

CRUISE RESULTS

NOAA FRV ALBATROSS IV Cruise
No. AL 01-03 Parts (I-V) Spring
Bottom Trawl Survey

Submitted to: NOAA, NEFSC

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CRUISE PERIOD AND AREA

The cruise period was from 26 February to 30 April 2001. The cruise was conducted in five parts: Part I was from 26 February-4 March; Part II, 12-21 March; Part III, 26 March to 6 April; Part IV, 9-20 April; Part V, 23-30 April. The area of operations was from Cape Hatteras to the Gulf of Maine. Station locations are shown in Figures 1 and 2.

OBJECTIVES

The objectives of the cruise were to: (1) determine the spring distribution and relative abundance of fish and invertebrate species; (2) collect biological samples for studies of age and growth relationships, fecundity, maturity and food habits; (3) collect hydrographic and meteorological data; (4) make collections of data and samples for cooperative researchers and programs; (5) collect hydroacoustic data between survey stations; (6) fully implement the Fisheries Scientific Computer System (FSCS) throughout the entire cruise.

METHODS

Operations and gear used during Parts I-V conformed with the Cruise Instructions for the spring bottom trawl survey dated 12 January and ADDENDUM NUMBER 1 dated 22 February and ADDENDUM NUMBER 2 dated 9 March 2001 with the following exceptions: Part I returned to Woods Hole on 4 March due to adverse weather conditions, Part II returned two days early also due to adverse weather conditions, Part IV had a port call in Yarmouth, Nova Scotia on 18 April due to adverse weather conditions and resumed the survey on 20 April.

A 30-minute tow was made at each station with a Northeast Fisheries Science Center (NEFSC) standardized number 36 Yankee otter trawl that was rigged with 41 centimeter (cm) diameter rubber rollers, 36 floats, and 9 meter (m) bridles. NEFSC

standardized 450 kilogram (kg) polyvalent trawl doors with chain backstraps were used. The trawl was fished at a scope of 4:1 in waters between 18 and 27 m deep, 3:1 in waters between 27 and 184 m deep, and 2.5:1 in depths greater than 184 m. During the survey, speed was determined primarily using DGPS instrumentation. Direction of the tow was generally toward the next station.

For each species, total weight was obtained using motion compensated electronic scales and recorded to the nearest 0.1 kilogram (kg) on standard trawl logs as well as in the Fisheries Scientific Computer System (FSCS). Fish were weighed and sampled for age and growth and food habits studies. Bony fish were measured to the nearest centimeter (cm) to the end of the central caudal ray and the data was automatically entered using an electronic measuring board; biological samples were collected concurrently with measuring operations. Elasmobranchs (except rays) were measured to the end of the caudal fin (total length). Disk width was measured for rays. Crabs were measured across the carapace width (cm). Lobsters were measured in millimeters (mm) from the posterior edge of the eye socket to the end of the carapace. V-notch lobster condition was also noted. Shell height was measured in (cm) for selected bivalves. Additional collections were obtained for various scientists. The remainder of the catch (miscellaneous invertebrates, shells, substrate, et cetera) was described by volume.

Surface temperatures were measured using the hull-mounted temperature sensor at a depth of 3 meters and displayed by the Scientific Computer System (SCS) at all stations. Temperature and conductivity profiles were made using a conductivity, temperature, depth instrument (CTD). A bottom salinity sample was obtained twice each day to calibrate the CTD. Water samples were also taken for fluorometer calibrations.

Samples of fish eggs and larvae were collected at selected stations. Plankton sampling gear consisted of a 61 cm bongo frame fitted with 0.333 mm mesh nets. Digital flowmeters were suspended within the mouths of the bongo frame. The net was towed at 2.8-3.8 kilometers/hour (1.5-2.0 knots). A CTD (conductivity/temperature/depth) was deployed at each station during plankton tows.

Eastern standard time was maintained during Parts I and II. Daylight savings time was maintained during Parts III, IV and V. The database is now recorded in GMT time.

RESULTS

Three hundred twenty-five stations were occupied during the survey with 33, 91, 77, 71, and 53 stations completed on parts one, two, three, four, and five respectively. Standard plankton

tows were made at 117 stations. Bottom temperatures were collected at 325 stations using the CTD system. Bottom water samples for CTD calibration were taken on 41 stations. The new Fisheries Scientific Computer System (FSCS) was used to process the data for immediate entry into the NEFSC data management system. Paper logs were also concurrently used. Tables 1 and 2 list the major samples collected for various studies.

DISPOSITION OF SAMPLES AND DATA

Age and growth samples, food habits data and samples, maturity data, trawl catch data, and hydrographic data will be analyzed at the NEFSC Woods Hole, Massachusetts Laboratory. The various collections were forwarded to the individuals listed in Table 2. Resulting data will be audited, edited, and entered into the NEFSC trawl survey data base.

