

ANNUAL SEA TURTLE MONITORING REPORT

HOUSTON-GALVESTON NAVIGATION CHANNELS
NEW-WORK DREDGING

FISCAL YEAR 2003

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INTRODUCTION

This report is submitted in fulfillment of requirements of the Endangered Species Act and the Section 7 Consultation - Biological Opinion, dated December 7, 1998, concerning Deepening of Galveston Bay Entrance Channel (Houston-Galveston Navigation Channels Project) Using A Hopper Dredge. Specifically this report, summarizing hopper dredging operations in Fiscal Year (FY) 2003, is submitted in compliance with reasonable and prudent measure No. 9 - Reporting.

The following new-work dredging project was undertaken in FY 2003.

H-GNC – Mid Bay

September 29, 2002 – August 11, 2003

The use of hopper dredges to construct this navigation project was necessary because of two factors: safety, and the character of the dredged material. In order to complete the work within a reasonable schedule, it was necessary to have several dredges working simultaneously. Safety concerns expressed by the pilots and U.S. Coast Guard involved this fact. Consequently, restrictions were placed on the spacing of the working cutterhead dredges, namely, a minimum distance of five miles was required. The use of hopper dredges did not violate this spacing, due to their mobility.

The other factor was the character of the material. The new work material was to be used to create retaining structures for marsh establishment. Some of the material was not suitable for this use and was thus coordinated for placement in the nearshore berm. Another related factor included the behavior of the material at the marsh creation sites. During construction, it was realized that the marsh sites would not function as designed. This necessitated a change in the design which resulted in a reduction of the quantity of material to be used for this purpose. Therefore, it was decided to place this extra material in the nearshore berm.

The use of hopper dredges was the only feasible way to satisfy all these constraints.

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

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the screens depended upon the construction of the dredge. Contract work began with a mixed-mesh configuration. The mesh size of the lower one-foot of the inflow screen was 6"x 6", the remaining screening mesh was 4"x 4". Additionally, around-the-clock monitoring by NMFS-approved turtle inspectors was conducted to identify any turtles or turtle parts that were caught on these screens. Draghead deflectors were also deployed to deflect any turtles that may happen to be in, or near, the path of the draghead during excavation.

The 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 sampled. Dead specimens were frozen until all concerned parties were notified. Specimens were then weighted with scrap iron and disposed of at the dredged material placement site, thereby ensuring that these same samples would not wash ashore or be taken again by the dredge.

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

PROJECT

Mid-Bay Channel

Dredging began on September 29, 2002, and was completed on August 11, 2003. Dredging was conducted intermittently by two dredges employed under this contract, as shown below:

<i>B.E. Lindholm</i>	September 29, 2002 to October 21, 2002
<i>B.E. Lindholm</i>	November 23, 2002 to December 9, 2002
<i>B.E. Lindholm</i>	May 13, 2003 to August 11, 2003
<i>R.N. Weeks</i>	June 5, 2003 to August 2, 2003

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A total of 1,992,702 cubic yards (CY) of material were excavated in 734 loads and deposited into Placement Area No. 1-A. Of this total, 546 loads comprising 1,447,219 CY were collected by the *B.E. Lindholm* and 545,483 CY in 188 loads were removed by the *R.N. Weeks*. Dredging was performed between Stations 57+000 and 80+000.

The dredges were equipped with rigid draghead turtle deflectors, and 100% overflow screening with a 4-inch square mesh. Additionally, they were fitted with 100% inflow screening through a 6" x 6" mesh along the lower one-foot of the inflow cage and a 4" x 4" mesh along the remainder of the cage.

NMFS-approved turtle observers were employed by REMSA under a subcontract to the dredging contractor, Weeks Marine. They provided 24-hour/day monitoring of dragheads and screens for each load cycle.

During the performance of this dredging, one Kemp's ridley sea turtle take was documented aboard the *B.E. Lindholm*. This take occurred on July 19, 2003 in load No. 465. This take occurred when the water column temperature was about 29°C. Copies of the observer reports are enclosed.

A review of the Sea Turtle Stranding and Salvage Network (STSSN) database indicated two reports suggest the possibility that stranding deaths may have been caused by an encounter with a hopper dredge. During the week of October 13-19, 2002, Kemp's ridley was found stranded offshore with only part of the lower jaw and the anterior portion of the carapace and plastron remaining. The second stranding occurred during the week of August 10-16, 2003, when a Kemp's ridley (46.4 cm SLCL) was found stranded inshore with the carapace cracked between the 4th and 5th vertebral scutes.

Water temperatures were taken in conjunction with the screen and draghead monitoring. The below mid-depth temperatures ranged from 13.9°C to 28.3°C during the September – December timeframe. Water temperature was not routinely documented during the May – August period.

Throughout the duration of dredging, bridge watch observations included numerous sightings of bottlenose dolphins (*Tursiops truncatus*).

Since this is primarily new-work dredging, the material dredged consisted of predominantly clay, along with mud, and old shell deposits. Non-biological samples commonly included wood,

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along with other miscellaneous debris. The most common biological samples were comprised of various species of fish and crabs.

COSTS

The costs incurred in performing the turtle-monitoring program for the H-GNC Project during FY 2003 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. Below is a table depicting the costs for FY 2003. However, costs not included in this discussion are 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.

PROJECT	COST OF MONITORING
Mid-Bay Ch.	108,011.52
District labor	7,560.81
TOTAL	\$115,572.33

SUMMARY

During Fiscal Year 2003, new-work dredging in the Mid-Bay reach of the H-GNC Project was conducted by hopper dredges. Following is a table summarizing lethal turtle encounters.

INCIDENTAL TAKES OF SEA TURTLES

H-GNC NEW-WORK DREDGING

FY 03

Date Taken	Project	Dredge	Channel Reach	Water Temp. (°C)	Species and Authorized Incidental Take per Fiscal Year			
					Kemp's ridley 5	Loggerhead 5	Green 2	Hawksbill 1
19 Jul 2003	H-GNC	<i>B.E. Lindholm</i>	29°30'N 94°52'W	30	1			
TOTAL TAKE					1	0	0	0
ALLOWABLE TAKE REMAINING					4	5	2	1