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

August 25, 2016

CRUISE RESULTS

F/V *E.S.S. Pursuit* (Contracted Survey Vessel)
Cruise No. EP 16-01 (Parts I-III)
Surfclam and Ocean Quahog Survey

CRUISE PERIOD AND AREA

The EP 16-01 Surfclam and Ocean Quahog Survey cruise period was from 3 – 18 August 2016 and was conducted in three parts: Part I was from 3 – 7 August 2016, Part II was from 9 – 13 August 2016, and Part III was from 15 – 19 August 2016. The area of operation was Georges Bank. Approximate station locations are shown in Figure 1.

OBJECTIVES

The objectives of the survey were to: (1) determine the distribution, relative abundance and obtain biological data for surfclams (*Spisula solidissima*) and ocean quahogs (*Arctica islandica*); (2) collect dredge performance readings on each dredge haul by deploying a set of archiving, multi-sensor sampling devices attached to the commercial clam dredge; (3) collect adductor muscle meat weights and shells from surfclams and ocean quahogs on a subset of station locations; (4) conduct a series of selectivity tows with a second commercial sized dredge built with ¾ inch bar spacing designed to characterize the smaller surfclams and ocean quahogs not retained in the standard commercial-sized survey dredge.

METHODS

A five-minute dredge tow was made at each randomly pre-selected station indicated on electronic cruise charts. The standardized towing speed was set between a range of 3.0 to 3.5 knots, speed over ground, and the scope ratio was approximately 2:1. Sampling was conducted using a standardized, commercial-sized hydraulic jet dredge, equipped with a 156-inch (13-foot) wide cutting blade with 1 3/8 inch bar spacing inside the dredge. The dredge was supplied with water from a ship mounted surface supplied pump. The vessel surface pump was set to 145 psi and 1800 RPM for most tows and monitored by the vessel operator. Catch was deposited into hoppers that delivered it up and over a shaking table with 3/4 inch spacing. After, the shaker table catch was deposited onto a second conveyor that brought the catch to the scientists for sorting into component species.

All catch and biological data were recorded using the shipboard automated data entry system, Fisheries Scientific Computing System (FSCS 1.6). This system uses digital scales, electronic

measuring boards (Ichthysticks), and touch screen displays to record data, in addition to archiving the data on the ship's computer network. On the commercial platform, NEFSC installed its own SCS system and tied into the ships GPS and Sounder. After each tow, the catch was sorted by species and weighed using motion compensated digital scales. Representative length frequencies were collected for surfclams, ocean quahogs, southern quahogs, and sea scallops. Sampled species were assigned individual identification numbers, measured, weighed to the nearest 0.001 kilogram (kg) and further sampled for age and growth studies. Shell lengths were measured to the nearest millimeter for surfclams, ocean quahogs, sea scallops and southern quahogs. Biological samples were collected concurrently with measuring operations (Table 1). Weights and total numbers were not recorded for by-catch fish and invertebrate species other than those mentioned above. The remainder of the catch (miscellaneous invertebrates, shells, substrate, et cetera) was discarded and not enumerated.

RESULTS

The survey successfully sampled at 174 stations, with 59, 65, and 50 stations completed on Parts I, II and III, respectively. There were four selectivity sites and six exploratory sites in the shallow Nantucket Shoals stratum 96.

A total of 301 age and growth samples were collected from Atlantic surfclams (Table 1). A total of 2,528 samples were collected to support additional internal and external investigations (Table 2).

DISPOSITION OF SAMPLES AND DATA

Age and growth samples, as well as trawl catch data, will be analyzed at the NEFSC Woods Hole, Massachusetts Laboratory. Resulting data will be audited, edited, and loaded into the NEFSC survey database.

SCIENTIFIC PERSONNEL

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[1] 3 – 7August 2016
[2] 9 – 13 August 2016
[3] 15 – 19 August 2016

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Table 1: Field observations and samples collected for age and growth studies on contracted F/V *E.S.S. Pursuit*, Surfclam and Ocean Quahog Survey, during 3 – 18, August 2016.

Species	Age and Growth Samples
Atlantic surfclam	301

Table 2: Miscellaneous scientific collections made on F/V *E.S.S. Pursuit*, Surfclam and Ocean Quahog Survey, during 3 – 18 August 2016.

