

FINAL REPORT

The Monitoring And Mitigation Of Impacts To Protected Species During Dredging At The Duval County Shore Protection Project

INTRODUCTION

Coastwise Consulting, Incorporated (CCI) provided Bean Stuyvesant with the required monitoring and mitigation of impacts to endangered and threatened species during the dredging operations at the Duval County Shore Protection Project from 06/10/05 – 08/07/05. The most commonly encountered endangered or protected species in this area is the loggerhead sea turtle (*Caretta caretta*). Several other species less likely to be encountered include the sea turtle species Kemp's ridley (*Lepidochelys kempii*), green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*) and leatherback (*Dermochelys coriacea*). Monitoring efforts were principally directed toward detecting impacts to the above species.

While several marine mammal species may be encountered during the summer months, principally the bottlenose dolphin (*Tursiops truncatus*), none of the activities undertaken by Bean Stuyvesant was expected to have an adverse effect on these species. Precautions were required regarding manatees (*Trichechus manatus*). While manatees were not likely to be encountered near the work site, they congregate near inshore grassbeds, structures where macro-algae proliferates (seawalls), sources of fresh water, such as creeks and water hoses at marinas. All Bean support vessels near these areas were directed to use caution.

Only two incidents were documented involving protected species. On 06/22/05, the moderately decomposed flipper of a loggerhead was recovered from the port draghead of the dredge and on 07/03/05 the fresh head of a loggerhead was recovered from the inflow screening.

METHODOLOGY

During dredging operations there were two endangered species observers, approved by the National Marine Fisheries Service, aboard the dredge *Eagle I*, to provide twenty-four hour monitoring of impacts to endangered and protected species, particularly sea turtles.

Rigid turtle deflectors were installed on the dragheads before work began and all points of inflow were screened before the observers boarded the dredge.

Inflow occurs on the *Eagle I* 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.

The observer on duty thoroughly cleaned and inspected all screening before each load was dumped. Before cleaning and inspecting the screens, the observer checked the dragheads and turtle deflectors. This will be done immediately after the dragheads were secured on deck. Data sheets were completed at the end of each load cycle, detailing everything found in the screening or the dragheads. The condition the screens and the deflectors was also recorded. Precise records were kept of 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 maintain a bridge watch for protected species and kept a logbook of all sightings of turtles and marine mammals.

The observers photographed the samples involved in the documented turtle incidents and recorded all pertinent data associated with the samples. Genetic samples were collected from each turtle piece. The Bean Dredging field office, the USACE, Jacksonville District and Coastwise Consulting were notified by telephone immediately after each incident.

RESULTS

The dredge Eagle I worked from 06/10/05 – 08/07/05. Over the course of 58 dredge days, 271 loads were dug and 2 turtle incidents were recorded. The water temperature ranged from 24.4 C – 28.8 C, over the course of the project.

- 06/22/05 Moderately decomposed loggerhead flipper recovered from draghead.
Load 57, 0221 hours local. Dig site N30° 21.3 x 081° 15.9
Water temperature 24.7 C
- 07/03/05 Fresh head, carapace frags of a loggerhead recovered from inflow screening.
Load 103, 1515 hours local. Dig site N30° 21.3 x 081° 15.9
Water temperature 26.1 C