DEPARTMENT OF THE ARMY
SOUTH ATLANTIC DIVISION, CORPS OF ENGINEERS
ROOM 9M15, 60 FORSYTH ST., S.W.
ATLANTA, GEORGIA 30303-8801

REPLY TO
ATTENTION OF

CESAD-PDS-P

03 JAN 2008

Dr. Roy E. Crabtree
US Department of Commerce
National Oceanic and Atmospheric Administration (NOAA)
Southeast Regional Office
National Marine Fisheries Service
263 13th Avenue South
Saint Petersburg, Florida 33701

Dear Dr. Crabtree:

This report is submitted in fulfillment of requirements of the Endangered Species Act and the Section 7 Consultation - Biological Opinion for the "Continued use of hopper dredging of channels and borrow areas in the southeastern United States" dated September 25, 1997 (that incorporates the August 25, 1995 Biological Opinion for these activities), and the 2006 Gulf of Mexico Regional Biological Opinion (GRBO).

We have enclosed the individual district reports for Wilmington, Charleston, Savannah, and Jacksonville Districts, covering the South Atlantic, and the annual reports from Jacksonville and Mobile Districts in fulfillment of similar requirements under the GRBO.

Briefly, there were twelve hopper dredging projects in the South Atlantic region - eight maintenance, one beach re-nourishment, and three regulatory projects. A total of seven turtles were taken during this period. During the same period, Jacksonville and Mobile Districts completed eleven hopper dredging projects in the Gulf of Mexico-three beach re-nourishment, and eight maintenance dredging projects. A total of six turtles were taken during this period. There were no takes of other endangered and threatened species by hopper dredges during this period in the South Atlantic or the Gulf of Mexico.

A significant accomplishment this year has been the progress made in coordinating and initiating preparation of the South Atlantic Regional Biological Assessment (SARBA) for the purpose of updating the 1997 SARBO. Development of the SARBA continues to be extensively coordinated with your staff. The SARBA addresses both Civil and Regulatory dredging along with dredging methods including hydraulic pipeline and use of bed levelers during cleanup operations. We expect the SARBA to be completed around February 2008.

We appreciate your past and ongoing support of our dredging activities in the South Atlantic and the Gulf of Mexico. We look forward to the continuation of our collaborative efforts to conserve threatened and endangered species.

Sincerely,

Lester S. Dixon, P.E.
Director of Programs

Enclosures

Copy Furnished:
Commander, Mississippi Valley Division, Chief of Operations and Regulatory Community of Practice
Commander, Southwestern Division, Chief of Operations and Regulatory Community of Practice
Commander, Charleston District
Commander Jacksonville District
Commander, Mobile District
Commander, Wilmington District
Commander, Mississippi Valley New Orleans District
Commander, Southwestern Galveston District

ANNUAL SEA TURTLE MONITORING REPORT
WILMINGTON DISTRICT
HOPPER DREDGING - FISCAL YEAR 2007

INTRODUCTION

This report is submitted in fulfillment of requirements of the Endangered Species Act and the Section 7 Consultation - Biological Opinion for the "Continued use of hopper dredging of channels and borrow areas in the southeastern United States" (No Consultation Number provided) dated September 25, 1997 (that incorporates the August 25, 1995 Biological Opinion for these activities). Specifically this report, summarizing hopper dredging operations in Fiscal Year (FY) 2007 within the Wilmington District, is submitted in compliance with reasonable and prudent measure No. 6 – Reporting found in the August 25, 1995 Opinion.

The following hopper dredging projects (or the portion of the project that used a hopper dredge) were completed in FY 2007.

Wilmington Harbor Ocean Bar	09 December 2006 – 11 January 2007
Morehead City Harbor Ocean Bar	05 January 2007 – 26 March 2007
Hurricane Ophelia – FEMA Sand Replacement	10 January 2007 – 29 March 2007

The Wilmington District schedules hopper-dredging operations during the winter months (1 December through 31 March), as recommended by the South Atlantic Division (SAD) hopper dredging protocol, when water temperatures are cool and the risk of taking sea turtles is low. A risk assessment developed by the Wilmington District for hopper dredging activities at Morehead City Harbor recommends a more stringent dredging window from 1 January through 31 March when the risk of taking sea turtles with a hopper dredge is low (Attachment 1). This more stringent Wilmington District recommended window is based on the concern that warm water rings spin off of the Gulf Stream during otherwise cool water months resulting in un-expected sea turtle take during the month of December. In order to maintain consistency among dredging projects within the Corps' Civil Works and Regulatory programs and to reduce overall incidental take numbers for the South Atlantic region, the 1 January to 31 March dredging window was incorporated as a permit condition for the Regulatory Hurricane Ophelia - FEMA Sand Replacement Project in which dredging occurred in the Morehead City, NC ODMDS. Considering that sea state conditions are not excessive and there are no site specific thermal dynamic concerns relative to the Gulf stream, the hopper dredging window for the Wilmington Harbor vicinity is consistent with the SAD recommended 1 December through 31 March timeframe.

TURTLE MONITORING PROGRAM

As result of the Section 7 consultation process, the requirement to document turtle takes by the hopper dredges was devised. In order to accomplish this task, before hopper dredging operations commence, they are equipped such that all inflows and, if possible, overflows are 100% screened with a 4" X 4" mesh size. The configuration and location of the screens depends upon the construction of the dredge. Additionally, 24-hour monitoring by NMFS-approved turtle observers is conducted to identify any turtles or turtle parts that may be caught on these screens during each load cycle. Draghead deflectors are 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, when plowing at approximately a 6" depth, a sediment wave is created ahead of the draghead cushioning any contact with benthic-oriented turtles and thereby preventing injuries. As a component of the project specifications, the contractor is required to submit drawings of the turtle deflector attachment to the draghead as well as the approach angles that are necessary to attain the required 6" plowing depth for the given project depths. These submittals are reviewed and the dredge is inspected prior to commencement of hopper dredging projects.

The observers inspect and clean all inflow and overflow screening at the end of each load. Dragheads and deflectors are also inspected immediately after each load, and dredge personnel are informed of any necessary repairs. Data sheets are completed daily, detailing all biological samples and debris found in the screening and dragheads. The observers also record 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 are described on a separate incident report form. Additionally, all incidents are photographed and diagrams are made of the specimen sampled. Once documentation has been collected, observers coordinate with the Wilmington District office in order share the specimens with the North Carolina Wildlife Commission and the National Marine Fisheries Service lab in Beaufort, NC to be used for scientific purposes. Observer reports for all projects have been compiled and entered into the USACE Sea Turtle Data Warehouse at the following links:

Wilmington Harbor Ocean Bar)
http://el.erdc.usace.army.mil/seaturtles/project.cfm?Id=489&Code=Project

Morehead City Ocean Bar
http://el.erdc.usace.army.mil/seaturtles/project.cfm?Id=487&Code=Project

Hurricane Ophelia – FEMA Sand Replacement
http://el.erdc.usace.army.mil/seaturtles/project.cfm?Id=488&Code=Project

A bridge watch for sea turtles and marine mammals is maintained during all daylight hours, except when the observer is off the bridge, cleaning and inspecting the screens and dragheads. All sightings of cetaceans and sea turtles were recorded in a bridge watch logbook. Specific sightings of right whales are reported separately and forms are sent to the District office for reporting purposes.

SCREEN CONFIGURATIONS

Turtle monitoring activities were conducted by Coastwise Consulting and East Coast Observers (ECO). Coastwise observers were aboard the *Glenn Edwards* for the Wilmington Harbor Ocean Bar project and aboard the *Dodge Island and Liberty Island* for the Hurricane Ophelia – FEMA Sand Replacement Project. ECO observers were aboard the *BE Lindholm and RN Weeks* for the Morehead City Ocean Bar project. Each of these vessels was required to have rigid draghead deflectors, and 100% inflow screening and, if possible, overflow screening with openings starting at 4" x 4."

HOPPER DREDGE SEA TURTLE INSPECTION

In order to assure contractor compliance with sea turtle protection measures outlined in the contract specifications, a pre-project inspection of the hopper dredges was performed by the CESAW sea turtle coordinator in accordance with the "COE Sea Turtle Inspection Checklist for Hopper Dredges (Attachment 2)." Prior to the physical inspection, Contractor submittals were reviewed to assure appropriate design and approach angle calculations of turtle deflecting dragheads for the dredging depths of each project. On site inspections were performed to confirm that the equipment on board was configured in accordance with the Contractor's submittals as well as assuring that all sea turtle compliance measures were implemented. Furthermore, paint tests were performed on all dredges prior to commencement to assure that efficient turtle deflector plowing depths were achieved in accordance with contract specifications. An additional inspection was performed to assure that sea turtle compliance measures were in place when the sea turtle take occurred.

