

# State-Federal Commercial Landings Sampling Workshop

September 22-23, 2025

Virtual Workshop

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## **Executive Summary:**

The Northeast Region Coordinating Council sponsored a State-Federal Commercial Landings Sampling Workshop on September 22 & 23, 2025. The workshop was organized in response to concerns about decreased biological sampling (e.g., lengths, ages) of commercial landings in the Greater Atlantic region which threatens the data underpinnings of stock assessments used to support fisheries management. The workshop had four objectives: 1) promote information exchange relative to sampling activities among state and federal programs; 2) share sampling technology and best practices among programs, 3) evaluate the collective dependency of our landings sampling programs on various sources of funding; and 4) generate recommendations to improve sampling coordination and data accessibility. Presentations were made by most state agency sampling programs from Maine to North Carolina, as well as the NOAA Fisheries Port Biological Sampling program. Presentations by NOAA Fisheries and the Atlantic States Marine Fisheries Commission's ACCSP program also covered needs and uses of biological data to characterize landings data used in stock assessment programs, the transition of the NOAA Fisheries sampling program to the Northeast Fisheries Science Center, and data storage and archiving systems to make data available to data users. The workshop generated five recommendations related to technology adoption, communications and outreach strategies, data standardization and centralization, funding recommendations and cooperative sampling programs.

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# Background

Biological sampling to characterize the size and age composition of commercial landings has declined markedly since 2019. This threatens to undermine the integrity of analytic stock assessments for species managed by the Atlantic States Marine Fisheries Commission and the New England and Mid-Atlantic Fishery Management Councils. Supplemental sampling by state agencies could augment federal sampling programs in corresponding state ports resulting in improved characterization of commercial landings. Many Northeastern and Mid-Atlantic states (Maine to North Carolina) support some type of sampling of commercial landings. Key states and ports where supplemental sampling would be beneficial to federally managed species include Maine (Portland, Rockland), Massachusetts (Gloucester, Boston, New Bedford), Rhode Island (Point Judith, Newport), Connecticut (Stonington), New York (Montauk, Greenport), New Jersey (Cape May, Barnegat, Point Pleasant), Maryland (Ocean City), Virginia (Hampton Roads, Newport News) and North Carolina (Wanchese). Some states associated with these ports have robust sampling programs, while others have limited or no sampling programs. The Northeast Port Biological Sampling Program samples most of these ports on a regular basis.

An initial step toward optimizing federal and state sampling efforts was to convene this virtual workshop to describe current practices and identify opportunities for greater coordination among sampling programs. This effort could result in better standardization of sampling practices across federal and state agencies. Expansion of cooperative efforts among state and federal programs has the potential result in a significant improvement in the characterization of landings data used to assess stocks in the region.

## Workshop Objectives:

1. Promote information exchange relative to sampling activities among state and federal programs
2. Share sampling technology among programs
3. Evaluate the collective dependency of our landings sampling programs on various sources of funding
4. Generate recommendations to improve sampling coordination and data accessibility

## Workshop Organization:

The workshop was held virtually on September 22<sup>nd</sup> and 23<sup>rd</sup>, 2025. Biological sampling programs from each of the coastal states from Maine through North Carolina were invited to give presentations summarizing their sampling programs including strengths and challenges. In addition, the NOAA Fisheries Port Biological Sampling Program (PBSP) and the ACCSP program provided summaries of their respective programs. Presentations by NOAA Fisheries and the Atlantic States Marine Fisheries Commission's ACCSP program also covered needs and uses of biological data to characterize landings data used in stock assessment programs, the transition of the NOAA Fisheries sampling program to the Northeast Fisheries Science Center and data storage and archiving systems to make data available to data users.

In addition to presentations by various state and federal programs, there were designated discussion sessions to address: commonalities and unique approaches among state and federal programs, communications and technology adoption, funding instability, and workshop recommendations. The Workshop agenda is located in Appendix 1. Over 80 scientists and stakeholders participated in the workshop and participation is listed in Appendix 2. Below are program summaries provided by each of the participating sampling programs.

## Determination of Sampling Needs

### ASMFC/ ACCSP Determination of Sampling Needs

#### **Jeff Kipp, Atlantic States Marine Fisheries Commission**

Commercial catch sampling conducted by state agencies, NOAA Fisheries and non-Governmental Organizations (NGOs) is utilized as input data in Commission sponsored stock assessments. The Commission does not have a separate commercial catch sampling program. Sampling requirements are set by individual species management boards. Sampling recommendations are made through individual stock assessments. In some cases, the management board may defer to states to individually prioritize and conduct sampling.

In some cases, biosampling is mandated through management board specific requirements and established in approved management documents (e.g. Fishery Management Plan, Amendment or Addendum). A jurisdiction can be found out of compliance if sampling requirements are not met. Some examples of mandated biosampling include American Lobster, Joan Crab, Bluefish, Atlantic Menhaden, River Herring and American Shad.

Species Technical Committees can recommend refinements to sampling requests to improve future stock assessments. ASMFC staff consider these recommendations when providing input into the ACCSP biological sampling matrix used to prioritize funding among data collection and data management programs. Of the 27 ASMFC managed and jointly managed species, 16 species currently incorporate size and age composition data into stock assessments. Table 1 outlines the 2025 sampling requests for ASMFC managed species.

Table 1. 2025 biological sampling requests for ASMFC managed species.

| Species           | Commercial Biosampling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Required?                        |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| American Eel      | Biological data taken from representative subsamples to include sex ratio and age structure (for yellow/silver eels), length and weight if available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Yes. FMP.                        |
| American Lobster  | Non-de minimis states are required to conduct fishery dependent sampling. States are required to conduct, at a minimum, 10 sea and/or port sampling trips per year in the lobster/Jonah crab fishery. In order to characterize lobster commercial catch, the following data elements must be collected: length, sex, v-notched, egg bearing status, cull status. In addition, the following data elements are recommended for collection in the lobster fishery, but not required: tissue for genetic or toxicity analysis, stomach contents for food habit assessments, gonads for maturity schedule data.                                                                                                                                                                                                                                   | Yes. Addendum XXVI.              |
| Atlantic Croaker  | No requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                  |
| Atlantic Herring  | Samples are routinely collected from the directed herring fishery as it operates within the three defined spawning areas (EM = Eastern Maine; WM = Western Maine; MANH = Massachusetts/New Hampshire). Samples of 100+ fish are collected and the Gonadal Somatic Index (GSI) of female herring in maturity stages 3-5 are recorded.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Yes. Amendment 3 and Addendum II |
| Atlantic Menhaden | Each state in the New England (ME, NH, MA, RI, CT) and Mid-Atlantic (NY, NJ, DE) regions are required to collect one 10-fish sample (age and length) per 300 mt landed for bait purposes. The TC recommends collecting the samples by gear type. One 10-fish sample consists of 10 fish collected from a distinct landing event (e.g., purse seine trip, pound net set). Each collection of 10 fish is from an independent sampling event; multiple 10-fish samples should not be collected from the same landing event. Each state in the Chesapeake Bay (MD, PRFC, VA) and South Atlantic (NC, SC, GA, FL) regions are required to collect one 10-fish sample (age and length) per 200 mt landed for bait purposes. The TC recommends collecting the samples by gear type. One 10-fish sample consists of 10 fish collected from a distinct | Yes, Amendment 3.                |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                              |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
|                       | landing event (e.g., purse seine trip, pound net set). Each collection of 10 fish is an independent sampling event; multiple 10-fish samples should not be collected from the same landing event.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                              |
| Atlantic Striped Bass | Commercial Fishery-Dependent: Catch composition samples shall be representative of location and seasonal distribution of catch, and should include size and sex composition. Collection of scales is conditional; if scale:age relationships from previous years are validated, indirect methods may be used. NOTE: This FMP requirement is vague. All states with commercial fisheries sample their catch for length/weight/age.                                                                                                                                                                                                                                                                                                                                                  | Yes. Amendment 6, Amendment 7                                                                |
| Atlantic Sturgeon     | No requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | No                                                                                           |
| Black Drum            | No requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | No                                                                                           |
| Black Sea Bass        | Maryland compiles data on population, age, sex, and size from any fish caught in pound nets, primarily summer flounder. North Carolina collects information on catch-per-unit-of-effort for the winter trawl fishery, estuarine gill net fishery, pound net fishery, the ocean gill net fishery, commercial gig, and the long-haul seine fishery. North Carolina also conducts dockside sampling of the aforementioned fisheries to obtain lengths and aggregate weight data for landed species.                                                                                                                                                                                                                                                                                   | No                                                                                           |
| Bluefish              | Under Addendum I, states that account for more than 4% of total coastwide removals (sum of recreational and commercial landings and dead discards) for the 2010-2019 period are required to collect a minimum of 100 bluefish ages with a target of collecting 50 from January through June and 50 from July through December. Those states are Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Virginia, North Carolina, and Florida. Age samples are primarily collected from fishery-dependent sources (e.g., party/charter boats, fishing tournaments, volunteer anglers) and sometimes supplemented through the commercial fishery, although samples collected from fishery-independent sources are sometimes utilized as needed to fulfill this requirement. | Yes, but not required to be collected from the commercial fishery. Addendum I to Amendment 1 |
| Coastal Sharks        | No requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                              |
| Cobia                 | No requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | No                                                                                           |
| Horseshoe Crab        | Reporting requirements should consist of numbers landed and pounds landed by sex and harvest method. Each state must characterize a portion of the commercial catch based on prosomal width by sex. Any state with horseshoe crab landings less than 5 percent of the total coastwide landings is only required to report total crabs landed by month.                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes. FMP. Addendum III.                                                                      |
| Jonah Crab            | Non-de minimis states are required to conduct fishery dependent sampling. States are required to conduct, at a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Yes. Addendum III.                                                                           |

