

**ANNUAL SEA TURTLE MONITORING REPORT
MAINTENANCE DREDGING
GULF COAST – Under GRBO
JACKSONVILLE DISTRICT
FISCAL YEAR 2006**

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FOR GULF of MEXICO PROJECTS
MAINTENANCE DREDGING - FISCAL YEAR 2006

INTRODUCTION

This report is submitted in fulfillment of requirements of the Endangered Species Act and the Section 7 Consultation - Biological Opinion for the “Dredging of the Gulf of Mexico Navigation Channels and Sand Mining (“Borrow”) Area Using Hopper Dredges by COE Galveston, New Orleans, Mobile and Jacksonville Districts (Consultation Number F/SER/2000/01287) dated November 19, 2003 and revised June 24, 2005. Specifically this report, summarizing hopper dredging operations in Fiscal Year (FY) 2006 within the Jacksonville District, is submitted in compliance with reasonable and prudent measure No. 9 – Dredge Take Reporting.

The following hopper dredging shore protection projects were started in FY 2005, but extended into FY 06.

Pensacola Beach Renourishment Project	June 25, 2005 – February 16, 2006
Town of Longboat Key Renourishment Project	June 3, 2005 – July 5, 2006

The following hopper dredging shore protection projects were completed in FY 2006.

Sanibel/Captiva Beach Renourishment	Sept 2, 2005 – Jan 31, 2006
Naples/Collier County Beach Renourishment	Feb 21, 2006 – May 23, 2006

The following hopper maintenance dredging/shore protection projects were started in FY 2006 but are expected to be completed in FY 2007.

Tampa Harbor Entrance Channel O&M	Aug 11, 2006 – Continued into FY2007
Navarre Beach Renourishment	March 26, 2006 – Suspended July 24, 2006
Destin/Ft. Walton Beach Renourishment	Feb 19, 2006 – Suspended May 22, 2006

The use of hopper dredges to dredge these entrance channels and build these shore protection projects is necessary because of three factors: safety, weather conditions and productivity. These factors are closely interrelated; however, the emphasis is placed on safety. For instance at Kings Bay, Georgia – due to the rough seas, all types of dredges, except for hopper dredges, have been forbidden to work in the area.

The dredges operating in navigation channels must be highly mobile to rapidly maneuver out of

the way of other vessels. Pipeline cutterhead dredges are not self-propelled, and are held into position with spuds. Furthermore, the swing of the cutterhead is controlled by cables attached to the cutterhead arm. These cables are anchored along the outer limits of the channel to be dredged. Prior to moving the dredge, tenders must raise the anchors, and a towboat must be fastened to the dredge. These characteristics prevent the pipeline dredge from quickly moving out of the channel when other vessels approach. From a practical standpoint, dredges are generally not relocated for normal ship traffic; rather, dredging may be interrupted, but the dredge remains a stationary obstruction in half of the channel. This situation is encountered in inland bays and waterways. The use of hopper dredges along the Gulf coast avoids such a stationary obstruction.

Weather conditions also affect the safety of the dredge and crew. Pipeline dredges were not designed to operate in open-sea conditions, and most shore protection projects borrow areas require vessels that can operate in open-sea conditions. Due to the reasons stated above, these dredges cannot rapidly demobilize in harsh weather, for example, as a hurricane approaches. The pipelines used to transport the dredged material to the placement sites would also be highly susceptible to breaking during rough weather. Even in relatively sheltered bays, cutterhead dredges often stop dredging in rough weather, and during frontal passages. During these periods, only water is pumped to keep tension on the pipelines to prevent breaking. In the open Gulf of Mexico, this precaution would not be effective, even if it were possible to leave the dredge offshore. During relatively calm weather conditions, only the largest cutterhead dredges would be able to operate efficiently. Sea swells make it difficult to control the depth of the cutterhead; consequently, this affects the dredging operation.

Productivity of the dredging operation is important because the purpose of dredging is to remove shoals and provide a safe depth for waterborne traffic. The use of pipeline dredges in the open Gulf of Mexico would result in frequent relocations, or other interruptions, due to weather and traffic conditions. Consequently, it would take longer to remove shoals, which present a hazard to safe navigation. The longer the time to remove the shoals, the longer a dredge must be on site to maintain the channel. The presence of the dredge and pipeline, themselves, present an obstruction to safe navigation. For these reasons, hopper dredges are used to maintain deep-draft entrance channels and construct many shore protection projects in the Jacksonville District.