PROJECTS

Wilmington Harbor Ocean Bar

Glenn Edwards

Contract #W912PM-07-C-0004 included maintenance dredging for the Wilmington Harbor Ocean Bar. The contractor Manson Construction performed the work using the Glenn Edwards from 12/09/06 through 01/11/07 for a total of 22 days (217.24 hours) of dredging time. A total of 112 loads were performed and approximately 750,617 cubic yards of material (silt, clay, sand, mud, rock and wood) was excavated from the channel and disposed in the designated Offshore Dredged Material Disposal Site (ODMDS).

In accordance with the NMFS 1997 SARBO, COE hopper dredges are required to have 100% inflow screening and observer coverage on all hopper dredging jobs. Overflow screening is required if the dredge is capable of fitting screens to the overflow or wiers. Historically, wood debris accumulation within the Wilmington Harbor Ocean Bar has resulted in difficulties with 100% inflow screening as well as safety concerns with clogging of the wiers with the implementation of overflow screening on several different hopper dredges. The Wilmington District has worked with the Contractors in the past to maximize, to the maximum extent practicable, inflow screening of the dredged material, understanding the plugging concerns. This may entail flushing the boxes more frequently or partially opening the screening. The Glenn Edwards dredged the Wilmington Ocean Bar in FY07 and, considering the large size of the dredge, the concerns with wood debris accumulation were exacerbated. Particularly, the high output of the dredge means that in any situation, observers will be called upon to monitor several times more material than with a smaller dredge and accumulation of debris is much more significant. When inflow screening is lifted to flush the lines, wood debris then floats and accumulates on top of the overflow screening of the weir resulting in vessel safety concerns. Therefore, until the accumulation of wood debris was reduced, overflow screening was not required. However, considering that NFMS RBO requires 100% inflow screening, the maximum inflow screening and observer coverage possible was enforced and entailed 100% inflow screening of all material. After each load observers were required to observe each inflow box, to the maximum extent practicable, for any incidental takes. This entailed using a hose or other tools to get better access and better visual of the material understanding the difficulties given the severity of plugging on some boxes. Once the best coverage possible is obtained, the tender was allowed to flush the material out of the boxes with the dragheads on bottom to avoid turtle takes, unless the dredge had alternative inflow ports and is capable of pumping water to the boxes without the potential for sucking turtles through the draghead. While the material in the box was being flushed, observers observed material falling out into the hopper for sea turtle parts. Once the debris in the box was cleared, the screens were closed and the process repeated. In order to prevent excessive clogging of the boxes prior to observer coverage, the captain and tender were required to minimize the amount of time for each load so that plugging of the screens was not as significant during observer coverage. By minimizing the time between each flushing, the observers had an easier time getting 100% coverage for incidental take prior to flushing of the inflow boxes. All of the recommendations outlined above were only performed during times when wood debris posed a significant concern and was re-evaluated on a daily basis. If wood debris was no longer considered a concern, standard 100% inflow and overlow requirements along with 100% observer coverage was required..

Morehead City Harbor Ocean Bar

Contract #W912HN-07-C-0005 included dredging of maintenance material from Range A and the Cutoff of the Morehead City Ocean Bar with placement of material to the beach under the Section 933 Authority. Material was also placed in the ODMDS if the sea state conditions were too rough for hookup to pump material to the beach. Also, incompatible material was taken to the ODMDS. The contractor Weeks Marine performed the work at Morehead City using the BE Lindholm from 01/05/07 through 03/26/07 (61 days) and the RN Weeks from 02/04/07 through 03/06/07 (30 days). No sea turtle abundance or relocation trawling was implemented during this contract for both dredges. Copies of the observer reports were provided to the U.S. Army Engineer Research and Development Center (ERDC) for uploading to the "Sea Turtle Data Warehouse."

RN Weeks

A total of 133 loads were performed and approximately 330,615 cubic yards of sandy material was excavated from Range A and the cutoff and placed on the beach or in the ODMDS. There was one documented incidental juvenile loggerhead sea turtle take recovered on the starboard draghead of the RN Weeks on 24 March 2007 during load 323 (Attachment 3). The sea surface water temperature at the time the take occurred was 56 degrees Celsius. A post sea turtle take compliance inspection was performed and the Silent Inspector was analyzed; however, no direct correlation could be made between the take and specific hopper dredge operating conditions. The specimen was later transported to the NMFS Beaufort, NC lab for additional scientific uses.

BE Lindholm

A total of 336 loads were performed and approximately 779,523 cubic yards of sandy material was excavated from Range A and the cutoff and placed on the beach or in the ODMDS. There were no documented incidental sea turtle takes.

While dredging the outer portions of Range A, the Lindholm encountered significant amounts of large debris. In order to minimize plugging of the overflow wiers, 1/3 of the screening was removed; however, 100% inflow screening was still maintained. Observers on board were required to report any change in conditions. 100% overflow screening was restored when conditions improved.

Hurricane Ophelia – FEMA Sand Replacement

Department of the Army permit # SAW-2006-32753-016 included dredging approximately 1,107,000 CY sandy material from the Morehead City ODMDS with placement of sediment to Emerald Isle, Indian beach, and Pine Knoll Shores, North Carolina. The contractor Great Lakes performed the work using the Dodge Island from 02/15/07 through 03/23/07 (37 days) and the Liberty Island from 01/10/07 through 03/29/07 (51 days). Sea turtle relocation trawling was implemented by REMSA from 27-28 March 2007 using the vessel "Cheryl Lyn" after a turtle was incidentally taken by the BE Lindholm while dredging the federal channel on 03/24/07. A total of 41 tows were performed with no sea turtles relocated (Attachment 4).

Dodge Island

A total of 113 loads were performed from 02/15/07 to 03/23/07 with no incidental sea turtle takes.

Liberty Island

A total of 215 loads were performed from 01/10/07 to 03/29/07 with no incidental sea turtle takes.

COSTS

The costs incurred in performing the turtle-monitoring program during FY 2007 include the costs for equipping and maintaining screens and draghead deflectors on contractor-owned dredges, as well as providing NMFS-approved observers, implementing Silent Inspector, contractor compliance oversight, and trawling. In addition to the direct contract costs are District costs for administration and oversight. Table #1 depicts the costs of monitoring, trawling, oversight, and dredge inspection for FY 2007. However, this table does not include 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.

SUMMARY\

During Fiscal Year 2007, two maintenance dredging projects and one FEMA permitted project were performed using hopper dredges. One turtle was taken lethally by the BE Lindholm while working the Morehead City Ocean Bar project on 24 March 2007. Table #2 summarizes lethal turtle encounters. Relocation trawling was performed in association with the Hurricane Ophelia FEMA shore protection project.

TABLE #1
COSTS ASSOCIATED WITH PROTECTION OF SEA TURTLES
DURING HOPPER DREDGING
WILMINGTON DISTRICT
MAINTENANCE DREDGING
FY2006

PROJECT	COST OF MONITORING ($500/day)	COST OF TRAWLING EFFORTS	COST OF SPEC DEVELOPMENT AND OVERSIGHT	COSTS OF INSPECTIONS	TOTAL
Wilmington Harbor Ocean Bar	$11,000	NA	$3,000	$2,000	**$16,000**
Morehead City Harbor	$45,500	NA	$3,000	$3,000	**$51,500**
Hurrican Ophelia - FEMA Sand Replacement	$18,500	$10,000	$5,000	$2,000	**$35,500**
TOTAL	$75,000	$10,000	$11,000	$7,000	**$103,000**

TABLE #2

INCIDENTAL TAKES OF SEA TURTLES

WILMINGTON DISTRICT

MAINTENANCE DREDGING

FY 2006

Date Taken	Project	Dredge	Channel Reach/ Borrow Area	Water Temp. (°C)	Species and Authorized Incidental Take per Fiscal Year			
					Kemp's ridley 7	Loggerhead 35	Green 7	Hawksbill 1
24 Mar 2007	Morehead City Ocean Bar	BE Lindholm	34' 40.125N 76' 40.271W	13		1		
TOTAL TAKE						1	0	0

ENDANGERED SPECIES MONITORING REPORT

MAINTENANCE DREDGING AND BEACH NOURISHMENT CONDUCTED UNDER SOUTH ATLANTIC REGIONAL BIOLOGICAL OPINION

CHARLESTON DISTRICT

FISCAL YEAR 2007

ENDANGERED SPECIES MONITORING REPORT
MAINTENANCE DREDGING AND BEACH NOURISHMENT CONDUCTED
UNDER SOUTH ATLANTIC REGIONAL BIOLOGICAL OPINION
CHARLESTON DISTRICT
FISCAL YEAR 2007

INTRODUCTION

This report is submitted in fulfillment of requirements of the Endangered Species Act and the Section 7 Consultation - Biological Opinion for the "Continued use of hopper dredging of channels and borrow areas in the southeastern United States" (No Consultation Number provided) dated September 25, 1997 (that incorporates the August 25, 1995 Biological Opinion for these activities). Specifically this report, summarizing hopper dredging operations in Fiscal Year (FY) 2007 within the Charleston District, is submitted in compliance with reasonable and prudent measure No. 6 – Reporting found in the August 25, 1995 Opinion.