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                  |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
|                        | minimum, 10 sea and/or port sampling trips per year in the lobster/Jonah crab fishery. In order to characterize Jonah crab commercial catch, the following data elements should be collected, where possible: carapace width, sex, discards, egg-bearing status, cull status, shell hardness, and whether landings are whole crabs or parts.                                                                                                                                                     |                                                  |
| Northern Shrimp        | Biological data taken from RSA program in year the program is active. The states of Maine, New Hampshire, and Massachusetts are required to collect size and sexstage composition data from subsamples with a target of at least 2% of commercial landings in that state to inform the stock assessment.                                                                                                                                                                                         | Amendment 3                                      |
| Red Drum               | No requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                  |
| Shad & River Herring   | Mandatory reporting of catch (numbers and weight) and effort from commercial fisheries; subsamples shall indicate size, age, and sex composition of catch.                                                                                                                                                                                                                                                                                                                                       | Yes, Amendment 2 (RH) and Amendment 3 (Am. Shad) |
| Spanish Mackerel       | No requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | No                                               |
| Spiny Dogfish          | No requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                  |
| Spot                   | No requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                  |
| Spotted Seatrout       | No requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                  |
| Summer Flounder & Scup | Maryland compiles data on population, age, sex, and size from any fish caught in pound nets, primarily summer flounder. North Carolina collects information on catch-per-unit-of-effort for the winter trawl fishery, estuarine gill net fishery, pound net fishery, the ocean gill net fishery, commercial gig, and the long-haul seine fishery. North Carolina also conducts dockside sampling of the aforementioned fisheries to obtain lengths and aggregate weight data for landed species. | No                                               |
| Tautog                 | All states in the stock unit are required to collect a minimum of 200 age and length samples annually (five fish per centimeter), within the range of lengths commonly caught by the fisheries. Specific sources are not mandated, therefore most states fulfill their obligations through a combination of fishery-dependent and fishery-independent sampling.                                                                                                                                  | Yes. Amendment I.                                |
| Weakfish               | Maintenance of at least the 2005 level of recreational sampling of individual lengths through the Marine Recreational Fisheries Statistics Survey. Collection of six individual fish lengths for each metric ton of weakfish landed commercially. Collection of three individual fish ages for each metric ton of total weakfish landed, with a maximum of 1000 ages annually per state [Samples may come from commercial and/or recreational fishery as long                                    | Yes. Addendum I.                                 |

|                 |                                                                                                           |  |
|-----------------|-----------------------------------------------------------------------------------------------------------|--|
|                 | as they come from the same general area (inshore versus offshore) that those fisheries are prosecuted in. |  |
| Winter Flounder | No requirements                                                                                           |  |

## Determination of Federal Sampling Needs:

### Brian Linton, NOAA Fisheries, Northeast Fisheries Science Center

The Greater Atlantic Regional Fisheries Office (GARFO) announced a predicted 50% reduction in the number of commercial biological samples collected by the Northeast Port Biological Sampling Program (NEPBSP) in FY2020<sup>1</sup>, due to funding issues. As a result, an FY2020 port biological sample allocation plan was developed to address how the Northeast Fisheries Science Center (NEFSC) might allocate the reduced number of port biological samples available in FY2020. The basic idea behind this plan was to sample stocks in proportion to their contribution to total commercial landings. Over the last few years, concerns were raised about this initial approach, because 1) it was tied to FY2019 sampling levels, which become increasingly irrelevant as time passes, and 2) it allowed stocks that do not use biosamples directly in their assessments to be allocated more samples than stocks that do. Therefore, a new sample allocation approach was developed for FY2023, with the help of the Population Dynamics Branch (PDB) task leaders.

The FY2026 biological sampling requests are affected by the same funding issues that constrained the FY2020-FY2025 sampling requests. This included the start of a new Protech contract on February 1, 2021, which increased costs and further reduced the number of biological samples that could be collected.

The following plan refers exclusively to the number of fish that are measured for lengths. Age structures are collected from a subsample of fish in the length sample. The number of lengths and ages in a complete NEPBSP sample varies by species and market category, ranging from 25 to 100 lengths and from 5 to 75 ages per sample.

### METHODS

This analysis initially looked at all 52 stocks for which port biological samples have been requested by the NEFSC in the past (Table 2). Proposed sample requests for FY2026 were not calculated for 11 of the stocks. These excluded stocks are 1) stocks that do not use port biological sampling information in their assessments (i.e., Atlantic Halibut, Barndoor Skate, and Sea Scallops), 2) no possession species (i.e., Northern Shrimp, Northern and Southern Sand-Dab, Ocean Pout, and Atlantic Wolffish), 3) stocks that are not regularly assessed (i.e., Cusk, Hagfish, and Offshore Hake), and 4) stocks for which sampling costs are not justified by the level of landings (i.e., Atlantic Halibut). Atlantic Halibut were added to the list this year, because landings are low, sampling costs are higher than for the other stocks, and the samples are not used directly in the assessment. These exclusions allow for more samples to be allocated to stocks that use NEPBSP length and age data as primary or auxiliary sources of information in their assessments.

With the transition of the NEPBSP from the GARFO to the NEFSC, a new baseline of how many samples can be collected in a year needs to be established. As a result, the total number of requested lengths for FY2026 is based on the total number of lengths ordered for FY2024, which was 77,711 standard lengths and 100 special lengths for Atlantic halibut that are considered separately from the other stocks. Fiscal year 2025 was not used for this analysis, because the GARFO provided additional funds for the NEPBSP in FY2025 that will not be available in FY2026. As in previous years, the maximum number of lengths that could be requested was assumed to be 110% of the standard lengths that were ordered, to help account for requests that are unlikely to be filled. With the special halibut lengths converted to standard lengths, this resulted in a maximum of 88,500 standard length requests.

The FY2026 requested number of lengths for each of the remaining 41 stocks were calculated using a tiered allocation approach. First, each stock was assigned to one of five tiers (Table 1). Tier 1 includes stocks that currently have analytical assessments, and have the highest FY2023 and FY2024 average landings. Tier 2 includes two or three high profile stocks with analytical assessments, with at least one from each council jurisdiction. Tier 3 includes the remaining stocks that have analytical assessments. Tier 4 includes stocks with empirical assessments. Even though Atlantic herring has an analytical assessment, it was placed in Tier 4, because it still receives some commercial biological samples from the state of Maine port sampling program. Tier 5 includes stocks from the other tiers with relatively low landings (i.e., recent average landings < ~150 mt), because it would be difficult to collect the number of lengths allocated to the stocks in the other tiers due to the low landings. Georges Bank cod was assigned to Tier 3, even though it fell below the Tier 5 landings threshold, due to the importance of the stock to stakeholders.

The PDB's NEPBSP point-of-contact and task leaders evaluated different allocations of stock-specific requested lengths for each tier to find a set of values that 1) would decrease the stock-specific requested lengths from Tier 1 down to Tier 5, and 2) would make the stock-specific requested lengths divisible by 100 so that they can be more easily allocated to individual samples. There were many possible combinations of stock-specific requested lengths that would meet these criteria from which the PBSP POC and task leaders chose a reasonable option. The tier assignments and stock-specific requested length values are not set-in-stone, and are re-evaluated each fiscal year.

Starting in quarter 2 of FY2026, stocks that are only landed in the unclassified market category (i.e., American Lobster, Atlantic Herring, Jonah Crab, Ocean Quahog, Red Crab, Northern and Southern Red Hake, the Skate complex, Spiny Dogfish, and Surf Clam) will be sampled at-sea by Northeast Fisheries Observer Program (NEFOP) observers. Therefore, these at-sea stocks received a quarter of the requested lengths that they received in FY2024, which can only be assigned in quarter 1 of FY2026. The remainder of the requested lengths for the at-sea stocks, which would have been assigned to quarters 2-4, were redistributed between the Tier 1-4 stocks that are sampled portside.

## **DISCUSSION**

As the number of commercial length samples collected by the NEPBSP decreases, the uncertainty in commercial catch at age and commercial catch at length estimates created from those data are likely to increase. Estimates of commercial catch at age and length are key inputs to age and size structured assessment models, and increased uncertainty in those estimates over multiple years may result in the eventual downgrading of some age and size structured assessments to index-based assessments. This

increase in uncertainty would be due to an increased inability to track cohorts over time in the assessment models.

Table 2. Stock-specific numbers of requested lengths based on the tiered sample allocation approach for FY2026 (FY26). Italicized stocks will be sampled at-sea after quarter 1 of FY2026. Stock abbreviations include Cape Cod (CC), Georges Bank (GBK), Gulf of Maine (GOM), Mid-Atlantic (MA), and Southern New England (SNE).

| Species                 | Stock       | Tier | FY26<br>Requested<br>Lengths |
|-------------------------|-------------|------|------------------------------|
| <i>CLAM,SURF</i>        | <i>UNIT</i> | 1    | 1,000                        |
| <i>LOBSTER</i>          | <i>UNIT</i> | 1    | 1,000                        |
| <i>QUAHOG,OCEAN</i>     | <i>UNIT</i> | 1    | 1,000                        |
| COD                     | WGOM        | 2    | 4,400                        |
| SEA BASS,BLACK          | NORTH       | 2    | 4,400                        |
| SEA BASS,BLACK          | SOUTH       | 2    | 4,400                        |
| BLUEFISH                | UNIT        | 3    | 3,400                        |
| BUTTERFISH              | UNIT        | 3    | 3,400                        |
| COD                     | GBK         | 3    | 3,400                        |
| <i>DOGFISH SPINY</i>    | <i>UNIT</i> | 3    | 800                          |
| FLOUNDER,AM. PLAICE     | UNIT        | 3    | 3,400                        |
| FLOUNDER,SUMMER         | UNIT        | 3    | 3,400                        |
| FLOUNDER,WINTER         | GBK         | 3    | 3,400                        |
| FLOUNDER,YELLOWTAIL     | CC/GOM      | 3    | 3,400                        |
| HADDOCK                 | GBK         | 3    | 3,400                        |
| HADDOCK                 | GOM         | 3    | 3,400                        |
| HAKE,WHITE              | UNIT        | 3    | 3,400                        |
| MACKEREL,ATLANTIC       | UNIT        | 3    | 3,400                        |
| POLLOCK                 | UNIT        | 3    | 3,400                        |
| REDFISH                 | UNIT        | 3    | 3,400                        |
| SCUP                    | UNIT        | 3    | 3,400                        |
| TILEFISH,GOLDEN         | UNIT        | 3    | 3,400                        |
| ANGLER                  | NORTH       | 4    | 2,200                        |
| ANGLER                  | SOUTH       | 4    | 2,200                        |
| <i>CRAB,JONAH</i>       | <i>UNIT</i> | 4    | 400                          |
| <i>CRAB,RED</i>         | <i>UNIT</i> | 4    | 400                          |
| FLOUNDER,WITCH          | UNIT        | 4    | 2,200                        |
| HAKE,SILVER             | NORTH       | 4    | 2,200                        |
| HAKE,SILVER             | SOUTH       | 4    | 2,200                        |
| <i>HERRING,ATLANTIC</i> | <i>UNIT</i> | 4    | 400                          |
| <i>SKATE COMPLEX</i>    | <i>UNIT</i> | 4    | 400                          |
| SQUID (ILLEX)           | UNIT        | 4    | 2,200                        |
| SQUID (LOLIGO)          | UNIT        | 4    | 2,200                        |
| COD                     | EGOM        | 5    | 400                          |

|                     |              |          |               |
|---------------------|--------------|----------|---------------|
| COD                 | SNE          | 5        | 400           |
| FLOUNDER,WINTER     | GOM          | 5        | 400           |
| FLOUNDER,WINTER     | SNE/MA       | 5        | 400           |
| FLOUNDER,YELLOWTAIL | GBK          | 5        | 400           |
| FLOUNDER,YELLOWTAIL | SNE/MA       | 5        | 400           |
| <i>HAKE,RED</i>     | <i>NORTH</i> | <i>5</i> | <i>400</i>    |
| <i>HAKE,RED</i>     | <i>SOUTH</i> | <i>5</i> | <i>400</i>    |
| TILEFISH,BLUELINE   | UNIT         | 5        | 400           |
| CUSK                | UNIT         | -        | -             |
| FLOUNDER,SAND-DAB   | NORTH        | -        | -             |
| FLOUNDER,SAND-DAB   | SOUTH        | -        | -             |
| HAGFISH             | UNIT         | -        | -             |
| HAKE,OFFSHORE       | UNIT         | -        | -             |
| HALIBUT,ATLANTIC    | UNIT         | -        | -             |
| POUT,OCEAN          | UNIT         | -        | -             |
| SCALLOP,SEA         | UNIT         | -        | -             |
| SKATE,BARNDOOR      | UNIT         | -        | -             |
| WOLFFISH,ATLANTIC   | UNIT         | -        | -             |
| <b>TOTAL</b>        |              |          | <b>88,600</b> |

# State Program Summaries

## Maine State Program Summary

**Jesica Waller, Maine Department of Marine Resources**

### 1) Atlantic Herring (*Clupea harengus*)

The MEDMR is responsible for monitoring the status of the Maine herring fishery and works in cooperation with the National Marine Fisheries Service (NMFS), Massachusetts Division of Marine Fisheries (MADMF), and New Hampshire Fish and Game (NHF&G), to assess the status of the U.S. Atlantic coast herring stock. The 60-year database produced from MEDMR's ongoing biological sampling of the herring fishery is unique in its ability to offer insight into short- and long-term trends occurring within the herring population as sampled by the directed fishery.

