

2 May 2005

## CRUISE RESULTS

NOAA FRV ALBATROSS IV  
Cruise No. AL 02-08 (Parts I-II)  
Sea Scallop Survey

### CRUISE PERIOD AND AREA

The cruise period was from 15 July-16 August 2002 and was divided into two parts. Part I was from 15-26 July; Part II, 29 July-16 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) make biological collections for interested scientists at various institutions and laboratories; (5) determine tow distance and angle change from inclinometer sensor; (6) conduct experimental comparison dredge tows between a modified standard dredge rigged with rock chains and one without rock chains; and (7) fully implement the Fisheries Scientific Computer System (FSCS).

### METHODS

Operations and gear for cruise AL 02-08, Parts I, II, conformed with the Cruise Instructions for the Sea Scallop Survey, dated 30 May and ADDENDUM NUMBER 1 dated 15 July, ADDENDUM NUMBER 2, dated 26 July with the following exceptions: during Part II on 30 July, a scientist was taken off the ship by the Coast Guard for medical attention; during Part II on 3 August, another scientist was taken off the ship by the Coast Guard for medical attention; during Part II, on 13 August, the Albatross IV returned to Woods Hole to refuel and to exchange some of the scientists. The vessel left that same morning to continue the survey.

Pre-selected random stations were sampled using a standard 2.44 meter (8 foot) wide New Bedford type scallop dredge rigged with 5.1 cm (2 inch) diameter rings and lined with a 3.8 cm (1½ inch) polypropylene 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.

During Part II, some experimental paired dredge comparisons were conducted to detect differences in scallop catches in both total numbers and length frequencies, between a rock chain dredge and a standard dredge. The rock chain dredge was a standard NEFSC dredge rigged with a rock chain configuration based on industry advice. The sequence of dredge tows were conducted in a traditional "A,B,B,A" sampling scheme.

The entire catch was sorted at each standard station into biological and trash components. Live whole and clapper shells of both sea and Iceland scallops were measured in five-millimeter length intervals. Fish species caught incidentally in the dredge were measured to the nearest centimeter. Weights and total numbers were recorded for cancer crabs and starfish to determine predator/prey relationships. Trash portions were estimated by volume and discarded. Data was recorded on paper logs as well as in the Fisheries Scientific Computer System (FSCS).

Surface temperatures were measured using the hull-mounted temperature sensor at a depth of three meters and displayed by the Scientific Computer System (SCS) at all stations. Temperature and conductivity profiles were made at approximately every third or fourth 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 535 stations occupied during the cruise with 164, and 371 dredge hauls made on Parts I and II respectively. There were a total of 30 flips (stations were retowed in most cases). There were 22 scallop dredge comparison tows conducted during leg II of the standard scallop survey. Bottom temperatures were collected at 144 stations using the CTD system. Bottom water samples for CTD calibration were taken at 47 stations.

Dredge data was entered into the Fisheries Scientific Computer System (FSCS). 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 the NEFSC Fisheries Scientific Computer System database.

## SCIENTIFIC PERSONNEL

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

Nancy McHugh, Chief Scientist<sup>1</sup>

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

Larry Brady<sup>2</sup>

Genoa Elder<sup>1</sup>

Devorah Hart<sup>1,2</sup> (13-16 August)

William Kramer<sup>2</sup> (13-16 August)

Stacy Rowe<sup>2</sup>

Nina Shepherd<sup>1,2</sup> (13-16 August)

Mary Woodruff<sup>2</sup> (29 July-3 August, 13-16 August)

### National Marine Fisheries Service, NEFSC, Narragansett, RI

Karen Tougas<sup>1</sup>

### NMFS, NERO, Hampton, VA

George Mattingly<sup>1</sup>

### Virginia Institute of Marine Sciences, Gloucester Point, VA

Andrew Walker<sup>1,2</sup> (29 July-13 August)

### North Carolina A&T University, NC

Barker Barker<sup>2</sup>

### Teacher-at-Sea Program

Casey Ross<sup>1</sup>

Erica Stafne<sup>2</sup>

Port Sanilac, MI

San Clemente, CA

### General Contractors

Kevin McIntosh<sup>2</sup> (13-16 August)

Avis Sosa<sup>1</sup>

Catherine Tadema-Wielandt<sup>2</sup>

Woods Hole, MA

Jakarta, Indonesia

Marshfield, MA

### Volunteers

Hannah Agoston<sup>2</sup>

Allison Clark<sup>2</sup> (7-29-8-13)

James Behm<sup>1</sup>

Joseph Benzing<sup>1</sup>

Robert LaFrance<sup>2</sup> (29 July-13 August)

Ryan Langnickel<sup>1</sup>

Danielle Mandracchia<sup>2</sup>

Arvada, CO

Findlay, OH

Portland, ME

Canton, MA

North Adams, MA

Astoria, NY

Karen Saur<sup>2</sup>  
Augustina Ursino<sup>2</sup>

Bayside, NY  
Carmel, CA

<sup>1</sup>15-26 July  
<sup>2</sup>29 July-16 August

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Table 1. Special samples obtained for various investigators on FRV ALBATROSS IV  
Cruise 02-08, (I-II), Scallop Survey, during 15 July-16 August 2002.

Investigator and Affiliation	Samples Saved	Approximate Number
Aquarium, NMFS, NEFSC, Woods Hole, MA	Live snake eel	1 indiv.
	Live blunthead puffer	1 indiv.
William Bemis, Univ. of Amherst, Amherst, MA	Misc. species	7 indiv.
John Burnett, NMFS, NEFSC, Woods Hole, MA	Sea scallop valves	1,369 samples
	Goosefish vertebrae	81 samples
Peter Clarke, Rutgers University, Tuckerton, NJ	YOY goosefish	186 samples
John Galbraith, NMFS, NEFSC, Woods Hole, MA	Unidentified species	14 indiv.
Hannah Goodale, NMFS, NEFSC, Gloucester, MA	Sea scallop shells	2 bags
Devorah Hart, NMFS, NEFSC, Woods Hole, MA	Starfish	194 samples
Ken Halanych, WHOI, Woods Hole, MA	Waved whelk	629 samples
	Northern horse mussel	47 samples
William Kramer, NMFS, NEFSC, Woods Hole, MA	Icelandic scallop	6 samples
Jason Link, NMFS, NEFSC, Woods Hole, MA	Goosefish stomachs	88 samples
Nancy McHugh, NMFS, NEFSC, Woods Hole, MA	Jonah crab	680 indiv.
	Rock crab	622 indiv.
	Fawn cusk eel	1 indiv.
	Tautog	1 indiv.
	Northern sea robin	1 indiv.
Paul Nitschke, NMFS, NEFSC, Woods Hole, MA	Cunner	1 bag
Rodney Rountree, Univ. of Amherst, Amherst, MA	Fawn cusk-eel	17 indiv.
Avis Sosa, Makati City, Philippines	Digital photo collection	25 photos
Kathy Sosebee, NMFS, NEFSC, Woods Hole, MA	Misc. skate vertebrae	186 samples
Michael Tork, NMFS, NEFSC, Woods Hole, MA	Misc. species	60 indiv.
Andrew Walker, VA Inst. of Marine Science, Gloucester Pt, VA	Invert. Assemblages	224 samples

Figure 1. Station locations from FRV ALBATROSS IV (01-07), during National Marine Fisheries Science Center, Sea Scallop Survey, June 27-August 17, 2001.

Figure 2. Station locations from FRV ALBATROSS IV (01-07), during National Marine Fisheries Science Center, Sea Scallop Survey, June 27-August 17, 2001.