PROJECTS

No hopper dredge projects were performed by, or permitted by, Charleston District in Fiscal Year 2007.

ANNUAL SEA TURTLE MONITORING REPORT
SAVANNAH DISTRICT
MAINTENANCE DREDGING - FISCAL YEAR 2007

INTRODUCTION

This report is submitted in fulfillment of requirements of the Endangered Species Act and the Section 7 Consultation - Biological Opinion for the "Continued use of hopper dredging of channels and borrow areas in the southeastern United States" (No Consultation Number provided) dated September 25, 1997 (that incorporates the August 25, 1995 Biological Opinion for these activities). Specifically this report, summarizing hopper dredging operations in Fiscal Year (FY) 2006 within the Savannah District, is submitted in compliance with reasonable and prudent measure No. 6 – Reporting found in the August 25, 1995 Opinion.

The following hopper maintenance dredging projects (or the portion of the project that used a hopper dredge) were completed in FY 2007.

Brunswick Harbor Bar Channel	20 Dec 06 to 11 Jan 07 and 20 Mar to 24 Mar 07
Savannah Harbor Bar Channel	13 Jan to 5 Feb 07

The Savannah District schedules hopper-dredging operations during the winter months (1 December through 31 March), as recommended by SAD, when water temperatures are cool and the risk of taking sea turtles is low.

TURTLE MONITORING PROGRAM

As result of the consultation process, the requirement to document turtle takes by the dredges was devised. In order to accomplish this task, before hopper dredging operations commenced, they are equipped such that all inflows and overflows are 100% screened with a 4" X 4" mesh size. The configuration and location of the screens depends upon the construction of the dredge. Additionally, 24-hour monitoring by NMFS-approved turtle observers is conducted to identify any turtles or turtle parts that may be caught on these screens. Draghead deflectors are 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, when plowing at approximately a 6" depth, a sediment wave is created ahead of the draghead cushioning any contact with benthic-oriented turtles and thereby preventing injuries. As a component of the project specifications, the contractor is required to submit drawings of the turtle deflector attachment to the draghead as well as the approach angles that are necessary to attain the required 6" plowing depth for the given project depths. These submittals are reviewed and inspected prior to commencement of hopper dredging projects.

The observers inspect and clean all inflow and overflow screening at the end of each load. Dragheads and deflectors are also inspected immediately after each load, and dredge personnel are informed of any necessary repairs. Data sheets are completed daily, detailing all biological

samples and debris found in the screening and dragheads. The observers also record 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 are described on a separate incident report form. Additionally, all incidents are photographed and diagrams are made of the specimen sampled. Once documentation has been collected, observers coordinate with the Savannah District office in order share the specimens with the North Carolina Wildlife Commission and the National Marine Fisheries Service lab in Beaufort, NC to be used for scientific purposes.

A bridge watch for sea turtles and marine mammals is maintained during all daylight hours, except when the observer is off the bridge, cleaning and inspecting the screens and dragheads. All sightings of cetaceans and sea turtles were recorded in a bridge watch logbook. Specific sightings of right whales are reported separately and forms are sent to the District office for reporting purposes.

SCREEN CONFIGURATIONS

Turtle monitoring activities were conducted aboard the Newport, Bayport, and Glenn Edwards during FY 2007 These vessels were required to have rigid draghead deflectors, and 100% inflow screening or overflow screening with openings starting at 4" x 4."

PROJECTS

Brunswick Harbor Channel, Glynn County, GA

Contract #W912HN-07-C-0008 included maintenance dredging for both Brunswick and Savannah Bar Channels. The contract was awarded to Manson Dredging on 7 Dec 06 and NTP was issued on 20 Dec 06. The Brunswick work included only bar channel work from Stations -19+000 to -38+000. This work was performed by the Newport from 20 Dec 06 to 11 Jan 07. In addition, the Bayport worked Stations -19+000 to -29+000 from 20 Mar to 25 Mar 07.

Brunswick Harbor Dredging Summary

Start	Stop	Dredge	Loads	Dredging Days	Dredging Hrs	Whale Slow Days
20 Dec 06	11 Jan 07	Newport	276	23	448.3	17
20 Mar 07	24 Mar -7	Bayport	52	5	102.2	3
Totals			328	28	550.5	20

Brunswick Harbor Dredged Material Placement Summary

Dredge	Loads in D	Loads in E	Loads in F
Newport	179	97	
Bayport		27	25
Totals	179	124	25

Pay Volume = 996,172 cu yds
Total Removed = 1,198,571 cu yds
Placement = Nearshore areas D, E, and F.

A sea turtle compliance inspection was performed in accordance with the "COE Sea Turtle Inspection Checklist for Hopper Dredges (Attachment 3)." The dredges dragarms were equipped with a rigid draghead turtle deflector. Inflow screening was in place and, during normal flow conditions, was 100%. NMFS-approved turtle observers, Coastwise Consulting, provided 24-hour/day monitoring of dragheads and screens for each load cycle.

Dredging began on 20 December and continued without turtle take until load 60 on December 26, when a loggerhead was taken, along with an Atlantic Sturgeon. After two Kemp's Ridley sea turtles were taken on 29 December (loads 98 and 103), work was stopped until relocation trawling could be begun. Relocation trawling by the Winds of Fortune began on 30 December and continued until dredging ceased on 11 January 07 when another Kemp's Ridley was taken in load 276. A risk assessment was performed and a decision reached to postpone dredging. A summary of related correspondence is appended to this document.

Relocation trawling began again on 15 March with dredging recommencing on 20 March. After 2 loggerhead sea turtles were taken in load 52 on 24 March, the dredging work was ended because of the high probability of continuing to take sea turtles. A total of 3 loggerheads and 3 Kemps' Ridley sea turtles were taken by the project.

Copies of the observer reports are being provided to Craig Theriot, a CSC contractor at the U.S. Army Engineer Research and Development Center (ERDC).

Summary of sea turtle takes at Brunswick Harbor FY07

Turtle Take	Species	date	load #	Temp C	dredge
1	Log	12/26/2006	60	16	Newport
2	Kemp's	12/29/2006	98	14.5	Newport
3	Kemp's	12/29/2006	103	14	Newport
4	Kemp's	1/11/2007	276	15	Newport
5	Log	3/24/2007	52	18.3	Bayport
6	Log	3/24/2007	52	18.3	Bayport

Relocation Trawling by the Winds of Fortune 30 Dec 06 to 11 Jan 07

Trawling Days = 25 12-hr periods
Number of Tows = 325
Number of Relocated Turtles = 1 loggerhead, 3 Kemp's Ridley

Relocation Trawling by the Winds of Fortune 15 Mar to 24 Mar 07

Trawling Days = 20 12-hr periods
Number of Tows = 207

Number of Relocated Turtles = 17 loggerhead, 14 Kemp's Ridley, 1 Atlantic sturgeon

Savannah Harbor Bar Channel, Chatham County, GA

The Savannah Harbor bar channel was dredged from 13 January through 5 February 2007. Dredged ranges included Stations 0+000 to -4+500B and Stations -8+000B to -45+000B..

Start	Stop	Dredge	Loads	Dredging Days	Dredging Hrs
13 Jan 07	5 Feb 07	Glenn Edwards	150	24	503.6

Whale Slow Days = 0
Pay Volume = 973,463 cu yds
Total Removed = 997,137
Placement = Savannah ODMDS

Because of the take of a Kemp's Ridley in Brunswick in January, relocation trawling was conducted prior to and during dredging operations in Savannah.

Relocation Trawling by the Catina Renea 11 Jan to 5 Feb 07

Trawling Days = 53 12 hr days
Number of Tows = 530
Number of Relocated Turtles = none. However, 8 Atlantic sturgeon were captured and relocated.

Copies of the observer reports are being provided to the U.S. Army Engineer Research and Development Center (ERDC) for uploading to the "Sea Turtle Data Warehouse."

