo to the Director of Civil Works recommending a three-tiered approach to meet Dade County's beach renourishment needs:

1. Consider use of emergency sand reserves in current borrow area SGC-Ext 1 and remaining material in other traditional borrow sources offshore of Dade County.
2. Examine the viability of non-domestic sand sources for intermediate and longer-term renourishment needs.
3. The remaining Florida coastal domestic sand sources should be evaluated through a comprehensive Regional Sediment Management (RSM) plan to address long term needs along Florida's Atlantic coast.

Work is underway on Tier 1. All economically and environmentally feasible domestic sources are being considered for placement on the Dade Co. project. Discussions regarding political and logistic concerns related to Tier 2 have begun with stakeholders. A Scope of Work is being developed to address the Tier 3 directive.

Regional Sediment Management:

- Three complete regional sediment budgets for the sandy coast of Florida are available. A large push is being made to participate in the Gulf of Mexico RSM initiative, utilizing existing stakeholders to assist in a regionalization of information and technology. The Southeast Atlantic Regional Sediment Source Study for Florida has been completed by GEC and Halcrow for SAJ. The report will be available in mid-September.

This Regional Sediment Management report approximates the volume of sand that remains offshore of Palm Beach, Broward and Miami-Dade Counties and compares that volume with the amount required by Federal and non-Federal nourishment projects over the next 50 years. This report marks a collaboration between the State of Florida, non-Federal sponsors, private industry, and the USACE to evaluate the sustainability of Florida's current beach nourishment program.

Construction:

- The Lee County, Captiva Island FCCE Rehabilitation Project is complete. Initial nourishment of the Nassau County Shore Protection Project is underway.

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Nassau County Shore Protection Project

By Erik J. Olsen, P.E.

Sand placement for a 3.8 mile long (1.7M cubic yard) federal beach fill project at Fernandina Beach, FL was initiated on 3 July 08. Scheduled completion by the dredge contractor, Weeks Marine is the end of September. The offshore borrow site for the project is located on the ebb tidal platform of St. Mary's Entrance some 2.5 miles seaward of the north end of Amelia Island, FL (see Fig. 1).

The first federal study addressing the need for hurricane protection at Fernandina Beach was performed in 1960 – by the Savannah District, USACOE. In 1973, the Nassau County BOCC formally requested a study of the effects of the Fernandina Harbor Federal Navigation project on the adjacent Amelia Island shoreline under the authority provided by Section 1-11 of the 1968 River and Harbor Act. In 1977, the Jacksonville District issued an in-depth feasibility report for Beach Erosion Control for Nassau County which included a favorable Section 1-11 finding. In a relatively landmark decision (a first for the State of Florida) the navigation project was found to be a major cause of downdrift beach erosion and a resulting erosion control project was recommended for Fernandina Beach at an escalated federal cost share of 81.3%. The project finally being constructed this summer – some 31 years later – is that project.

Pragmatically, there were two (2) major reasons why it took over three (3) decades for the subject project ultimately to come to fruition:

Eight (8) additional years of “analysis” by the Jacksonville District preceded actual Congressional Authorization in 1988 (10 years later).



Figure 1. Location of Federal Beach Fill Project at City of Fernandina Beach

Subsequently a lack of political prioritization both at the federal level (Congress and COE District), as well as at the local level (i.e., Nassau County) resulted in many years of non-action, do-over studies, and low level initiatives necessary to keep the project “alive” (mostly thanks to former Deputy District Engineer, Richard Bonner).

Ultimately, the City of Fernandina Beach Commission formally volunteered to be the federal project sponsor and the Nassau County Commission committed to the City to help defray the local cost share. With a renewed governmental interest, the Florida Congressional delegation facilitated the required federal appropriations thereby allowing the project to be bid in March of this year. Assisting in this regard was the fact that the project has also consistently been in the President’s Budget – due to the unique documentation of historical navigation project impact to the downdrift shoreline.

