

Report of the Northeast Fisheries Science Center

Presented to the New England Fishery Management Council

September 11, 2014

Surveys:

2014 Sea Scallop Survey

The 2014 sea scallop survey occurred July 1-July 25. Mechanical issues and Tropical Storm Arthur delayed the cruise and resulted in lost sea days. Efforts were focused on surveying Georges Bank, the Great South Channel, and eastern portions of southern New England. HabCam data were reduced and almost no dredge data were collected in the southernmost strata.

2014 ASMFC Northern Shrimp Survey

The annual Gulf of Maine northern shrimp survey occurred during July 20 - August 15.

2014 Cooperative Clam Survey

The 2014 clam survey occurred during August 6-16 August. Research on dredge efficiency and selectivity was accomplished in addition to completing the three year survey cycle.

Bigelow Net Selectivity Research

During 2014-2015, the NEFSC Ecosystems Surveys Branch will investigate selectivity and efficiency (*i.e.*, fish escapement and herding) of the FSV *Bigelow* survey trawl. Field work will begin in mid-September aboard the F/V *Karen Elizabeth* out of Point Judith.

FSV *Bigelow*/ Industry side-by-side tow comparisons

This field work will occur in October, and involve side-by-side tow comparisons of the FSV *Bigelow* with a commercial vessel using the same trawl as in 2013 industry-based pilot flatfish survey on Georges Bank. HabCam will be used to independently estimate flatfish populations within the study area. This work was originally planned for last year, but cancelled because of the federal furlough.

Apex Predators

Apex Predator Program and Cooperative Research scientists conducted the second summer sampling trip in Delaware Bay for the Cooperative Atlantic States Shark Pupping and Nursery (COASTSPAN) program. Approximately 50 sets were completed and about 200 sharks tagged and released (predominantly sandbar and sand tiger sharks).

Penobscot estuary

Since April, Maine Field Station scientists have conducted biweekly hydroacoustic surveys in the Penobscot estuary. These surveys primarily monitor movements of diadromous fish in May and June. Monthly trawl surveys help validate species composition, and July efforts indicate primary species are Atlantic herring moving inshore and juvenile river herring emigrating seaward.

Cetacean survey

The cetacean and turtle abundance survey on eastern Georges Bank was shortened to 6 sea days. However, the survey work was intensified with marine mammal observations during the day, and ecosystem/pelagic sampling during the night. One acoustic mooring was deployed and will be

retrieved in approximately 12 months.

Deep-coral survey

The deep-coral survey was conducted in late July 23- August 6. A towed camera system was used to study the diversity, abundance, and spatial distribution of deep-coral communities in six submarine canyons including Carteret, Lindenkohl, Spencer, Wilmington, Accomac, and Washington canyons as well as inter-canyon slope areas. Results from this cruise will likely influence the choice of canyons selected by NOAA's of Oceanic Exploration and Research for the 18-day *Okeanos Explorer* September seamount cruise (see: <http://1.usa.gov/1plGuqE>). In other coral work, a joint cruise with Canadian scientists occurred in the early summer, to survey and sample corals and other marine life in deep-water canyons of the Northern Gulf of Maine (see: <http://1.usa.gov/1tN4tqt>).

Stock Assessments and Reviews:

The annual TRAC assessment review of Eastern Georges Bank cod, Eastern Georges Bank haddock, and Georges Bank yellowtail flounder occurred during 23-27 June in Woods Hole, MA (see: <http://www.nefsc.noaa.gov/saw/trac/>).

The SAW/SARC59 peer review of the benchmark assessments of Gulf of Maine haddock and Georges Bank and Mid-Atlantic sea scallops took place during 15-18 July in Woods Hole, MA (see: <http://www.nefsc.noaa.gov/SAW-Public/>).

During 11-13 August, assessment updates for pollock, Georges Bank winter flounder, and Gulf of Maine winter flounder were peer reviewed in Woods Hole, MA using the operational assessment process (see: [http://www.nefsc.noaa.gov/SAW-Public/Operational Assessment-Aug2014/](http://www.nefsc.noaa.gov/SAW-Public/Operational%20Assessment-Aug2014/)).

