

Appendix A. Summary of cruise information and hydrographic work completed.

Hydro-Acoustic Survey

Cruise: DEL0101
Vessel: R/V Delaware II
Dates: 2 – 21 February
Sea Days: 20
Instrument(s): 2277
Total # of stations: 74
of vertical CTD/Profiler casts: 49
of double oblique Profiler casts: 0
Salinity samples: 9
Salt correction: 0.00, None Applied

Cruise Objectives: The primary goal is to provide fisheries independent abundance estimates of Atlantic herring in the Georges Bank and Gulf of Maine regions, and to calibrate the EK-500 echo-integrator and test the mid-water trawl performance.

Winter Bottom Trawl Survey

Cruise: ALB0102
Vessel: R/V Albatross IV
Dates: 30 January – 22 February
Sea Days: 23
Instrument(s): 1496
Total # of stations: 175
of vertical CTD/Profiler casts: 104
of double oblique Profiler casts: 73
Salinity samples: 34
Salt correction: +.018

Cruise Objectives: To (1) determine the winter distribution and relative abundance of fish and selected 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) collect samples of ichthyoplankton and zooplankton; (5) make data and sample collections for cooperative researchers and programs.

Spring Bottom Trawl Survey

Cruise: ALB0103
Vessel: R/V Albatross IV
Dates: 28 February – 30 April
Sea Days: 38
Instrument(s): 1496
Total # of stations: 325
of vertical CTD/Profiler casts: 235
of double oblique Profiler casts: 102
Salinity samples: 43
Salt correction: +.014

Cruise Objectives: 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.

Apex Predator Survey

Cruise: DEL0104
Vessel: R/V Delaware II
Dates: 16 April – 24 May
Sea Days: 47
Instrument(s): 2277,0851, 0853
Total # of stations: 85
of vertical CTD/Profiler casts: 97
of double oblique Profiler casts: 0
Salinity samples: 31
Salt correction: 2277 = +.011, 0851 = +.006 (not applied)

Cruise Objectives: To 1) investigate the distribution, abundance and species composition of sharks; 2) collect baseline catch per effort (C/E) data; 3) tag sharks for migration studies; 4) inject, with tetracycline, tagged sharks whenever feasible for age validation studies; 5) collect biological samples for age and growth, food habits and reproductive studies; 6) collect morphometric data.

Ecosystem Monitoring Survey

Cruise: ALB0104 and DEL0105
Vessel: R/V Albatross IV (leg 1)
 R/V Delaware II (leg 2)
Dates: 20 – 26 May (leg 1)
 29 – 6 June (leg 2)
Sea Days: 16
Instrument(s): 1496, 1447
Total # of stations: 121
of vertical CTD/Profiler casts: 25
of double oblique Profiler casts: 130
Salinity samples: 24
Salt correction: 1496 = +.012

Cruise Objectives: To assess the impact of changing biological and physical properties of the Northeast Continental Shelf ecosystem which influence the sustainable productivity of the living marine resources.

Benthic Habitat

Cruise: DEL0106
Vessel: R/V Delaware II
Dates: 13 –21 June
Sea Days: 9
Instrument(s): 1447
Total # of stations: 19
of vertical CTD/Profiler casts: 20
of double oblique Profiler casts: 0
Salinity samples: 15
Salt correction: 0.00

Cruise Objectives: To monitor the recovery of the benthic habitat in closed areas.

AWARE Sonar Testing

Cruise: DEL0107
Vessel: R/V Delaware II
Dates: 19 July – 2 August
Sea Days: 15
Instrument(s): 0851, 0456
Total # of stations: 32
of vertical CTD/Profiler casts: 32
of double oblique Profiler casts: 0
Salinity samples: 8
Salt correction: 0851-all salts bad, 0456 – 0.00 None applied

Cruise Objectives: To conduct sea-trials of a new forward looking sonar to be used for whale detection and tracking. Areas will be surveyed that have been recently identified as having either right whales or humpback whales present. Testing will evaluate the sonar's ability to localize animals underwater and track them between surfacings.

Right Whale Survey

Cruise: ALB0108, DEL0108
Vessel: R/V Albatross IV, R/V Delaware II
Dates: 24 July – 29 August
Sea Days: 37
Instrument(s): 1447
Total # of stations: 169
of vertical CTD/Profiler casts: 169
of double oblique Profiler casts: 0
Salinity samples: 3
Salt correction: N/A

Cruise Objectives: ALB-01-08 – To conduct oceanographic sampling in areas of right whale habitat and to assess the feasibility of methods for several ECOHAB studies . DEL-01-08 - To 1) deploy the VHF-linked time-depth recorders on right whales to examine their diving behavior relative to prey abundance and availability; 2) Conduct systematic, broad-scale oceanographic and marine mammal surveys to characterize right

whale habitat; 3) to collect *Calanus finmarchicus* specimens for studies on natural toxin concentrations and energy content; 4) to support studies being conducted by WHOI on the reaction of right whales to vessel approaches; and 5) photographing and/or opportunistic biopsy sampling of cetaceans for individual identification, as well as genetic, toxicological and stable isotope analyses.

Scallop Survey

Cruise: ALB0107
Vessel: R/V Albatross IV
Dates: 27 June – 16 August
Sea Days: 20
Instrument(s): 1495
Total # of stations: 551
of vertical CTD/Profiler casts: 162
of double oblique Profiler casts: 0
Salinity samples: 49
Salt correction: 0.00 None Applied

Cruise Objectives: 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; and 4) make collections for interested scientists at other institutions and laboratories.

Ecosystem Monitoring Survey

Cruise: ALB0109
Vessel: R/V Albatross IV
Dates: 21 – 28 August
Sea Days: 9
Instrument(s): 1495
Total # of stations: 61
of vertical CTD/Profiler casts: 16
of double oblique Profiler casts: 66
Salinity samples: 12
Salt correction: 0.00 None Applied

Cruise Objectives: To assess the impact of changing biological and physical properties of the Northeast Continental Shelf ecosystem which influence the sustainable productivity of the living marine resources.

HydroAcoustic Survey

Cruise: DEL0109
Vessel: R/V Delaware II
Dates: 6 September – 10 October
Sea Days: 35
Instrument(s): 1447, 0360
Total # of stations: 220
of vertical CTD/Profiler casts: 152
of double oblique Profiler casts: 0
Salinity samples: 10
Salt correction: 1147- 0.00 None Applied, 0360 – 0.00 None Applied

Cruise Objectives: The primary goal is to provide fisheries independent abundance estimates of Atlantic herring in the Georges Bank and Gulf of Maine regions, and to calibrate the EK-500 echo-integrator and test the mid-water trawl performance

Fall Bottom Trawl

Cruise: ALB0110
Vessel: R/V Albatross IV
Dates: 5 September – 22 October
Sea Days: 42
Instrument(s): 1495
Total # of stations: 339
of vertical CTD/Profiler casts: 228
of double oblique Profiler casts: 115
Salinity samples: 42
Salt correction: 0.00 None Applied

Cruise Objectives: To 1) determine the autumn 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.

ECOMON Survey

Cruise:	ALB0111
Vessel:	R/V Albatross IV
Dates:	6 September – 10 October
Sea Days:	35
Instrument(s):	1495
Total # of stations:	120
# of vertical CTD/Profiler casts:	19
# of double oblique Profiler casts:	127
# Salinity samples:	20
Salt correction:	-0.016

Cruise Objectives: To assess the impact of changing biological and physical properties of the Northeast Continental Shelf ecosystem which influence the sustainable productivity of the living marine resources