An overarching indirect effect likewise contributing to a multi-decadal delay in this project’s construction resulted from important operational changes in the disposal practices for navigation project maintenance material dredged from St. Mary’s Entrance and the requirement to deepen the federal channel for Trident Class submarines. Facilitation was through an MOU among the U.S. Navy, the USACOE and the State of Florida (politically facilitated by local interests) resulting in a commitment to place all future beach compatible material dredged at that location onto the northern end of Amelia Island at 100% federal expense. To date, the U.S. Navy has annually met their obligation in the regard and over 4M cubic yards of sand have been placed as beach disposal within the oceanfront limits of Fernandina Beach since 1978. The details of the disposal plan were further codified by a State Adopted Inlet Management Plan. Eventually, navigation project disposal sand provided direct benefit to the shoreline thereby ameliorating, to some degree the degree of threat to upland properties and the historical lack of a high tide beach (see Fig. 2), particularly during winter nor’easter conditions.



Figure 2. Winter Beach Conditions—Pre Project (note rock revetment constructed in 1965)

Unfortunately, beach disposal alone could never restore the beach to the full storm protection configuration both needed and as authorized by Congress. Hence, impetus for construction of the federal shore protection project was renewed some 6-years ago by the City of Fernandina Commission with the assistance of the Bureau of Beaches and Coastal Systems, FDEP as their new "fiscal partner". The cost of the project fill being constructed today is approximately \$15M (see Figure 3). The federal share is 80%. The State of Florida Beach Management percentage share is 42.2% of the non-federal share (or about 8.5% of the total cost). The City and County are co-funding the remaining 11.5%, mol. It is anticipated by all parties involved that continued beach disposal operations by the U.S. Navy under the MOU will greatly reduce the non-federal cost of future project maintenance at this location.

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Figure 3. Beach Fill Operations Underway (July 2008)

Fort Zachary Taylor State Park Beach Nourishment

By Paden E. Woodruff, Bureau of Beaches and Coastal Systems and
T. K. Blankenship, P.E., Coastal Systems International, Inc.

Fort Taylor was one of the seacoast defense posts constructed as part of the Third System of fortifications to protect strategic harbors following the War of 1812. Funding was appropriated by Congress in 1844 and construction began in 1845. Fort construction was difficult due to the remote location requiring materials and the work force to be shipped from the mainland. Work crews were hampered by numerous outbreaks of Yellow Fever, the subtropical climate and storms. Congressional appropriations were sporadic which caused repeated suspension of work.

One year after the building of Fort Taylor had begun; the project was halted due to a violent hurricane striking Key West. Of the 601 buildings in the town, 594 had been greatly damaged or leveled. The fort's cisterns, smithy and stable were spared but four workmen drowned. They were among the 50 people who lost their lives in Key West. The lighthouses on Key West and Sand Key, seven miles southwest of Key West, were toppled. Those who had taken refuge in the lighthouses drowned.