The Jacksonville District and the District's permit holders schedule hopper-dredging operations based on the availability of the hopper dredge fleet. Hopper dredging priorities for the Jacksonville District are developed in concert with other Corps of Engineers Districts that conduct these operations along the Atlantic and Gulf Coasts. The priorities are determined after considering the dredging needs and resident sea turtle populations within the various Districts. Projects constructed under a regulatory permit issued by the Jacksonville District must also compete with the Corps for availability of dredges, as

well as being limited by some of the same factors that influence equipment choices on Federal projects including costs, location of dredging site and time of year.

TURTLE MONITORING PROGRAM

A result of the consultation process was the requirement to document turtle takes by the dredges. In order to accomplish this task, before hopper dredging operations commenced, they were equipped such that all inflows and overflows would be screened. The configuration and location of the screens depends upon the construction of the dredge. The starting mesh size of this screening is 4-inches by 4-inches. Additionally, around-the-clock monitoring by NMFS-approved turtle inspectors was conducted to identify any turtles or turtle parts that were caught on these screens. Draghead deflectors were also deployed to deflect any turtles that may happen to be in, or near, the path of the draghead during excavation. The design of the deflectors is such that a sediment riffle is created ahead of the draghead, cushioning any contact with turtles thereby preventing injuries.

The observers inspected and cleaned all inflow and overflow screening at the end of each load. Dragheads and deflectors were also inspected immediately after each load, and dredge personnel were informed if repairs were necessary. Data sheets were completed daily, detailing all biological samples and debris found in the screening and dragheads. The observers also recorded the start, end and discharge times for each load, the specific location of the dredging area, the type of material being dredged, weather, tide and water temperature data, the condition of the screening, and any other pertinent information. Any sea turtle encounters or takes would be described on a separate incident report form. Additionally, all incidents would be photographed and diagrams would be made of the specimen. Once documentation has been collected, dead specimens are discarded by the NMFS-approved observer and disposed of at the dredged material placement site, thereby ensuring that these same samples would not wash ashore or be taken again by the dredge.

A bridge watch for sea turtles and marine mammals was maintained during all daylight hours, except when the observer was off the bridge, cleaning and inspecting the screens and dragheads. All sightings of cetaceans and sea turtles were recorded in a bridge watch logbook.

If a sea turtle is taken by a hopper dredge, a risk assessment will be undertaken in partnership between the District, the dredger and/or his engineering or environmental consultant, and the permittee and/or his engineering or environmental consultant (if applicable). The risk assessment may include a temporary cessation of the dredging operations, but will include a review of the mandatory SI data, a review of the draghead functionality, and a review of District and Gulf-wide sea turtle lethal takes to date. Once the risk assessment is completed, dependent upon the findings, the project may be authorized to reinstate dredging operations, recommendations for modifications to the dredge physical plant may be

made, recommendations for modifications to the dredging process may be made, or dredging operations may be suspended for a specified period of time.

SCREEN CONFIGURATIONS

Turtle monitoring activities were conducted aboard ten different hopper dredges during FY2006. These were the *Sugar Island*, *Manhattan Island*, *Dodge Island*, *Liberty Island*, *B.E. Lindholm*, *R.N. Weeks*, *Atchafalaya*, *Bayport*, *Newport*, *Eagle I*. Each of these vessels was required to have rigid draghead deflectors, and 100% inflow screening or overflow screening with openings starting at 4" x 4."

PROJECTS

Projects Begun in FY2005 – Continuing into FY2006

Pensacola Beach Renourishment Project

RN Weeks, *B.E. Lindholm*

On June 25, 2005 the contract hopper dredges *RN Weeks*, *Newport* and *B.E. Lindholm* began work on the Pensacola Beach Nourishment Modification project conducted under Department of the Army Permit #200105838 (IP-MBH). Dredging began on June 24, 2005 and was completed on February 16, 2006. A total of 3 million CYs of beach quality sand was placed on the beaches of Pensacola Beach.

A total of 1520 loads of beach quality (as defined by Florida Department of Environmental Protection (FLDEP)) sand were collected and deposited on the permitted renourishment project template between Natural Resource Monuments R-107 and R-151. The *RN Weeks* began dredging on June 25, 2005 and continued through February 16, 2006 for a total of 237 dredging days. During this period, the dredge shut down due to rough weather occurred between October 4 - 6, 2005 and October 21 - 24, 2005. The dredge *B.E. Lindholm* was brought to the project to increase production. She dredged from September 8, 2005 through September 28 for a total of 25 dredging days. She was shut down due to the swells from hurricane Rita (September 22, 2005 - September 26, 2005). The dredge *Newport* was brought to the project to replace the *B.E. Lindholm* and continue increased production. She dredged from September 30, 2005 - October 7, 2005 for a total of 37 loads and nine (9) dredging days. A total of 271 dredging days were completed over the life of the project.