Tw 50-count random sample is collected by gear type, per NMFS Statistical Area, every week, year-round (or when the fishery is operating) and placed into a collection box along with a written record of the vessel, landing port, and date, catch location, and the weight of the total catch landed. Trips are targeted by accessing the VMS pre-landings reports of the vessels, such that the vessel is unaware that it will be sampled in port. The samples are frozen until they can be worked on by lab personnel. The length, weight, sex, fecundity, and maturity stage of the fish are recorded, as well as the extraction and mounting of the otoliths, which are used to determine the age of the fish. Ageing is determined by removing one otolith from one fish per centimeter size bin of the sample. Otoliths are then read by an experienced reader, whole, under a microscope, and then digitized to determine fish age. Otolith processing and ageing of herring began in the early 1990s at the MEDMR lab in West Boothbay Harbor. Calibrations between the MEDMR reader and personnel at NOAA Woods Hole and DFO St. Andrews are ongoing.

Using biological samples collected from the commercial fishery, areas are closed based on the maturation of the fish in each of three regions along the Maine coast: Eastern Maine, Western Maine, and MA/NH. MEDMR, along with our partners at MADMF, monitors and manages the spawning closure management measures used by ASMFC to limit the number of spawning fish removed from the inshore population. This is done by collecting two 100-count samples per week per Spawning Area, which have fish greater than 23 cm total length. These samples are refrigerated and examined within 24 hours, and the total length, weight, gonad weight, and developmental stage are used to calculate the Gonadal Somatic Index (GSI) of maturing females. If there is a certain percentage of fish spawning or projected to be spawning, then the area will be closed. See <http://www.massmarinefisheries.net/herring/> for complete details of procedures. Additionally, MEDMR staff conducted portside bycatch investigations, but that work concluded in 2022 due to a loss of funding.

All data collected by MEDMR for this fishery are entered into the MEDMR centralized database (MARVIN). Once QA/QC has been completed, components of these data are delivered or uploaded to the appropriate agencies. For instance, ageing data is passed along to NMFS for input into the stock assessments. Spawning data are uploaded to the MADMF website, in accordance with ASMFC policy, for use in determining spawning area closures. MEDMR sends all the biological sampling data to ACCSP, as part of a grant requirement, and the data is stored by that agency also. The MEDMR staff that supervise and implement this program are funded by a blend of state and federal funds (Interjurisdictional Fisheries Act and Atlantic Coastal Fisheries Cooperative Management Act) and conduct program work year-round. Program costs including out of state sampling are supported by funds from ASFMC. This award is currently set to expire in December 2025.

## 2) [Atlantic menhaden](#) (*Brevoortia tyrannus*)

Since 2015, MEDMR staff have conducted portside sampling to characterize the catch of Atlantic Menhaden. Once the fishery opens, vessels are picked randomly, but MEDMR conducts outreach to maintain communication with active vessels and identify sampling opportunities by gear type and across fishing areas. The target sampling quota is guided by landings reports and communication with industry members. MEDMR conducts portside biological sampling following ASMFC's fishery management plan requirements of one 10-fish sample per 300 metric tons landed for bait purposes. These fish are collected from fishing vessels while they are unloading at the docks and brought back to the lab to be analyzed for length and weight. Both scales and otoliths are collected to determine age. Protocols for this sampling are laid out by NOAA Fisheries, Beaufort, NC, and have remained consistent since the 1990s. As of 2023, all data collected by MEDMR for this fishery are entered into the MARVIN database. Once spatial points QA/QC has been completed, components of these data are delivered or uploaded to NOAA. Commercial biological (age) sample data, as well as other biological measurements, are stored at NOAA's Laboratory in Beaufort, NC, and provided to ASMFC during the stock assessment process. MEDMR program staff are funded by a blend of state and federal funds (Interjurisdictional Fisheries Act and Atlantic Coastal Fisheries Cooperative Management Act) and conduct program work year-round.

## 3) [American lobster](#) (*Homarus americanus*)

The MEDMR Lobster Sea Sampling (LSS) program began collecting fishing effort and biological information on legal and discarded lobsters from the near shore Maine lobster fishery in 1985 as a fishery-dependent survey. This program was initiated at the request of industry, managers, and scientists to gain insight into the discarded portion of the lobster population that supports the most economically important single-species fishery in Maine coastal waters. The LSS program places trained samplers on commercial lobster boats for four trips (two in state waters, two in federal) monthly from May-November in each of the seven Lobster Management Zones. Participation by commercial boats is voluntary and not random, but trips are distributed spatially and temporally within each month. In addition to effort information collected (date, length of trip, length of soak, trap hauls, crew number, bait information, location, gear configuration, etc) samplers work collaboratively with the captain and crew to collect biological data on lobsters (length, sex, egg status, molt status, shell disease presence and severity, cull

status, and v-notch type) and bycatch (species ID and length). In 2024, the program expanded at the request of the industry to cover more trips in federal waters resulting in a program increase from 162 trips per year to 241 trips per year. Data is collected using voice recorders on board the boat, entered into a customized Microsoft Access Database, quality controlled, and then compiled into the MARVIN database. As of 2024, audio data is uploaded and entered using a custom “voice to text” data entry program with QA/QC protocols developed by MEDMR staff to reduce staff data entry time and manual data entry errors. Data is shared with ACCSP, ASMFC and other partners for assessments and upon request. Program staff are supported by a blend of state and federal funds (Interjurisdictional Fisheries Act and Atlantic Coastal Fisheries Cooperative Management Act), and conduct program work year-round, but all other program costs are federally funded (Atlantic Coastal Fisheries Cooperative Management Act).

## Massachusetts Summary

### **William Hoffman and Micah Dean, Massachusetts Division of Marine Fisheries**

The Massachusetts Division of Marine Fisheries (DMF) supports a state sea sampling and State and Federal port sampling program named Fisheries Research and Monitoring (FRM) project. The purpose of the project is to collect and manage fishery dependent data from State and Federal commercial fisheries through port and sea sampling efforts. These data are used to conduct scientific research, inform stock assessments, and craft policies and regulations. The FRM also completes fishery dependent and independent sampling requests submitted by agency biologists and regional collaborators and conducts long-term monitoring and research projects, such as commercial lobster trap sampling, sea sampling the Nantucket Sound otter trawl loligo fishery, and port sampling the commercial striped bass fishery.

Massachusetts Division of Marine Fisheries has had a port and sea sampling project in place for decades. Beginning in 2022, through the Northeast Fisheries Science Center (NEFSC) stock assessment process for several northeast and mid-Atlantic federally managed species, it became apparent that due to static funding there was a lack of essential biological samples that are required to support a comprehensive stock assessment. In response, DMF reallocated NOAA Inter-jurisdictional (IJ) grant funds from Conservation Engineering focus to biological sampling. Conservation Engineering had been focusing on net selectivity and by-catch but given the creation of groundfish sectors and individual fishing quotas, net design and deployment was more of a captain’s decision with far less emphasis on area specific gear regulations. Enhancing the shore-side sampling of commercial landings was determined to be a cost-effective way to increase the collection of biological samples and support Atlantic States Marine Fisheries Commission (ASMFC) and NEFSC stock assessments.

In 2023, with approval from our director (Dan McKiernan), NEFSC (Jon Hare), and Greater Atlantic Regional Fisheries Office (GARFO) (Michael Pentony), FRM received support and inclusion into the Northeast Port Biological Sampling Program (NEPBSP) efforts. Over the 2<sup>nd</sup> and 3<sup>rd</sup> quarters of 2023 we got training, credentials and received our sample requests from the science center. Interjurisdiction funds were used to purchase Big Fin measuring boards, Marel scales. Because DMF was currently engaged in other port sampling and sea sampling studies, much of the hardware was already secured.

Staff – FRM is comprised of five biologists that are responsible for supporting commercial catch sampling shore-side and at sea. They also support applied fisheries research, such as acoustic telemetry and surveys. Conducting the port sampling program is top priority and consumes a considerable amount of their time. Because biologists at DMF split time between other projects, the amount of time dedicated to port sampling varies. Bill Hoffman is the project lead and typically contributes 25% of his time, however recently due to a vacancy, he has been filling duty for the project leader. Michele Heller is our dedicated port sampler. She is responsible for coordinating the daily tasks and contributes 75% of her time to port sampling. David Gauld and Bart DiFiore are our other two biologists that support the port sampling efforts when needed or not focusing on other activities. When fully staffed, annually DMF contributes approximately twenty-seven person months to the port sampling program.

Funding - FRM currently has three positions funded through state funds and two through a IJ grant. The Federal grant is equal to around \$200,000 per year and is on a three-year cycle. We are currently in year two of the grant. DMF has funding guaranteed through June 2027. The IJ grant has been a critically important grant to DMF and has relied on it to fund staff and research for decades. Note, if in the future there was a funding shortfall, staffing levels could be reduced to three people and sampling capacity would be reduced. The DMF remains dedicated to supporting the Federal NEBPSP and Cooperative Research Program (CRP) and will continue the State port sampling program.

When DMF decided to allocate effort to a port sampling project, it was important that it was collected in a way that was useful and available to end users. We wanted to collect data with maximum utility to ensure that it could be incorporated into Federal stock assessments. Therefore, our protocols and sampling design are consistent with the NEBPSP. Bi-Annually NEFSC Population and Dynamics Division establishes sampling requests, which are divided between contracted port samplers and MA DMF. We receive assignments for eight groundfish species, by market category and statistical area. This is essentially the “shopping list” used by our samplers when they go to sample at seafood dealers. Currently, DMF samples the primary ports of Gloucester, Boston, and New Bedford.

The DMF port samplers have access to the NOAA Vessel Monitoring System, which allows vessels to be tracked while actively fishing. This allows samplers to determine when and where vessels will be landing, as well as what species can be sampled. Unfortunately, many commercial fishing trips cross over multiple statistical areas, resulting in the trip not being eligible to be sampled when the trip contains fish from multiple stock areas.

