

# CRUISE RESULTS

NOAA Ship *ALBATROSS IV*  
Cruise No. AL IV 06-08 (Parts I-II)  
Sea Scallop Survey

**Submitted to:** NOAA, NEFSC

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### CRUISE PERIOD AND AREA

The cruise period was 13 July - 11 August 2006 and was divided into two parts. Part I was from 13 - 28 July; Part II, 31 July - 11 August. The area surveyed was from North Carolina to Georges Bank. Sampling depths ranged from 28 to 110 meters (15 to 60 fathoms). Approximate station locations are shown in Figures 1 and 2.

### OBJECTIVES

The objectives of the survey were to: (1) determine the distribution and relative abundance of the sea scallop, *Placopecten magellanicus* and Iceland scallop, *Chlamys islandica*; (2) collect biological samples and data relative to assessment needs; (3) monitor hydrographic and meteorological conditions; (4) collect biological samples requested by scientists at various research institutions and laboratories; (5) determine bottom contact of the research scallop dredge using a deployable inclinometer sensor; (6) conduct two paired dredge hauls with a commercial scallop vessel (Kathy Marie) deploying an underwater towed camera array designed to count and measure scallops; (7) quantify the selectivity and catchability of the scallop dredge with and without rock chains; (8) collect Paralytic Shellfish Poisoning (PSP) samples.

### METHODS

Operations and gear for cruise AL IV 06-08, Parts I and II conformed with the Cruise Instructions for the Sea Scallop Survey, dated 5 July 2006 with the following exceptions: Leg I left three days late due to ship ventilation problems.

Pre-selected random stations were sampled using a standard 2.44 meter (8') wide New Bedford type scallop dredge rigged with 5.1 cm (2 inch) diameter rings and lined with at 3.8 cm (1½ inch) polyethylene stretched mesh liner. Tow duration was 15 minutes; tow speed was 3.8 knots

and the dredge was fished using a 3:1 wire out to depth scope. A recording inclinometer was mounted on the dredge to collect bottom contact time data. Tow distance was recorded using differential GPS.

The entire catch was sorted at each standard station into biological and habitat components. Live whole and clapper shells of both sea and Iceland scallops were measured on Limnoterra boards to the nearest millimeter. Selected fish species caught incidentally in the dredge were also measured to the nearest millimeter. Weights and total numbers were recorded for all other fish species at each station. Cancer crabs and starfish weights and total numbers were recorded at every third station. Habitat portions were estimated by volume and discarded.

Surface temperatures were measured using the hull-mounted temperature sensor at a depth of three meters and logged by the Scientific Computer System (SCS) at all stations. Temperature and conductivity profiles were made at approximately every third station using a conductivity, temperature, and depth instrument (CTD). A bottom salinity sample was obtained twice a day to calibrate the CTD. Water samples were also taken for fluorometer calibrations. GMT time was used throughout the survey.

## RESULTS

There were a total of 536 stations occupied during the cruise with 294 and 242 dredge hauls made on Parts I and II respectively. There were a total of 6 occurrences of dredge flips (stations were retowed in most cases). Bottom temperatures were collected at 169 stations using the CTD system. Bottom water samples for CTD calibration were taken at 40 stations. During Part II, there were a total of 17 paired rock chain dredge hauls conducted. These were considered part of the ongoing project to develop a calibration factor in the Great South Channel. These pairs will be used in the future to expand the use of the rock chain dredge during the standard scallop survey. There were (XX) non-random tows added to the set of station selections with three distinct purposes. There were 11 non-random stations added to strata 13, 17, and 21 for the purpose of expanding our scallop sampling coverage inshore in the Mid-Atlantic in depth to 40 meters. These strata have historically not been sampled. A second set of non-random stations were added to the North East corner of the Lightship closed area to increase survey precision. A third set of non-random stations was selected in various locations across the continental shelf for the purpose of verifying and improving data on scallop growth rates. These are annually repeated sites in all the closed areas where recent catches have shown large concentrations of smaller individuals that could be monitored over several survey years. Table 1 lists the major samples collected for various studies.

## DISPOSITION OF DATA

Catch data and hydrographic data will be analyzed at the NEFSC Laboratory in Woods Hole, Massachusetts. The various collections were forwarded to researchers listed in Table 1. Resulting data will be audited, edited, and archived in an Oracle database.

## SCIENTIFIC PERSONNEL

### National Marine Fisheries Service, NEFSC , Woods Hole, MA

Victor Nordahl, Chief Scientist<sup>2</sup>

Stacy Rowe, Chief Scientist<sup>1</sup>

Larry Brady<sup>1</sup>

William Duffy<sup>1</sup>

Devorah Hart<sup>2</sup>

Alicia Long<sup>1</sup>

Sean Lucey<sup>1,2</sup>

Kevin McIntosh<sup>2</sup>

Yvonna Rowinski<sup>1,2</sup>

Nina Shepherd<sup>2</sup>

### National Marine Fisheries Service, NERO, Gloucester, MA

Ryan Silva<sup>2</sup>

### National Marine Fisheries Service, Science & Tech., Silver Spring, MD

Theresa Turk<sup>2</sup>

### Contractors, Integrated Statistics, Woods Hole, MA

Wesley Dukes<sup>1</sup>

Jakub Kircun<sup>1</sup>

Katey Marancik<sup>2</sup>

### Volunteers

Amanda Bazinet<sup>1,2</sup>

Patricia Connor<sup>2</sup>

Linda Depro<sup>2</sup>

Kenneth Houghton<sup>1</sup>

Joel Jaroch<sup>1</sup>

Loukea Kouvanis<sup>2</sup>

Neven Popovic<sup>2</sup>

Laurence Reeves<sup>1</sup>

David Riddle<sup>1</sup>

USCGA, New London, CT

W. Genesee Middle School, Camillus, NY

Salisbury Elem. School, Gap, PA

Silver Spring, MD

Overbrook Ed. Center, Philadelphia, PA

Fenton, MI

Rockville, MD

Thetford Center, VT

Polk County Middle School, Mill Spring, NC

<sup>1</sup>13 - 28 July

<sup>2</sup>31 July - 11 August

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Table 1. Special samples obtained for various investigators on NOAA Ship ALBATROSS IV Cruise 06-08, Sea Scallop Survey, during 13 July - 11 August 2006.

<b>Investigator and Affiliation</b>	<b>Samples Saved</b>	<b>Approximate Number</b>
John Burnett, NMFS, NEFSC, Woods Hole, MA	Goosefish illicia	37 indiv.
Michael Fine, Virginia Commonwealth Univ., Richmond, VA	Fawn cusk-eel	174 indiv.
John Galbraith, NMFS, NEFSC, Woods Hole, MA	Various species	20 indiv.
Devorah Hart, NMFS, NEFSC, Woods Hole, MA	Scallop shells/meat weights	1538/1317 indiv.
	Diseased scallop	10 indiv.
	Tagged scallop	9 indiv.
	<i>Asterias</i> spp.	1551 indiv.
	<i>Astropecten</i> spp.	9 bags
	<i>Leptasterias</i> spp.	1 indiv.
William Kramer, NMFS, NEFSC, Woods Hole, MA	Sea scallops	55 indiv.
Anne Richards, NMFS, NEFSC, Woods Hole, MA	Goosefish vertebrae	1 indiv.
Kathy Sosebee, NMFS, NEFSC, Woods Hole, MA	Various skates	645 indiv.
Richard Taylor, WHOI, Woods Hole, MA	Sea scallops	1177 indiv.