During 28-29 August, an operational assessment of Gulf of Maine cod was peer reviewed by the NEFMC SSC in Portsmouth, NH (see: <http://1.usa.gov/1lWyDF6> and <http://bit.ly/1nNSxxz>).

In August 2014, the Center updated stock status determinations for the seven skate species, and completed operational assessments on northern and southern silver hake, northern and southern red hake, and offshore hake. In September, the NEFSC will conduct a data update on dogfish.

In 2014, updated assessments and data updates were completed for scup, black sea bass, summer flounder, bluefish, mackerel and the squids and provided to MAFMC staff and its SSC.

Other Research Activities

Cooperative Research

Study fleet staff observed Closed Area I sampling trips conducted on the F/V *Mary K* and F/V *Hera*. These are the third and fourth of the ten trips allowed under the Study Fleet-specific Closed Area Experimental Fishery Permit to collect information to support the haddock fishery.

Electronic Observer Technologies

At-sea monitoring training occurred in August. This training used a rugged Panasonic Android tablet to collect data on sector groundfish fishing vessel trips. Data were provided daily to GARFO and to sector managers, transmitted wirelessly upon landing.

Spiny Dogfish

The first year of monthly sampling of mature female spiny dogfish was completed. These data will be used in a study of the dogfish's reproductive seasonality and gestation period. Samples were obtained in all months except October 2013 (the Federal furlough) from Southern New England. Sampling will continue for another 12 months.

Loggerhead Turtles

During 27 May – 1 June, a team of researchers from NOAA's Northeast Fisheries Science Center and the Coonamessett Farm Foundation tagged 19 loggerhead sea turtles in the Mid-Atlantic. The team worked aboard the F/V *Kathy Ann*, a commercial sea scallop vessel based in Barnegat Light, New Jersey. The work is part of an ongoing effort to learn more about the movements and behavior of loggerheads. (<http://1.usa.gov/Yy7Kxc>)

NEFSC Climate, Ecosystem, Habitat and Assessment Steering Group (CEHASG)

The Center's intramural CEHASG is developing a plan for including ecosystem, climate, and habitat terms of reference in all NEFSC stock assessments. The CEHASG is also discussing the benefits of establishing a Regime Shift Working Group to consider evidence for such shifts and to evaluate the potential effects on stock dynamics in the ecosystem.

NEFSC Strategic Planning

The NEFSC is revisiting its strategic science plan. The Greater Atlantic Regional Fisheries Office is also developing a strategic plan, and we are coordinating our efforts. Listening sessions with NEFSC staff and the Greater Atlantic Regional Fisheries Office are completed. External engagements will occur in September and October (via phone interviews, two regional workshops, and written responses to a questionnaire.) A final plan is expected in early 2015.

Selected Publications

Genetic evidence of local exploitation of Atlantic salmon in a coastal subsistence fishery in the Northwest Atlantic. Bradbury IR, Hamilton LC, Rafferty S, Meerburg D, Poole R, Dempson JB, Robertson MJ, Reddin DG, Bourret V, Dionne M, Chaput G, Sheehan TF, King TL, Berna L. *Can J Fisher Aquat Sci* 71(2):246-258

Winter and spring controls on the summer food web of the coastal West Antarctic Peninsula. Saba, G.K., Fraser, W.R., Saba, V.S., Iannuzzi, R.A., Coleman, K.E., Doney, S.C., Ducklow, H.W., Martinson, D.G., Miles, T.N., Patterson-Fraser, D.L., Stammerjohn, S.E., Steinberg, D.K., and Schofield, O. 2014. *Nature Communications* 5:4318.

Discard estimation, precision, and sample size analyses for 14 federally managed species groups in the waters off the northeastern United States. Wigley S.E, Blaylock J., Rago P.J., and Shield G. 2014. US Dept Commer., *Northeast Fish. Sci. Cent. Ref. Doc.* 14-05: 157 p. (<http://1.usa.gov/Yy6f22>)

New probiotic developed to protect larval oysters from vibrio. *Hatchery International*. July 28, 2014 (<http://bit.ly/Yy6bPS>)