At the onset of dredging in Savannah, the dredge Glenn Edwards encountered extreme debris problems. A large amount of debris accumulated in the inflow boxes. The large amount of debris made it impossible for the turtle observer to adequately search to boxes for endangered species remains. In addition, the inflow boxes filled before the vessel completed a load, leading to reduced volumes of material being hauled to the ODMDS. It was determined that the high accumulation of debris was at least in part due to box plates that contained round 4" holes rather than 4" square holes. Permission was received from SAD to open the box doors 4 inches. This resulted in much lower accumulations of debris which the turtle observer was able to sort through. In addition, 100% overflow screening was in place. When the dredge operated in areas without debris, the box doors were shut. Because of questions regarding the adequacy of screening for endangered species, relocation trawling continued throughout the extent of dredging. It is suggested that the inflow boxes of the Glenn Edwards be equipped with all 4"square screening to minimize potential debris accumulation and increase the percentage of debris the turtle observers are able to sort through while the dredge proceeds to the discharge site.

COSTS

The costs incurred in performing the turtle-monitoring program during FY 2007 include the costs for equipping and maintaining screens and draghead deflectors on contractor-owned dredges, as well as providing NMFS-approved observers. In addition to the direct costs are District costs for administration and oversight. Table #1 depicts the costs of monitoring and dredge inspection for FY 2007. However, this table does not include the costs for equipping and maintaining screens and draghead deflectors, 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.

TABLE #1
COSTS ASSOCIATED WITH PROTECTION OF SEA TURTLES
DURING HOPPER DREDGING IN FY07

Project	Monitoring*1	Trawling*2	Dredge Stand-by*3	Inspections *4	PD-E*5	Silent Inspector
Brunswick Bar	(28 days) $14,000	47 12-hr periods $164,500	(1.408 days) $85,957	(28 days) $27,299	$8,000	$22,429.50
Savannah Bar	(24 days) $12,000	(53 12-hr periods) $185,500	0	(24 days) $23,399	$2,000	$19,018.98
Total	$26,000	$350,000	$85,957	$50,698	$10,000	$41,448.48

*1 Monitoring by Turtle Observers, estimated at $500/day
*2 Cost of trawling efforts, $3,500 per 12-hr period
*3 $40k for first day, $80k for all additional
*4 Inspections/oversight, $974.96. Includes administration time. This cost equals COE daily inspection costs determined for liquidated damages.
*5 Estimate

SUMMARY

During Fiscal Year 2007, two maintenance-dredging projects in Savannah District were performed using hopper dredges, Savannah Harbor bar and Brunswick Harbor bar. Six turtles were taken lethally by the Brunswick Harbor project. That project was ended before all dredging was completed. No sea turtle takes occurred during dredging of the Savannah Harbor.

TABLE #2
INCIDENTAL TAKES OF SEA TURTLES
BRUNSWICK HARBOR MAINTENANCE DREDGING FY07

Date Taken	Project	Dredge	Channel Reach	Water Temp. (°C)	Species and Authorized Incidental Take per Fiscal Year			
					Kemp's ridley 7	Loggerhead 35	Green 7	Hawksbill 2
12/26/06	Brunswick Harbor Bar	Newport	-19+000B to -29+000B	16.0		1		
12/29/06	Brunswick Harbor Bar	Newport	-29+000B to -38+000B	14.5	1			
12/29/06	Brunswick Harbor Bar	Newport	-19+000B to -29+000B	14	1			
1/11/07	Brunswick Harbor Bar	Newport	-29+000B to -38+000B	15	1			
3/24/07	Brunswick Harbor Bar	Bayport	-19+000B to -29+000B	18.3		1		
3/24/07	Brunswick Harbor Bar	Bayport	-19+000B to -29+000B	18.3		1		
TOTAL TAKE					3	3	0	0

Appendix A. Correspondence related to the Glenn Edwards debris problem.

Text of discussiond between SAW PD and SAW COR provided to SAM/SAS PD-EC by email dated 1/16/07:

We are required by the NMFS to have 100% inflow screening and observer coverage on all hopper dredging jobs. As identified in the SARBO (1995 reasonable and prudent measures (which are included in the 1997 SARBO)), 100% overflow screening is recommended. If conditions disallow 100% inflow screening, it can be reduced, but 100% overflow is required along with an explanation in the dredging report. For most Corps contracts, overflow screening is required if the dredge is capable of fitting screens to the overflow or wiers. Considering the difficulty with wood debris at the Wilmington Harbor Ocean Bar and the safety concerns with clogging of the wiers with the implementation of overflow screening, we have worked with the contractors in the past to maximize, to the maximum extent practicable, inflow screening of the dredged material, understanding the plugging concerns. Given the wood situation that we observed last Thursday, I don't think screening the overflow would be effective and wood pose potential safety concerns. Therefore, until the wood debris clears, 100% overflow screening is not required (reduced in increments of 25%). However, considering that NFMS requires 100% inflow screening, we must enforce the maximum inflow screening and observer coverage possible. This will entail 100% inflow screening of all material. However, after each load observers will observe each inflow box, to the maximum extent practicable, for any incidental takes. This may entail using a hose or other tools to get better access and better visual of the material. I understand that this may not be possible given the severity of plugging on some boxes; however, every

ANNUAL SEA TURTLE MONITORING REPORT
JACKSONVILLE DISTRICT
FOR ATLANTIC COAST PROJECTS
MAINTENANCE DREDGING AND BEACH NOURISHMENT - FISCAL YEAR 2007

INTRODUCTION

This report is submitted in fulfillment of requirements of the Endangered Species Act and the Section 7 Consultation - Biological Opinion for the "Continued use of hopper dredging of channels and borrow areas in the southeastern United States". (No Consultation Number provided) dated September 25, 1997 (that incorporates the August 25, 1995 Biological Opinion for these activities). Specifically this report, summarizing hopper dredging operations in Fiscal Year (FY) 2007 within the Jacksonville District, is submitted in compliance with reasonable and prudent measure No. 6 – Reporting found in the August 25, 1995 Opinion.

The following hopper maintenance dredging/shore protection projects were started in FY 2006, but extended into FY 2007.

Jupiter Island Beach Nourishment	11 November 2006 – 11 May 2007

The following hopper maintenance dredging/shore protection projects (or the portion of the project that used a hopper dredge) were completed in FY 2007.

Palm Beach Harbor	16 February 2007 – 20 April 20, 2007
Kings Bay Entrance Channel	06 February 2007 – 19 March 2007
Indian River County SPP	04 April 2007 – 04 May 2007
Key West Harbor	22 April 2007 – 08 August 2007
Ft. Pierce SPP	19 April 2007 – 04 June 2007

The use of hopper dredges to maintain these navigation and 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 – 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 Atlantic 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 hurricanes 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 Atlantic Ocean, 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 Atlantic Ocean 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 schedules hopper-dredging operations during the required December 1 through April 15 window, for Kings Bay, Jacksonville (St. John's River and Mayport), St. Augustine and Ponce de Leon Inlet. However, it is impossible to schedule all hopper-dredging projects during this time frame, due to 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.

PROTECTED SPECIES MONITORING PROGRAM

A result of the consultation process was the requirement to document endangered and threatened

species (sea turtles, sturgeon, etc) takes by 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 endangered species observers (ESO) was conducted to identify any turtles or sturgeon or parts that were caught on these screens (these are the species most likely to be taken by hopper dredges). Draghead deflectors were also deployed to deflect any turtles or sturgeon 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 or sturgeon thereby preventing injuries.

The ESOs 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 ESOs 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 endangered or threatened species 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 and genetic samples collected of any sea turtles taken by the dredge. Once documentation has been collected, dead specimens are discarded by the ESO and disposed of either offshore at the ODMDS (thereby ensuring that these same samples would not wash ashore or be taken again by the dredge) or in a manner approved by the contracting officer's representative.

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 marine mammals 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 Silent Inspector data, a review of the draghead functionality, and a review of District and Division-wide sea turtle lethal takes to date. Once the risk assessment is completed, dependent upon the findings, the project may be authorized to reinitiate 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 six different hopper dredges during FY 2007. These were the *Atchafalaya*, *Liberty Island, Dodge Island, Bayport, Padre Island* and *Glenn Edwards.*. 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 FY2006 – Continuing into FY2007

Jupiter Island Beach Renourishment

Dodge Island, Liberty Island

On 11 November 2006, the contract dredge *Liberty Island* resumed dredging and beach placement on the Jupiter Island Beach Restoration in Martin County, Florida. The previous portion of the project, completed in 2006, placed sand between monuments R-78 to R-79 and R-89 to R-100, and the details were included in the FY2006 Annual Report. The remaining stretch of the project, between monuments R76A to R84 and R99 to R110 began dredging and placement on 11 November 2006 and finished dredging and placement on 11 May 2007. Material was dredged from two borrow areas located approximately two miles offshore from markers R-90 and R-102. and detailed in Department of the Army permit #SAJ-1992-1740 (IP-PLC). The contractor placed 815,000 cubic yards (CY) of beach quality sand (as defined by the Florida Department of Environmental Protection) on Jupiter Island. The project was dredged over four periods by the two dredges with periods of down time for repair and weather.