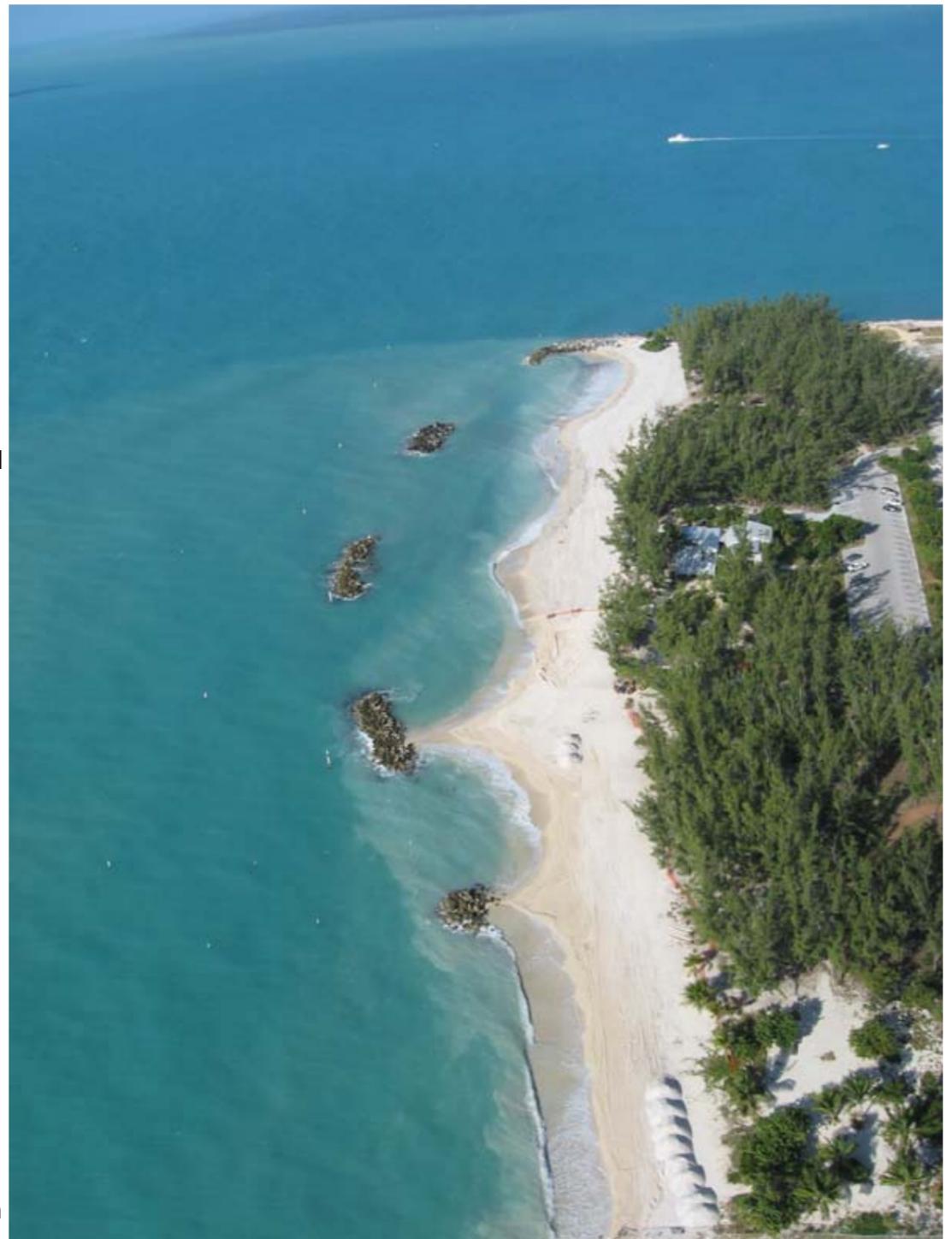
When Fort Taylor was planned, the Corps of Engineers decided that the best place to put the fort would be off shore on the southwestern side of the island. A little more than 60 acres of land was purchased to build piers and supply areas. Engineers constructed a dam and pumped out ten feet of water. They then established the foundation of granite. The three-tier fort would be connected to Key West by a wooden causeway spanning 1,000 feet. By 1851 the walls had risen 10 feet. By 1859 crews had much of the fortress completed. They installed the drawbridge and tidal flush latrines. Cannon had been shipped down and mounted in casemates on two levels and on barbette mountings on the very top of the fort. Toward the end of 1860 the fort was ready for occupancy.

Fort Taylor was one of three forts in Florida to be held by Union forces throughout the Civil War. Fort Jefferson remained in Union hands as did Fort Pickens in Pensacola. The main role of Fort Taylor during the war was to serve as headquarters for the Union Navy East Gulf Coast Blockading Squadron. Close to 300 vessels were captured by the squadron and forced to anchor in front of Fort Taylor. Over the years the fort was modified with new coastal artillery until its military role came to an end in 1947. The property was then transferred to the Navy as part of the naval facilities in Key West. Although the original fort was surrounded by water, over the years the Navy placed dredge spoil from channel and harbor deepening projects so that by the late sixties the entire fort was encompassed by fill material. The fill material consisted of large rocks and coral fragments which does not make a very attractive recreational beach. The Department of the Interior took over the property until it was deeded to the State of Florida in 1976. Fort Taylor which is a National Historic Landmark includes the largest collection of civil war armaments in the U.S.

