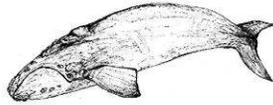


May 17, 2002

Cruise Results  
NOAA Fisheries Research Vessel Albatross IV  
Cruise No. AL - 02-05  
Northern Right Whale Survey



### **Cruise Period and Area**

The survey was conducted aboard the NOAA *R/V Albatross IV* from 29 April to 17 May, 2002. It started from and returned to Woods Hole, Ma. The southern border of the study area included Great South Channel, which is also the southern most portion of the Great South Channel Right Whale Critical Habitat area. The northern border included the waters of Cashes Ledge and Platts Bank in the northwestern part of the Gulf of Maine, and, in the east, extended to Cultivator Shoal and Georges Shoal (northwest Georges Bank).

### **Objectives**

The primary objectives of the cruise were to conduct marine mammal observations from the near-shore waters out to the Gulf Stream and throughout the Gulf of Maine. Specific goals included: (1) photographing and biopsy sampling large cetaceans (North Atlantic right whales) for individual identification; (2) running transect lines to determine cetacean distribution; (3) support the Dynamic Area Management (DAM) and Seasonal Area Management (SAM) fishery closure for the protection of North Atlantic Right Whales and their habitat; (4) provide support for the Right Whale Sighting Advisory System (SAS) and, if necessary, (5) provide support for the Center for Coastal Studies disentanglement team.

Operations during this cruise were coordinated with concurrent Northeast Fisheries Science Center (NEFSC) and Center for Coastal Studies (CCS) aerial surveys that were being flown simultaneously in the same area.

### **Survey Methods**

Aboard the *R/V Albatross IV* the marine mammal survey was conducted at a speed of 10 knots. Survey operations were conducted during daylight hours (0800-1700) and sometimes later (19:30) if weather conditions permitted. The survey was conducted along non-random track lines. The determination of track lines was based on the location of right whales and environmental factors (i.e., direction of the sun/glare; wind direction and sea state).

During survey operations scientific personnel formed a single sighting team of three observers. Two individuals searched from the port side and starboard side of the bridge deck, observing from the bow to amidships using 10X50 binoculars. The third member of the team was positioned in the middle as data recorder. The recorder also scanned the waters using both



naked eye and hand-held binoculars. While on watch, observer positions were rotated every 30 minutes. When right whales were sighted, the *R/V Albatross IV* broke track to facilitate species identification, reduced speed to conduct photo-identification of individuals and determine the total number of right whales in an area. Upon request of the Chief Scientist, the *R/V Albatross IV* crew deployed a rigid-hull inflatable boat (RHIB) with three or four members aboard to collect photo identification and biopsy samples. The decision concerning deployment depended upon weather conditions and the numbers, species, and movements of the

encountered whales. Photo identification and biopsy samples were obtained from right whales and sei whales.

During this 19 day cruise, the *R/V Albatross IV* transected regions of the Gulf of Maine where North Atlantic right whales had been reported recently, historically, or on a real-time basis with the assistance of aerial survey platforms in the region. During the first week of the cruise, the *R/V Albatross IV* transected the waters of the Northwestern Gulf of Maine including; Wild Cat Knoll, Wilkinson Basin, Fippennies Ledge, Cashes Ledge, Three Dory Ridge and Platts Bank. The later half of the cruise transected the waters east of Cape Cod, Great South Channel and western Georges Bank. The scientific party consulted with NEFSC and CCS aerial survey efforts to determine the presence of right whale concentrations. Depending on these reports, the vessel would either steam for regions of reported whale concentrations; conduct line transect surveys to search for right whales; or search for right whales in support of DAM and SAM closures. Weather (Beaufort >3) and daylight conditions were the only limiting factors for the team to conduct small boat operations which coincided with sightings of right whales.



### **Photographic and biopsy sampling methods**

Photographs were taken with a 35 mm camera equipped with an autofocus zoom or telephoto lens, power winder and either 400 ASA or 200 ASA color slide film. Individual identity was documented using the following natural or acquired characteristics: dorsal fin shape and scarring (sei whales), and callosity pattern and scarring (right whales).

Skin biopsies were taken with a 70-kg-draw crossbow and a specially designed sampling dart (See Palsboll et al. 1991). Each biopsy sample was divided three ways: (i) 1/3 frozen archived at the NEFSC; (ii) part of the dermis and epidermis into DMSO for genetics; and (iii) remaining skin frozen for stable isotope analysis.

During biopsy operations, the *R/V Albatross IV* assisted with visual monitoring of animals

from the flying bridge. The *R/V Albatross IV* was also requested to approach large whale species for individual identification and biopsy (i.e. without launching a RHIB).

### **Additional methods for data collected**

The position (latitude/longitude), date, time, speed, course, temperature, depth and other variables were obtained from the ship computer system (SCS), to be interfaced with two portable computers. These data were routinely collected every minute during survey operations. Sightings and effort data were recorded using a hand-held at-sea data entry system called "pingle". All marine mammal sightings included; event number, observer name, date, time, species, best, high, low count for number of animals, bearing to the ship, animal's swim direction, presence or absence of calves in group, distance from *R/V Albatross IV*, animal's behavior, cue to sighting the animal, and any additional comments.

All effort data included; date, time, event, platform, staff at each position, magnification used for observations, cloud cover, weather, sun and glare (vertical and horizontal angle of the sun, angle/location to ship, glare width and intensity), transect number, Beaufort, visibility, sea state (swell height and angle to the ship).

All observers reviewed and edited effort and sightings data on a daily basis. Copies of the original and edited versions of the collected data are maintained by the NEFSC.