SCIENTIFIC PERSONNEL

National Marine Fisheries Service, NEFSC, Woods Hole, MA

John Galbraith, Chief Scientist, Part I*, Part V*****,

Participant, Part III, IV

Linda Despres, Chief Scientist, Part II**

Victor Nordahl, Chief Scientist, Part III***, Participant, Part I

Nancy McHugh, Chief Scientist, Part IV****, Participant, Part I

Jon Brodziak, IV

John Burnett, IV

Charles Keith, I, II

Paul Kostovick, I, IV

William Kramer, III, IV

Barbara Lewis, III

Jason Link, III

Paul Nitschke, III, V

William Overholtz, III

Joan Palmer, II

Nancy Lee Peltier, V

Daniel Salerno, V

Nina Shepherd, I, II, V

Vaughn Silva, II

Mark Terceiro, II

National Marine Fisheries Service, NEFSC, Narragansett, RI

Jacquelyn Anderson, I

Stephen Brownell, III

Joseph Kane, I

Sharon MacLean, III

Jerry Prezioso, II, V

National Marine Fisheries Service, NEFSC, Highlands, NJ

John Sibunka, II, IV

National Marine Fisheries, Service, NEFSC, Milford, CT
 Robin Katersky, III
 David Veilleux, II

National Marine Fisheries Service, NERO, Gloucester, MA
 Brad McHale, V

National Marine Fisheries Service, NERO, Cape May, NJ
 Christopher Petrucelli, I

NOAA, OMAO, Woods Hole, MA
 Noah Lawrence-Slavas, II
 Jeffrey Taylor, I
 Scott Wingerter, IV

NOAA, OMAO, Silver Spring, MD
 David Benigni, I
 Dennis Shields, I

NOAA, NMFS Headquarters, Silver Spring, MD
 Bonnie Ponwith, V

University of Massachusetts, Amherst, MA
 Joseph Kunkel, III

University of Massachusetts, Lowell, MA
 Scott Fulmer, IV

New England Fisheries Management Council, Chatham, MA
 William Amaru, III

Contractors, PTSI, Woods Hole, MA
 Lawrence Brady, I, III, IV, V
 David Butman, II
 Holly Celico, I, II, V
 Peter Chase, IV
 John DePersenaire, II
 Kara Dwyer, IV
 Robert Gamble, IV
 Sara Henley, I
 Sandra Sutherland, III
 Catherine Tadema-Wielandt, I

Volunteers

Emily Burns, II
 Wendy Culbert, V
 Danielle Reardon, V
 Elizabeth Sipple, IV
 Augustina Martiniuc-Ursino, IV

Narragansett, RI
 Martha's Vineyard, MA
 Charlestown, RI
 Wakefield, VT
 Seaside, CA

- * Part I, 26 February-4 March
- ** Part II, 12-21 March
- **** Part III, 26 March-6 April
- ***** Part IV, 9-20 April
- ***** Part V, 23-30 April

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Table 1. Field observations and samples collected for feeding ecology, and age and growth studies on FRV ALBATROSS IV, Cruise 01-03 (I-V), Spring Bottom Trawl Survey, during 26 February-30 April 2001.

Species	Feeding Ecology Observations	Age and Growth Samples
Acadian redfish	112	341
American plaice	267	601
American shad	53	-
Atlantic cod	214	416
Atlantic croaker	3	48
Atlantic halibut	7	7
Atlantic herring	299	704
Atlantic mackerel	231	518
Atlantic wolffish	4	-
Barndoor skate	18	-
Blackbelly rosefish	36	1
Black sea bass	53	109
Blueback herring	43	-
Bluefish	4	5
Butterfish	97	259
Clearnose skate	10	-
Cunner	7	-
Cusk	5	5
Fawn cusk-eel	19	-
Fourspot flounder	196	194
Goosefish	153	154
Haddock	194	435
Little skate	359	-
Longhorn sculpin	224	-
Northern searobin	1	-
Ocean pout	156	238
Offshore hake	17	23
Pollock	76	131
Red hake	327	726
Rosette skate	4	-
Scup	26	58
Sea raven	161	-
Shorthorn sculpin	1	-
Silver hake	534	1491
Smooth dogfish	51	-
Smooth skate	20	-
Spiny dogfish	531	-
Spot	8	-
Spotted hake	131	261
Striped bass	50	-
Summer flounder	160	241
Thorny skate	30	-
Weakfish	14	22

White hake	183	340
Windowpane	113	217
Winter flounder	285	542
Winter skate	178	-
Witch flounder	151	287
Yellowtail flounder	170	355
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TOTALS	5986	8729
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Table 2. Miscellaneous scientific collections made on FRV ALBATROSS IV, Cruise 01-03 (I-V), Spring Bottom Trawl Survey, during 26 February-30 April 2001.