Liberty Island 11/13/06 – 01/08/07
Dodge Island 01/22/07 – 02/12/07
Dodge Island 03/25/07 – 04/28/07
Liberty Island 04/07/07 – 05/01/07

A total of 337 loads of dredged material were collected during 217 dredging days and deposited in the permitted beach template. Surface water temperatures ranged from 22.0 °C -26.0 °C for the life of the project.

The two contract 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 turtle takes occurred.

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=465&Code=Project

Projects in FY 2007

Palm Beach Harbor

Atchafalaya

On February 16, 2007 the contract hopper dredge *Atchafalaya* began work on the maintenance dredging of Palm Beach Harbor. The contractor dredged approximately 120,000 CY of beach quality sand (as defined by the Florida Department of Environmental Protection) from the entrance channel, which was placed on the beach directly south of the south jetty. The required depth of dredging was 33 feet below Mean Low Water (MLW) with two feet of allowable overdepth dredging.

The dredge operated under a "rental contract". Instead of being paid by CY, the contractor is paid by the number of days it takes to complete the project. In this case, it took the dredge 51 days to remove the shoal material consisting of 294 loads.

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 Coastwise Consulting, Inc. under a subcontract to the dredging contractor, B+B Dredging. During the performance of this dredging, no lethal takes we observed. Surface water temperatures were between 23 and 25 °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=483&Code=Project.

Kings Bay Entrance Channel

Glenn Edwards, Bayport

On February 6, 2007 the contract hopper dredge *Glenn Edwards* began work on the Kings Bay/Fernandina Harbor Entrance Channel. The contractor dredged a total of 649,623 CY of shoal material. 578,311 CY were dredged from the Entrance Channel and placed in the EPA designated ODMDS and 71,312 CY of beach quality sand (as defined by the Florida Department of Environmental Protection) were placed on the beach at Ft. Clinch. The required depth of dredging was 49 feet below MLW with two feet of allowable overdepth dredging inside the Entrance Channel and 47 feet MLW with two feet of overdepth inside of the jetties.

Dredging began on February 6, 2007, and ceased on February 18, 2007 by the *Glenn Edwards* and begun again with the *Bayport* from 8 March, 2007 through March 19, 2007. A total of 84 loads of dredged material were collected during 15 dredging days.

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, Manson Construction Company.

During the performance of this dredging, one lethal take was observed. The take occurred on 16 March 2007 and was an unknown age loggerhead turtle of unknown sex found 0033 hours in load #27. Surface water temperature at time of take was 17.4°C.

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=477&Code=Project.

Ft. Pierce Shore Protection Project
Bayport

On 19 April 2007 the contract dredge *Bayport* began dredging and beach placement on the Ft. Pierce Shore Protection Project in St. Lucie County, Florida. Approximately 8,000 linear feet of beach (from DEP Monuments R-34 to R-41) was nourished with 460,130 CY of beach quality sand (as defined by the Florida Department of Environmental Protection) that was dredged from Capron Shoals, an offshore borrow area approx. 5.0 miles southeast of the project shoreline.

A total of 207 loads of dredged material were collected during 47 dredging days and deposited in the permitted beach template. Surface water temperatures were between 22 and 26 °C for the life of the project.

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 Coastwise Consulting, Inc. under a subcontract to the dredging contractor, Mason Construction Company. During the performance of this dredging, no lethal takes we observed.

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=492&Code=Project

Indian River County Shore Protection Project
Dodge Island, Padre Island

On 10 April 2007 the contract dredges *Dodge Island* and *Padre Island* began dredging and beach placement on Sector 7 of the Indian River County Shore Protection Project in Indian River County, Florida. 11,730 linear feet of beach (from DEP Monuments R-97 to R-108) was nourished from this first-time project with 340,019 CY of beach quality sand (as defined by the Florida Department of Environmental Protection) that was dredged from an offshore borrow area approx. 2.5 miles southeast of the project shoreline and detailed in Department of the Army permit #SAJ-2003-6106 (IP-IFS). The project was dredged by two dredges with substantial overlap between them.

Dodge Island - 4/10/07 - 5/4/07
Padre Island - 4/10/07 - 5/1/07

A total of 159 loads of dredged material were collected during 42 dredging days and deposited in the permitted beach template. Surface water temperatures were between 22 and 25 °C for the life of the project.

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 Lake Dock and Dredge, Inc. During the performance of this dredging, no lethal takes we observed.

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=482&Code=Project

Key West Harbor O&M
Atchafalaya

On April 22, 2007 the contract hopper dredge *Atchafalaya* began work on the Key West Entrance Channel Operations and Maintenance Dredging project. Contract specifications required dredging an estimated 92,102 CY of shoal material. The required depth of dredging was 34 feet below Mean Low Water (MLW, Corps of Engineers Datum), with 2 feet of allowable advanced maintenance dredging inside the Entrance Channel. Project details can be obtained at http://www.keywestharbordredging.com/default.asp.

Dredging began on April 22, 2007 and was completed on August 7, 2007. A total of 79 days of hopper dredging were conducted and 225 loads of dredged material were collected and deposited in the EPA designated ODMDS.

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 Coastwise Consulting, Inc. under a subcontract to the dredging contractor, B+B Dredging. During the performance of this dredging, no lethal takes were observed.

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=495&Code=Project

COSTS

The costs incurred in performing the turtle-monitoring program during FY 2007 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 FY 2007. 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 it's permitting of private projects that utilize hopper dredges.

SUMMARY

During Fiscal Year 2007, six maintenance-dredging or beach re-nourishment projects were constructed using hopper dredges. One turtle was taken lethally by the projects conducted in FY2007. Table #2 summarizes lethal turtle encounters. No relocation trawling was performed in association with any hopper dredging project on the Atlantic coast of Florida in FY2007.

ANNUAL SEA TURTLE MONITORING REPORT
MAINTENANCE DREDGING/BEACH NOURISHMENT
ATLANTIC COAST – Under SA RBO
JACKSONVILLE DISTRICT
FISCAL YEAR 2007

TABLE #1

COSTS ASSOCIATED WITH PROTECTION OF SEA TURTLES

DURING HOPPER DREDGING

JACKSONVILLE DISTRICT – ATLANTIC COAST PROJECTS

MAINTENANCE DREDGING/BEACH RENOURISHMENT

FY2007

PROJECT	COST OF MONITORING	COST OF RELOCATION EFFORTS	COSTS OF INSPECTIONS
Palm Beach Harbor	$31,350	NA	$1,400
Kings Bay Entrance Channel	$15,000	NA	$1,100
Jupiter Island Beach Renourishment Project	NT	NA	$500
Indian River County SPP	NT	NA	$500
Key West Harbor O&M	$25,000	NA	$1,040
Fort Pierce Shore Protection Project	$23,500	NA	$800
TOTAL	$94,850	$0.00	$5,340

TABLE #2

INCIDENTAL TAKES OF SEA TURTLES

JACKSONVILLE DISTRICT – ATLANTIC COAST PROJECTS

MAINTENANCE DREDGING/BEACH NOURISHMENT

FY 2007

Date Taken	Project	Dredge	Channel Reach/ Borrow Area	Water Temp. (°C)	Species and Authorized Incidental Take per Fiscal Year			
					Kemp's ridley 7	Loggerhead 35	Green 7	Hawksbill 1
16 March 2007	Kings Bay	*Bayport*	Section 6/ 30 42.60N 81 23.20W	17.4		1		
TOTAL TAKE					0	1	0	0
ALLOWABLE TAKE REMAINING					7	34	7	1

ANNUAL SEA TURTLE MONITORING REPORT
JACKSONVILLE DISTRICT
FOR GULF of MEXICO PROJECTS
MAINTENANCE DREDGING - FISCAL YEAR 2007

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) 2007 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 2006, but extended into FY 07.

- Tampa Harbor Entrance Channel O&M Aug 11, 2006 – November 26, 2006
- Navarre Beach Renourishment September 29, 2006 – November 12, 2006
- Walton County December 2, 2006 – June 24, 2007

The following hopper dredging shore protection projects were completed in FY 2007.

- Siesta Key Beach Renourishment December 18, 2006 – March 4, 2007

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.

PROTECTED SPECIES MONITORING PROGRAM

A result of the consultation process was the requirement to document endangered and

threatened species (sea turtles, sturgeon, etc) takes by 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 endangered species observers (ESO) was conducted to identify any turtles or sturgeon or parts that were caught on these screens (these are the species most likely to be taken by hopper dredges). Draghead deflectors were also deployed to deflect any turtles or sturgeon 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 or sturgeon thereby preventing injuries.

The ESOs 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 ESOs 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 endangered or threatened species 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 and genetic samples collected of any sea turtles taken by the dredge. Once documentation has been collected, dead specimens are discarded by the ESO and disposed of either offshore at the ODMDS (thereby ensuring that these same samples would not wash ashore or be taken again by the dredge) or in a manner approved by the contracting officer's representative.

