

CRUISE RESULTS

F/V E.S.S. Pursuit (Contracted Survey Vessel)

Cruise No. EP 23-01 (Parts I-III)

Atlantic Surfclam and Ocean Quahog Survey

NOAA National Marine Fisheries Service Northeast Fisheries Science Center

Submitted to: NOAA, NEFSC

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CRUISE PERIOD AND AREA

The 2023 Atlantic Surfclam and Ocean Quahog Survey took place from 9 - 23 August 2023 and was conducted in three parts: Part I was from 9 - 13 August 2023, Part II was from 14 - 18 August 2023, and Part III was from 19 - 23 August 2023. The area of operation was Georges Bank. Approximate station locations are shown in Figure 1.

OBJECTIVES

The objectives were to: 1) Determine the distribution, relative abundance and collect biological data for surfclams/ocean quahogs utilizing a commercial clam vessel and a commercial-sized hydraulic clam dredge. 2) Collect clam dredge performance data for each haul utilizing tilt sensors (Star-Oddi) and water pump pressure sensors (MadgeTech). 3) Conduct gear comparisons between the standardized hydraulic clam dredge and the selectivity dredge if necessary.

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 v2.0). This system uses digital scales, electronic measuring boards (Ichthysticks), and touch screen displays to record data, in addition to archiving the data on the computer network. On the commercial platform, the NEFSC installed the Scientific Computer System (SCS) and tied into the ship's GPS and depth 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 and further sampled for age and growth studies. Shell lengths were measured to the nearest millimeter for surfclams, ocean quahogs, southern quahogs, and sea scallops. Biological samples were collected concurrently with measuring operations (Table 1). Weights and total numbers were not recorded for bycatch 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.

For years 2022 and 2023, Ocean Quahog data was collected using a stratification scheme designed for Atlantic Surfclams, so those data should not be used for population abundance estimation of Ocean Quahogs.

RESULTS

The survey successfully sampled at 170 stations, with 59, 74, and 37 stations completed on Parts I, II and III, respectively. A total of 442 age and growth samples were collected from Atlantic surfclams (Table 1). A total of 194 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

National Marine Fisheries Service, NEFSC, Woods Hole, MA

Mike Bergman ^{1,2}, Chief Scientist ¹
Jonathan Duquette ^{2,3}, Chief Scientist ²
Kathryn Ford ¹
Zachary Fyke ^{1,2}
Dan Hennen ³
Chad Keith ³, Chief Scientist ³
Nancy McHugh ¹
Dana Morton ¹
Richard Powell ³
Sandy Sutherland ¹

Contractors, IBSS Corp., Silver Spring, MD

Elizabeth Alonzo ^{1,2,3}
Megan Barry ^{2,3}
Jenn Casey ^{1,3}
Cristian Carneiro ²
Joey Dunphy ^{1,2,3}
Cameron Fairclough ³
Matt Megill ²

Volunteers

Thalia Eigen ²

Sea Grant Knauss Fellow/Office of Coast Survey

¹ 9 – 13 August 2023

² 14 – 18 August 2023

³ 19 – 23 August 2023

For further information contact Chad Keith, NOAA Fisheries, Northeast Fisheries Science Center, Woods Hole, Massachusetts 02543-1097. Charles.Keith@noaa.gov. The cruise results can be viewed at: [NOAA Institutional Repository](#). Choose the Cruise Results of interest.

Table 1: Atlantic Surfclam samples collected for age and growth studies on F/V *E.S.S. Pursuit*, Atlantic Surfclam and Ocean Quahog Survey, August 9 – 23, 2023.

Investigator	Species Sampled	Approximate Number
NEFSC Age and Growth	Atlantic surfclam	221 shells
NEFSC Age and Growth	Atlantic surfclam	221 viscera weights

Table 2: Miscellaneous scientific collections made on F/V *E.S.S. Pursuit*, Atlantic Surfclam and Ocean Quahog Survey, August 9 – 23, 2023.