Northern right whales: When northern right whales were encountered, and if the scientific party was unavailable, bridge officers were requested to observe and collect data per the protocols described in the NEFSC Sighting Network Manual, dated 9 October 1997.

Data Management: Sightings and oceanographic data will be processed and computerized at the NEFSC Laboratory at Woods Hole, Massachusetts. Biopsy and tissue samples will be archived at the NEFSC until the appropriate processing organization is identified. Tissue collection and distribution are conducted under authority of MMPA and ESA Research Permits #775-1600-2 (mammals) and #1295 (turtles).

ROSCOP 3 forms (IOC SC-90/WS-23) will be completed and forwarded to NODC, Washington, DC. A cruise report, and a completed "Ship Operations Evaluation Form," will be submitted to the NEFSC Vessel Coordinator within 20 days following the completion of the cruise.

## **Results**

### **Area covered**

The southern border of the study area was the southern most part of Great South Channel, which is also the southern most portion of the Great South Channel Right Whale Critical Habitat area. The northern border included the waters of Cashes Ledge and Platts Bank in the northwestern part of the Gulf of Maine, and bordered in the east by Cultivator Shoal and Georges Shoal (northwest Georges Bank). During the 19 days, 7 days were spent anchored or tied to the Woods Hole dock due to gale force winds. Over 800 miles were surveyed in the remaining 12

days (Figure 1).

### Right Whale Sightings

All right whale sightings were reported to the Right Whale Sighting Advisory System (SAS). Daily SAS reports were submitted via email and cell phone and supported DAM and SAM area closures. This cruise generated 9 SAS reports. Right whales were sighted from the *R/V Albatross IV*; April 30<sup>th</sup>; May 1<sup>st</sup>; 2<sup>nd</sup>; 4<sup>th</sup>; 5<sup>th</sup>; 6<sup>th</sup>; 8<sup>th</sup>; 11<sup>th</sup>; 12<sup>th</sup>. The total number of right whales sighted was 63. The best number of individuals photographed will be determined after photo-analysis is completed.

### **Efforts to locate/relocate Entangled Right Whale #1424**

The *R/V Albatross IV* provided additional effort to relocate an entangled right whale (#1424) on two occasions (May 6<sup>th</sup> and May 12<sup>th</sup>). However, due to strong winds and high sea state, no effort was made to attach a satellite tag or to disentangle the animal.

### **Biopsy sampling and protocol**

Six right whale biopsies were collected during this cruise. All right whales were photographed for individual identification purposes. Tim Frasier (McMaster University) determined, via the right whale catalogue/database, whether or not the individual had been previously biopsied. Pre and post biopsy behavior was collected on all biopsy attempts. No reaction was documented during the seven attempts, six hits, and six samples collected on the targeted right whales. The final disposition of samples is as follows: all biopsy samples were divided into three parts 1) genetics to Tim Frasier, McMaster University. 2) Stable isotopes research by Dr. Sean Todd, College of the Atlantic, Bar Harbor, Maine. 3) archive sample maintained at the Protected Species Branch at the NEFSC.

### **Other cetaceans sightings**

Table 1. Sightings of cetaceans from *R/V Albatross IV* AL02-05, 29 April to 17 May 2002. "Number" represents the sum of the "best estimates" for each sighting. Number photo-identified is preliminary and will be updated when photo analysis is complete.

Species	Number	Photo-ID'd	Biopsied
<i>Eubalaena glacialis</i>	63	25+	6
<i>Megaptera novaeangliae</i>	121	-	-
<i>Balaenoptera physalus</i>	71	-	-
<i>Balaenoptera borealis</i>	31	4	-
<i>Balaenoptera acutorostrata</i>	8	-	-
<i>Lagenorhynchus acutus</i>	551	-	-
<i>Phocoena phocoena</i>	1	-	-
Fin/sei undetermined	4	-	-
Unidentified dolphin	2	-	-
Unidentified large whales	66	-	-
<b>TOTAL</b>	<b>918</b>	<b>29</b>	<b>6</b>

### **Disposition of the photographic data**

All right whales photographed during the cruise will be submitted to the Right Whale Catalogue maintained at New England Aquarium, Boston, Massachusetts.

### **PERSONNEL (SCIENTIFIC)**

29 April - 17 May 2002

<u>Name</u>	<u>Title</u>	<u>Institution</u>
1. Frederick Wenzel	Chief Scientist	NMFS, NEFSC, Woods Hole, MA
2. John Nicolas	Marine Mammal Spec.	NMFS, NEFSC, Woods Hole, MA
3. Janeen Quintal	Computer Asst.	NMFS, NEFSC, Woods Hole, MA
4. Desray Reeb	Marine Mammal Spec.	WHOI, Woods Hole, MA
5. Joy Lapsertitis	Marine Mammal Spec.	WHOI, Woods Hole, MA
6. Tim Frasier	Geneticist	McMaster Univ.
7. Caroline Harper	Guest Investigator	WHOI, Woods Hole, MA



### **References**

Palsboll, P.J., F. Larsen and E.S. Hansen. 1991. Sampling of skin biopsies from free ranging large cetaceans in West Greenland: Development of new biopsy tips and bolt designs. In International Whaling Commission Special Issue 13 SC/S89/Gen26 pp. 71-79.

### **Acknowledgment**

A special thank you to the officers and crew of the *R/V Albatross IV* for making this right whale research cruise such a success. We would also like to acknowledge the pilots and observers of the Center for Coastal Studies aerial survey teams and the Northeast Fisheries Science Center NOAA 57 and Grumman Goose aerial survey teams for their assistance in locating congregations of right whales during this cruise.

Figure 1. Tracklines from Cruise No. AL - 02-05 Northern Right Whale Survey