All dredges were equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. NMFS-approved turtle observers provided 24-hour/day monitoring of dragheads and screens for each load cycle. The observers were employed by Coastwise Consulting, Inc. under a subcontract to the dredging contractor, Weeks Marine. During the performance of this dredging of this project, no lethal takes have been reported for this project. Surface water temperatures ranged from 17.7 °C - 30.0 °C for the life of the project.

Detailed information for this project can be accessed from the Corps' Sea Turtle Data Warehouse website – specifically at <http://el.erdc.usace.army.mil/seaturtles/project.cfm?Id=407&Code=Project>.

Town of Longboat Key Renourishment Project

Bayport, Newport, Atchafalaya

As stated in the FY2005 Annual Report of Hopper Dredging Activities in the Jacksonville District for projects in the Gulf of Mexico, the contract dredges *Bayport*, *Newport* and *Atchafalaya* began dredging of the Town of Longboat Key Renourishment Project on May 1, 2005 and was completed July 6, 2006 under Department of the Army permit SAJ-1991-296. Approximately 2.2 million CYs of beach quality sand had been placed on the beaches of Longboat Key.

A total of 866 loads of beach quality sand (as defined by FLDEP) were collected from two offshore borrow sites (and deposited on the permitted renourishment project template. The *Bayport* began dredging on June 3, 2005 and continued through July 5, 2006 for a total of 351 dredging days and 866 loads. Weather delays were experienced between August 26-30, 2005 and September 11–26, 2005.

Due to the water depth of the borrow area, the contractor used the *Newport* to rehandle material from shallower areas that the *Bayport* could not reach to deeper areas that the *Bayport* could access. The *Newport* began dredging on August 7, 2005 and ceased dredging on September 2, 2005 collecting a total of 487 loads over 23 dredging days. Dredging ceased on September 2, 2006 due to a hurricane being in the project area. Dredging was suspended by the contractor on March 11, 2006 due to conflicts with other dredging commitments and resumed on April 26, 2006. The contract dredge *Atchafalaya* was also brought in to rehandle shallow material from December 11 – 19, 2005 and April 11 – 26, 2006. It moved 70 loads in December and 180 loads in April for a total of 24 dredge days. There were 398 total dredging days for the project (all three dredges combined).

All dredges were equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. NMFS-approved turtle observers provided 24-hour/day monitoring of dragheads and screens for each load cycle. The observers onboard the *Newport* and *Bayport* were employed by Coastwise Consulting, Inc. under a subcontract to the dredging contractor, Manson Construction Company. The observers onboard the *Atchafalaya* were employed by East Coast Observers, Inc. under a subcontract to the dredging contractor, B+B Dredging Company, which was also a sub-contractor to Manson.

During the performance of this dredging, two lethal takes occurred on the *Bayport*; on November 4, 2005 and January 25, 2006. As a result of these lethal takes, the permit holder was required to cease dredging operations until a risk assessment had been prepared, submitted to the Jacksonville District

Regulatory Division and Con-Ops Division staff and evaluated. After evaluation and review of data from the Silent Inspector system operating aboard the dredge, modification to dredge operations were recommended and relocation trawling efforts to reduce the likelihood of additional lethal take were initiated.

The first take occurred on November 4, 2005 and was an adult loggerhead turtle of unknown sex found 0115 hours in load #325. Surface water temperature at time of take was 24.4°C.

The second take occurred on January 25, 2006 and was an unknown age and sex green turtle found at 1900 hours in load #543. Surface water temperature at the time of take was 17.2°C.

In response to the lethal takes, the Corps Regulatory Division required the dredging company to initiate relocation efforts to lessen the likelihood of take. The contractor began relocation trawling efforts on November 7, 2005 using the commercial fishing vessels *Reva Rose* and *Simple Man*. A total of 129 turtles (74 loggerhead, 12 green, 41 Kemp's ridley and two hawksbill) were relocated during the trawling efforts with 5,247 tows. This equals a catch per unit effort of 0.0246. This meant that 2.46% of the tows had a turtle in the net.

Additionally, two ill turtles were taken to rehabilitation facilities for care. Details on "Speedy" can be found here:

<http://www.mote.org/index.php?src=directory&view=STRH&srctype=display&back=STRH&id=587&pos=0,30,127&PHPSESSID=24891b40b7b0ee8c37e782ababc436e4> and "Dredge" here:

<http://www.mote.org/index.php?src=directory&view=STRH&srctype=display&back=STRH&id=485&pos=0,30,127>.