The southernmost state park in Florida, Ft. Zachary Taylor State Park now has one of the best beaches in



Aerial Photo during construction



Construction nearing completion



Shoreline condition in 1983

economic upland sources of sand were identified since no beach compatible sand sources were available in the Florida Keys. The DEP Bureau of Design and Recreation is responsible for Florida State Park projects, and the Bureau implemented the Park beach nourishment with 100% funding support from the DEP Bureau of Beaches and Coastal Systems.

The Park beach nourishment project was designed and permitted by Coastal Systems International as part of the ongoing beach management program at the Park. American Earth Movers was awarded the construction contract after a competitive bid process. The contractor hauled approximately 3,600 cubic yards of sand from Ortona mines in Central Florida for a total contract value of \$412,000. The contractor was able to take advantage of a unique opportunity in the sand mining industry in Florida with the availability of the sand source at the Conrad Yelvington rail yard near Ft. Lauderdale. The sand was hauled by trains from the Ortona mines and then trucking was only required from the rail yard in Ft. Lauderdale south to Key West. Despite ongoing road expansion construction on the Overseas Highway north of Key Largo, the contractor was able to complete the project in approximately 1 month, averaging 40-50 trucks of sand placed per day. The project included selected invasive species removal, and the Park has planted several areas of native dune vegetation as part of the ongoing Park beach management program.

The beach nourishment was completed in December in time for the peak winter tourist season and prior to marine turtle nesting season in May. On July 27th and 28th the park had 99 Loggerhead turtle hatchlings emerge from their nest in the newly placed fill material. This is the first viable marine turtle nest in the park since 2003. Bird watchers can see Gray Kingbird, Caribbean Short-eared Owl and trans-Gulf migrants. The breakwaters for shore stabilization were constructed in the late 1980's, and they also provide habitat for corals and tropical fish. The park has facilities for parking, shady picnics, fishing, swimming, snorkeling, and concessions. For more information on the park, please visit the DEP Parks web site: <http://www.floridastateparks.org/forttaylor/default.cfm>

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Key West. The beach attracts locals, tourists, and cruise ship passengers, with a projected attendance of over 450,000 visitors for 2008. The projected attendance figure, based on the first 7 months of 2008, is much larger compared to previous years. Attendance for 2005, 2006 and 2007 was 281,413, 269,777 and 314,639 respectively. The lower attendance for those years is due to the tourist industry recovering from the storms of 2004 and 2005. The increase in attendance beginning in November 2007, when the nourishment project was under construction, is evident from review of the data through July of 2008.

The 0.3 mile of beach at the Park is critically eroded and requires periodic maintenance due to its southernmost location and exposure to coastal forces. Shore protection is enhanced with a series of four breakwaters and a terminal groin. The truck haul beach nourishment was completed in December 2007 to restore the beach after the hurricanes of 2004 and 2005 which also damaged the coastal structures. Prior to the beach nourishment, a carbonate sand source investigation was completed in October 2005, and the most



Department of Environmental Resources Management

Environmental Enhancement & Restoration Division

June 2008
Status Report

Completing a 934 report will enable the County to save considerable time and money and maintain its current renourishment schedule of fall 2009. County staff will seek the BCC's approval of the renourishment scope of work (SOW) and a FDEP funding agreement in August.

Jupiter/Carlin Erosion Control Project

County staff met with its consultant to discuss anticipated project performance goals and possible breakwater engineering scenarios. A second ADCP deployment to capture summer wave conditions will occur over the summer.

Singer Island Erosion Control Project

The environmental resource survey of the nearshore reef has been completed and the draft report is being reviewed by County staff. The scoring used to determine mitigation requirements will be completed by the end of the month. The data from the resource survey are being incorporated into the FDEP RAI #2 response. A consultant is continuing the numerical modeling efforts of the design

modifications to evaluate how alternative configurations could help minimize impacts to the exposed nearshore hardbottom and potential downdrift erosion impacts.

The Corps of Engineers will soon visit the project area and reef to verify results of the resource survey.