The DMF has begun to address the multiple-stock limitation by working with the Northeast Seafood Coalition and 2 groundfish sectors. We developed methods to access fish from rarely sampled stocks/areas. We also partnered with Conservation Law Foundation (CLF) and implemented the pilot project, called OPPSAMP. This pilot study was proof in concept that captains could isolate fish from individual tows, keep separate from the rest of the catch, and then bring them to a fish dealer where they could be sampled by DMF staff. Four boats from Gloucester and Boston were enlisted and trained on protocols. As incentive, vessels were compensated by the sector managers for their efforts by funds furnished by CLF.

This one-year pilot has ended as funds have been exhausted, but DMF has continued working with the vessels on a voluntary basis and will be receiving samples once they are again available. In addition, a fifth vessel has agreed to participate with the expectation that once the vessel begins fishing in the hard to source areas (eastern Gulf of Maine and Georges Bank) more samples will become available.

Since October 1, 2024, we've been working with CRB & NEPBSP to administer the port sampling aspect of the Conversion Factor study, with the purpose of the study is to update outdated length/weight and round/gutted relationships to improve future stock assessments. This sampling increases the number of samples, species, ports and gear strata from year one. The CRB has hired a sampler to help assist DMF in the southern ports and is focused on sampling in New Bedford during the end of each quarter and collect paired round/gutted weights at sea. The DMF staff meets quarterly with CRB to coordinate and discuss logistics. This study has been funded for two years, and we recently finished the first year.

|                          | Yr1 (Oct'23-Sept'24) | Yr2 (Oct'24-Sept'25)<br>(partial year) | Total   |
|--------------------------|----------------------|----------------------------------------|---------|
| Tallies/Sampling Trips   | 120                  | 90                                     | 210     |
| Unique Dealers           | 5                    | 9                                      | 9       |
| Unique Vessels           | 41                   | 46                                     | 46      |
| Number of ports          | 4                    | 6                                      | 6       |
| L/W collected            | 5311                 | 3442                                   | 8753    |
| Age structures collected | 2607                 | 2508                                   | 5115    |
| L/W strata complete      | 97/148               | 101/264                                | 198/412 |
| Oto strata complete      | 103/148              | 103/264                                | 206/412 |

Sampling this winter was slightly off compared to last year, but this was due to poorer fishing conditions, vessels fishing across stock boundary areas, and reduced staffing levels. To date DMF has sampled 210 trips at 9 unique dealers, and 46 unique vessels. Over 8700 lengths with individual weights and 5115 age structures were collected. Staff have also filled data requests collecting over 1000 cod genetic tissue samples and 1100 winter flounder genetic samples.

Consistent with the NEPBSP, biological data is collected on Android tablets running the GARFO software package BLISS. BLISS was developed specifically for the NEPBSP and is the interface used to collect data and electronically upload into the NEFSC Biological Sampling Monitoring database. This is where all DMF's groundfish port sampling data is housed and made available to stock assessment scientists. Prior to uploading, DMF staff edit data for quality assurance. After uploading NEPBSP staff run an audit to look for data gaps and outliers and corrections are made by DMF staff.

In addition to port sampling Federal fisheries, FRM is responsible for collecting biological samples for shared coastal resources that are managed cooperatively by the Atlantic coastal states through ASMFC. Annually FRM staff receive requests for striped bass, black sea bass, scup, summer flounder, Atlantic sea herring, American lobster and menhaden. Stock assessment scientists represent DMF on ASMFC and Mid-Atlantic Fisheries Management Council technical committees and are responsible for relaying the sample requests to FRM. Annually market sampling for striped bass is one of the primary ASMFC port sampling activities. The objective of this sampling is to generate a time series database of biological characteristics of Massachusetts's commercial striped bass landings. Length, weight, and age structures (scales and otoliths) are collected during market sampling trips, in accordance with ASMFC target sampling levels. During 2024, staff conducted fourteen market sampling trips and collected length, weight, and age structures from three hundred and thirty-nine striped bass. The FRM staff also port sampled nineteen menhaden and four Atlantic herring trips.

## Rhode Island Summary

### Nicole Lengyel Costa, Rhode Island Department of Environmental Management

The Rhode Island Department of Environmental Management (RIDEM) Division of Marine Fisheries (DMF) age and growth study is used to characterize the age-structure and diet composition of stocks whose ranges extend into Narragansett Bay and will supplement data collected in the Northeast Fisheries Science Center (NEFSC) spring and fall surveys as well as the NorthEast Area Monitoring and Assessment Program (NEAMAP). Data collected in this study is used in several stock assessments and we expect that number to increase as ecosystem-based modeling approaches are further developed. Additionally, this study satisfies the requirements of ASMFC Fishery Management Plans (FMP's) for tautog, bluefish, menhaden, striped bass, and weakfish which require the state of Rhode Island to collect a minimum number of age and growth samples annually for stock assessment purposes. The number of samples collected for each species varies depending on the research and management needs as well as ASMFC FMP requirements (Table 1).

Table 1. Species, primary ageing structure, and target # of finfish to be sampled annually.

| Common name         | Structure            | Minimum # of fish to be aged              | Source                           |
|---------------------|----------------------|-------------------------------------------|----------------------------------|
| Summer Flounder     | Otolith              | 100 fish aged                             | Fishery-independent (FI)         |
| Scup                | Otolith              | 100 fish aged                             | FI                               |
| Black sea bass      | Otolith              | 100 fish aged                             | FI                               |
| Winter Flounder     | Otolith              | 40 fish aged                              | FI                               |
| <b>Weakfish</b>     | <b>Otolith</b>       | <b>3 fish aged per metric ton landed*</b> | <b>Commercial, FI</b>            |
| <b>Menhaden</b>     | <b>Scale/Otolith</b> | <b>100 fish aged</b>                      | <b>Commercial, FI</b>            |
| <b>Striped bass</b> | <b>Scale/Otolith</b> | <b>150 fish aged per gear type**</b>      | <b>Commercial</b>                |
| Bluefish            | Otolith              | 100 fish aged*                            | Recreational (For-Hire, Private) |
| Tautog              | Spine                | 200 fish aged*                            | Recreational (For-Hire, Private) |

### *Weakfish*

Weakfish otoliths have been collected by the RI DEM since 2005 on fishery-independent surveys and from the commercial fishery. The annual target number of samples is 3 ages and 6 lengths per metric ton of weakfish landed per the requirements of Addendum I to Amendment 4 to the Interstate Fishery Management Plan for Weakfish. Obtaining commercial weakfish samples remains a challenge for RI due to the sporadic landings that come in throughout the year. The DMF purchases fish directly from seafood dealers at market price to help ensure samples are obtained.

### *Atlantic Menhaden*

Scale and otolith samples are collected from fishery-dependent sampling of bait fisheries and supplemented with fishery-independent survey samples. Per Amendment 3 to the Atlantic Menhaden Fishery Management Plan, the annual sample size required is one 10-fish sample/300 metric tons landed. RI has set an annual target of 10 trip (100 fish) which is typically sufficient to satisfy the sampling requirement.

### *Striped Bass*

Fishery-dependent samples have been collected at RI seafood dealers since 2001 during the open commercial season. The annual target number of samples is 150 general category and 150 from the commercial floating fish trap fishery. During each sampling trip, 25 fish are measured for individual fork lengths (cm) and weights (lbs). Scales are collected from each fish with a maximum of two scale samples per one cm length bin. Dealers have expressed their concern over staff taking otoliths and therefore scales remain the primary ageing structure from fishery-dependent samples.

Fishery-independent samples have been collected from various DMF surveys (Trawl, Fyke Net, etc.) since 2013 with a target number of 40 fish per year divided equally by quarter. Fish are brought back to the DMF lab where they may be frozen before they are dissected.

### *Other Programs*

American lobster port and/or sea sampling is conducted annually to satisfy the Atlantic States Marine Fisheries Commission (ASMFC) requirement of 10 trips sampled per year. Data collected in support of the stock assessment include carapace length, sex, shell condition (degree of shell hardness), cull status (claws missing), other shell/body damage, V-notch status, mortality, incidence and severity of shell disease. Additionally, total catch in pounds, number of lobsters, trap type, bait type, depth and bottom type are recorded.

A Pilot Gillnet Observer Program for RI state waters was started in 2023 to collect discard data on the following target species: striped bass (*Morone saxatilis*), bluefish (*Pomatomus saltatrix*), Atlantic menhaden (*Brevoortia tyrannus*), black sea bass (*Centropristis striata*), summer flounder (*Paralichthys dentatus*), winter skate (*Leucoraja ocellata*), little skate (*Leucoraja erinacea*), and spiny dogfish (*Squalus acanthias*). The primary goals of this project were to investigate the utility of weekly aggregate limits in reducing discards, the potential for increased effort for active gillnet fishers the size distribution of discarded target species, and the seasonality of pulse fisheries. Funding for this project is expected to end in 2026.

### *Ageing Methods*

Scales are cleaned, pressed onto acetate with a heat press, and aged using a microfiche reader. For Atlantic Menhaden, scales are prepared for reading by being placed between two microscope slides, and shipped to the NOAA-Beaufort Lab where they are read and archived. Duplicate scale samples have been archived in-house since 2014. Whole otoliths are also collected and stored in glass vials. The ASMFC has been working with the Beaufort Lab and the Atlantic Coast states to transition menhaden ageing to the states.

Otoliths are dried, mounted in epoxy resin, and thin-sectioned using an IsoMet™ slow speed saw. Thin sections are then mounted onto microscope slides with Flo-Texx™ and aged with a microscope.

All samples are currently aged annually by a single reader. A second read is conducted by the same reader on at least 10% of the samples to obtain precision estimates.

#### Diet Analysis

For all the species listed in Table 1, 40 whole fish or fish racks are collected to obtain sex and maturity data. Diet data is also collected on all species except Atlantic Menhaden. Stomachs are excised, weighed, emptied of their contents, and weighed again. All stomach contents are sorted to the lowest taxonomic level possible, weighed, and measured for individual prey lengths when possible.

#### Funding

Funding for biological sampling has been provided by Sport Fish Restoration, ACCSP, and Interjurisdictional Fisheries Act funding.

## New York Summary

**Jesse Hornstein, New York Department of Environmental Conservation**

#### Program History

Prior to 2020, various units within the New York Department of Environmental Conservation (DEC) would separately sample commercial species of interest from fish markets, ports, and at sea. Beginning in 2020, a Fishery Dependent Sampling Program was formed with dedicated staff to cover all commercial fishery dependent sampling for New York. Since 2023, all data has been stored in a centralized database.

#### Sample Planning/Priorities/Collection

Sampling targets are determined by Atlantic States Marine Fishery Commission (ASMFC) Fishery Management Plans. Jointly managed ASMFC and Mid-Atlantic Fishery Management Council (MAFMC) species that do not have state specific sampling targets such as black sea bass and scup are also sampled. Additionally, state only managed species such as blue crab and whelk are also targeted for sampling.