Detailed information for this project can be accessed from the Corps' Sea Turtle Data Warehouse website – specifically at <http://el.erdc.usace.army.mil/seaturtles/project.cfm?Id=406&Code=Project>

Projects in FY 2006

Naples/Collier County

Sugar Island, Manhattan Island

On February 21, 2006 the contract hopper dredges *Sugar Island* and *Manhattan Island* began work on the Naples/Collier County Beach Nourishment Project conducted under Department of the Army Permit #SAJ-2003-12405. From the beginning of dredging on February 21, 2006 through May 23, 2006, an estimated 664,000 CYs of beach quality sand had been placed on Vanderbilt and Naples beaches in Collier County.

A total of 334 loads of beach quality (as defined by FLDEP) sand were collected from a borrow site 15 miles offshore of Sanibel Island and deposited on the permitted renourishment project template. The *Sugar Island* began dredging on February 21, 2006 through May 23, 2006 for a total of 91 dredging days. The *Manhattan Island* began dredging on March 1, 2006 through May 23, 2006 for a total of 82 dredging days. These two dredges added together equal 173 dredge days.

Both dredges were equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. NMFS-approved turtle observers provided 24-hour/day monitoring of dragheads and screens for each load cycle. The observers were employed by Coastwise Consulting, Inc. under a subcontract to the dredging contractor, Great Lakes Dredge and Dock. During the performance of this dredging of this project, no lethal takes have been reported for this project. Surface water temperatures ranged from 16.6°C – 27.6°C for the life of the project.

Relocation trawling was conducted throughout the life of this beach nourishment project on the commercial fishing vessels *Captain Wick* and *Reva Rose*. A total of 2,319 tows were completed and 87 turtles (86 loggerhead, 1 Kemp's ridley) were captured and relocated. This equals a catch per unit effort of 0.0375. This meant that 3.8% of the tows had a turtle in the net.

Detailed information, including the final observer and trawling reports for this project can be accessed from the Corps' Sea Turtle Data Warehouse website – specifically at <http://el.erdc.usace.army.mil/seaturtles/project.cfm?Id=421&Code=Project>

Sanibel and Captiva Islands Beach Restoration Project

Dodge Island, Manhattan Island

On September 2, 2005 the contract hopper dredge *Dodge Island* began work on the Sanibel and Captiva Islands Beach Restoration Project. Contract specifications required dredging an estimated 1.3 million CY of beach quality sand to be placed repair the damage from the 2004 and 2005 hurricanes that hit Florida. Material was dredged from a borrow area approximately 3.5 miles offshore of the fill area.

Dredging began on September 2, 2005 and was completed on January 31, 2006. Two dredges were used to complete the project. The hopper dredge *Dodge Island* dredged from September 3, 2005 – January 30, 2006 and the hopper dredge *Manhattan Island* dredged from October 2, 2005 – January 31, 2006. A total of 756 loads of beach quality (as defined by FLDEP) sand were collected during 258 hopper dredging days and deposited on the Federally authorized shore protection project template.

The dredges were equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. NMFS-approved turtle observers provided 24-hour/day monitoring of dragheads

and screens for each load cycle. The observers were employed by Coastwise Consulting, Inc. under a subcontract to the dredging contractor, Great Lakes Dock and Dredge Co. During the performance of this dredging, no lethal takes were observed. Surface water temperatures ranged from 17.7°C – 30.0°C for the life of the project.

Detailed information, including the final observer report for this project can be accessed from the Corps' Sea Turtle Data Warehouse website – specifically at <http://el.ercdc.usace.army.mil/seaturtles/project.cfm?Id=405&Code=Project>

Projects Begun in FY2006 – Continuing into FY2007

Tampa Entrance Channel O&M

Eagle 1

On August 11, 2006 the contract hopper dredge *Eagle 1* began work on the Tampa Harbor Entrance Channel Operations and Maintenance dredging project. Project specifications required dredging an estimated 1.0 million CY of material to be placed on Egmont and Mullet Keys. Material was dredged from a borrow area approximately 3.5 miles offshore of the fill area.

Dredging began on August 11, 2006 and will continue into FY 2007. Between August 11, 2006 and September 30, 2006 (the end of Fiscal year 2006) the *Eagle 1* placed a total of 240 loads of beach quality (as defined by FLDEP) sand (approximately 800,000 CYs) on Egmont Key.

The dredge was equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. NMFS-approved turtle observers provided 24-hour/day monitoring of dragheads and screens for each load cycle. The observers were employed by East Coast Consulting, Inc. under a subcontract to the dredging contractor, Bean Styvesant LLC. During the performance of this dredging during FY 2006, two lethal takes were recorded.

The first lethal take occurred on August 25, 2006. An adult male loggerhead turtle was found at 1820 hours in the starboard draghead of load #81. Surface water temperature at time of take was 28.9°C.

