



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Northeast Fisheries Science Center  
166 Water Street  
Woods Hole, MA 02543-1026

13 September 2007

## CRUISE RESULTS

NOAA Ship ALBATROSS IV  
Cruise No. AL IV 07-05  
(Parts I-III)  
Sea Scallop Survey

### CRUISE PERIOD AND AREA

The cruise period was 10 July - 16 August 2007 and was divided into three parts. Part I was from 10 - 20 July; Part II, 24 July - 3 August; Part III, 7 - 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) 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) test a new dredge design and an underwater towed camera array through paired tows with commercial scallop vessels F/V Kathy Marie, F/V Nordic Pride, and F/V Celtic; (7) continue testing the rock chain dredge used to determine a calibration factor between dredges with and without rock chains; (8) collect Paralytic Shellfish Poisoning (PSP) samples.

### METHODS

Operations and gear for cruise AL IV 07-05, Parts I, II, and III conformed with the Cruise Instructions for the Sea Scallop Survey, dated 10 May 2007 and Addendum 1 dated 6 July; Addendum 2 dated 13 July; Addendum 3 dated 27 July. Exceptions to the cruise instructions are as follow: all three legs left one day late due to ship mechanical issues.

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 591 stations occupied during the cruise with 210, 202, and 179 dredge hauls made on Parts I, II and III respectively. There were a total of 19 occurrences of dredge flips (stations were retowed in most cases). Bottom temperatures were collected at 165 stations using the CTD system. Bottom water samples for CTD calibration were taken at 35 stations. During Part III, 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 between the rock chain dredge and the standard dredge in the Great South Channel. There were 24 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 northeast 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>1,3</sup>

Stacy Rowe, Chief Scientist<sup>2</sup>

Larry Brady<sup>2,3</sup>

William Duffy<sup>2</sup>

Jonathan Duquette<sup>1</sup>

Deborah Hart<sup>1</sup>

Robert Johnston<sup>2</sup>

Alicia Long<sup>2</sup>

Sean Lucey<sup>3</sup>

Yasha McDonald<sup>3</sup>

Kevin McIntosh<sup>3</sup>

Sarah Pregracke<sup>2</sup>

Grace Thorton<sup>1</sup>

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

Heath Cook<sup>1,3</sup>

Lara Jarvis<sup>1,3</sup>

Jakub Kircun<sup>1,2</sup>

Nikolai Klibansky<sup>2</sup>

Melanie Underwood<sup>1,3</sup>

### Volunteers

Vickery Brewer<sup>3</sup>

Danielle Brezinski<sup>1</sup>

Croy Carlin<sup>1</sup>

John Carroll<sup>1</sup>

Dan Cullen<sup>2</sup>

Melissa Ellwanger<sup>2</sup>

Stacey Etheridge<sup>2</sup>

Adrienne Heim<sup>3</sup>

Rebecca Hill<sup>2</sup>

Leah Larned<sup>1</sup>

Claude Larson<sup>2</sup>

Elizabeth Martz<sup>3</sup>

Shawn McPhee<sup>3</sup>

Greg Noonan<sup>3</sup>

Andrew Norberg<sup>3</sup>

Ann Penning<sup>1</sup>

Sara Southard<sup>1,2</sup>

College Park, MD

Brewer, ME

University of Maine, Orono, ME

Louisville, KY

Princess Anne, MD

Annapolis, MD

Silver Spring, MD

New York City, NY

Suffolk, VA

University of Massachusetts, Boston, MA

Branchville, NJ

Hagerstown, MD

Millis, MA

Washington, DC

New London, CT

Environmental Careers Org., Gloucester, MA

USCGA, New London, CT

<sup>1</sup>10 - 20 July

<sup>2</sup>24 July - 3 August

<sup>3</sup>7 - 16 August

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For further information contact: Russell Brown, National Marine Fisheries Service, Northeast Fisheries Science Center, Woods Hole, Massachusetts 02543-1097. Phone (508) 495-2380; FAX (508) 495-2115; Russell.Brown@noaa.gov. The Cruise Results and the Resource Survey Report for this survey can be viewed at [NEFSC Ecosystems Survey Branch webpage/](#).

Table 1. Special samples obtained for various investigators on NOAA Ship ALBATROSS IV Cruise 07-05, Sea Scallop Survey, during 10 July - 16 August 2007.