Sampling plans focus on species availability and species sample target requirements. All species are sampled as they are available in markets throughout the year. Species with sporadic or lower landings such as weakfish can be difficult to intercept in markets. Our Fishery Dependent Sampling Program samples fish markets on different days of the week based on the preference of the market. Port sampling is variable, and we are working to build new relationships with fisherman to enhance port sampling efforts.

Depending on the species, samples are measured, weighed, and sexed. Scales are collected from whole fish and otoliths are taken from filleted fish racks. All hard parts are stored in labeled coin envelopes with unique ID's for sample tracking and processing. The Fishery Dependent Sampling Program provides

the scales and otoliths to different units at the DEC for processing and ageing. Processed otoliths are glued on slides and scales are pressed and archived. All fishery dependent data is stored in an Access database and reviewed for accuracy.

Species that are sampled include: American lobster, jonah crab, blue crab, channeled whelk, knobbed whelk, horseshoe crab, American eel, striped bass, Atlantic menhaden, bluefish, blackfish, summer flounder, black sea bass, weakfish, scup, northern puffer, spot, and winter flounder.

### Budget and Staffing

Currently, the Fishery Dependent Sampling Program has two permanent staff members including a biologist and a fish and wildlife technician. Staff from other units fill in to support sampling efforts. The Program budget is approximately \$290,000 per year and which is entirely from state funding sources. This cost covers salaries, indirect, fringe, material costs, and vehicle charge backs.

## New Jersey Summary

### **Chad Power, New Jersey**

New Jersey's Commercial Sampling Program began officially in 2006 under an ACCSP funded pilot program. The primary focus of the program was to characterize biological sampling for ASMFC managed species, particularly inshore, state managed species that were not being sampled federally. Target species comprised of six fisheries: weakfish, American eel, American shad, Atlantic croaker Atlantic menhaden, and Tautog. Prior to 2006, sampling for weakfish and tautog was conducted in 2004 in house to test sampling feasibility.

Targets for each species sampled varied based on ASMFC's FMP requirements and commercial availability. Breakdown followed as such:

- Weakfish- ASMFC requirement of 6 lengths and 3 ages per MT of landings
- Atlantic menhaden- ASMFC requirement of 10 fish per 300 MT of landings
- Tautog- ASMFC requirement of 200 lengths and ages
- American eel, American shad, and Atlantic Croaker- Opportunistic sampling based on availability.

Parameters collected for individuals included the date of landing, species, total and/or fork length (when applicable), weight, age structures (otoliths, scales, or opercula), area fished, landing vessel, and gear used.

In 2008, an at-sea observer program to characterize NJ's offshore American lobster fishery was adopted through the ACCSP funded grant. The program was primarily in response to Addenda VII and X of the ASMFC's American lobster FMP, which required non de minimis states to develop a biological collection program. The program initially comprised of 16 targeted commercial trips in Lobster Management Areas (LMAs) 4 and 5. Parameters collected while aboard the commercial vessel included carapace length, sex, egg development of gravid females, cull status (number of claws), shell disease condition, shell hardness, vessel, latitudinal and longitudinal location of the trap string, and bait used.

As of 2025, commercial sampling is still being conducted for Atlantic menhaden and American eel. NJ Commercial landings for weakfish, tautog, American shad, and Atlantic croaker have seen substantial declines (Figure 1). Additionally, American lobster effort and landings have dramatically dropped since the program's initiation. Currently, American lobster in LMAs 4 and 5 are experiencing a declining stock and recruitment failure, which may attribute to the decline in harvest. Aside from effort declines, the ACCSP started a phase out of NJ's project, beginning in 2019. The program was officially terminated in 2022.

New Jersey follows the approved ASMFC ageing practices published in the ASMFC document: *Practical Handbook for Determining the Ages of Gulf of Mexico and Atlantic Coast Fishes* (<https://asmfc.org/resources/science-special-report/a-practical-handbook-for-determining-the-ages-of-gulf-of-mexico-and-atlantic-coast-fishes/>). New Jersey also participates in the annual QA/QC Fish Ageing Workshop each year along with any ageing workshops that are related to the fisheries that NJ participates.

## Delaware Program Summary

**Garry Glanden, Delaware Department of Fisheries and Wildlife**

### Delaware Commercial Landings Sampling

Delaware's commercial sampling program is small, but efficient. With coordination efforts from scientists, technicians and commercial fishermen, it is one of the better successes in our state fisheries program. For most of the species we need to collect biological data from, the spring gill net fisheries are where we start. A group of roughly 3 environmental scientists and 4 technicians work together to collect the samples that we need in accordance with compliance plans put in place by the Atlantic States Marine Fisheries Commission (ASMFC). All of our projects are funded through various federal grants established by the state and federal government. After samples are processed, the resulting data is stored individually and entered into Access and/or Excel in order to maintain and find in an easier fashion.

American eels are collected from fishermen utilizing the eel pot fishery. The division collects roughly 200 eels per year. Biological data collected and processed includes sex, length, weight and otoliths for aging. Atlantic menhaden samples are collected from the Spring gill net fishery. The division collects 10 to 50 fish annually. Mid-Atlantic states are required to collect one (1) 10-fish sample per 300 mt landed for bait purposes. Horseshoe crabs are sampled live at a commercial dealer's business. Division staff collects prosomal width and sex data (male-only harvest) on 800 – 1500 crabs annually during the spring hand harvest season. Atlantic striped bass sampling is collected from the Spring gill net fishery. A goal of 300 samples is collected with scales, weight, length and sex documented from representative fish. The fish are sampled from the Upper, Middle and Lower portions of Delaware Bay. Weakfish samples are collected from the gill net fishery, with a small number (6) required. Scientists usually collect 30-50 lengths, weights and otoliths to be processed to get a nice representative sample.

Our age and growth lab are used to collect, process and store the many samples and hard parts (otoliths, scales, operculum, etc.) from the year. Technicians begin to process samples in the wintertime using various pieces of equipment. Once prepared for aging, two scientists will read the individual samples and get an agreeance on age. Otoliths are photographed and digitally stored for ease of access.

All other structures, once read and agreed upon, are entered in Access and/or Excel and stored for further use.

## Maryland Program Summary

**Jodi Baxter, Maryland Department of Natural Resources**

Maryland Department of Natural Resources (MDDNR) does not currently have a formal port monitoring program that obtains biological fisheries data from coastal commercial harvest landings. While there is no MDDNR formal port program, some biological data can be obtained through the reported harvest information and biological sampling that support other programs.

### *Reported Commercial Landings Information*

Information on commercial landings is primarily obtained through required harvester reports and permit cards. MDDNR also obtains commercial fishery purchase information from seafood dealers. Harvesters submit daily trip information on location of harvest, gear used, effort data, and total pound per species harvested. For some permitted fisheries species, additional information on the number of fish harvested and sex is collected.

### *Biological Sampling Programs of Coastal Commercial Landings*

The primary biological sampling program is for commercially harvested striped bass landed in the Chesapeake and coastal bays as well as the state waters of the Atlantic ocean. All striped bass harvested are required to be weighed and counted at a check station prior to being sold. Check stations sign an agreement with MDDNR to collect harvest information as well as allowing biologists to sample those fish. While this program samples mainly in the Chesapeake Bay, two coastal check stations are sampled.

Weight, length, and age (using analysis of scales) are obtained from striped bass sampled at check stations. This work is funded by the US Fish and Wildlife Service's Sport Fish Restoration Program and Maryland state funds. The data are collected internally by staff on paper and entered into a database which is stored on MDDNR servers.

Obtaining striped bass biological samples landed from ocean waters or coastal bays can be difficult at times given that harvest is intermittent. The majority of the coastal harvest occurs in April and May. Sampling requires three to fifteen days annually using two to three staff. Staff are not 100% focused on striped bass monitoring and instead are utilized in many different monitoring surveys.

Additionally, MDDNR also purchases American eel, Atlantic croaker, spot and weakfish from dealers and harvesters when they are available. Sample size varies as harvest of the species is highly variable in Maryland. MDDNR staff analyze these fish to collect data on length, weight, and age (using analysis of otoliths).

It is important to note that while there is limited biological sampling of coastal commercially landed fish, MDDNR conducts fishery dependent monitoring programs within the Chesapeake Bay as well as multiple fishery independent monitoring programs throughout Maryland waters.

# Virginia Program

**Ethan Simpson, Virginia Marine Resources Commission**

## INTRODUCTION:

The General Assembly initiated a Stock Assessment Program in 1988, as a means of providing VMRC with improved information on Virginia's fisheries for management decisions and plans. The program, now referred to as the Biological Sampling Program (BSP), collects and maintains fishery-specific biological data (lengths, weights, sex, and age composition) on commercially and recreationally important finfish species of the Commonwealth.

The original Stock Assessment Program determined a list of important species to be targeted for sampling, based on ranking of inshore ( $\leq 3$  miles) landings by species, their spatial distributions, and consideration of state, interstate, and federal management priorities. Currently, the BSP targets Atlantic croaker, Atlantic menhaden, black drum, bluefish, cobia, red drum, sheepshead, spadefish, Spanish mackerel, spot, spotted seatrout, striped bass, summer flounder, tautog, weakfish, and horseshoe crabs.

Biological data are collected by Biological Sampling Technicians through dockside sampling (multi-stage random sampling) of the commercial harvest landed in Virginia. Length-based targets (the number of samples needed to characterize the length distribution of commercial landings) for each species are established on a three-year moving average of landings by gear and by month of the harvest data collected through mandatory reporting. Real-time landings are used to adjust these preliminary targets ("landings" include all fish landed in Virginia, caught in state or federal waters; "harvest" includes those fish caught in state waters, reported directly to VMRC). By using their knowledge of the spatial and temporal patterns of Virginia's fisheries, along with guidance from the BSP supervisor, the sampling technicians locate the fish they will sample at various fish buyer and harvester locations. The data collected by the technicians reflect trends in commercial harvest and are used to examine the biological trends in the targeted fish populations through stock assessments.

## METHODS:

Each biological sampling technician is assigned to different geographical areas (Northern Neck and Middle Area, Middle Peninsula/Southside, Eastern Shore/Southside). Field sampling occurs at fish processing houses or buyer locations, generally while the buyer is packing them for resale. The technicians use Bigfin Scientific measuring boards and Samsung field tablets, equipped with the Bigfin Scientific software to directly record and subsequently download sampling data (length, weight, sex, and stage of maturity) for the fish that they sample. For sampling fish weight, they use Doran 8000XL scales that also able to communicate with the Bigfin software. A fish identification number unique to each sample is created, along with a batch number for a subsample of specific species for particular trips. These data are uploaded by the technicians to the Biological Sampling Database weekly (see Attachment 1 for documentation).

For striped bass and summer flounder, the technicians remove a subsample of scales for ageing, aside from the otolith samples, as scale ages are used in the stock assessments of these two

species. These fish are not purchased; after being measured and having scales removed, the technician returns them to the buyer. For samples being collected for hard parts (otoliths,

opercula) and other biological information (such as sex and maturity stage), the fish are purchased. The removal of otoliths requires sacrifice of the sample, and the fish are no longer suitable for retail sale after their hard parts have been removed.