Investigator & Affiliation	Samples Saved	Approximate Number
Aquarium, NMFS, NEFSC, Woods Hole, MA	<u>Loligo</u> Atl. herring Shrimp Atl. mackerel	15 bags 20 bags 9 bags 13 bags
Kendra Buresch, MBL, Woods Hole, MA	<u>Loligo</u>	9 samples
John Burnett, NMFS, Woods Hole, MA	Misc. species maturity workshop	28 indiv.
Steve Cadrin, NMFS, NEFSC, Woods Hole, MA	Yellowtail flounder	79 indiv.
John Galbraith, NMFS, NEFSC, Woods Hole, MA	Misc. species	10 indiv.
Devora Hart, NMFS, NEFSC, Woods Hole, MA	<u>Astropecten</u>	7 samples
Lisa Hendrickson, NMFS, NEFSC, Woods Hole, MA	Squid egg mops	1 bag
Josef Idoine, NMFS, NEFSC, Woods Hole, MA	Shrimp	54 samples
Christopher Lage, Univ. of Maine, Orono, ME	Atl. cod muscle tissue	86 samples
Sharon MacLean, NMFS, NEFSC, Narragansett Lab, Narragansett, RI	Atl. herring Alewife Atl. mackerel	167 indiv. 53 indiv. 89 indiv.
Thomas Munroe, NMFS, Nat'l Systematics Lab, Washington, DC	Fourspot flounder Windowpane flounder	10 indiv. 10 indiv.
Paul Nitschke, NMFS, NEFSC, Woods Hole, MA	Cunner	22 indiv.
Anne Richards, NMFS, NEFSC, Woods Hole, MA	Goosefish	3 indiv.

Daniel Salerno, NMFS, NEFSC, Woods Hole, MA	Misc. species	22 indiv.
Katherine Sosebee, NMFS, NEFSC, Woods Hole, MA	Barndoor skate ovaries, & vertebrae	28 samples
	Misc. skate meas.	940 indiv.
	Female spiny dogfish	595 indiv.
	Pup lengths/weights	
Douglas Stoner, South Carolina DNR, Charleston, SC	Barndoor skate fin clip	4 samples
Susan Wigley, NMFS, NEFSC, Woods Hole, MA	Witch flounder	4 indiv.
Ike Wirgin, NYC Medical Medical School, Tuxedo, NY	Atl. cod fin clip	77 samples
David Wyanski, South Carolina DNR, Charleston, SC	Blackbelly rosefish	17 indiv.
John Ziskowski, NMFS, NEFSC, Milford, CT	American plaice	1 bag