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 marine mammals 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 Silent Inspector data, a review of the draghead functionality, and a review of District and Division-wide sea turtle lethal takes to date. Once the risk assessment is completed, dependent upon the findings, the project may be authorized to reinitiate 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 five different hopper dredges during FY2007. These were the *Bayport, Dodge Island, Liberty Island, R.N. Weeks* and *Eagle 1*. 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 FY2006 – Continuing into FY2007

Tampa Harbor 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 ended on November 25, 2006. *Eagle 1* dredged a total of 1,325,878 CYs.

The dredge was equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. NMFS-approved ESOs provided 24-hour/day monitoring of dragheads and screens for each load cycle. The ESOs were employed by East Coast Consulting, Inc. under a subcontract to the dredging contractor, Bean Stuyvesant LLC. During the performance of this dredging during FY 2007, two lethal takes were recorded.

The first lethal take occurred on October 15, 2006. An adult loggerhead turtle of unknown sex was found at 0915 hours in the aft starboard box of load #299. Surface water temperature at time of take was 78°F.

The second lethal take occurred on October 31, 2006. A loggerhead turtle of unknown sex and age was found at 0524 hours in the starboard draghead of load 364. Surface water temperature at the time of take was 70°F.

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 11 – November 25 a total of 2,264 tows were completed and 38 turtles (32 loggerhead, 6 Kemp's ridley) were captured and relocated. This equals a catch per unit effort of 0.0168. This meant that 1.68% 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=456&Code=Project

Navarre Beach Renourishment
RN Weeks

On September 29, 2006, the contract hopper dredge *RN Weeks* resumed work on the Navarre Beach Protection Project conducted under Department of the Army Permit # SAJ-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 was obtained from a borrow area approximately four miles offshore.

For FY 2007, dredging began on September 29, 2006 and was completed on November 12, 2006. The project length was 167 days and the total number of loads for the entire project (including FY 06) was 1311 loads.

The dredge *RN Weeks* was equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. NMFS-approved ESOs provided 24-hour/day monitoring of dragheads and screens for each load cycle. The observers were employed by East Coast Observers under a subcontract to the dredging contractor, Weeks Marine. During the performance of dredging (September 29, 2006, to November 12, 2006) no take of a sea turtle was recorded.

Relocation trawling was conducted throughout the life of the beach nourishment project on the commercial fishing vessels *Jana Lin* (354 tows) and *Elvira* (325 tows). The total tows for both vessels were 861 and the sea surface temp was 20.5 C. Five (5) loggerhead turtles and one (1) leatherback were caught and relocated. This equals a catch per unit effort of 0.0070. This meant that 0.70% of the tows had a turtle in the net.

On October 23, 2006 at 1425 hours the trawler *Jana Lin* observed a leatherback 50 feet offbow

while the dredge was approaching the borrow site. On October 24, 2006 a leatherback was caught by the F/V *Elvira* on tow 227 and relocated.

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

Walton County
Dodge Island, Liberty Island

On December 2, 2006 the contract hopper dredge *Dodge Island* resumed work on the City of Destin/Walton County Beach Nourishment Project conducted under Department of the Army permit SAJ-2003-8314(IP-DEB). Project consists of renourishment of approximately 11,340 linear feet of beach and dune between R- monuments R-39 in Okaloosa County extending to R-23.91 in Walton County. Fill material was 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.

The Walton County portion (R-1.0 to past R-23.0) which began on December 2, 2006 was completed as of January 19, 2007. This portion of the project placed sand along 6,284 linear feet of shoreline. The dredging was temporally halted on January 19, 2007, in accordance with a contractual agreement between the permittee and the dredging contractor. On May 4, 2007, the contract hopper dredge *Liberty Island* re-started dredging the Walton County/City of Destin beach renourishment project. This portion of the project consisted of renourishment of approximately 5,000 linear feet. The project was completed on June 24, 2007. The hopper dredge *Dodge Island* dredged for 48 days (between December 2, 2006 and January 19, 2007) and the *Liberty Island* dredged for 51 days (between May 4, 2007 and June 24, 2007) for a total of 99 days dredging days. Between December 2, 2006 and June 24, 2007 a total of 409 loads (approximately 1.4 million CYs) of beach quality (as defined by FLDEP) sand were collected and deposited on the permitted renourishment project template along 11,340 linear feet of beach.

The dredge was equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. NMFS-approved ESOs 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 2007, three lethal takes of sea turtles were recorded.

The first lethal take occurred on December 2, 2006. A leather back turtle was found at 0207 (tow #19) after the nets were hung by metal debris which kept the turtle submerged for a long period of tine; water temperature was 16.8 °C. Results of the necropsy proved the leatherback taken by the trawler was an immature female weighing almost 600 lbs.

The second lethal take occurred on January 10, 2007, by the *Dodge Island*. A male loggerhead turtle of unknown age was found at 2347 hours on the starboard draghead and starboard inflow screen of load #180. Surface water temperature at time of take was 15.5 °C.

The third lethal take occurred on May 13, 2007, by the *Liberty Island*. A loggerhead of unknown age and sex was found at 0740 hours in the discharge box in load #344. Surface water temperature at the time of take was 22.4 °C.

The Jacksonville District project permit was modified after the first lethal take in FY 06 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 for FY 2007 began at 0927 hours December 1, 2006, using the commercial fishing vessel *Reva Rose* and concluded on June 24, 2007 at 1053 hours. A total of 35 turtles (25 loggerheads, 9 Kemps Ridley and 1 green) were relocated during the trawling efforts with 1312 tows. This results in a catch per unit effort of 0.0267. This meant that 2.67% 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=425&Code=Project

Projects in FY 2007

Siesta Key Beach Renourishment
Bayport

On December 18, 2006, the contracted hopper dredge *Bayport* began work on The Siesta Key Beach Renourishment Project under Department of the Army Permit SAJ-2004-12003(IP-MN). The project consists of renourishment of approximately 10,910 liner feet of beach and dune 300 feet north of FDEP reference monument R-67 to 500 feet south of R-77. Approximately 924,896 CYs of material were dredged and approximately 922,300 CYs of beach quality sand

was placed on the beach South Siesta Key in Sarasota County. Material was dredged from a borrow site 5.9 miles west of the project site.

Dredging began on December 18, 2006 and was completed on March 4, 2007. A total of 314 loads of beach quality (as defined by FLDEP) sand were collected during the 76 days of dredging and deposited on the federally authorized shore protection project.

The dredge *Bayport* was equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. NMFS-approved ESOs provided 24-hour/day monitoring of dragheads and screens for each load cycle. The ESOs were employed by Coastwise Consulting, Inc. under a subcontract to the dredging contractor, Manson Dredge Company. During the performance of this dredging one take of a sea turtle was recorded.

The take occurred on February 23, 2007 by the dredge *Bayport*. A juvenile green sea turtle (Lucky) was taken alive and sent to Mote Lab for rehabilitation. Lucky was successfully released back to the Gulf on March 29, 2007. One take (Lucky) has been reported for this project. Surface water temperatures ranged from 18 °C - 22 °C for the life of the project. You can find out more information at this related website:
http://www.mote.org/index.php?src=directory&srctype=display&id=658&view=STRH_detail&PHPSESSID=5273cb0c123b2459cf2ee97cec2ebb58

Relocation trawling was conducted throughout the life of the beach nourishment project on the commercial fishing vessel *Riva Rose*. A total of 2106 tows were completed and 20 turtles (16 loggerhead, 3 Kemps Ridley and 1 green) were captured and relocated. This equals a catch per unit effort of 0.0095. This meant that 0.95% 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=425&Code=Project

COSTS

The costs incurred in performing the turtle-monitoring program during FY2007 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 FY2007 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 it's permitting of private projects that utilize hopper dredges.

SUMMARY

During Fiscal Year 2007, three beach re-nourishment and one operations and maintenance projects were constructed using hopper dredges that were in the action area defined by the GRBO. Six turtles were taken by the projects conducted in FY2007, five lethally and one was successfully released after rehab at Mote Marine Laboratory. 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 5,424 tows during FY 2007 and captured, tagged, and released a total of 72 turtles equaling a catch per unit effort of 0.0133. Table #3 summarizes the catch per unit effort for relocation trawling efforts associated with projects utilizing a hopper dredge.