Subsamples of a catch or batch are processed for sex information (gender and gonadal maturity or spawning condition index). Such subsamples are indexed by visual inspection (macroscopic) of the gonads. Females are indexed as gonadal stage I-V with males I-IV, with stage I representing an immature or resting stage of gonadal development and, stages IV (males) and V (females) representing spent fish. Fish that cannot be accurately categorized, in terms of spawning condition, are not assigned a gonadal maturity stage (see Table 1). A description of the timeline for the processing of these samples and their associated data is given in the protocol below. Ancillary data for fish sampled at dealers are collected and include species grade or market category (e.g., small, medium, large), harvest area, gear type used, and total catch by market category for a species (some species have a single, unclassified market category, such as spot). This information would allow for expansion of the sample size to the total harvest reported for a species. Estimates of effort are not typically recorded by this program but can be extrapolated from mandatory harvest reports sent to VMRC on a monthly basis by harvesters, sometime after a sampling event.

#### FINFISH AGEING:

All finfish ageing is conducted by the Age & Growth Laboratory at the VMRC HQ at Fort Monroe, VA. VMRC has held a cooperative ageing agreement with CQFE since 1998, made possible through a grant from the U.S. Fish & Wildlife Service's Wallop-Breaux fund. The number of samples needed for ageing varies by species and is determined by evaluating a two-stage sampling regime executed by CQFE, with the goal of achieving a coefficient of variation (CV) of 0.2 at each length interval (Quinn & Deriso, 1999). Each year's annual targets are provided by the lab manager at CQFE to the BSP supervisor. The targets provide the number of fish needed (for ageing) in a given length bin to accurately capture the variability in size-at-age for a given species. The annual targets are split in half, as the BSP targets the spring and fall seasons separately. The minimum number of samples for ageing within a given length bin is 6 fish. The sampling design does not provide targets for cobia, sheepshead, red drum or black drum, as very few specimens have been collected on an annual basis. Daily communications between the technicians and the biological sampling supervisor also ensure that sampling effort is not duplicated. Finally, the use of the ageing targets document ("Age Samples Needed by species, period, and area") prevents oversampling within any given species or length bin.

## North Carolina Program

### **Tina Moore, North Carolina Division of Marine Fisheries**

North Carolina commercial landings have been sampled by the NC Division of Marine Fisheries (NCDMF) since 1982 through the Interjurisdictional Fisheries Act (IJFA) commercial fisheries dependent assessment program and other federal and state funded programs. The IJFA program currently collects samples from a variety of commercial fisheries including the estuarine gill net fishery, ocean gill net fishery, flounder pound net fishery, ocean trawl fishery, blue crab pot fishery, and miscellaneous fishery. In the past, other primary fisheries and data included under the IJFA sampling program were the long-haul seine fishery, ocean beach seine fishery, and sciaenid pound net fishery. These fisheries and data along with the offshore live bottom fishery and coastal pelagic fishery are currently represented under the miscellaneous fishery. The shellfish fishery is sampled but are not included under the IJFA program. Today, NCDMF staff sample commercial landings through fourteen active commercial fisheries specific programs throughout the state.

NCDMF's five field offices (Elizabeth City, Manteo, Washington, Morehead City, and Wilmington) facilitate staff coverage of high traffic fishing regions. Commercial fish house sampling occurs at least one to two days weekly when fisheries are most active but may occur more often depending on commercial fishing activity. Two to three NCDMF staff travel to the major seafood ports in their designated region to intercept commercial fishermen as they land and sell their catch to the commercial fish houses (seafood dealers). The timing of sampling varies depending on the fishery and fishing activity, but generally staff will arrive early in the morning and collect samples throughout the day or arrive in the afternoon and collect samples throughout the night. Staff use a designated fish house sampling work truck to travel to and from commercial fish houses. At the commercial fish house, staff greet fish house owners and workers and ask to set up equipment to collect samples. Once permission is granted, staff gather sampling gear (boots, gloves, bibs, clipboard, data sheets, sampling baskets, length measuring board, weight measuring scales, and age/genetic structure tools) and set up their sampling station in an unobtrusive location.

Samples are collected as catches are offloaded at the fish houses or are collected from catches recently landed and waiting to be processed. When available, the captain or crew members are interviewed to obtain trip information including area and depth fished, days at sea, and gear(s) including more specific gear parameters depending on gear type (for example, gill net mesh size and yards fished). Staff attempt to collect samples from each fishery so that the number of samples are representative of the effort and proportion of the fishing activity occurring in each season and region. NCDMF operates a standard sampling protocol for each fishery across the state.

A representative sample of each species by market grade is measured and weighed as offloaded catches are culled at the fish house. Individual fish from each sample are measured to the nearest millimeter (Fork length; FL or Total length; TL) and an aggregate weight is taken for all samples by species and market grade. Collected samples are recorded in metric units (kilograms and millimeters) and subsequently converted to U.S. customary units (pounds and inches) for reporting consistency. When fish house personnel allow, ageing structures such as otoliths or scales, and fin clips are collected for genetic information. Fish are also purchased to collect ageing structures as funds allow. After all biological information is collected, staff put fish into boxes of ice for fish house workers so the fish can be sold.

Staff repeat the sampling process for each trip sampled until samples mirror relative fishing effort that day. For each trip sampled, the total catch weight of each species by market grade is obtained from the fish house dealer's records. These dealer records are kept in accordance with the North Carolina Trip Ticket Program (NCTTP) mandatory reporting of all fish bought and sold in the state which was implemented in 1994.

Collection and ageing of fish otoliths and scales began in the late 1970's and included species such as river herring (*Alosa spp.*), striped bass, weakfish, and Atlantic croaker, among others. In 1985, program 930 (P930) was created as a central program to code all age data and simplify data storage and queries. Until 1996, all ageing for species in P930 was completed by the species lead biologist at which time the Age & Growth Lab was established at the Headquarters office in Morehead City to facilitate centralized processing of age samples, increase timeliness of deliverables, and provide robust quality assurance. One exception to the centralization of ageing remains at the Elizabeth City office which is separate from P930 and the Age & Growth Lab by choice. The Elizabeth City office continues to code age data for samples collected from program 400.

Federal receipts support Age & Growth Lab staff including three biologists and one technician. Age collections occur across all offices and from many different sampling programs including the commercial fish house programs. The Age & Growth Lab coordinates the collection and processing of structures from 22 species with a formalized Age Manual detailing collecting methods, storage, and coding of data. Certain species (i.e., striped bass, American shad, black sea bass) may have their data housed in either P930, or their corresponding program depending upon the type of data collection (independent/dependent) and/or unit stocks. Fish are aged without reader knowledge of the specimen's length or sex. Two readers, typically the Age Lab biologist and the species lead, independently age each structure. When readers agree on an age, that age is assigned to the fish. Any disagreements are aged by a third reader. For samples where all three readers disagree, the Age Lab biologist and species lead work together to assign a final age to the fish. If consensus cannot be reached, the sample is given an age "99" and excluded from further analysis. This procedure ensures the ages are reproducible and it is not just one person assigning an age to a fish.

Not all species are aged by NCDMF. Snapper-grouper age structures are sent to the National Oceanic and Atmospheric Administration (NOAA) Beaufort Lab, and Spanish and king mackerel otoliths are sent to the NOAA Panama City lab for ageing. Preliminary data collected for the fish that the age structures originate from is found in P930. However, since 1994 mackerel ages are stored in the NOAA Southeast Fishery Science Center (SEFSC) Trip Interview Program (TIP) database, and not the NCDMF biological database.

All biological data, across a variety of surveys and sampling programs, is stored in the Biological Database (BDB). The BDB was established in 1980 and follows a standardized structure and protocols under the Fisheries Information Management and Support System (FIMSS). FIMSS provides the workflow, documentation, and processes for data entry and data extraction from the database. The BDB is a Microsoft SQL Server 2022 relational database and the underlying data model retains its hierarchical format where each record type is stored as a separate table and relationships maintained through key variables.

Collected data is coded, checked for errors, scanned, and sent to NCDMF data management staff in the Department's Information & Technology Section for incorporation into the BDB. Alternatively, staff may complete direct entry themselves depending on the program. Before the data is used, all records

undergo quality control including double verification by data collectors. Each program lead biologist works closely with the Department's IT staff to ensure the FIMSS standards are met for data entry into the BDB.

Data entry, validation, and editing are managed via a Microsoft Blazor front end with an API backend. Biologists primarily access data using R, SAS, or Python through .NET API, with authentication and access control handled via Microsoft Azure Entra ID.

Data collection from commercial landings is highly dependent on federal funding, and state appropriated funds have been used to cover these data collection programs and some mission essential shortfalls over time. Currently, two main federal funding sources cover the commercial landings sampling in North Carolina:

1. The Sport Fish Restoration Act through the Wallop-Breaux Amendments, funded by the US Dept. of the Interior, Fish and Wildlife Service (referred to as the F70 Grant) and Title III of the Interjurisdictional Fisheries Act, funded by the US Dept. of Commerce, NOAA, and 2. The National Marine Fisheries Service, which is shortened to the IJ Grant. NCDMF provides state match funds to support these programs as well.

The F70 Grant provides operating funds matched with funds from state appropriated positions. It covers staff time spent collecting commercial landings samples and many of NCDMF's fishery independent sampling programs. All Age & Growth Lab personnel (4 positions) and 28% of the positions in the Fisheries Management section (20 positions) are supported by this grant. Currently, funding is stable under the F70 grant with a recent notice of award to cover the next 5-year window. However, this grant covers salary and operating costs from other federal programs that NCDMF is unable to support at previous levels.

The IJ Grant has been ongoing since 1982 and originally covered commercial landings sampling across most all NCDMF offices to collect information from the long haul seine, ocean trawl, ocean gill net, beach seine, and sciaenid pound net fisheries. Over time collections expanded to the estuarine gill net fisheries and the snapper-grouper and ocean pelagic fisheries then expanded again to the entire fourteen active commercial fisheries specific programs performed by NCDMF staff including gig, shellfish and blue crab, and. Between 2004-2007 the annual IJ grant award was approximately \$117,000. Funding has been reduced through time, as evidenced by the 2025-2026 grant award of \$32,099 representing 28% of the 2004-2007 annual average. Other funding sources have had to augment commercial landings sampling, which further strains operating costs for other sampling programs and agency priorities. Additionally, a grant for transferring data from NCDMF's BDB to the Atlantic Coastal Cooperative Statistics Program (ACCSP) was approved and started in fiscal year 2022. This project has since been completed and data from 2011-2024 for the snapper-grouper and coastal pelagic fisheries commercial sampling programs have been added to the ACCSP data warehouse. These programs were chosen first because they are part of the TIP database and aligned with NOAA Fisheries' process of receiving data preferentially from the ACCSP. The current priority is to transfer historical data (1986-2010) from those programs into the ACCSP data warehouse. Subsequent goals include the mapping of additional fishery-dependent data programs for inclusion within the ACCSP data warehouse. These programs include the estuarine commercial gill net and estuarine gill net selectivity sampling programs.

