CRUISE RESULTS
Surfclam and Ocean Quahog Survey

F/V E.S.S. Pursuit (Contracted Survey Vessel)
Cruise No. EP 22-01 (Parts I-III)

NOAA National Marine Fisheries Service
Northeast Fisheries Science Center

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UNITED STATES DEPARTMENT OF COMMERCE
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CRUISE PERIOD AND AREA

The EP 22-01 Surfclam and Ocean Quahog Survey cruise period was from 17-31 August 2022 and was conducted in three parts: Part I was from 17 – 21 August 2022, Part II was from 22-26 August 2022, and Part III was from 27-31 August 2022. The area of operation was the Delmarva Peninsula to Nantucket Shoals. Approximate station locations are shown in Figures 1 - 3.

OBJECTIVES

The objectives are to: 1) Determine the distribution, relative abundance and biological data for surf clams utilizing a commercial clam vessel and a commercial sized and rigged clam dredge (standardized dredge Quahog dredge with 1 and 3/8”bar spacing). 2) Collect dredge performance readings on each dredge haul utilizing a set of archiving deployed tilt, roll (Star-Oddi), and differential pressure sensor sampling devices (MadgeTech) attached to the clam dredge. 3) Conduct dredge gear comparisons between the standard 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, NEFSC installed Scientific Computer System (SCS) and tied into the ships 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 (kg) 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 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 188 stations, with 47, 83, and 58 stations completed on Parts I, II and III, respectively. A total of 217 age and growth samples were collected from Atlantic surfclams (Table 1). A total of 715 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]
Jonathan Duquette [1, 2, 3], Chief Scientist [1, 2, 3]
Dan Hennen [1]
Nancy McHugh [1]
Christine Kircun [1, 2]
Jill Price [1]
Dominique St. Amand [1]
Catherine Foley [1]
Jessica Blaylock [2]
Chad Keith [3]
Katie Rogers [3]
Katy Shoemaker [3]

Contractors, IBSS Corp., Silver Spring, MD
Thomas Arthur [1, 2, 3]
Doug Brander [1, 2, 3]
Joey Dunphy [2, 3]
Shelby Joyce [3]

Volunteers
Cullen Hauck[2] Hollings Scholar, Saint Olaf College, MN

[1] 17 – 21 August 2022
[2] 22 – 26 August 2022
[3] 27 – 31 August 2022

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 contracted F/V *E.S.S. Pursuit*, Surfclam and Ocean Quahog Survey, during August 17 – 31, 2022. Table updated January 20, 2023.

Investigator	Species Sampled	Approximate Number
NEFSC Age and Growth	Atlantic Surfclam	217 shells

Table 2: Miscellaneous scientific collections made on contracted F/V *E.S.S. Pursuit*, Surfclam and Ocean Quahog Survey, during August 17 – 31, 2022. Table updated January 20, 2023.

Investigator and Affiliation	Species Sampled	Approximate Number
Hare, Matt Cornell University, Ithaca, NY	Atlantic Surfclam	212 gill samples
Hennen, Daniel NMFS, NEFSC, Woods Hole, MA	Ocean quahog Atlantic Surfclam	97 viscera weights 213 viscera weights
Robillard, Eric NMFS, NEFSC, Woods Hole, MA	Ocean quahog	97 quahog shells
Shepherd, Nina NMFS, NEFSC, Woods Hole, MA	Ocean quahog	20 viscera weight
Shoemaker, Katyanne NMFS, NEFSC, Milford, CT	Atlantic Surfclam	76 viscera samples