ANNUAL SEA TURTLE MONITORING REPORT
MAINTENANCE DREDGING
GULF COAST – Under GRBO
JACKSONVILLE DISTRICT
FISCAL YEAR 2007

TABLE #1

COSTS ASSOCIATED WITH PROTECTION OF SEA TURTLES
DURING HOPPER DREDGING

JACKSONVILLE DISTRICT
MAINTENANCE DREDGING/BEACH RENOURISHMENT
GULF COAST PROJECTS
FY2007

PROJECT	COST OF MONITORING	COST OF RELOCATION EFFORTS	COSTS OF INSPECTIONS
Navarre	NT	NT	$0*
Tampa Harbor O&M	$9,247	$231,000	$0*
Walton County	NT	NT	$4,200
Siesta Key	NT	NT	$2,000
Totals	$9,247	$231,000	$6,200

NT = Not Tracked

* *Inspected in FY06*

TABLE #2

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

FY 2007

Date Taken	Project	Dredge	Channel Reach/Borrow Area	Water Temp. (°C)	Species and Authorized Incidental Take per Fiscal Year				
					Kemp's ridley 20	Loggerhead 40	Green 14	Hawksbill 4	Leatherback
10/15/2006	Tampa Harbor O&M	*Eagle 1*	Markers 11 & 12	25.1		1			
10/31/2006	Tampa Harbor O&M	*Eagle 1*	Egmont Key Channel #52600	21.1		1			
12/2/2006	Walton County	*Trawler Reva Rose*	N/A	16.8					1*
1/10/2007	Walton County	*Dodge Island*	30 22.40 N/ 86 30.50 W	15.5		1			
2/23/2007	Siesta Key	*Bayport*	27 12.40 N/ 82 37.10 W	18.8			1^		
5/13/2007	Walton County	*Liberty Island*	30 22.60 N/ 86' 86 31.60 W	22.4		1			
TOTAL TAKE					0	4	1	0	1*
ALLOWABLE TAKE REMAINING					20	36	13	4	1*

* - Turtle incidentally taken during relocation efforts is limited to two turtles of any species per fiscal year.
^ - Live take, rehabbed at Mote Maine Lab and released.

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

FY 2007

Project Name	**Number of Tows**	**Number of Turtles Captured**	**Catch per Unit Effort**
Navarre	861	6	.0070
Tampa O&M	1145	11	.0096
Walton	1312	35	.0267
Siesta Key	2106	20	.0095
TOTALS	**5424**	**72**	**.0133**

* Numbers presented in this table are for FY2007 activities.

ANNUAL SEA TURTLE MONITORING REPORT
MAINTENANCE DREDGING/BEACH NOURISHMENT
GULF OF MEXICO COAST
MOBILE DISTRICT
FISCAL YEAR 2007

ANNUAL SEA TURTLE MONITORING REPORT
MOBILE DISTRICT
FOR GULF OF MEXICO PROJECTS
MAINTENANCE DREDGING/BEACH NOURISHMENT
FISCAL YEAR 2007

INTRODUCTION

This report is submitted in fulfillment of requirements of the Endangered Species Act and the Section 7 Consultation - Biological Opinion concerning Dredging of Gulf of Mexico Navigation Channels and Sand Mining ("Borrow") Areas Using Hopper Dredges by COE Galveston, New Orleans, Mobile, and Jacksonville Districts (Consultation Number F/SER/2000/01287) dated November 19, 2003 and amended on June 24, 2005 and January 9, 2007. Specifically this report, summarizing hopper dredging operations in Fiscal Year (FY) 2007 within the Mobile District, is submitted in compliance with Reasonable and Prudent Measure, Nos. 3 and 9.

The following Mobile District Civil Works hopper maintenance dredging projects were completed in FY 2007. No Civil Works shore protection projects were conducted in FY 2007.

Mobile Harbor	October 03, 2005 - November 11, 2006 March 07, 2007 to May 26, 2007 May 26, 2007 to July 17, 2007 July 20, 2007 to August 10, 2007 August 05, 2007 - August 30, 2007
Pascagoula Ship Channel	April 27, 2007 to May 1, 2007
Gulfport Harbor	June 01, 2007 to June 8, 2007

No Regulatory hopper dredging work was conducted by the Mobile District in FY 2007.

The use of hopper dredges to maintain these navigation projects is necessary because of three factors: safety, weather conditions, and productivity. These factors are closely interrelated; however, the emphasis is placed on safety.

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 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 (such as the bar areas). Due to the reasons stated above, these dredges cannot rapidly demobilize in harsh weather, for example, as a hurricanes 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 Ocean 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 Mobile District.

The Mobile District sometimes has to schedule hopper-dredging operations outside of the required December 1 through April 15 window due to the lack of equipment (dredges are on the Atlantic coast during this described period). The Mobile District tries to schedule as much of its hopper dredging during the December 1 through April 15 timeframe as possible. However, it is impossible to schedule all hopper-dredging projects during this time frame, due to the availability of the hopper dredge fleet. Hopper dredging priorities for the Mobile 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.

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 protected species observer(s) 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 were described on a separate incident report form. Additionally, all incidents were photographed and diagrams were made of the specimen. Once documentation had been collected, dead specimens were properly discarded by the NMFS-approved protected species observer(s).

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.

SCREEN CONFIGURATIONS

Turtle monitoring activities were conducted aboard 3 different hopper dredges during FY 2007. These were the *Bayport*, *Newport* and *Glenn Edwards*. 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

Civil Works Projects in FY 2007

Mobile Harbor – Bay Channels
Glenn Edwards

On October 3, 2006 the *Glenn Edwards* began work under a new contract on the Mobile Harbor- Bay Channel under contract W19278-06-D-0039. The contractor dredged approximately 475,472 cy. The required depth of dredging was 45 feet below Mean Lower Low Water (MLLW) with 2 feet of allowable overdepth dredging and 2 feet of advanced maintenance dredging.

Dredging began on October 3, 2006 and was completed on November 11, 2006. A total of 280 loads of dredged material were collected during 39 dredging days and deposited in the Mobile North Ocean Dredged Material Disposal Site (ODMDS).

The dredge was equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. NMFS-approved protected species observers provided 24-hour/day monitoring of dragheads and screens for each load cycle. The observers were employed by Coastwise, Inc. under a subcontract to the government. No relocation trawling was conducted during this work.

During the performance of this dredging, no lethal takes were observed.

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.

Mobile Harbor – Bay & River Channels
Glenn Edwards

On March 7, 2007 the *Glenn Edwards* began work on the Mobile Harbor - Bay Channel under a new contract W19278-07-D-0001. The contractor dredged approximately 986,844 cy. The required depth of dredging was 45 feet below MLLW with 2 feet of allowable overdepth dredging and 2 feet of advanced maintenance dredging.

Dredging began on March 7, 2007 and was completed on May 26, 2007. A total of 176 loads of dredged material were collected during 48 dredging days and deposited in the Mobile North ODMDS.

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

dragheads and screens for each load cycle. The observers were employed by Coastwise, Inc. under a subcontract to the government. No relocation trawling was conducted during this work.

During the performance of this dredging, no lethal takes were observed.

A sea turtle stranding was reported about 0.25 miles east of Fort Morgan on April 13, 2007 (lat: 30 deg. 13.876' long: -88 deg. 00.483'). According to the Sea Turtle Stranding Network there was blunt trauma to the nachal area behind the neck and rear left leg of the carparse, which may have been caused by a dredge. The *Glenn Edwards* had demobilized on April 8, 2007 and did not return to the Mobile Harbor until May 1, 2007. According to NOAA Fisheries the turtle was at most 2 to 3 days dead when it stranded. The only other reported dredge working in the area during this time period was a small hydraulic cutterhead dredge. This dredge was excavating material from a permitted borrow area north of Dauphin Island in the Mississippi Sound.

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.

Pascagoula Harbor – Bar Channel
Glenn Edwards & Newport

On April 27, 2007 the *Glenn Edwards* and *Newport* began work on the Pascagoula Harbor Channel under a new task order to contract W9178-07-D-0001. The contractor dredged approximately 231,573 cy of sand and silt material (139,687 cy by the *Glenn Edwards* and 91,886 cy by the *Newport)*. The required depth of dredging was 38 feet below MLLW with 2 feet of allowable overdepth dredging and 2 feet of advanced maintenance dredging.

Dredging began on April 27, 2007 and was completed on May 1, 2007. A total of 79 loads (37 loads by *Glenn Edwards* and 42 loads by *Newport*) of dredged material were collected during 10 dredging days. Material was disposed of in authorized open water and littoral zone placement sites.

The dredges were equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. Two NMFS-approved protected species observers provided 24-hour/day monitoring of dragheads and screens for each load cycle. The observers were employed by Coastwise, Inc. under a subcontract to the government. No relocation trawling was conducted during this work.

During the performance of this dredging, one lethal loggerhead turtle take was experienced. This take occurred on April 29, 2007, in load No. 19. The water temperature during this take was 26°C.

Detailed information for this project, including incidental take forms can be accessed at the Corps' Sea Turtle Data Warehouse website – specifically at http://el.erdc.usace.army.mil/seaturtles.