The Riviera Beach City Council held a workshop on June 10th to discuss the proposed funding agreement with the County to help fund shoreline protection efforts on Singer Island. County staff provided a presentation discussing the erosion issues, current responses in the form of dune restoration and the long-term solution of breakwaters. The Council agreed to cost share but additional discussions are necessary to determine how to secure the local share, estimated to be \$6 million (20%) of total project costs.

South Palm Beach

The consultant provided ADCP results (wave parameters, currents and tides) for the winter deployment (March 10 - April 20). A strong swell occurred from March 17-20 and resulted in the burial of the nearshore ADCP. Due to the sand coverage, the ADCP was unable to acquire wave directional spectrum and current velocity data. However, the instrument was still able to collect the wave parameters and tide levels until the recovery date.



Snook Islands Natural Area

The third year of seagrass monitoring at the Snook Islands Natural Area is currently underway with seagrasses, predominantly *Halophila johnsonii* and *H. decipiens* found throughout the site. In May, just prior to initiating the seagrass work, two manatees were spotted feeding on *Spartina* along the shoreline at the north end of the restored site. More recently, an American Oyster Catcher chick was observed feeding with his parents along the flats at one of the islands (photo above). This is the second year in a row that an oyster catcher has fledged from this location. Work continues on design of the public use facility and a funding request was submitted to FIND.

Juno Beach Renourishment

The response to the FDEP's 3rd Request for Additional Information (RAI) was submitted June 11. The response to the Army Corps RAI was submitted June 25. A letter to FDEP containing supplemental information for the mitigation reef permit modification was mailed June 26. Construction contract technical specifications are in development.

Jupiter/Carlin Renourishment

The ACOE informed the County that a Section 934 (Economic Feasibility Study) report is now required instead of a General Reevaluation Report.

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Staff intends to present the engineering & design SOW for the erosion control project to the BCC in August.

South Lake Worth Inlet

30% plans for the modified sand transfer plant design are under review. Staff is preparing a response to RAI #2 for a jetty rehab permit or exemption. The existing plant continues to pump while fine tuning of the RPM's continues following the engine overhaul. Monitoring seagrass impacts resulting from the sand trap dredging inside the inlet will occur in July.

Reef Monitoring and Management

This month the Reef Research Team visited Warrior Reef, Tug Boat Reef, and 2 natural reefs. Warrior Reef continues to attract goliath grouper, and gorgonians are encrusting on the flat concrete basis of the pillars. MG111 next to Warrior Reef has all but collapsed but continues to attract large numbers of fish, including several more goliath groupers. The northernmost tug could not be found; currents were strong that day.

Sea Turtle Nesting Update

Loggerhead nesting is higher than during this point in the 2007 nesting season and 10-20% higher than the 5-year average. After the record low 2007 nesting season, it is encouraging to record an increase in loggerhead nesting. Though green nesting has just begun, nesting is similar to the 5-year average. Leatherback nesting has almost concluded for the 2008 nesting season and, though lower than the record 2007 nesting season, is generally 10-20% higher than the 5-year average. Sea turtle nesting season continues through October 31.



Sea Turtle Lighting Compliance

Lighting inspections have been conducted in Jupiter Inlet Colony, Tequesta, North Palm Beach, Riviera Beach, Palm Beach Shores, Manalapan and portions of unincorporated Palm Beach County. Follow-up inspections will be conducted throughout the sea turtle nesting season. Disorientations have been

reported; lighting sources contributing to the events include street lights and skyglow (pictured above).



In-water Sea Turtle Monitoring

InWater Research Group (IRG) conducted a sampling event to characterize the turtle populations in the Lake Worth Lagoon and on the nearshore reefs adjacent to shoreline protection projects in northern Palm Beach County. Three juvenile green sea turtles were captured during netting activities and over 40 juvenile greens were sighted during visual transects in the vicinity of Little Munyon Island. Four sea turtles (three greens and one loggerhead) were sighted during visual transects conducted on the nearshore reef between Jupiter and Riviera Beach. IRG will conduct the next sampling event in September.