The second lethal take occurred on September 28, 2006. An adult loggerhead of unknown sex was found at 1600 hours in the port draghead of load 241. Surface water temperature at the time of take was 27.2°C.

Due to the “borrowing” of loggerhead turtles under the GRBO from the Mobile District, the Jacksonville District agreed to require relocation trawling throughout the life of the Tampa O&M project. Trawling was conducted on the commercial fishing vessel *Ellen Louise*. From August 10 – September 30

a total of 1,121 tows were completed and 27 turtles (24 loggerhead, 3 Kemp's ridley) were captured and relocated. This equals a catch per unit effort of 0.0241. This meant that 2.41% of the tows had a turtle in the net.

Two turtles that were captured during relocation trawling were determined to need medical care due to general health concerns. Turtle number 8, nicknamed "Soto", a sub-adult female loggerhead; was captured on August 12, 2006 in tow # 33. The turtle was in the same net as a spotted eagle ray. The barb from the eagle ray punctured the turtle's rear left flipper. The FFWCC decided that the turtle should be brought to the dock to have the barb removed by a veterinarian. Veterinarian Tammy Langer, from Clearwater Aquarium, contacted the trawling supervisor and arrangements were made to meet up with aquarium staff for turtle transport. Soto has undergone surgery to remove the two pieces of barb from her flipper and is expected to be released in the Spring of 2007. More details on Soto can be found at the following website: <http://www.cmaqarium.org/Sea%20Turtle%20Dept%20Web%20Page/Soto.htm>

The second turtle that was taken to rehab was a subadult loggerhead of unknown sex taken on August 30, 2006 in tow # 438. The turtle had monofilament fishing line around all of its flippers causing some deep wounds, and had a large fishing lure hooked into one rear flipper and the plastron. The turtle was taken to Mote Marine Laboratory where it was rehabilitated for 51 days and released on October 18, 2006 in good health. For details on "Pepito", see the following website. <http://www.mote.org/index.php?src=directory&view=STRH&srctype=display&back=STRH&id=600&pos=0,30,127&PHPSESSID=b47260314eccc712e4d0b4983831b43f>

On August 12, 2006 in tow #36, an adult male smalltooth sawfish, *Pristis pectinata*, was incidentally captured in the port net of the F/V *Ellen Louise* while she was conducting turtle relocation trawls in association with the Tampa O&M dredging project. The sawfish was caught in the wing of the net. The gear was brought aboard at 1135 hours and efforts were undertaken to disentangle the animal, while ensuring safety of the crew and observers. The sawfish was estimated by the observers to be 20 feet in length with a bill length of approximately 130 cm. There were 24 teeth on either side of the bill. From the time the fish left the water until it was released was approximately 18 minutes. Observers noted that upon release, the fish immediately swam away. As a result of this incidental capture, the Corps reinitiated consultation under the GRBO to include the possible incidental capture of sawfish in relocation trawling efforts associated with hopper dredge projects by email dated August 22, 2006 from Eric Hawk and an email to NMFS from Daniel Small at SAD dated September 12, 2006.

Detailed information, including the take reports and details about the sawfish incidental take can be accessed from the Corps' Sea Turtle Data Warehouse website – specifically at <http://el.erdc.usace.army.mil/seaturtles/project.cfm?Id=456&Code=Project>

Navarre Beach Shore Protection Project

RN Weeks, B.E. Lindholm

On March 26, 2006 the contract hopper dredges *RN Weeks* and *B.E. Lindholm* began work on the Navarre Beach Shore Protection Project conducted under Department of the Army Permit #2003-10496-IP-EPS. Project consists of restoration of over 3.6 miles of beach and dune from the eastern limit of the Gulf Islands National Seashore (500 ft E of R-192) eastward to Navarre Beach State Recreation Area (R-211), and revegetation of the created dunes. Fill material is being obtained from a borrow area approximately four miles offshore.

Dredging began on March 26, 2006 and was suspended on July 24, 2006 due to levels of lethal sea turtle take. The project is expected to begin dredging again in FY2007. Between March 23, 2006 and July 24, 2006 a total of 987 loads (approximately 2.76 million CYs) of beach quality (as defined by FLDEP) sand were collected and deposited on the permitted renourishment project template. The *BE Lindholm* began dredging on March 23, 2006 and continued until April 15, 2006 and from May 18, 2006 through July 24, 2006, when the project was suspended. The *RN Weeks* began dredging on April 18, 2006 and continued until the project was suspended. The project was originally suspended on July 1, 2006 and an extension to the permit was granted for 10-days of dredging to close a gap in the berm. The original extension was from July 10 – July 20, 2006; with an additional extension from July 20 – July 25. A total of 125 dredging days were completed on the project in FY 2006.

