

FINAL REPORT

Marine Endangered Species Monitoring Program

Maintenance Dredging, 46-ft Project, Entrance Channel
(Cut-1N), Kings Bay, GA and Fernandina Harbor, FL,
Camden County, GA and Nassau County, FL

Great Lakes Dredge & Dock, LLC
Kings Bay, GA

Project Number: W912EP-10-R-0023

Dates: 18 February 2011 – 19 March 2011

Submitted by:
Coastal & Marine Services Division
Marine Endangered Species Observer Program



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ABSTRACT

A twenty-four hour per day marine endangered species monitoring program was conducted onboard the hopper dredge *Terrapin Island* from 18 February – 19 March 2011 (30 days) during the Kings Bays, Georgia Maintenance Dredge Project. Endangered and threatened sea turtles *Caretta caretta* (loggerhead), *Chelonia mydas* (green), *Lepidochelys kempii* (Kemp's ridley), *Dermochelys coriacea* (leatherback), *Acipenser brevirostrum* (shortnose sturgeon) and marine mammals were the species of interest. There were a total of three incidents involving the species of interest, one involving a *C. mydas* take, one involving a *C. caretta* take, and another involving an unknown turtle species take. Tissue samples for the *C. mydas* and unknown species takes were sent to the Southeast Marine Sciences Center. Twenty-four-hour-per-day non-capture sweep trawling began on 16 March 2011.

INTRODUCTION

The REMSA Inc., Endangered Species Observer Division was subcontracted by Great Lakes Dredge & Dock (GLDD), LLC, to monitor for the presence and/or parts of sea turtles, marine mammals and Gulf sturgeon in the area of the dredge operation. Pursuant to agreements with the National Marine Fisheries Service (NMFS), two NMFS approved endangered species observers were required onboard during the months of prime sea turtle and whale activity for that area to document any incidents involving species of interest.

Sea turtle non-capture sweep trawling was conducted immediately following the second turtle take. Twenty-four-hour-per-day trawling began 16 March using *F/V Cheryl Lynn* and continued until the end of the project.

SCOPE OF WORK

REMSA provided the necessary trained personnel and equipment to clean and maintain the inflow screens and dragheads onboard the Great Lakes Dredge & Dock, LLC hopper dredge *Terrapin Island*. Monitoring was performed for 12 hour shifts occurring in 24 hour periods for all dredging operations. The NMFS approved observers physically inspected all inflow screens, and inspected the dragheads each time the equipment was brought on deck for cleaning and maintenance during his/her 12 hour shift. Any death or injury of any species of interest, the loggerhead turtle (*Caretta caretta*), green turtle (*Chelonia mydas*), leatherback turtle (*Dermochelys coriacea*), and hawksbill turtle (*Eretmochelys imbricata*) were to be identified to species when possible, logged, measured, and photographed. A load sheet was completed for each load inspected whether or not turtle/sturgeon parts were found. In the case of an incident or take involving a sea turtle or marine mammal, incident report forms were completed and the observers contacted NMFS and the USACE within 24 hours of the incident. A daylight bridge watch was conducted during periods when the observer was not occupied with screen cleaning duties. Observers ensured that dredge crew personnel were aware of the need to avoid incidents involving any endangered animal, and that civil and criminal penalties are possible for harming or harassing endangered species.

Trawling

Sea turtle non-capture sweep trawling was contracted by GLDD 15 March 2011. REMSA Inc. agreed to provide no-capture trawling services including the trawler, nets, equipment and the necessary trained personnel. Trawler was equipped with two 60-fott flat-style trawling nets with the bag of the nets removed.

METHODS

Dredge coverage began when the observers arrived onboard the *Terrapin Island* on 18 February 2011 and ended 19 March 2011. Two certified observers were present during prime sea turtle and whale activity, each working 12 hour shifts.

