

FINAL REPORT

ENDANGERED SPECIES OBSERVER PROGRAM

DREDGE *WHEELER*
Freeport Harbor Channel
Freeport, TX

June-August, 1996

Submitted To:

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SCOPE OF WORK

Pursuant to a contract with the U.S. Army Corps of Engineers, Galveston District, maintenance dredging was conducted in the Freeport Harbor channel, from 06/23/96 -08/05/96, using the hopper dredge *WHEELER*, operated by the U.S. Army Corp of Engineers. Two endangered species observers, approved by the National Marine Fisheries Service (NMFS) and provided by Coastwise Consulting, Inc., lived onboard the *WHEELER* to monitor impacts to endangered and protected species, particularly sea turtles, 24 hours per day. The dredge was screened at all points of inflow (where dredged material is discharged into the hopper) in order to detect the presence of sea turtles and/or their parts. Turtle excluder devices (TEDs) were attached to each of the three dragheads. Observers worked around the clock cleaning and inspecting the screening and during daylight hours they monitored the water's surface for the presence of turtles and marine mammals.

METHODOLOGY

All points of inflow were screened before the observers boarded the dredge on 06/27. On the *WHEELER* three inflow pipes, one for each of the dredge's 3 dragarms, converge into two pipes (port and starboard) which discharge dredged material into the hopper bin. There are two primary points of discharge on each pipe, one at the forward end of the hopper and one aft. At each of these points the material is discharged through a cage of steel mesh. These cages are approximately 122cm x 183cm (48" x 72") and 91cm (36") deep. The openings in the mesh of the cages are not more than 10cm x 10cm (4" x 4"), per contract specifications. Observers gained access to the cages through heavy steel hatches. The secondary points of inflow were 3 openings (approximately 21cm x 100cm) on the underside of each discharge pipe between the forward and aft cages. These openings were thoroughly screened.

Observers inspected and cleaned the primary points of inflow (cages) at the end of every load. Secondary points of inflow were inspected after each load but rarely required cleaning. Dragheads and TEDs were also inspected immediately after each load and dredge personnel were informed if the excluders were in need of

repair. Data sheets were completed at the end of every load, detailing all biological samples and debris found in the screening and dragheads. Also recorded were the start, end and dump 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 the TEDs and any other pertinent information.

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, etc.). All sightings of cetaceans and sea turtles were recorded in a bridge watch logbook. Daily reports and weekly summaries were filed with the Corps of Engineers.

In the event of a turtle take or suspected take, the observers photograph the samples involved, as well as measure and inspect such samples. Samples not positively identified are frozen in the ship's freezer for later analyses. Positively identified samples are weighted with scrap-iron and buried under the tons of dredged material at the disposal site, thus ensuring that the same samples don't wash ashore or get taken by the dredge a second time. However, samples representing a small part of a turtle are routinely frozen and kept for 24 hours for comparison to any samples which might be encountered on subsequent loads. Injured but living turtles are driven to the National Marine Fisheries Services' sea turtle stranding facility in Galveston or to the Gladys Porter Zoo in Brownsville by one of the observers for rehabilitation. Uninjured turtles are photographed, weighed, measured and tagged in accordance with NMFS-approved procedures. The USACE, Galveston District representative (409-766-3999) and the NMFS Southeast Regional Office (813-570-5312) are notified by telephone immediately after any incident involving a sea turtle. Incident reports are completed for every event, recording all details surrounding the event.

RESULTS

During the 44 days that observers were onboard the dredge *WHEELER* in the Freeport Harbor channel, 5 incidents were documented involving sea turtles impacted by dredging activities. It was determined that these incidents represented 4 takes, all loggerheads (*Caretta caretta*).

06/28/96 Load #4 (loads numbered on a daily basis) between stations 0+000 & -50+000; 0341hrs.-0400hrs. Surface water temp. 25°C. Two parts of a loggerhead were found in the starboard aft screening cage immediately following this load. There was a left rear flipper, 19cm x 10cm, some flesh and two claws attached. Also found: a small portion of right side of plastron, 34cm x 12cm, some marginal and inframarginal scutes still attached. Fresh (bloody, no odor).

07/11/96 Load # 6 between stations -24+000 & -10+000; 1216hrs.-1324hrs. Surface water temp. 30°C, mid-depth water temp. 28°C. A piece of loggerhead carapace, 24cm x 20cm, with plastron attached was recovered from port side aft cage. Fresh.

7/13/96 Load #9 between stations 0+00 & 26+00; 1346hrs.-1422hrs. Surface water temp. 30°C, mid-depth water temp. 28°C. Two pieces of loggerhead carapace, 25cm x 16cm and 24cm x 15cm, were recovered from port side forward cage. Also found: viscera including 53cm of intestine (no intestinal contents) recovered from same cage. Observers saw piece of intestine suspended in hopper, unobtainable. Observers determined scute size indicated adult turtle. Parts photographed and frozen. Fresh.

07/22/96 Load#16 between stations 0+00 & -40+00; 2243hrs.-2312hrs. Surface water temp. 31°C, mid-depth water temp. 31°C. Two pieces of loggerhead carapace, 16cm x 15cm and 14cm x 8cm, were recovered with 45cm of trachea, a small piece of intestine and other viscera, muscle tissue, and bone. Turtle parts found in three of the four cages. Fresh.

07/23/96 Load #2 between station 0+00 & -40+00; 0311hrs.-0347hrs. Surface water temp. 31°C, mid-depth temp. 30°C. Loggerhead carapace, in two pieces, with attached piece of plastron (38cm x 19cm), viscera, muscle tissue, and left posterior flipper recovered from starboard forward cage. Small piece of skull recovered from port forward cage. After examining and comparing these parts with those from the earlier take, it was apparent that they came from the same turtle. The pieces of carapace from the 07/22

incident fit almost perfectly with the pieces of carapace from this incident 4 hours later. Carapace length was estimated to be approximately 66cm (sub-adult). On several occasions over the years, we have documented a single turtle being sampled on more than one load. The turtle may be broken into pieces under the draghead with only part of it being pulled into the system while the rest is left to be picked up on a subsequent load. Sometimes parts will be stuck within the dredge system to later be dislodged and found in screening. These samples usually show sign of severe sand-blasting.

On 07/03, a Kemp's ridley (*Lepidochelys kempii*) sea turtle was observed from the bridge of the ship. Observer's notified the captain of the turtle's presence in the immediate area and dredging was halted for the next 20 minutes, giving the turtle time to move out of the area. The turtle was not resighted.

Groups (10-25) of bottlenose dolphins (*Tursiops truncatus*) were seen in and around the jetties and at the disposal area on a daily basis. No other marine mammals were sighted from the bridge.

All incidents were photo-documented and the specimens were frozen in the ship's freezer until all concerned parties had been notified. It is good policy to keep such specimens for 24 hours for reasons demonstrated on 07/22 and 07/23. The material being dredged consisted mostly of clay, silt and sand. Two of the turtles were taken while digging in clay and mud, the other two were taken while digging in hard packed sand along the edges of the channel. Fishing net and line, and other jettisoned debris, was sampled on almost every load. The most commonly sampled biological specimens included blue crabs, shrimp, sharks, rays, mollusks, and benthic fish.

The captain and the crew of the *WHEELER* provided generous assistance whenever it was requested by the observers. Their help maintaining the screening was invaluable. In addition, the assistance of Espey, Huston & Associates, as well as the USACE, Galveston District, ensured the monitoring program ran smoothly and efficiently. The cooperation of the above entities is greatly appreciated.