Data collected through commercial fisheries dependent sampling programs provide long-term data necessary for monitoring the status of fish stocks in North Carolina and along the Atlantic coast of the

United States. These programs allow North Carolina to provide historical, timely, and accurate assessment information to the Atlantic States Marine Fisheries Commission, South Atlantic Fishery Management Council, Mid-Atlantic Fishery Management Council, and NOAA's Fisheries Science Centers staff to conduct stock assessments. Data collected through these programs will continue to be critical for statewide assessments of species such as striped mullet, red drum, kingfish, striped bass, spotted seatrout, and blue crab. It will also continue to be critical for coastwide assessments of species such as southern flounder, summer flounder, weakfish, Atlantic croaker, red drum, Spanish mackerel, spot, and bluefish. These data allow North Carolina to evaluate the effectiveness of current management measures and modify those regulations in development of management plans and promulgation of fisheries regulations by the NC Marine Fisheries Commission.

For further information on the specific subjects covered in this overview from the North Carolina Division of Marine Fisheries, website links and emails are provided:

Fish House Lead Biologist – Lorena de la Garza – [Lorena.delaGarza@deq.nc.gov](mailto:Lorena.delaGarza@deq.nc.gov)  
Age & Growth Lab Lead Biologist – Sara Pace – [Sara.Pace@deq.nc.gov](mailto:Sara.Pace@deq.nc.gov)  
Information & Technology Services – Scott Smith – [Scott.Smith@deq.nc.gov](mailto:Scott.Smith@deq.nc.gov)  
Accounting & Grants Office – William Brantley – [William.Brantley@deq.nc.gov](mailto:William.Brantley@deq.nc.gov)

NCDMF website link to Species Leads.

## Federal Program Summary

### NOAA Fisheries Port Biological Sampling Program

#### **Victor Vecchio**

NOAA's National Marine Fisheries Service conducts many different types of sampling programs in order to characterize fishery resources of the United States. One such program is the Greater Atlantic Region (GAR) port biological sampling program. The GAR port biological sampling program (program) is a fishery-dependent data collection effort. Fishery-dependent, because samples are collected of commercial landings at fish dealers, docks, or pack houses.

Commercial port sampling begins with the development of a sample "request" crafted by the population dynamics branch at the Northeast Fisheries Science Center (center). Center staff review recent landings trends to develop a set of sample requests intended to be statistically representative of the landings expected for the coming year. Sample requests are stratified by species, geographic region, market category, gear, stock area, and calendar quarter. The sampling request covers 39 different species and market categories, which include three species where possession is currently prohibited (Windowpane flounder, Ocean pout, Atlantic wolfish). These species are included in case regulations lift the no-possession limit during the fishing year.

The entire region from Maine to Virginia is divided into seven sub-regions to ensure that samples are collected across a broad, spatially diverse area. Market categories, taken from the dealer descriptions of landings (e.g., small, medium, large, etc.), are used to fine-tune requests so that sample requests are proportional to the volumes of landed market categories. Fishing gear types are those common to the commercial fishery, and include, but are not limited to otter trawl, gill net, long line, lobster pots, and clam or scallop dredge.

Stock areas are considered for each species and statistical area where different stocks exist. Some species are divided into multiple stocks (e.g., Gulf of Maine, Georges Bank) for biological reasons. Therefore, stock areas are assigned for each species, which are defined by the statistical areas covered by each stock area. Thus, the request includes 62 different stock areas corresponding to groupings of various statistical areas wherein different stocks of species are found. Calendar quarters are three-month periods, which fall on the federal fiscal year cycle (October-September).

Taking all of the aforementioned strata into consideration results in a total request for four to five thousand samples. As each sample may represent up to 100 individuals, and upwards of 25 age structures, the entire request represents several hundred thousand individual measurements, and tens of thousands of age specimens identified over the course of one year.

NOAA Fisheries utilizes a service contractor to collect the samples and enter the resulting data into the Biological Sampling Module Database (BSMDBS). The contract staff are skilled in fish identification, and field techniques necessary to collect biological samples. The contractors are provided with equipment, including laptop computers used for tracking samples, and recording their collections. Contract samplers are embedded within each of the sampling regions, which coincides with the locations of GAR port offices distributed from Maine to Virginia. Contract samplers work closely with federal port agents who conduct outreach with the fishing community. The contractor provides seven staff to meet the sampling contract objectives.

Recently, the port biological sampling program has upgraded the technology used to collect and store biological samples. Instead of the former paper forms and wooden measuring boards, the contractors have been outfitted with electronic measuring boards linked to tablet computers running the latest software developed specifically for the sampling program. While it was expected that application of the new equipment would help reduce keystroke errors, samplers experience increased speed and efficiency of sampling once they become accustomed to the new equipment.

As each sample is collected the length of each fish (or specimen) is measured. The field computer helps store pertinent information about the fishing trip the sample came from, including the date, species, market category, vessel, statistical area fished, and the total weight of all fish measured. Hard parts (otoliths) are collected from a sub-sample of the specimens measured to determine age and stored in bar-coded envelopes. The barcode ties the hard part to the individual it was taken from at the time of collection and remains with that specimen through processing and ultimate disposition of the sample. All sample data are maintained at the organism level for further processing.

A series of quality checks and audits are applied after the sample data are entered onto the BSMDDBS. The audits are designed to examine the sampling data in an effort to uncover inconsistencies. Should a question arise, samples are referred back to the originator for review. These checks ensure that the data are of the highest quality possible. Once a sample has passed the quality checks they are forwarded for further processing where they will be used by the center's population dynamics branch in stock assessments and management of these resources.

## Federal Program Transition

**Katherine McCardle and Nichole Rossi, NOAA Fisheries, Northeast Fisheries Science Center**

The Northeast Port Biological Sampling Program (NEPBSP) is merging with the Northeast Fisheries Observer Program (NEFOP) to increase biological samples and achieve program efficiencies. The NEPBSP, which began in the 1970s as a simplified sampling program and expanded into a more complex program, will be integrated with NEFOP in an effort to increase and streamline sampling efforts. Both the NEFOP and the NEPBSP are inherently complex programs that require varying degrees of staff training, field support, working knowledge of fishing fleets, and coordination. At their foundation, both contracts share common ground as fisheries biological sample-based programs. Furthermore, both programs rely on trained biological samplers who collect crucial biological data for science initiatives and stock assessments. The collection of biological samples to inform stock assessments and fishery management or for research to inform the scientific community are pillars on which observer programs are founded. Many regions have folded biological port sampling into their observer programs thereby paving the way for the northeast to follow suit. FMRD intends to strategically train observers for the biological sampling program, prioritizing observers and ports with high sampling targets.

Utilizing observers, who are trained scientific data collectors operating directly with commercial fishing vessels, fishers, and dealers, will increase the program's ability to meet sample targets and reduce the amount of travel and coordination required to obtain samples. In addition, the contract merger will enhance program oversight, communication and expand the geographic range of sample collection. The contract merge aims to combine these similar fisheries biological sample-based programs, with anticipated efficiencies including reduced program costs, and improved sample targeting and responsiveness to changes in program needs.

### **The NEPBSP and NEFOP Merge: A Detailed Timeline**

The merger of the Northeast Port Biological Sampling Program (NEPBSP) and the Northeast Fisheries Observer Program (NEFOP) has been a multi-phase initiative, aiming to enhance biological sampling and achieve program efficiencies.

*Phase 1: Research and Initial Planning (Spring - Fall 2024)*

- **Spring 2024:** The process began with research into the potential for a contract merge. Meetings were held with key stakeholders including GARFO, READ, and the NEPBSP service provider to explore the feasibility and implications of the merger.
- **Fall 2024:** The plan to merge the contracts was officially communicated to stakeholders and state partners, initiating broader collaboration and feedback.

*Phase 2: Contract Revision and Solicitation (Fall 2024 - May 2025)*

- **Fall 2024/Winter 2025:** The NEFOP Performance Work Statement underwent significant revisions to incorporate both programs into a single, merged contract.
- **April 18, 2025:** The re-compete solicitation for NEFOP was publicly posted on SAM.gov, inviting competitive bids for the combined contract.
- **May 19, 2025:** The solicitation period for the NEFOP re-compete officially closed.

*Phase 3: Internal Retreats and Contract Finalization (June - September 2025)*

- **June 2025:** Two internal NEPBSP retreats were conducted with NEFSC and GARFO staff to further refine the integration strategy and address any outstanding issues.
- **August 2025:** GARFO exercised the fourth option period for NEPBSP services, extending NEPBSP from August 2025 to July 2026. Concurrently, an informational mailer was distributed to federal permit holders and fish dealers.
- **September 2025:** A technical evaluation of the bids for the NEFOP contract was completed, leading to the award of the new contract.
- **September 15, 2025:** FMRD officially awarded the new NEFOP re-compete contract to AIS, Inc.
- **September 30, 2025:** The NEPBSP "QA/QC" contract will expire. Concurrently, planning commenced for the transition of technical responsibilities for BSM and BLISS applications.

*Phase 4: Transition and Future Alignment (October 2025 - 2026)*

- **October 2025:** Preparations were also initiated for in-person outreach across the Northeast states (Maine - North Carolina). The new combined NEFOP contract is expected to begin this month.
- **December 7, 2025:** The current NEFOP contract is scheduled to end.
- **Ongoing:** Efforts are continuously underway to fully incorporate the NEPBSP into the Fisheries Monitoring and Research Division's (FMRD) NEFOP program.
- **2026:** The annual NEPBSP request list will be aligned with the NEFOP seaday schedule, which runs from April to March, to optimize resource allocation and operational efficiency.

### **Future Work and Outlook**

The NEFOP contract tracks performance routinely and FMRD will monitor and adjust NEPBSP operations as needed. Additional steps FMRD is taking to assist in program success include aligning the Standardized Bycatch Reporting Methodology (SBRM) seaday schedule and the

NEPBSP Annual Sample Request List to one consolidated timeline (April - March). FMRD will continue outreach efforts to the fishing industry, dealer facilities, and other stakeholders.

## Data Flow and Databases

### ACCSP Data Flow and Databases

**Skye Thomas, Atlantic Coastal Cooperative Statistics Program**

The Atlantic Coast Cooperative Statistics Program (ACCSP) was created in 1995 as a cooperative state-federal program between 23 management bodies. ACCSP works with a combination of councils, commissions, state, and federal agencies to produce dependable and timely marine fisheries statistics for the Atlantic Coast, establishing and maintaining coastwide data collection and storage standards for the commercial fisheries data.

The commercial data warehouse, established in 2001, was created to hold fisheries-dependent data supplied by the program partners. Data is collected in partner codes and formats, which is then translated to ACCSP codes before submission for centralized storage. Currently, the data warehouse has full year, coastwide commercial data available from 1950 to 2024, and recreational data from 1982 to 2024.