Nearshore Mitigation Reefs

There were no bidders for the rock placement and mitigation reef construction contract. The contract is being re-advertised and bids are due July 29. Construction of mitigation reefs at Riviera Beach and Ocean Ridge will be delayed until September.

Seagrass Mapping

The 2007 Habitat Classification and Mapping Project for all of PBC estuarine habitat are nearly completed. Aerial photography that was obtained last summer has been converted into digital orthophotography and used to map seagrass, mangroves, oysters and spartina grass within the estuarine boundaries of Palm Beach County. Preliminary data has shown an increase of mangroves from 646 acres in 1985, to 669 acres in 2001, to 725 acres in 2007 a 12% increase in mangrove coverage county wide. Preliminary seagrass data comparing 2001 to 2007 has shown a 62 acre increase of seagrass. The increase was observed mostly in the Southern portion of the LWL and PBC.

Juno Dunes Hydrologic Restoration

The hydrologic restoration of the Juno Dunes Natural Area is underway. Approximately 4 acres of vegetation clearing was completed with 3 culverts installed to facilitate the use of the management roads. In addition, excavation continues in the creation of a rookery island and 2 freshwater ponds for bird utilization and holding mosquitofish (*Gambusia affinis*) that are important in controlling mosquito populations.



South Cove Natural Area

Staff is still in the permitting process with DEP currently preparing our 3rd RAI response. County staff recently completed a site visit with DEP staff that was very positive. An interlocal agreement will be considered by West Palm Beach on July 14. This project was also recently presented to FIND (Florida Inland Navigation District) Board for funding with the 2008 Waterway Assistance Program.

Ibis Isle Restoration

The project components are to cap 20 acres of muck sediments with a layer of sand and create mangrove, spartina grass, and oyster reef habitat. The objective is to restore a muck lagoon bottom to a healthy benthic environment. Staff is in the process of testing the compression rates of muck with a layer of sand at the surface by installing metal culverts of various lengths at eight locations within the proposed project area. Muck depths in the project area have been measured between 1 and 8 feet in depth.



NENA Trail Head at Lake Okeechobee Scenic Trail

Construction on the Northeast Everglades Natural Area (NENA) trail head to the Lake Okeechobee Scenic Trail (LOST) is progressing toward completion in August of this year, however, the Army Corps of Engineers is working on the Herbert Hoover Dike in this area and therefore this section of the Lake Okeechobee Scenic Trail is currently closed to public use.

NENA Historic Jupiter-Indiantown Trail, Phase 1

The design for the sections of trail and associated facilities to be built in Cypress Creek Natural Area was scoped in-house in June. Staff is investigating various options for creating a ten foot wide hardened trail for use by pedestrians and bicyclists and a separate six foot wide trail for horseback riders.

John Prince Park/Chain of Lakes Restoration

Six months after the hydric hammock and littoral zone was planted at Bird Island, the plants have grown in, the wetland has filled with littoral growth and the birds have moved in. Four juvenile limpkins were recently spotted. Limpkins feed heavily on Apple Snail, marsh insects and frogs, all of which are in abundant supply in this restored wetland. Three families of great blue heron have also constructed nests and raised their young on the island. The area is a favorite spot for birders who can almost be assured of observing aquatic birds in this freshwater wetland habitat.



For more information on Palm Beach County environmental restoration projects, please visit:
<http://www.co.palm-beach.fl.us/erm/>

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**Department of
Environmental
Resources Management**

**Environmental Enhancement &
Restoration Division**

July 2008

Status Report

Juno Dunes

Hydrologic Project

A new freshwater flow way through the Juno Beach Natural Area south of Donald Ross Road includes a bird island centrally located within the natural area site.



**Peanut Island
Breakwaters**

485 tons of limestone now form three new breakwaters off Peanut Island's shoreline. These structures will provide

shoreline protection and reef habitat.

USACE Seagrass Surveys

Staff completed seagrass surveys for proposed reef sites in the Lake Worth Lagoon, where some grass was found on two of the five sites.

Artificial Reef Program

The USACE issued a ten year artificial reef permit for thirteen offshore artificial reef sites covering over 9,000 acres. The sites are spread along the entire coast of Palm Beach County and encompass a wide range of depths.