Investigator and Affiliation	Species Sampled	Approximate Number
Hennen, Daniel NMFS, NEFSC, Woods Hole, MA	Atlantic surfclam	313 meats examined 12 frozen whole
	ocean quahog	789 meats examined
Long, Chase VIMS, Gloucester Point, MA	ocean quahog	1,193 gonad samples
McNabb, Justin University of N. Carolina, Chapel Hill, NC	Astarte sp.	1 frozen
Whitney, Nina University of Iowa, Ames, IA	ocean quahog	220 frozen
TOTAL		**2,528 samples**

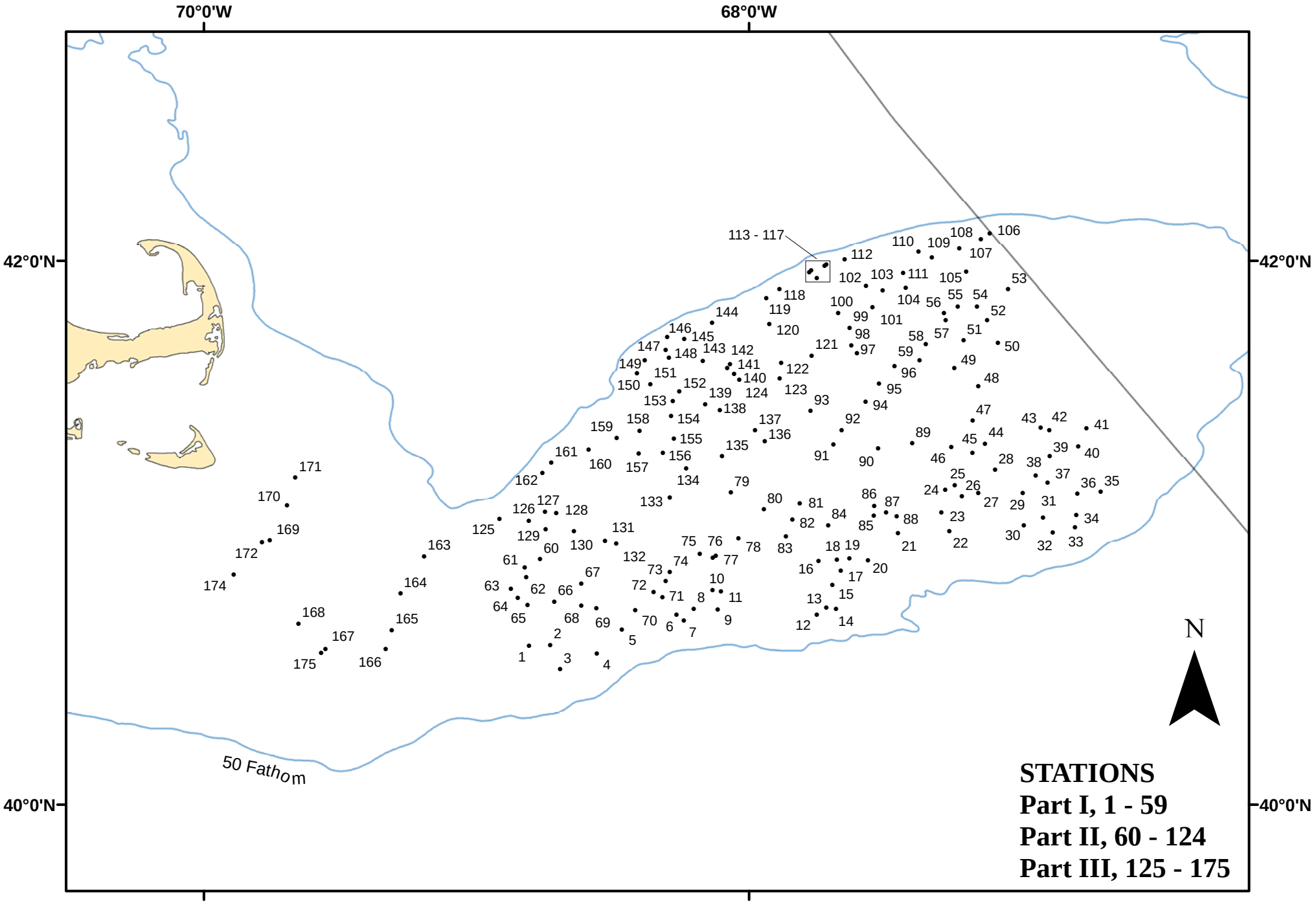

Figure 1. Dredge hauls made from F/V *E.S.S. Pursuit* during NOAA Fisheries Service, Northeast Fisheries Science Center's Surfclam / Ocean Quahog Survey, 3 August - 18 August 2016