<b>Investigator and Affiliation</b>	<b>Samples Saved</b>	<b>Approximate Number</b>
John Burnett, NMFS, NEFSC, Woods Hole, MA	Goosefish illicia	37 indiv.
Stacey Etheridge, FDA, Silver Spring, MD	Sea scallops	3031 exam.
John Galbraith, NMFS, NEFSC, Woods Hole, MA	Various species	159 indiv.
Deborah Hart, NMFS, NEFSC, Woods Hole, MA	Scallop shells/meat weights	1278/3469 indiv.
	<i>Asterias</i> spp.	1893 exam.
	<i>Astropecten</i> spp.	10 bags
	<i>Leptasterias</i> spp.	1 indiv.
Anne Richards, NMFS, NEFSC, Woods Hole, MA	Goosefish vertebrae	118 samples
	Goosefish illicia	109 samples
	Goosefish gonad & liver	114 exam.
	Goosefish gonad	107 preserved
Jeanne Serb, Iowa State Univ., Ames, IA	Iceland scallops	6 indiv.
Kristin Smith, WHOI, Woods Hole, MA	Sea scallops	3 bags
Kathy Sosebee, NMFS, NEFSC, Woods Hole, MA	Various skates	171 exam.
Richard Taylor, WHOI, Woods Hole, MA	Sea scallops	52 indiv.

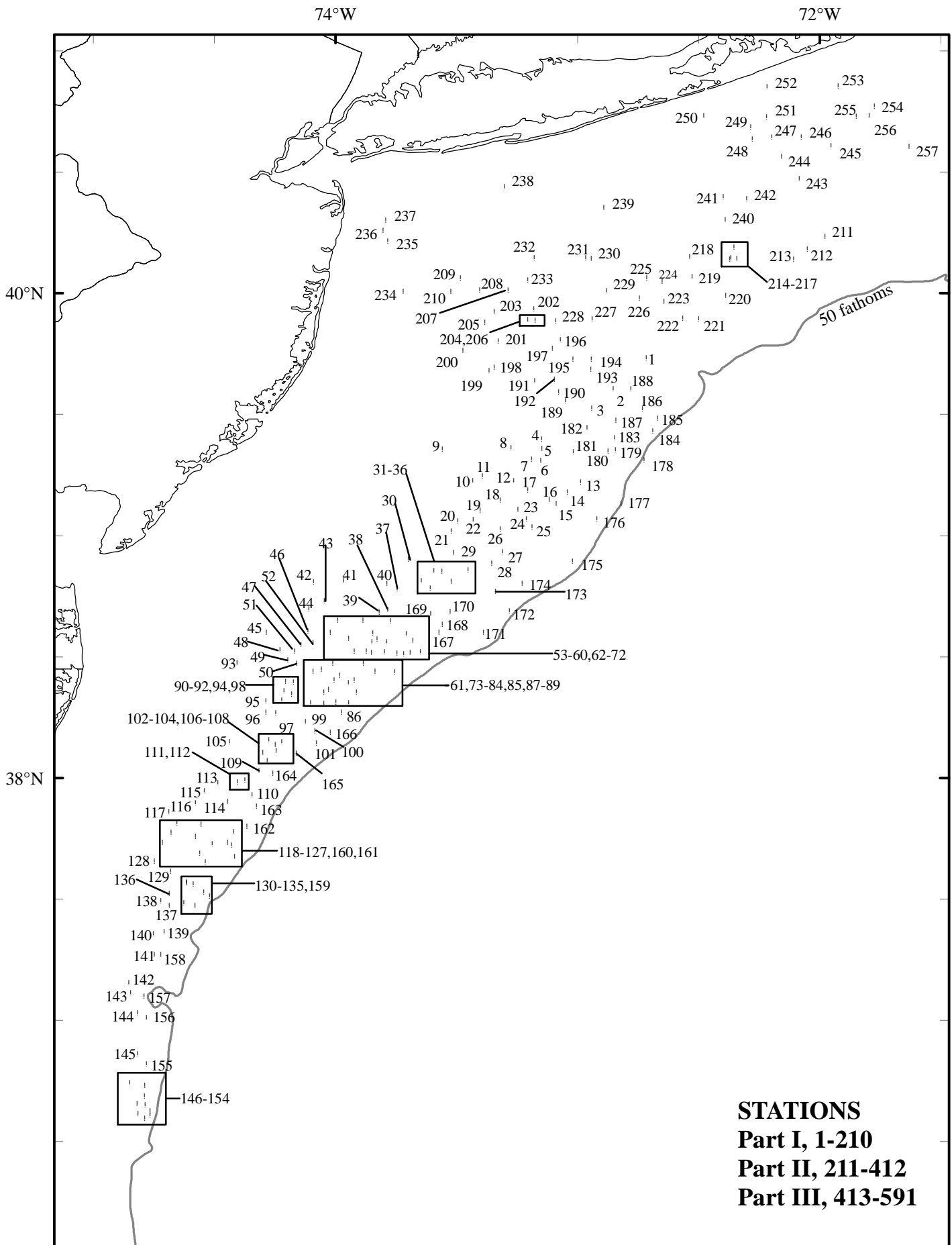


Figure 1. Dredge tows made from R/V *Albatross IV* (07 - 05), during NOAA Fisheries Service, Northeast Fisheries Science Center sea scallop survey, July 10 - August 16, 2007.