Reef Monitoring and Management

The Reef Research Team visited Boynton Corridors and its natural reef comparison site, Delray Ledge, plus Genesis Reef, the EIDSVAG and Tri-County Reefs. There are now 3 species of coral encrusting the Corridors compared to many more species of hard corals and gorgonians present on the older concrete Genesis Reef. On Delray Ledge, over 80 species of fish were recorded. Lots of benthic growth was present on the EIDSVAG as well as on Tri-County Reef. Of interest to note is that the growth of hard corals is more numerous on the north side of Tri-County Reef compared to its south side.

Jupiter/Carlin Beach Renourishment

The engineering & design scope of work and FDEP Grant Agreement will be presented to the BCC for approval on August 19. Under the terms of Agreement, the FDEP will reimburse 50% of the non-federal project costs. Federal reimbursement of 54.71% of the total project will be available after the County and

the U.S. Army Corps of Engineers re-negotiate a new Project Cooperation Agreement (PCA).

Singer Island Erosion Control Project:

The alternative configuration for the segmented breakwater plan has been prepared as requested by the permitting agencies. The revised design reduces the number of breakwater segments from 13 to 11, eliminates the terminal structure and repositions the remaining segments in an effort to reduce the amount of natural hardbottom that may be covered by the beach response to the structures (see figure). If it is determined that the revised design will not result in negative downdrift impacts, the design will be presented as Phase I of the project in order to expedite permitting and the additional elements will be proposed as Phase II, as deemed necessary. Modeling of the new configuration will be available by July 31st and incorporated into the UMAM assessment.



On July 16, the Riviera Beach City Council voted to approve the \$6M local share for the Erosion Control Project. To date, the State has appropriated \$7M with potential for another \$5.9M. Together, these funds represent 60% of the total estimated project cost. The City has postponed a vote for the cost-share on dune restorations until the issue of how to best generate the funds has been resolved.

South Palm Beach

Continued coordination with FDEP will delay the engineering, design and permitting task order going before the BCC until September. July photo monitoring again highlighted an eroded



dune system throughout the Lantana Municipal Beach Park and Town of South Palm Beach.

South Lake Worth Inlet

65% construction plans for the new sand transfer plant & for jetty reconstruction were reviewed with the design team. Seagrass surveys of the impacts from the dredging project, along with the required post-construction survey are being finalized for DEP review.

Ocean Ridge Shore Protection Project

The permit-required 36 month post-construction project performance report and a 36 month post-construction environmental monitoring survey are underway.

NENA trail head at Lake Okeechobee Scenic Trail

Construction on the Northeast Everglades Natural Area (NENA) trail head to the Lake Okeechobee Scenic Trail (LOST) is progressing toward completion in August 2008.

NENA Historic Jupiter-Indiantown Trail, Phase 1

This June the FDOT District IV conducted a field review of the projects submitted for Transportation Enhancement funding this year by the PBC Metropolitan Planning Organization. ERM had applied for \$750,000 to develop the portion of Historic Jupiter-Indiantown Trail and extensive trailhead facilities within Cypress Creek Natural Area and received the good news that this project appeared to be eligible for reimbursement monies in 2011.

Sea Turtle Nesting Update:

After the record low 2007 nesting season, it is encouraging to record an increase in loggerhead nesting; loggerhead nesting is 20-75% higher than during this point last year and 5-25% higher than the 5-year average. Though lower than the record 2007 nesting season, green and leatherback nesting is generally 10-20% higher than the 5-year average. Sea turtle nesting season continues through October 31.