Both dredges were equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. NMFS-approved turtle observers provided 24-hour/day monitoring of dragheads and screens for each load cycle. The observers were employed by East Coast Consulting, Inc. under a subcontract to the dredging contractor, Weeks Marine. During the performance of this dredging during FY 2006, three lethal takes by the dredge and two lethal takes in the relocation trawlers were recorded.

The first lethal take occurred on March 31, 2006. A sub-adult female Kemp's ridley turtle was found at 0500 hours in the forward lander of load #43. Surface water temperature at time of take was 18.9 °C.

The second lethal take occurred on June 16, 2006. An unknown age loggerhead of unknown sex was found at 1316 hours in the forward lander of load 289. Surface water temperature at the time of take was 25.3 °C.

The third lethal take occurred on July 1, 2006. A juvenile loggerhead of unknown sex was found at 0100 hours in the aft lander of load 382. Surface water temperature at the time of take was 29.4 °C.

The Jacksonville District project permit required relocation trawling throughout the remaining life of the Navarre project. Trawling was conducted on the commercial fishing vessels *Miss Adrienne*, *Bad Habit*, and *Jana Lin*. The *F/V Miss Adrienne* conducted relocation trawling efforts from March 24, 2006 through July 25, 2006 by completing 2,303 tows and relocating 43 turtles (38 loggerheads and five Kemp's ridleys). The *F/V Jana Lin* conducted relocation trawling efforts from May 20, 2006 through July 25, 2006 completing 1,235 tows and relocating 15 turtles (14 loggerheads and 1 Kemp's ridley). And the *F/V Bad Habit* conducted relocation trawling efforts as a back up vessel from March 24, 2006 through May 20, 2006 completing 69 tows and relocating three loggerhead turtles. Total relocation effort for FY2006 for the Navarre project is 3,604 tows, 61 turtles captured.

Although 61 turtles were captured in the relocation trawling efforts, two died subsequent to capture in the nets. Incidental take #1 occurred on June 5, 2006 aboard the *F/V Jana Lin* during tow #212. At 2155, an unknown sex, sub-adult loggerhead turtle was brought onboard the relocation vessel. The trawl supervisor was concerned that the animal was lethargic and unresponsive to touch or reflex and the eyes were fixed and dilated. The turtle was transferred to the *F/V Miss Adrienne* to attempt resuscitation per the NMFS guidelines. At 0000 hours, it was determined that the turtle was deceased. The turtle was turned over to the Florida Fish and Wildlife Conservation Commission and the University of Florida College of Veterinary Medicine for necropsy by Dr. Brian Stacy. The necropsy report states that while a definitive cause of death could not be confirmed due to autolysis and prior freezing of the carcass, that "asphyxia associated with submersion, occult trauma, external injury, or a combination there of could not be ruled out."

The second incidental take associated with relocation trawling occurred on July 14, 2006 onboard the *F/V Jana Lin* during tow #994 at 2255 hours. An adult male loggerhead turtle was brought onboard the vessel with its head and mouth wedged in the webbing of the tailbag of the net, forcing the turtle's mouth to remain in the open position. Once onboard and removed from the net, a large amount of water was expelled from the lungs and mouth of the turtle, and the animal struggled to breath. All efforts were undertaken to assist the animal, but at 0200 July 15, 2006, it expired. The turtle was turned over to the Florida Fish and Wildlife Conservation Commission and the University of Florida College of Veterinary Medicine for necropsy by Dr. Brian Stacy. The necropsy report states that "abundant fluid was observed in the airways, which, given the circumstances of the death is consistent with drowning."

Under the requirements of the GRBO, page 68 revision 1 dated June 24, 2005, the two lethal takes associated with the trawlers were not counted against the District's lethal take allocation, but to a separate allocation for injurious or lethal incidental take associated with relocation efforts. "NOAA Fisheries estimates that 0-2 turtles and 0-1 Gulf sturgeon will be killed or injured annually pursuant to annual relocation trawling in the Gulf of Mexico".

Excluding the two lethal incidental takes associated with the relocation trawling efforts, a total of 59 turtles (53 loggerhead, 6 Kemp's ridley) were captured and relocated during the trawling efforts with 3,604 tows. This equals a catch per unit effort of 0.0164. This meant that 1.64% of the tows had a turtle in the net.

Detailed information, including the take reports can be accessed from the Corps' Sea Turtle Data Warehouse website – specifically at <http://el.erdc.usace.army.mil/seaturtles/project.cfm?Id=426&Code=Project>

City of Destin/Walton County Beach Nourishment Project

Liberty Island

On February 19, 2006 the contract hopper dredge *Liberty Island* began work on the City of Destin/Walton County Beach Nourishment Project conducted under Department of the Army Permit #2003-18314-IP-DEB. Project consists of renourishment of approximately 7.1 miles of beach and dune between R-monuments 39 and 23. Fill material is being obtained from a 261-acre nearshore ebb shoal approximately 500 meters south of East Pass. The project area is located within Gulf sturgeon critical habitat unit 11. Two movement patterns occur in the project area: migration between freshwater spawning and marine/estuarine foraging.