Investigator and Affiliation	Species Sampled	Approximate Number
Hennen, Daniel NMFS, NEFSC, Woods Hole, MA	Ocean quahog	101 viscera weights
Robillard, Eric NMFS, NEFSC, Woods Hole, MA	Ocean quahog	93 shells

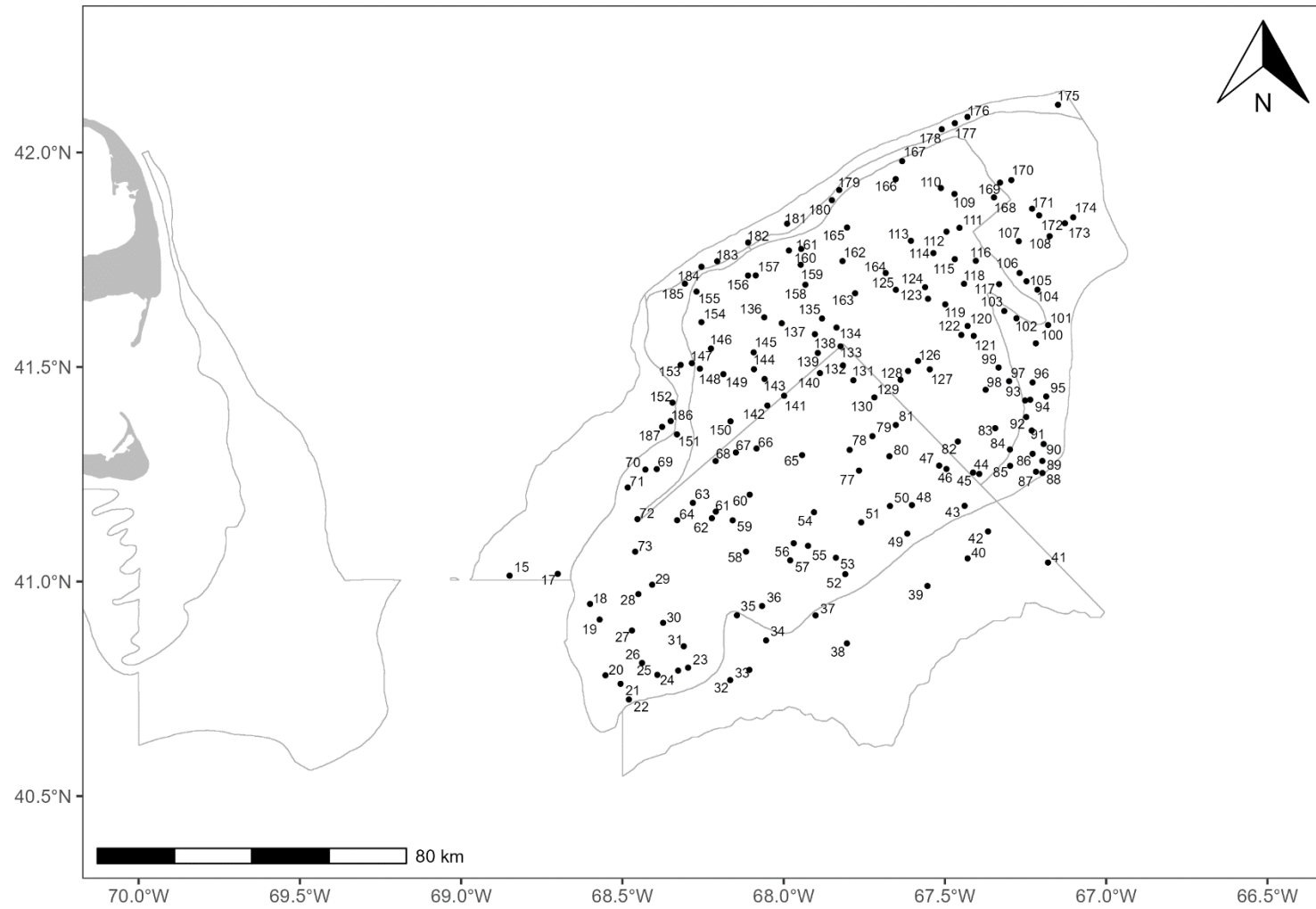


Figure 1: Dredge tows made from F/V E.S.S. Pursuit during the Northeast Fisheries Science Center's Atlantic Surfclam/Ocean Quahog Survey, 9 August - 23 August 2023