The dredge *Terrapin Island* functioned with 100% inflow and overflow screening for all 70 loads and operated with sea turtle draghead deflectors for all loads. The screening basket was fitted with 4" x 4" screening material to insure that parts of the species of interest would not be allowed to flow through into the hopper. Dragheads and screening baskets were inspected after each hopper load was completed during the observer's 12-hour shift. The appropriate forms were filled out, noting any incidents regarding species of interest as well as noting other marine life and abiotic material present in the inflow boxes.

The screening (ordinance grating) on the draghead was 1.25" x 6" as per the Army Corps specifications to prevent the passage of any material greater than 1.25" in diameter.

A bridge lookout was maintained during those daylight hours that an observer was not on deck checking screens. Watch was kept for sea turtles and marine mammals in the dredging area and pump-out site.

Trawling

Trawling was conducted in a manner to maximize net sweeping bottom time as directed in the project specifications. Positions at the beginning and end of each tow were determined from DGPS positioning equipment. Tow speed was taken approximately midpoint of each tow. Vessel heading was taken at the beginning of each tow. Water temperature measurements were taken at the surface, weather conditions and tidal stage was recorded throughout the trawling activities.

RESULTS

1. On 11 March 2011, load #54, body parts from a juvenile loggerhead turtle were discovered in the port forward basket. The specimen was fresh (dead) and recovered body parts consisted of pieces from three areas: the left margin of the carapace (Figure 1) and plastron (Figure 2), chopped pieces of the lower jawbone (Figure 3), and viscera (Figure 4). All parts were presumed to be from the same turtle. No other viable tissues, organs, or flippers were recovered. The location of the take was: Latitude 30° 42.65 N, Longitude 81° 22.20 W. The weather was as follows: Air Temp. 59.5°F, Winds W @ 20 knots, Waves 0-2ft.
2. On 15 March 2011, load #64, body parts from a sub-adult loggerhead turtle were discovered in the aft portside intake box. The specimen was fresh (dead) and consisted of only the severed head with part of the esophagus and neck still attached. The remainder of the body was not recovered. Genetic samples were sent to the Southeast Fisheries Science Center (tracking #794545136598) The location of the take was: Latitude 30° 42.6 N, Longitude 81° 23.0 W. The weather was as follows: Air Temp. 60.3°F, Winds NE @ 5 knots, Waves 0-0.5 ft (see Figure 5).

3. On 15 March 2011, load #65, body parts from a turtle, species unknown, were discovered in the aft starboard basket. Recovered body parts of the specimen were moderately decomposed and consisted chopped pieces of neck tissue and scutes. Genetic samples were sent to the Southeast Fisheries Science Center (tracking #794545136598). The location of the take was: Latitude 30° 42.6 N, Longitude 81° 21.1 W. The weather was as follows: Air Temp. 74.0°F, Winds W @ 4 knots, Waves 0ft (see Figure 6).

Trawling

Non-capture sweep trawling was initiated following the 2nd turtle take onboard the dredge. Trawling began <24hrs after notice to proceed was given. No sea turtles were taken via the trawler nor via the dredge once trawling was initiated. For more details please reference the attached project tow sheets.

FIGURES

Figure 1. Juvenile green turtle carapace section recovered from load #54, 12 March 2011. Drake's Bay is incorrect – location was Kings Bay, GA.



Figure 2. Juvenile green turtle plastron section recovered from load #54, 12 March 2011. Drake's Bay is incorrect – location was Kings Bay, GA.



Figure 3. Juvenile green turtle jawbone recovered from load #54, 12 March 2011. Drake's Bay is incorrect – location was Kings Bay, GA.