Dredging began on February 19, 2006 and was suspended on May 22, 2006 due to levels of lethal sea turtle take. The project is expected to begin dredging again in FY2007. Between February 18, 2006 and May 22, 2006 a total of 309 loads (approximately 1.3 million CYs) of beach quality (as defined by FLDEP) sand were collected and deposited on the permitted renourishment project template. A total of 83 dredging days were completed on the project in FY 2006.

The dredge was equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. NMFS-approved turtle observers provided 24-hour/day monitoring of dragheads and screens for each load cycle. In addition to mitigate for Gulf sturgeon, dredging of each load did not exceed 6 hrs in duration; and total dredging in a 24-hr period did not exceed 12-hrs to maintain migratory pathways. The observers were employed by Coastwise Consulting, Inc. under a subcontract to the dredging contractor, Great Lakes Dredge and Dock. During the performance of this dredging during FY 2006, four lethal takes of sea turtles were recorded.

The first lethal take occurred on March 13, 2006. An unknown age, unknown sex loggerhead turtle was found at 1229 hours on the inflow screen of load #63. Surface water temperature at time of take was 20.0 °C.

The second lethal take occurred on April 20, 2006. An adult Kemp's ridley turtle of unknown sex was found at 0320 hours on the inflow screen of load #228. Surface water temperature at the time of take was 22.0 °C.

The third lethal take occurred on May 7, 2006. A whole juvenile Kemp's ridley turtle of unknown sex was found at 0515 hours in load #282. Surface water temperature at the time of take was 22.0 °C.

The fourth lethal take occurred on May 21, 2006. An unknown age and unknown sex loggerhead turtle was found at 0245 hours on the inflow screen of load #309. Surface water temperature at the time of take was 23.9 °C.

The Jacksonville District project permit was modified after the first lethal take to require relocation trawling throughout the remaining life of the Destin project in an effort to reduce the likelihood of additional sea turtle take. Relocation trawling efforts began on March 15, 2006 using the commercial fishing vessels *Simple Man*, *Capt. Wick* and *Reva Rose*. A total of 53 turtles (31 loggerhead, 21 Kemp's ridley and one leatherback) were captured and 52 animals were relocated. A loggerhead that was "captured" by the Simple man was ½ of a deceased animal. A total of 52 turtles (30 loggerhead, 21 Kemp's ridley, 1 leatherback) were relocated during the trawling efforts with 1,357 tows. This equals a catch per unit effort of 0.0383. This meant that 3.83% of the tows had a turtle in the net. The leatherback turtle was captured and released on May 23, 2006 and was 151cm in length.

In addition to sea turtles, on March 23, 2006 a 161 cm gulf sturgeon was captured and relocated by the *F/V Simple Man* in tow #161. Water temperature at time of capture was 18.3°C.

Detailed information, including the take reports can be accessed from the Corps' Sea Turtle Data Warehouse website – specifically at <http://el.erdc.usace.army.mil/seaturtles/project.cfm?Id=425&Code=Project>

COSTS

The costs incurred in performing the turtle-monitoring program during FY2006 include the costs for equipping and maintaining screens and draghead deflectors on contractor-owned dredges, as well as providing NMFS-approved observers and relocation trawling. In addition to the direct costs are District costs for administration and oversight. Table #1 depicting the costs of monitoring, relocation trawling and dredge inspection for FY2006 for Federal and permitted dredging projects. However, this table does not include costs of administration and oversight activities conducted by SAJ staff, or the unquantifiable costs associated with decreased dredging efficiency which may result from the use of the draghead deflectors, and downtime experienced during cleaning of excessively fouled screens. Estimates of these

increased costs are anticipated by the potential contractors during the preparation of bids, and there is no way to determine the actual value of these costs. The Corps also does not capture the costs beyond the cost of inspections associated with projects permitted by the Corps' Regulatory Division in its permitting of private projects that utilize hopper dredges.

