



SURVEYS AND FIELD STUDIES

Bottom Trawl Survey: The Fall Bottom Trawl Survey, conducted on NOAA Ship *Henry B. Bigelow*, takes place from August 31 – November 7, 2015. There are four cruise legs, which include trawl, plankton and CTD sampling. In addition, light sensors were installed to collect data to examine the effect of light on the catchability of a variety of species.

Integrated Pelagic Survey / Ecosystem Monitoring Survey: The Fall EcoMon survey, conducted on the *Gordon Gunter*, begins in early October. The survey measures ocean chemistry, physics, and biology, including plankton and fish larvae. The data will contribute to NEFSC efforts to improve stock assessments.

Deep-Sea Coral and Sponge Survey: The Coral and Sponge Survey, conducted on NOAA Ship *Henry B. Bigelow*, took place from July 27 - August 7, 2015. The survey explored canyons at depths of 500 – 2000m using a WHOI *TowCam* device. Multibeam sonar was also used to map habitat to better define management zones.

Northern shrimp survey: The shrimp survey took place on the *Gloria Michelle*, July 19-Aug. 14.

Surfclam and ocean quahog survey: The cooperative clam survey took place August 3- 21 aboard industry vessel *ESS Pursuit*.

AMAPPS Aerial Surveys: NEFSC scientists conduct aerial surveys of marine mammals and sea turtles from the coast to 2000m depth from New Jersey to Halifax, Nova Scotia. Surveys took place in 2014 and throughout 2015. Right whale aerial surveys were run in coordination with NOAA ship *Gordon Gunter*.

Massachusetts Inshore Bottom Trawl Survey: The inshore survey is underway in September on the *Gloria Michelle*.

Monitoring fin whales: Visual and acoustic surveys of fin whales off the coast of Maine are ongoing through October to track whale and study vocalizations.

Hydroacoustic survey of diadromous fish: An acoustic survey of fish in the Penobscot Estuary is ongoing, with a focus on river herring and salmon.

eCLAMS: In September and October, the Northeast Cooperative Research Program will be installing eCLAMS and training captains of the surf clam/ocean quahog fleet.

Ventless trap sampling for lobsters: In September, NEFSC staff assisted Massachusetts Department of Marine Fisheries staff with the coastwide ventless trap survey. It is carried out to track abundance for use in lobster assessments.

Sea scallop experiments in cooperation with MBL and WHOI, Woods Hole MA: In September AED/Culture Systems and Habitat Evaluation Branch staff conducted experiments on the susceptibility of sea scallop larvae to varying CO₂ concentrations.

Narraguagus River sampling – In October READ/Population Dynamics Branch staff sampled aquatic invertebrates in Maine with University of Maine, Maine DMR, and Project SHARE to evaluate changes in habitat resulting from a habitat restoration project.

Electronic vessel trip reporting: The Northeast Cooperative Research Program is field testing software for e-VTR.

GOM bottom longline survey: FEMAD/Population Biology Branch and Northeast Cooperative Research Program staff are preparing for Year 2 of the bottom longline survey using industry vessels.

Observer Program (Fisheries Sampling): Fisheries Sampling Branch (FSB) completed 11,149 sea days during October 2014 – August 2015. This comprises days from the Northeast Fisheries Observer Program (NEFOP) (5,520 sea days), At-Sea Monitoring (ASM) (2,928 sea days), and Industry funded Scallop (IFS) (2,701 sea days), for Fiscal Year 2015 (partial).

Electronic Monitoring (EM) - The FSB continues to actively work as part of the EM Pre-Implementation Working Group to develop a program in the groundfish fishery, including database and processing tools for EM video footage data. The purpose is to determine the effectiveness of EM through data comparisons and develop performance standards for an operational program in May 2016.

Groundfish - For the Multispecies Groundfish 2015 fishing year, FSB's preliminary estimates of coverage are 7.7% NEFOP and 11.3% ASM (19.0% combined), totaling 719 observed trips. This is below the target which is 24% combined NEFOP/ASM, due primarily to trip cancellations. Currently obligated funding will support At-Sea Monitoring for some, but not all, of the 2015 fishing year. The transition to industry funding would happen once all funds in ASM Federal contracts have been expended. Current funding is estimated to last at least until December 1, 2015. In November NMFS will provide another update on the transition.

Atlantic Sea Scallops - In response to an NEFMC memorandum about collection of observer data on scallop discard mortality, FSB plans to add a disposition code for discarded grey meats, increasing the frequency of biological sampling, and adding scripted comments to identify the spatial/temporal extent of the scallop meat problems.

Average Scallop Coverage rates (June – August):

Mid Atlantic Access Area, Limited Access Vessels = 10.9% (11% target)

Mid Atlantic Access Area, General Category Vessels = 2.3% (9% target)

Open Areas (GBK & MA), Limited Access Vessels = 8.1% (13% target)

Open Areas (GBK & MA), General Category Vessels = 4.8% (9% target)

Ocean Quahog and Surf Clam - NEFOP conducted clam dredge training on Aug 25-26 for 10 experienced NEFOP observers. Observers are targeting 140 seadays in the 2015 SBRM Fishing Year. Industry has been extremely helpful with training with FSB staff.

Squid - In July, 2015 the NEFSC sent a letter to the Longfin Squid fleet that clarified a Pre-Trip Notification System (PTNS) update.

American Lobster - ASMFC has helped to organize a meeting on October 6, 2015 about state and federal observer program issues in the lobster fishery.