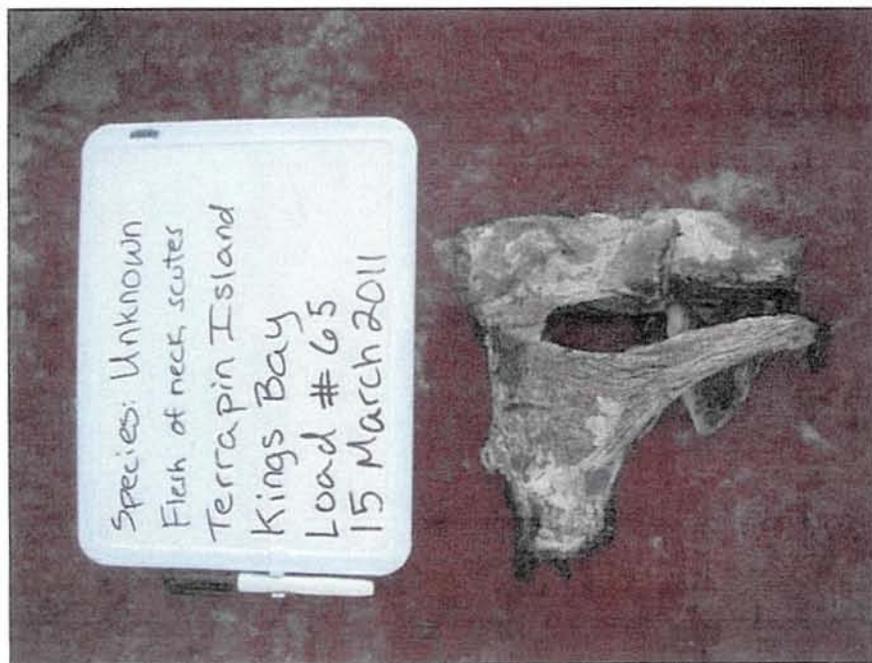
Figure 4. Juvenile green turtle viscera recovered from load #54, 12 March 2011. Drake's Bay is incorrect – location was Kings Bay, GA.



Figure 5. Severed head with part of the esophagus and neck still attached of a sub-adult loggerhead turtle from load #64, 15 March 2011.



Figure 6. Chopped pieces of neck tissue and scutes from a turtle, species unknown, recovered from load #65, 15 March 2011.



SUMMARY

On 18 February 2011, the hopper dredge *Terrapin Island* began dredging the Kings Bay Maintenance Dredging Project (Kings Bay, GA, Fernandina Harbor, FL, Camden County, GA and Nassau County, FL). Dredging was conducted for 30 days terminating on 19 March 2011, with a total of 70 loads. There were a total of three incidents involving the species of interest, one involving *C. mydas* take, one involving a *C. caretta* take, and another involving an unknown turtle species take. Tissue samples for the *C. mydas* and unknown species takes were sent to the Southeast Marine Sciences Center. Non-capture sweep trawling was initiated following the second turtle take, beginning 16 March 2011 and continued through the remainder of the project.

If there are any questions regarding this report please feel free to contact us at the number below.

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APPENDIX A
Tow Sheets

Date: 16Mar-18Mar 2011 Dredge Site: Fernandina Channel Dredge: Terrapin Island

Trawler: Cheryl Lynn Biologist(s): Roxanne Carter & Jessica Pfundston Capt(s): Carl Moore

Tide (Time, High/Low): 16March 0552 H Hrs, H / L 1227 L Hrs, H / L 1818 H Hrs, H / L

17March 1249L Hrs, H / L 0650H Hrs, H / L 1321L Hrs, H / L 1915H Hrs, H / L

18March 0147L Hrs, H / L 0743H Hrs, H / L 1412L Hrs, H / L 2009H Hrs, H / L

Water Temp: 60 °F Air Temp: 55-77 °F Wind Spd / Dir: 4-10kts Wave Ht: 1-3 ft Bottom Type: Mud Station #'s: _____