Sea Turtle Lighting Compliance:

Lighting inspections have been conducted for most of Palm Beach County. Follow-up inspection will be conducted throughout the sea turtle nesting season. An estimated 3,500

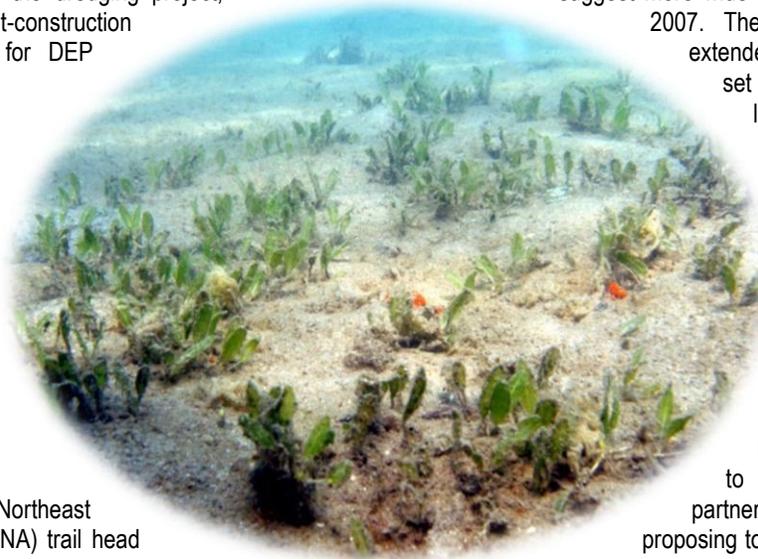
disoriented sea turtle hatchlings have been reported so far this season.

Juno Renourishment:

The response to the FDEP's 4th Request for Additional Information (RAI) was submitted July 18. RAI 1 for the mitigation reef was received July 29, 2008. An August 1st teleconference to discuss the RAI has been scheduled. Construction contract technical specifications and plans are in development. Construction is expected to begin in December 2008. Of the estimated project cost of \$12M, the Federal Emergency Management Agency (FEMA) will contribute \$3M to offset erosion caused by hurricane Frances. FDEP is preparing a funding agreement to cost share up to 50% of the local share of construction costs.

LWL Seagrass Monitoring

Preliminary observations during the fixed transect monitoring suggest more wide spread seagrass cover than in 2007. The width of the grass beds often extended further from the shore and set new all-time records at several locations, including one transect, where seagrasses extended all the way to (and into) the Intracoastal Waterway channel. A detailed analysis of this year's results will be compiled into a report that will compare data from all monitoring years. The South Florida Water Management District continues to strengthen the cooperative partnerships with the County by proposing to monitor seagrass bimonthly at five locations within Lake Worth Lagoon. County and District staff have identified the five two acre monitoring sites.



South Cove Natural Area

FDEP has issued a letter deeming the South Cove Restoration application complete. An Interlocal Agreement with the City of West Palm Beach identifying maintenance & monitoring responsibilities is pending.

Artificial Reef Guidelines and Considerations

Staff is working with Marine Industries Coastal Construction Impacts group of the Southeast Florida Coral Reef Initiative (SEFCRI) on guidelines for planning, construction, management and monitoring of all types of artificial reefs in the region. The project involves representatives from Broward, Dade, Palm Beach and Martin counties under the coordination of FDEP.

International Coral Reef Symposium

ERM environmental analyst Janet Phipps was a contributing author to two major publications issued for the Symposium, *Coral Reefs of the USA* and *The State of Coral Reef Ecosystems of the United States and Pacific*.

For more information on Palm Beach County environmental restoration projects, please visit: <http://www.co.palm-beach.fl.us/erm/>

Calendar of Events

August 31-September 5, 2008

International Conference on Coastal Engineering
Hamburg, Germany
<http://icce2008.hamburg.baw.de/>

September 10-12, 2008

FSBPA Annual Meeting
South Seas Plantation
<http://www.fsbpa.com/annual.htm>

October 15-17, 2008

ASBPA Fall Conference
Holiday Inn Chicago Mart Plaza
www.asbpa.org

February 16-18, 2009

10th Annual CIRP Workshop
TradeWinds Island Resorts
St. Petersburg Beach, FL

February 18-20, 2009

National Conference on Beach Preservation Technology
TradeWinds Island Resorts
St. Petersburg Beach, FL

April 6-10, 2009

National Hurricane Conference
Austin Convention Center
Austin, TX
www.HurricaneMeeting.com

September 16-18, 2009

FSBPA Annual Meeting
Amelia Island Plantation
Amelia Island, FL

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