

DRAFT FINAL REPORT

**THE MONITORING AND MITIGATION OF IMPACTS
TO PROTECTED SPECIES DURING BEACH RESTORATION
AT MYRTLE BEACH, SOUTH CAROLINA**

Submitted To:

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INTRODUCTION

Coastwise Consulting, Incorporated (CCI) provided Great Lakes Dredge & Dock Company with the required monitoring and mitigation of impacts to endangered and threatened species during the dredging operations at the Myrtle Beach Shore Protection Project. . The sea turtle species that could be encountered in this area during the winter include the loggerhead (*Caretta caretta*), the Kemp's ridley (*Lepidochelys kempi*) and the green (*Chelonia mydas*). The cetacean species likely to be encountered include the bottlenose dolphin (*Tursiops truncatus*) and the right whale (*Eubalaena glacialis*).

Hopper dredging was closely monitored for indications that any of the listed species were impacted. This was aided by the fact that GLDD dredges are equipped with some of the most effective screening systems in the industry. The operators of the dredge and the support vessels were thoroughly briefed on right whale behavior and biology, as well as, the mandated modes of vessel/dredge operation when right whales were sighted within 15 nautical miles of the project area.

The *Padre Island* and *Dodge Island* were on site as follows:

Padre Island 11/14/07 – 12/07/07
Dodge Island 11/17/07 – 12/07/07

Padre Island 12/31/07 – 02/18/08
Dodge Island 12/31/07 – 02/16/08

Padre Island 03/07/08 – 03/23/08
Dodge Island 03/07/08 – 03/23/08

Padre Island 08/14/08 – 01/08/09
Dodge Island 08/28/08 – 01/07/09

HOPPER DREDGE MONITORING

The Great Lakes Hopper dredges *Padre Island* and *Dodge Island* were used for dredging at the Myrtle Beach Shore Restoration Project. During dredging operations endangered species observers, approved by the National Marine Fisheries Service, provided twenty-four hour monitoring of impacts to endangered and protected species, particularly sea turtles. During the months of January and February, all monitoring effort was directed at detecting whales and turtle monitoring wads suspended.

Rigid turtle deflectors were installed on the dragheads before work began and all points of inflow were screened before the observers board the dredge(s). Inflow occurs on these Great Lakes *Island* dredges at the end of four pipes, two of which empty into the forward section of the hopper, port and starboard, and two of which discharge at the aft end of the hopper, port and starboard. Cages are attached directly to the ends of the discharge pipes and are constructed of steel bar-stock, welded in a grid pattern, with openings of approximately 4" x 4". Observers gain access into the top of these cages through hinged trap doors. The aft walls of the cages are hinged and can be opened by hydraulic rams in order to clear the cages of debris after inspection by observers.

Observers cleaned and inspected this screening, around-the-clock, in order to document any evidence of turtle take. Before cleaning and inspecting the screens, the observers checked the dragheads and turtle deflectors. Load sheets were completed at the end of each load cycle, detailing everything found in the screening or the dragheads, as well as the condition of the screens and the deflectors. Also recorded was the start, end and pump times for each load, the specific location of the dredging area, the type of material being dredged, weather, tide and water temperature data (surface and mid-depth), and any other pertinent information.

Observers maintained a bridge watch for protected species and noted all sightings of turtles and marine mammals. All sightings were summarized on the Daily Reports. Sightings data included date, time, location, species, number of animals, distance and bearing from dredge, direction of travel and any other information available. Daily Reports and Weekly Summaries were filed with Great Lakes.

Had there been a turtle take or suspected take, observers follow the following protocol: Photograph and measure samples. Samples which are not positively identified are frozen in the ship's freezer for later analyses. Samples are then sent ashore to be handled by the local Sea Turtle Salvage and Stranding Network (STSSN). A small piece of tissue from all turtles taken will be preserved in DMSO for later genetic analyses (see Appendix 1). Injured but living turtles are delivered to a facility that can provide rehabilitation to injured turtles.

RESULTS

Hopper Dredge Monitoring

Over the course of this project there were approximately 400 “dredge days” (one dredge, 24-hours per day) and almost 1600 loads were monitored. There were no incidents involving marine mammals. Groups of 1-20 bottlenose dolphin were regularly sighted in the project area. Two turtles were taken, both loggerheads. The Padre took one turtle on 09/21/08 and the Dodge took one on 11/20/08.

SEE ATTACHED EXCEL FILE

DISCUSSION

The crews of both dredges were diligent in the operation of their vessels and the proper attention to draghead handling may have contributed to the low number of takes over so many days of dredging. The field personnel with Great Lakes Dredging are always a pleasure to work with, providing as much support for environmental concerns as possible. The Charleston District’s Environmental Brand likewise provides all the support necessary to do a proper job of monitoring impacts to endangered species preventing harm to those species.