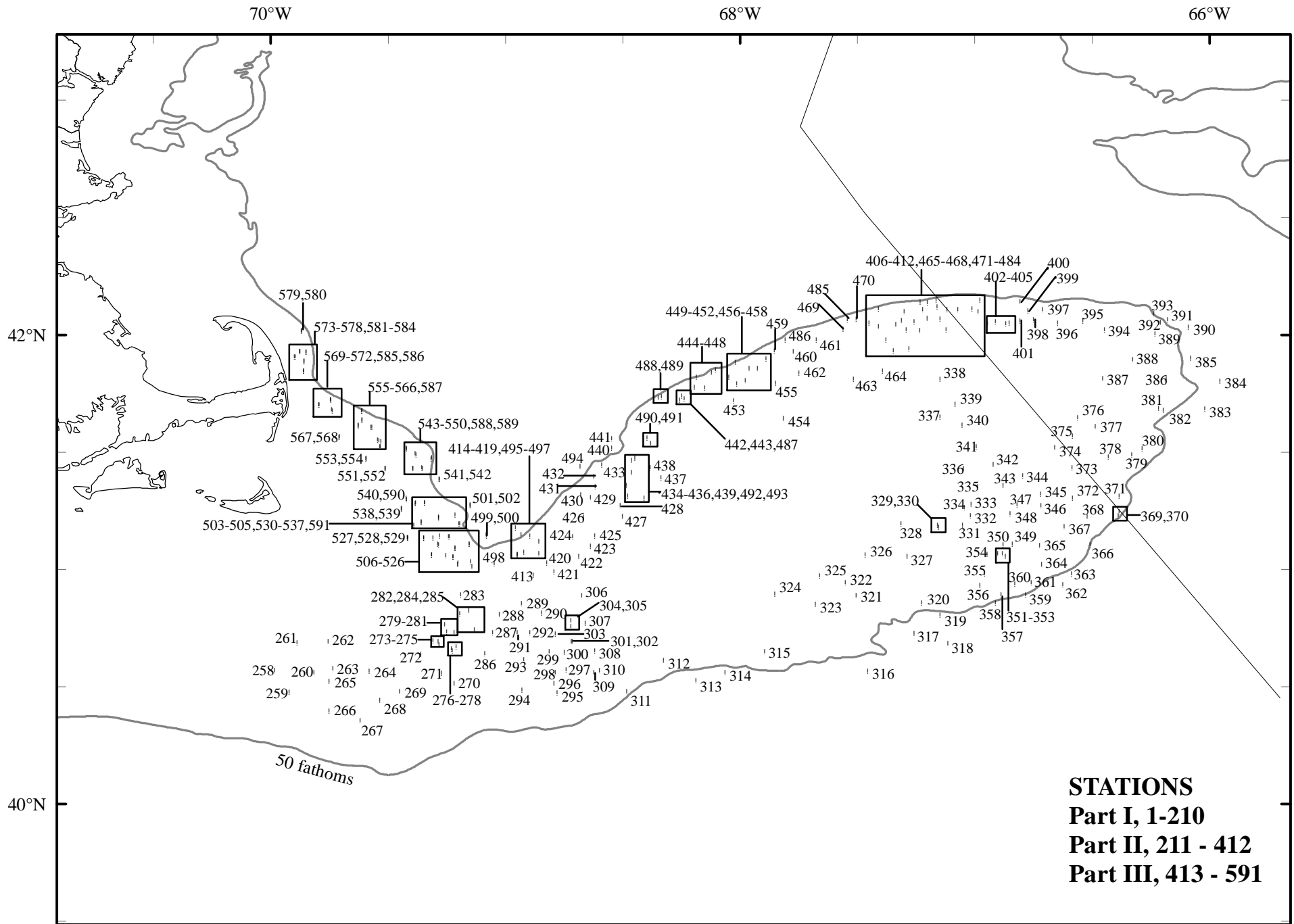


Figure 2. Dredge tows made from R/V *Albatross IV* (07 - 05), during NOAA Fisheries Service, Northeast Fisheries Science Center sea scallop survey, July 10 - August 16, 2007.