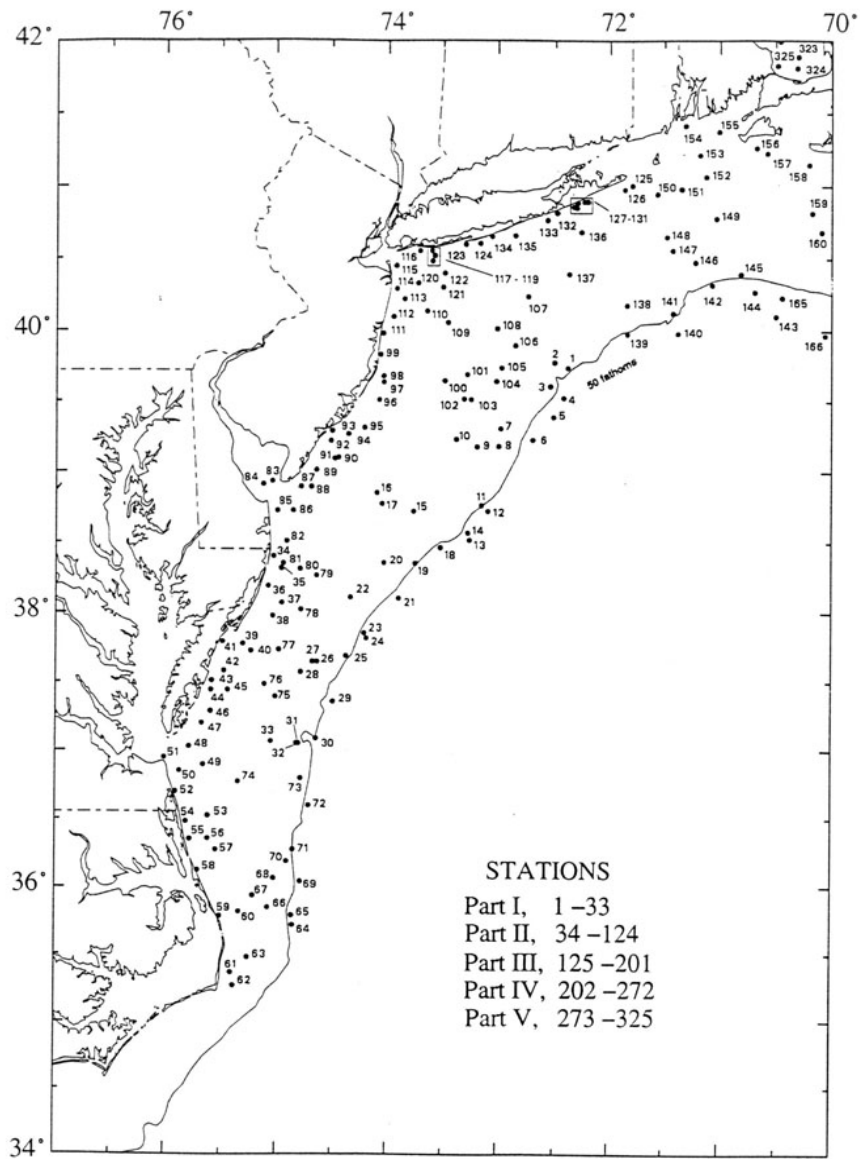


Figure 1. Station locations on NOAA FRV ALBATROSS IV, Cruise 01-03 (I-V), Spring Bottom Trawl Survey, during 26 February-30 April 2001.

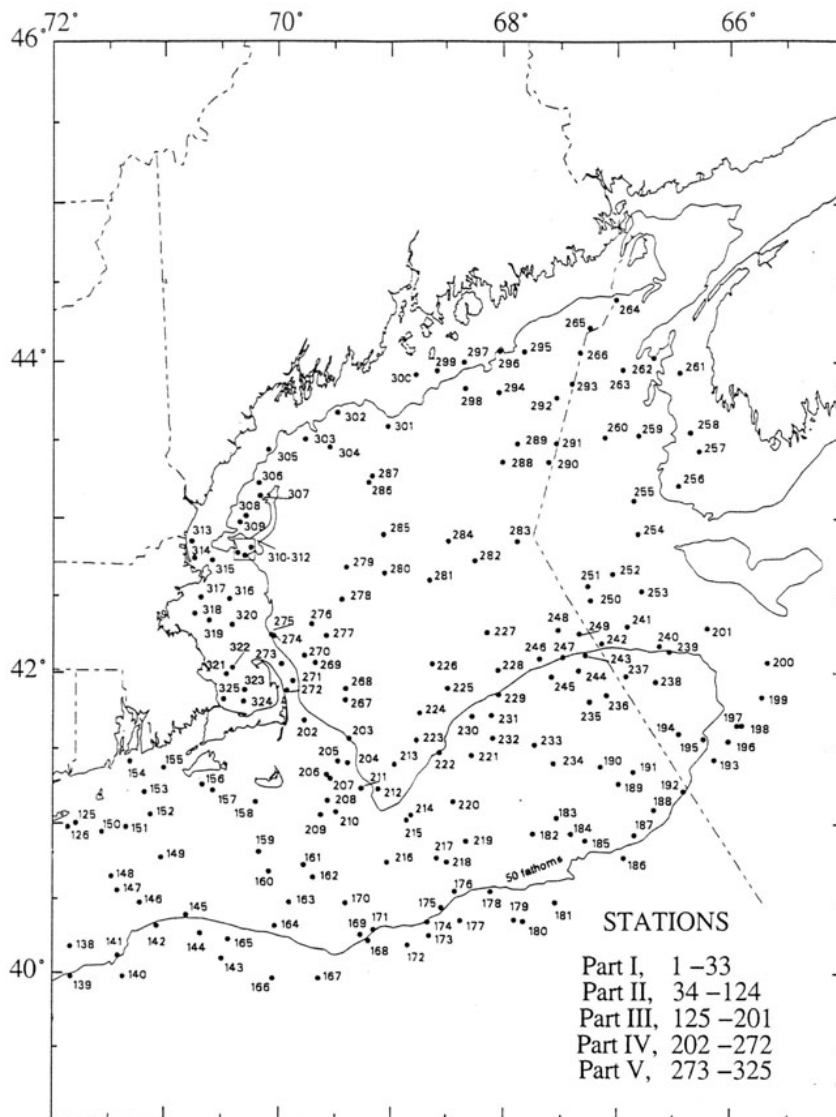


Figure 2. Station locations on NOAA FRV ALBATROSS IV, Cruise 01-03 (I-V), Spring Bottom Trawl Survey, during 26 February - 30 April 2001.