Observer Program Review - A independent review of the Fisheries Sampling Branch was conducted in late 2014-early 2015 to assess effectiveness and efficiency, as well as objectives and applicability to strategic and operation processes. The final report and the NEFSC's summary and response to the report are available (<http://nefsc.noaa.gov/fsb/misc/nefsc-fsb-review-memo-final-posted08282015.pdf>).

Training - At-Sea Monitoring (October 13-28); NEFOP to ASM Cross Training (November 2-6); At-Sea Monitoring Recertification (the week of November 16th); Pot & Trap Certification (December 29); Longline Certification (12/30).

STOCK ASSESSMENTS AND PEER REVIEWS

Multispecies Groundfish. Operational Stock Assessments of 20 groundfish stocks managed under the NE multispecies FMP were peer reviewed by an independent panel in Woods Hole, September 14-18. Prior to the review, public information outreach meetings were held in July in Maine, New Hampshire and Massachusetts. The Assessment Oversight Panel meeting took place in Woods Hole on July 27.

Georges Bank Yellowtail flounder, Eastern GB haddock, Eastern GB cod. These stocks are co-managed with Canada and assessed jointly within the TRAC process. The TRAC took place this year from July 7-9 in St. Andrews Canada. <http://www.nefsc.noaa.gov/saw/trac/>

Summer flounder, red hake, dogfish, and 7 skates. Stock assessments of several species were updated during July, August and September.

SAW Working Groups. SAW WGs are being formed to carry out future stock assessments of black sea bass, surfclam, ocean quahog, mackerel, and monkfish.

OTHER CENTER ACTIVITIES/ACHIEVEMENTS

NEFSC Strategic Science Plan. The Strategic Plan for 2016-2021 was completed this year and is available at <http://www.nefsc.noaa.gov/rcb/stratplan/>.

Dogfish predation on cod: NEFSC staff are carrying out field studies and genetic analyses for a long-term study of predation on Atlantic cod.

Individual identification of Right whales: The Center is collaborating with MathWorks to develop computer algorithms to automatically identify photographs of individual right whales for use in studies of population biology, health, social structure, and disentanglement operations.

Coastal and Ocean Acidification Stakeholder Workshop. NEFSC staff attended and gave presentations at workshop on coastal and ocean acidification sponsored by the NART (North Atlantic Regional Team) and New Jersey Sea Grant. The workshop represents an important first step in communicating ocean acidification science in the Mid-Atlantic.

Northeast Coastal Acidification Network Science Subcommittee. Center staff participated in developing a technical document highlighting the state of the coastal acidification science in the region.

SMILE Talk, URI: A member of the EPD/Oceanography Branch gave a presentation on NEFSC ecosystems monitoring activities on the Northeast U.S. Continental Shelf to teachers participating in the University of Rhode Island's Science and Math Intensive Learning Experience.

Transboundary Management Guidance Committee meeting in Halifax, NS, Canada. Representatives from the NEFSC Directorate, READ Division, Population Dynamics Branch participated in negotiations with Canada regarding shared fish stocks at the September 9-10 meeting in Halifax, NS..

Ocean acidification experimental system installed at Milford. AED/Culture Systems and Habitat Evaluation Branch completed construction of a system for studying the effects of different levels of PCO₂ on larval shellfish. The system is designed to be used for batch culture experiments.

Regional National Climate Strategy Working Group. The Northeast Regional Action Plan Working Group, including NEFSC and GARFO members, is writing the Regional Action Plan for the NMFS Climate Science Strategy. It will focus on developing priority needs and actions for the region over next five years. NEFSC leads are from the Ecosystem Processes Division and Ecosystem Assessment Program.

Trawl Survey Advisory Panel (TSAP). Representatives from the NEFSC directorate, Population Dynamics Branch, and FEMAD attended the first TSAP meeting. The panel is administered by the Mid-Atlantic Fishery Management Council with funding support from the NEFSC.

Northeast Fisheries Climate Vulnerability Assessment. The purpose of this project is to assess the vulnerability of 82 Northeast species to climate change. Researchers from NEFSC, GARFO, NMFS S&F, NMFS S&T, and OAR/ESRL conducted the work. Three measures were produced: vulnerability to a change in productivity, potential for a distribution shift, and the directional effect of climate change on the species. A major manuscript has been submitted for publication.

Regional action planning for climate science starts: The Northeast Regional Action Plan Working Group met in early September to begin drafting a climate science action plan. The working group includes representatives from NEFSC, GARFO, and NOAA HQ.

NOAA/North Atlantic Seal Research Consortium workshop. The Protected Species Branch hosted a workshop to develop a multiyear NEFSC seal research action plan.

Hydrographic Atlas published. The Center has a new publication summarizing the broadscale oceanographic conditions observed by Northeast Fisheries Science Center surveys during 2014.

NOAA Bay Watershed Education and Training (B-WET) drifter project. NEFSC Staff from the Oceanography Branch instructed students from eight schools on the North Shore of Boston and the Gulf of Maine Research Institute on building satellite-tracked drifters and data processing for a project in which fishermen will deploy the instruments in state waters this year to obtain data on ocean conditions.

PUBLICATONS

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- Li Y, SL Meseck, MS Dixon, JM Rose, BC Smith, G H Wikfors. **Short-term effects of a commercial eastern oyster nursery upon nutrient and plankton dynamics of a coastal embayment: observations from mesocosm experiments.** accepted in *Aquaculture Research*
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