Tow #	Start Time	Start Lat / Long	Stop Time	Stop Lat / Long	Tide: Ebb / Flood	Water Depth	Vessel Heading / Speed	Turtles ? Sturgeon ? Species ?	By - Catch	Comments (change in weather or water temp, net damage, etc.)
1	1140	N30 42 46 W81 22 51	1550	N30 42 41 W81 21 53	Flood	25	250° 3kts	_____	jellies	*sweeping to clear turtles in the vicinity of the dredge
2	1600	N30 42 45 W81 22 36	1724	N30 42 40 W81 22 16	"	28	94° 2.3	_____	_____	Check gear *sweeping to clear turtles in the vicinity of the dredge
3	1826	N30 42 44 W81 22 09	2327	N30 42 46 W81 21 19	Ebb	30	84° 3	_____	Jellies, sponge	Nets hung up on something very large – not biological – lost starboard door *sweeping to clear turtles in the vicinity of the dredge
4 17Mar	0213	N30 42 41 W81 22 53	0512	N30 42 39 W81 21 53	Flood	29	71° 2.8	_____	_____	Using portside and pulling two nets using dummy door and trailing off center line *sweeping to clear turtles in the vicinity of the dredge
5	0515	N30 42 45 W81 21 54	0711	N30 42 40 W81 21 52	Flood	32	69° 2.7	_____	_____	Nets hung up & tangled *sweeping to clear turtles in the vicinity of the dredge
6	0810	N30 42 48 W81 21 39	1440	N30 42 34 W81 22 37	Ebb	35	272° 2.8	_____	_____	Shorting cable length to help eliminate hang-ups *sweeping to clear turtles in the vicinity of the dredge
7	1606	N30 42 39 W81 22 05	1844	N30 42 45 W81 21 24	Flood	33	82° 3.1	_____	horseshoe crabs, 2 cownose rays	Pulled early to check gear *sweeping to clear turtles in the vicinity of the dredge
8	1911	N30 42 54 W81 23 11	0430	N30 42 33 W81 22 36	Ebb-Flood	34	57° 2.9	_____	Jellies, sponge	*sweeping to clear turtles in the vicinity of the dredge
9 18Mar	0455	N30 43 36 W81 22 53	0759	N30 43 25 W81 21 29	Flood	25	116° 2.9	_____	_____	Pulled up nets b/c sub passing through *sweeping to clear turtles in the vicinity of the dredge
10	0817	N30 43 17 W81 21 51	1044	N30 42 35 W81 21 44	Ebb	35	224° 2.6	_____	Horseshoe crabs, sponge	Bottom snag – pulled in gear *sweeping to clear turtles in the vicinity of the dredge

Date: 18Mar-19Mar 2011 Dredge Site: Fernandina Channel Dredge: Terrapin Island

Trawler: Cheryl Lynn Biologist(s): Roxanne Carter & Jessica Pfundston Capt(s): Carl Moore

Tide (Time, High/Low): 18March 0147L Hrs, H/L 0743H Hrs, H/L 1412L Hrs, H/L 2009H Hrs, H/L

19March 0242L Hrs, H/L 0834H Hrs, H/L 1301L Hrs, H/L 2101H Hrs, H/L

Water Temp: 61 °F Air Temp: 56-77 °F Wind Spd / Dir: 4-10kts Wave Ht: 1-3 ft Bottom Type: Mud Station #'s: _____

Tow #	Start Time	Start Lat / Long	Stop Time	Stop Lat / Long	Tide: Ebb / Flood	Water Depth	Vessel Heading / Speed	Turtles ? Sturgeon ? Species ?	By - Catch	Comments (change in weather or water temp, net damage, etc.)
11	1111	N30 42 40 W81 21 37	1648	N30 42 41 W81 21 38	Ebb-Flood	50	271° 2.6	_____	Horseshoe crabs, jellies	*sweeping to clear turtles in the vicinity of the dredge
12	1701	N30 42 41 W81 21 41	2344	N30 42 52 W81 21 38	Flood-Ebb	46	286° 3.0	_____	Jellies	Bottom snag *sweeping to clear turtles in the vicinity of the dredge
13 19Mar	0115	N30 42 29 W81 22 20	0735	N30 43 22 W81 23 02	Flood	39	171° 2.7	_____	bluecrabs	*sweeping to clear turtles in the vicinity of the dredge
14	0740	N30 42 40 W81 22 28	1148	N30 42 52 W81 22 47	Ebb	38	276° 2.5	_____	jellies	Job end *sweeping to clear turtles in the vicinity of the dredge
15										
16										
17										
18										
19										
20										