Mobile Harbor – Bay Channel
Glenn Edwards

On May 26, 2007 the *Glenn Edwards* began work on the Mobile Harbor Bay Channel under a new task order to contract W19278-07-D-0068. The contractor dredged approximately 1,366,164 cy. The required depth of dredging was 45 feet below MLLW with 2 feet of allowable overdepth dredging and 2 feet of advanced maintenance dredging.

Dredging began on May 26, 2007 and was completed on July 17, 2007. A total of 259 loads of dredged material were collected during 54 dredging days and deposited in the Mobile North ODMDS.

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 Coastwise, Inc. under a subcontract to the government. No relocation trawling was conducted during this work.

During the performance of this dredging, no lethal takes were observed.

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.

Gulfport Harbor Navigation Channel – Bar Channel
Newport

On June 1, 2006 the *Newport* began work on the Gulfport Harbor Bar Channel under a new task order to contract W91278-07-D-0068. The contractor dredged approximately 200,828 cy of shoal material. The required depth of dredging was 38 feet below MLLW with 2 feet of allowable overdepth dredging and 2 feet of advanced maintenance dredging.

Dredging began on June 1, 2007 and was completed on June 8, 2007. A total of 204 loads of dredged material were collected during 8 dredging days and deposited in the authorized littoral zone placement site between 14 and 22 feet below MLLW.

The dredge was equipped with rigid draghead turtle deflectors, and 100% inflow screening with a 4-inch square mesh. Two NMFS-approved protected species observers provided 24-hour/day monitoring of dragheads and screens for each load cycle. The observers were employed by Coastwise, Inc. under a subcontract to the government. In addition, relocation trawling was conducted around the clock during hopper dredging. All trawling was properly conducted and supervised (i.e., observing trawl speed and tow-time limits, and taking adequate precautions in the release of captured animals). In all, 1 loggerhead, 1

leatherback, and 1 Kemps ridley sea turtle was successful relocated (no evidence of serious injury or mortality). Sea turtle tagging and relocation reports are on file. During the performance of this dredging, no lethal takes were observed.

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.

Mobile Harbor – Bay Channel
Glenn Edwards

On July 20, 2007 the *Glenn Edwards* began work on the Mobile Harbor Bay Channel under a new task order to contract W91278-07-0087. The contractor dredged approximately 546,213 cy. The required depth of dredging was 45 feet below MLLW with 2 feet of allowable overdepth dredging and 2 feet of advanced maintenance dredging.

Dredging began on July 20, 2007 and was completed on August 10, 2007. A total of 94 loads of dredged material were collected during 22 dredging days and deposited in the Mobile North ODMDS.

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 Coastwise, Inc. under a subcontract to the government.

During the performance of this dredging, no lethal takes were observed.

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.

Mobile Harbor –Bar Channel
Bayport and Newport

On August 5, 2007 the *Bayport* began work on the Mobile Harbor Bar Channel under a new task order to contract W91278-07-D-0087. The *Newport* began work on the Mobile Harbor Bar Channel on August 11, 2007. The contractor dredged approximately 1,011,998 cy (796,004 by *Bayport* and 215,954 by *Newport*). The required depth of dredging was 47 feet below MLLW with 2 feet of allowable overdepth dredging and 2 feet of advanced maintenance dredging.

Dredging began on August 5, 2007, and was completed on August 30, 2007. A total of 476 loads (363 by *Bayport* and 113 by *Newport*) of dredged material were collected during 36 dredging days and deposited in

the Sand Island Beneficial Use Disposal Area.

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 Coastwise, Inc. under a subcontract to the government. In addition, relocation trawling was conducted around the clock during hopper dredging for the time period of August 4, 2007 to August 20, 2007. All trawling was properly conducted and supervised (i.e., observing trawl speed and tow-time limits, and taking adequate precautions in the release of captured animals). No sea turtles or Gulf sturgeon were relocated during this work.

During the performance of this dredging, no lethal takes were observed.

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.

Regulatory Projects in FY 2007

No hopper dredging work was preformed under the Mobile District Regulatory program during FY 2007. A short non-hopper project with relocation trawling due to the use of a bed leveler/I-beam equipment to lay fiber optic cable was conducted during the last week of the FY 2007. The observers were employed by Coastwise, Inc. under a contract to the permittee, BP Exploration and Product, Inc. In all, 1 Kemps ridley sea turtle was successful relocated (no evidence of serious injury or mortality).

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.

SUMMARY

During Fiscal Year 2007, 7 maintenance-dredging projects were constructed using hopper dredges. In FY 2007, 1 turtle was taken lethally by the dredging of these projects. Relocation trawling was conducted during 2 of the 7 civil works dredging projects and during one Regulatory non dredging project. In all, 4 turtles were successful relocated (no evidence of serious injury or mortality). Table #1 summarizes some of the costs associated with implementation of the Terms and Conditions of the GRBO. Table #2 summarizes lethal and nonleathal turtle encounters. Table #3 summarizes the catch per unit effort for relocation trawling efforts associated with projects utilizing a hopper dredge.

TABLE #1
FY 2007 COSTS ASSOCIATED WITH PROTECTION OF SEA TURTLES DURING MOBILE DISTRICT HOPPER DREDGING

PROJECT	COST OF OBSERVER	COST OF RELOCATION EFFORTS
Mobile Harbor	$48,600.00	$50,000.00
Pascagoula Harbor	$3,600.00	$19,525.00
Gulfport	$4,050.00	0
Total	$56,250.00	$69,525.00

TABLE #2
FY 2007 INCIDENTAL TAKES OF SEA TURTLES &GULF STURGEON
MOBILE DISTRICT MAINTENANCE DREDGING/BEACH RENOURISHMENT

Date Taken	Project	Dredge/Trawl	Water Temp. (°C)	Gulf sturgeon	Kemp's ridley	Loggerhead	Green	Leatherback
4/29/2007	Pascagoula	Newport	26		1			
6/1/2007	Gulfport	Bayport/Capt. Wick	26					1*
6/6/2007	Gulfport	Bayport/Capt. Wick	26			1*		
6/8/2007	Gulfport	Bayport/Capt. Wick	26		1*			

*Non lethal/Non injurious incidentally taken during relocation efforts

TABLE #3
FY2007 CATCH PER UNIT EFFORT – TRAWLING VS SEA TURTLES &GULF STURGEON
MOBILE DISTRICT MAINTENANCE DREDGING/BEACH RENOURISHMENT

Project Name	Number of Tows	Number of Turtles Captured	Number of Gulf sturgeon Captured	Catch per Unit Effort
Gulfport	211	3	0	0.016
Mobile Harbor	398	0	0	0
TOTALS	609	3	0	0.005

ANTICIPATED FISCAL YEAR 2008 HOPPER DREDGING

Civil Works Anticipated Hopper Dredging Projects for FY 2008

Schedule For FY-08 Dredging Work for Mobile District
South Atlantic Division

SAM Dredging Program

Hopper
Bucket
Pipeline
Existing Contract

Updated Sep 2007

FY 08

Project		Contractor & Dredge	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
Mobile Bay/Bar (Rental)	Hopper	Manson - Glenn E.														
Mobile Bay/Bar (Rental)	Hopper	Bid Opening by Amendmen														
Mobile Bay/Bar (Rental)	Hopper	Bid Opening by Amendmen														
Mobile Bay/Bar (Rental)	Hopper	Bid Opening by Amendmen						Hurricane Contingency Solicitation								
Panama City Beach Nourishment (Unit Price)	Hopper	TBD 500,000 CY														
Mobile Harbor Extensions 1200/2100 (Unit Price)	Bucket	Bid Opening 15 Nov 07														
Gulfport Harbor Improvements (Unit Price)	Bucket/Hopper	Bid Opening 8 April 5.4Mcy														
Mobile River Bucket/Pipeline (Unit Price)		Bid Opening TBD 500Kcy														
Pascagoula Harbor Improvements	Bucket/Hopper	Bid Opening 17 June 6.6Mcy														
Pascagoula Sound/Horn Island Pass/Gulfport (Unit Price)	Pipeline	Weeks Ellefson	Pasc	Gulfport		Pasc		Theodore								
BWT/GIWW/Ala River (Rental)	Pipeline	Mike Hooks E. Stroud	Ala River		GIWW			Bucau								
Harrison County Beaches (Unit Price)	Pipeline	600KCY Gulf Sand and Gravel														
BWT/Alabama River (Rental)	Pipeline	Bid Opening TBD														
Tenn-Tom/GIWW (Rental)	Pipeline	Bid Opening TBD														

Regulatory Anticipate Hopper Dredging Projects for FY 2008

No Regulatory hopper dredging projects are anticipated for FY 2008.