SUMMARY

During Fiscal Year 2006, six beach re-nourishment and one operations and maintenance projects were constructed using hopper dredges that were in the action area defined by the GRBO. Thirteen turtles were taken lethally by the projects conducted in FY2006. Table #1 summarizes some of the costs associated with implementation of the Terms and Conditions of the GRBO. Table #2 summarizes lethal turtle encounters. Relocation trawling conducted with these dredging projects completed 13,649 tows during FY 2006 and captured, tagged, and released a total of 354 turtles equaling a catch per unit effort of 0.0259. One gulf sturgeon and one leatherback turtle were captured and relocated during trawling efforts at Destin. Four turtles captured during relocation efforts were turned over to permitted rehabilitation facilities due to health concerns not associated with the relocation trawling. One smalltooth sawfish was incidentally entangled in a relocation trawler's nets at Tampa and safely released. Two turtles were lethally taken incidental to the relocation efforts at Navarre. Table #3 summarizes the catch per unit effort for relocation trawling efforts associated with projects utilizing a hopper dredge.

TABLE #1
 COSTS ASSOCIATED WITH PROTECTION OF SEA TURTLES
 DURING HOPPER DREDGING
 JACKSONVILLE DISTRICT
 MAINTENANCE DREDGING/BEACH RENOURISHMENT
 GULF COAST PROJECTS
 FY2006

PROJECT	COST OF MONITORING	COST OF RELOCATION EFFORTS	COSTS OF INSPECTIONS
Navarre Beach	NT	NT	\$6,000
Longboat Key	NT	NT	\$3,000
Naples/Collier County	NT	NT	\$3,000
Pensacola	NT	NT	Reported in 2005
Tampa Harbor O&M/Egmont Key	\$18,000	\$355,680	\$7,966
Sanibel/Captiva	\$53,500	N/A	\$3,180
Destin	NT	NT	\$6,000
Totals	\$71,500	\$355,680	\$29,146

*NT = Not Tracked

TABLE #2
 INCIDENTAL TAKES OF SEA TURTLES
 JACKSONVILLE DISTRICT
 MAINTENANCE DREDGING/BEACH RENOURISHMENT
 GULF OF MEXICO COAST PROJECTS

FY 2006

Date Taken	Project	Dredge	Channel Reach/Borrow Area	Water Temp. (°C)	Species and Authorized Incidental Take per Fiscal Year			
					Kemp's ridley 3 (+2) = 5 (Borrowed from Mobile)	Loggerhead 5 (+5) = 10 (Borrowed from Galveston and New Orleans)	Green 3	Hawksbill 1
11/4/2005	Longboat Key	<i>Bayport</i>	27' 31.92N/ 82' 46.52W	24.4		1		
1/25/2006	Longboat Key	<i>Bayport</i>	27' 32.0N/ 82' 46.5W	17.22			1	
3/31/2006	Navarre	<i>B.E. Lindholm</i>	Borrow T2-1B	18.9	1			
3/13/2006	Destin	<i>Liberty Island</i>	30' 22.413N/ 86' 30.60W	19.4		1		
4/20/2006	Destin	<i>Liberty Island</i>	30' 22.464N/ 86' 30.462W	22	1			

5/7/2006	Destin	<i>Liberty Island</i>	30' 22.592N/ 86' 31.828W	22.0	1			
5/21/2006	Destin	<i>Liberty Island</i>	30' 21.725N/ 86' 29.795W	23.9		1		
6/5/2006	Navarre	<i>F/V Jana Lin</i>	30' 18.028N/ 86' 51.123W	30.0		1*		
6/16/06	Navarre	<i>B.E. Lindholm</i>	30' 18.3N/ 86' 50.8W	25.3		1		
7/1/06	Navarre	<i>B.E. Lindholm</i>	T2-1B Borrow Area	29.4		1		
7/14/2006	Navarre	<i>F/V Jana Lin</i>	30' 18.01N/ 86' 51.503W	NA		1*		
8/25/2006	Tampa	<i>Eagle 1</i>	27' 36.490N/ 82' 49.325W	28.9		1		
9/28/2006	Tampa	<i>Eagle 1</i>	Egmont Channel	27.2		1		
TOTAL TAKE					3	7	1	0
ALLOWABLE TAKE REMAINING					2	3	2	1

* - Turtle incidentally taken during relocation efforts and is not counted in District totals, per GBRO page 68, rev 1.

TABLE #3
 CATCH PER UNIT EFFORT – TRAWLING VS TURTLES
 JACKSONVILLE DISTRICT
 MAINTENANCE DREDGING/BEACH RENOURISHMENT
 GULF OF MEXICO COAST PROJECTS

FY 2006

Project Name	Number of Tows	Number of Turtles Captured	Catch per Unit Effort
Longboat Key	5,247	129	.0246
Naples/Collier	2,319	87	.0375
Tampa O&M *	1,121	27	.0241
Destin *	1,357	52	.0383
Navarre *	3,604	59	.0164
TOTALS	13,648	354	.0259

* Numbers presented in this table are for activities in FY2006. Project continued in FY2007.