Aerial Surveys for assessing marine mammals and sea turtles in the region of the Mississippi Canyon 252 incident

Background

On 28 April, the Southeast Fisheries Science Center initiated a series of aerial surveys to assess the marine mammal and sea turtle species occurring within areas likely to be affected by oil from the Mississippi Canyon 252 (MS252) incident. There were two primary survey components. First, helicopter flights based in Houma, LA were executed to document the presence of marine mammals and sea turtles close to the site and within the oil slick itself. These surveys were designed on an adaptive basis to track the oil slick and support planning for mitigation efforts. Second, broad-scale synoptic surveys were conducted aboard the NOAA Twin Otter. These flights occurred over coastal and continental shelf waters between eastern Louisiana and Pensacola Bay, Florida. The surveys were conducted along line transects, and data were collected to provide information on the distribution and abundance of marine mammals and sea turtles in the area prior to oil impacts.

The helicopter flights demonstrated the occurrence of many species of marine mammals within the oil slick or close to the site of the incident. These included sperm whales, striped dolphins, spinner dolphins, and a Cuvier's beaked whale. Loggerhead sea turtles were also sighted near the incident site. This platform also conducted surveys along a convergence zone near the Mississippi River delta where very high densities of bottlenose dolphins, loggerhead turtles, and Kemp's ridley turtles were observed. The Twin Otter flights documented high densities of Kemp's ridley and loggerhead turtles just outside of Chandeleur Sound and on the outer continental shelf. Leatherback turtles were also sighted in these waters. Bottlenose dolphins were also observed throughout the survey area along with Atlantic spotted dolphins on the outer continental shelf and Risso's dolphins and pantropical spotted dolphins in deeper water near the incident site.

In combination, these two survey efforts provide baseline information on the marine mammals and sea turtles occupying the region and assess initial exposure to oil from the incident. We propose to continue both survey efforts with the goal of monitoring exposure to oil and dispersants and marine mammal sea turtle spatial distribution and abundance. These surveys will provide information in support of NRDA goals by documenting both animal exposure to the oil and by quantifying initial impacts on local populations.

Survey Methods

The helicopter flights will continue to focus on the deep water areas near the incident site and in regions directly affected by oil. The helicopter will carry 2-3 trained observers and will fly at an altitude of 600 feet at speeds <100 knots. The trackline of the survey will be designed on an adaptive basis to respond to changes in the location of the oil slick near the incident site. Data will be recorded on the location, numbers, and identification of each marine mammal and turtle sighted. All animals will be documented with still photographs and video to the greatest extent that conditions allow. Video will be used to document behavior. These observations will be georeferenced and time-stamped. Flights will occur when winds near the spill are <20 knots. The initial target is 3 flights per week but the schedule is flexible due to weather and the nature and effectiveness of oil spill response actions. Flexibility in these localized, targeted flights are necessary to respond to the dynamic nature of the spill.

The twin otter flights will be conducted along predetermined tracklines focusing on the coastal waters including Mississippi Sound, Chandeleur Sound, and Barataria Bay and adjacent continental shelf waters. The surveys will be conducted at 600 feet and a speed of 100 knots. The survey team consists of 3 observers and a data recorder. Two observers will be stationed at bubble windows in the forward part of the aircraft that allow visibility directly beneath the aircraft. A third observer will be stationed in a downward looking belly window. Data are entered into an computer data entry program that continuously records location, environmental conditions (e.g., sea state, water color, glare), and sea surface temperature from an optical probe. All marine mammal and sea turtles sightings will be recorded along with sightings of birds, fish, and vessels. The occurrence and appearance of oil will also be recorded. The data will be collected in a manner to allow estimation of the absolute abundance of observed species in the survey area. Flights will be conducted over 3-4 days at intervals of every two weeks. Flights will be limited to days when winds are <15 knots.

Outcomes

The helicopter flights will directly document the exposure of the diverse marine mammal community of the Mississippi canyon area to impacts from the oil spill. In addition, the flights will allow documentation of acute adverse effects, if any, through behavioral changes or distribution shifts. Data collected from the Twin Otter flights will allow quantitative estimation of the abundance and spatial distribution of marine mammals and sea turtles within the surveyed area. These data can be used to infer broadscale changes in population size or shifts in spatial distribution and thereby directly quantify potential impacts of the incident on these protected species.

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Approval of this work plan is for the purposes of obtaining data for the Natural Resources Damage Assessment. Parties each reserve its right to produce its own independent interpretation and analysis of any data collected pursuant to this work plan.

APPROVED:

Federal Trustee Representative: Date 5/14/10

BP Representative: Date 5/15/2010

Budget

Project duration: 17 May – 31 July (10 weeks)

Helicopter Flights: Budget for 35 flight days during project period, 4 hour flight duration

Aircraft daily costs: 4 flight hr @ $800 x 35 days:	$112,000
Observer Labor: 3 observers @ $600 per day x 70 days:	126,000
Observer Travel Per Diem: 3 Observers @$200 per day x 70 days:	42,000
Sub-total: Helicopter surveys	$280,000

Twin Otter Flights: Budget for 25 flight days during project period, 6 hour flight duration

Aircraft daily costs (incl. pilot travel and per diem): $4500 x 25 days:	$112,500
Observer Costs: 4 observers @ $500 per day x 70 days:	140,000
Observer Travel Per Diem: 4 observers @ $200 per day x 70 days:	56,000
Sub-total: Twin Otter Surveys	$308,500

Project Management and Data Analysis	
4 months labor x 2 people (NMFS FTE):	$ 86,700
Project Total:	**$654,200**