The Biological Module contains commercial biological sample data in the ACCSP Data Warehouse. This is a component designed to aggregate high resolution biological data. The data stored here uses Data Warehouse standards and codes, except for those codes used for biological samples. Those codes are contained in the biological transfer format, which was standardized by the Biological Review Panel Committee and agreed upon by the Standard Codes Committee, before being approved by the Operations and Advisors Committees. The biological module supports the needs of ASMFC and ACCSP partners by providing data for stock assessments, policy decisions, and public and partner data accessibility.

While the detailed biological data is held in the biological module, ACCSP also tracks partner sampling programs. This information is held in the Biological Inventory, the online repository for program metadata. It contains summary information and contact points on current and past biological sampling programs from state and federal programs. This module is partner managed - partners add new programs, update current ones, or finalize completed programs themselves.

The data from the biological programs can be found in the Biological Warehouse, which was created to hold sample data. The biological transfer format harmonizes the sample data from different partner collection programs. Currently, there are several species with datasets in the Biological Warehouse including: American lobster (1981-2024), Atlantic herring (2003-2018), and Jonah crab (2003-2024).

The Biological Warehouse is structured around four main tables in a nested format to accommodate storage of information collected under various sampling designs (Fig. 1). As with the commercial data, partners collect biological samples in their codes and formats, before translating them into ACCSP codes

and submitting the data for storage. This standardization allows for regional summarization while preserving program specific information.

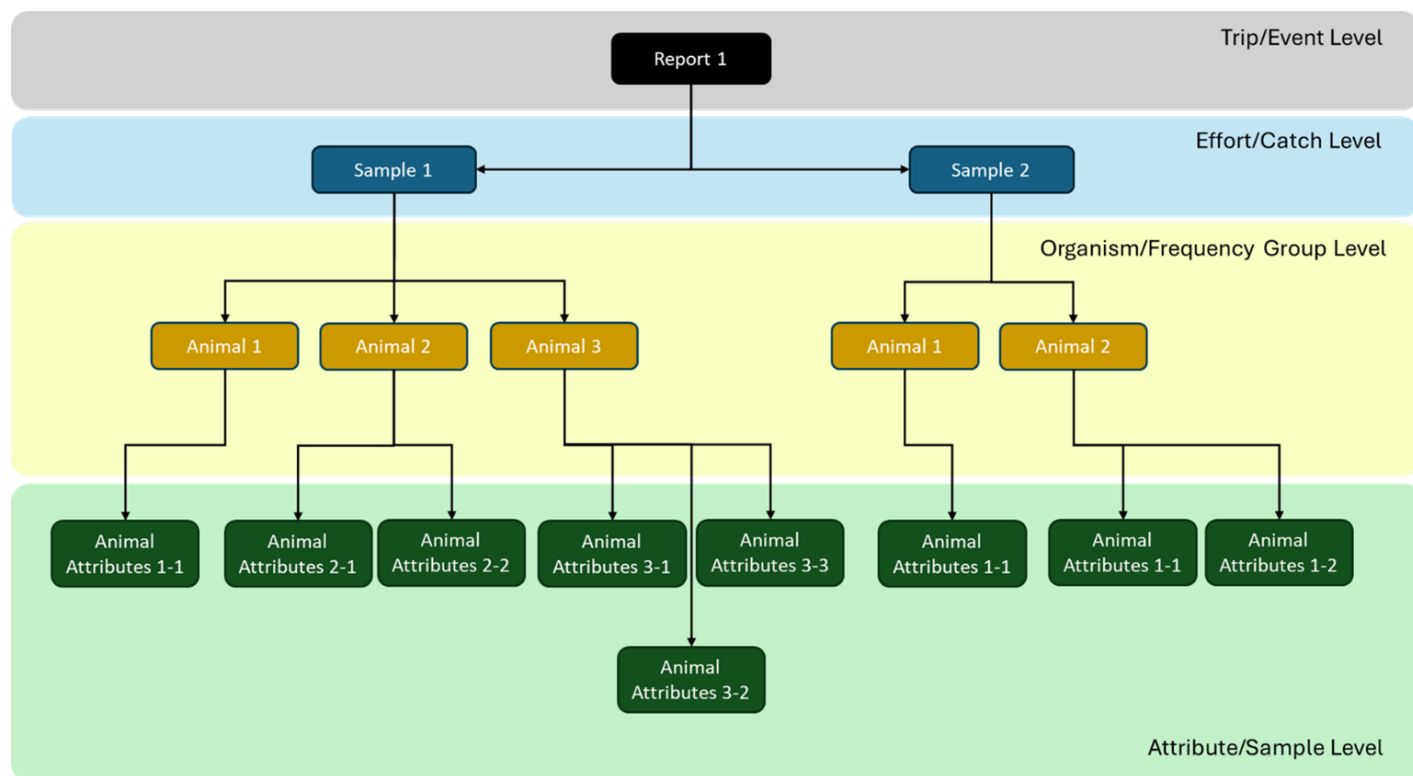


Figure SEQ Figure \\* ARABIC 1: Biological Module Four Table Structure

ACCSP currently has two active biological data projects, one with North Carolina and the other being the SEFSC. ACCSP funded a North Carolina proposal to restructure their biological databases and to create a direct database link with the biological module. Currently North Carolina biological data from 2022 to 2024 has been loaded into the Biological Warehouse, with data from 2011 to 2021 being prepared for submission to ACCSP. The ongoing project with the SEFSC established a direct database link with ACCSP's Biological Module for historical data covering South Carolina through Florida. There is currently data from 2023 to 2024 in the Warehouse and data from 2014 to 2022 is under review for submission. Both projects plan to submit data multiple times a year to the Warehouse.

ACCSP is working with partners and committees to expand the Biological Warehouse to include greater species and temporal coverage and implement standard queries to facilitate data accessibility and availability for partners and public use.

## NOAA Fisheries Data Flows and Databases:

**Russell Brown, NOAA Fisheries, Northeast Fisheries Science Center**

NOAA Fisheries and its preceding agencies have a long history of collection of biological sampling data dating back to the early 1930s. The federal commercial fisheries data collection system has evolved considerably through time, and continues to be modernized.

Federal data collection relies on four key sources to collect data on commercial fisheries trips and catch. Federally licensed fishers are generally required to complete a vessel trip report for each trip and separate reports for each 3-digit statistical area fished when multiple areas are fished. Dealer reports by federal licensed dealers that purchase landings. The Northeast Observer program provides detailed haul by haul information for observed trips, which provides critical information on gear used, as well as landings and discards. Finally, the Northeast Port Biological Sampling Program (NEPBSP) samples landings once they reach fisheries dealers.

Different data sources are used to identify key characteristics associated with fisheries landings. The Vessel Trip Report is important in identify the trip date(s), areas fished, gear used and hail weights of landed species. The dealer records are used as the definitive source of data on landings weight and market category. The NEPBSP data are used to characterize the length and age composition (and in some cases the sex composition) of the landings by market category. It is critical to be able to link these data sources from each trip to be able to characterize the overall length and age composition of the catch.

From 1994-2003, it was difficult to establish reliable links among these data sources for given trips. In addition, the primary databases were focused more on catch/quota monitoring without regard to stock assessment needs. As a result, separate catch accounting systems evolved for catch/quota monitoring required for management, and catch accounting systems used for stock assessment purposes.

The introduction of the Catch Accounting and Monitoring System (CAMS) allowed for generation of catch estimates to be utilized for both science (sampling and stock assessment) and management (management and quota monitoring). The system introduced a trip declaration system that assigns a unique trip identification number (e.g. a trip serial number) for each federal commercial trip. This unique trip identification number is used to link all other data sources for that fishing trip.

For biological sample collection, samplers use an electronic data collection system including a tablet computer, sampling program software (BLISS and BSM), electronic measuring boards, barcode scanners and in some cases digital balances to collect biological data. Metadata for each sample is entered on the tablet computer including the trip identification number, vessel, landed port, landed date, species and market category. Collected biological data can then be matched back to the Vessel Trip Report which includes key information such as trip timing and

duration, vessel permit, area(s) fished and catch hail weight. A key performance criteria of this system is that the port biological sampling data must be linked to the trip metadata to determine area fish and ultimately stock area.

Collected age samples are place in bar code labeled envelopes which are scanned at the point of data collection. Age samples are ultimately sent to the Age and Growth Laboratory at the Woods Hole Laboratory of the Northeast Fisheries Science Center. Age determinations are linked back to the sample and trip metadata via individual bar codes.

The CAMS databases house data from multiple programs including historical federal data since 1982, New England Port Biological Sampling Program data, Massachusetts Division of Marine Fisheries sampling data, and a number of special studies (e.g., head vs. gutted weight studies, length-weight conversion studies, and cooperative research projects on Illex and Loligo squid). Each data source as a unique source code that allows data users including stock assessment biologists to identify and appropriate utilize data.

Federal databases are likely to continue to evolve to address the needs of a variety of data collectors and users. This will require considerable planning and built-in flexibility to allow for the incorporation of new biological sampling data sources.

## Workshop Recommendations

The workshop met in plenary on September 23, 2025 to discuss potential recommendations resulting from the workshop. The participants adopted four recommendations related to technology adoption, communication and outreach strategies, data standardization and centralization, and funding opportunities, and cooperative sampling programs.

**Technology Adoption:** The workshop provided an opportunity for state and federal programs to share technology applications including voice recording and auto processing, electronic data collection systems, and use of Vessel Monitoring Systems (VMS) to enhance the efficiency and accuracy of data collection. Programs are encouraged to examine their current practices and seek opportunities for adoption of technology when appropriate.

**Communication and Outreach Strategies:** All programs recognized the importance of communication and outreach in terms of encouraging communication and cooperation of harvesters and dealers. Sampling programs should strive to communicate to fishery stakeholders how biological data are used to improve stock assessments and seek fishery specific information that will improve sampling efforts. This will promote a sense of ownership of provided data by fishery stakeholders. Programs should continue to share best practices and seek strategies for communicating the importance of biological sampling to fishery stakeholders.

**Data Standardization and Centralization:** Data collected by State and Federal sampling programs reside in a variety of state and regional databases, resulting in significant effort to assemble regional datasets

for stock assessment purposes. Programs should seek to utilize regional databases (e.g., ACCSP data warehouse) to house data in standardized formats to allow for efficient utilization for stock assessment and other science and management purposes.

**Funding Recommendations:** Most state programs and all federal programs are directly or indirectly dependent on federal funding to support sampling and ageing activities. Information in this report identified specific funding sources/lines that are critical for supporting the biological sampling programs. This information should be of use as agencies leadership communicate the dependency of data collection programs and indirectly the reliability of regional fisheries stock assessments. Agencies should examine sampling support relative current priorities when making decisions concerning funding.

**Cooperative Sampling Programs:** The workshop noted effective cooperative programs (e.g., Massachusetts Cooperative groundfish, Loligo and Illex squid) that collect biological sampling data. Governmental programs are encouraged to seek cooperative research projects with non-governmental organizations. Workshop participants saw considerable value in regular exchange of information among state and federal biological sampling programs. The integration of program ideas likely will result in an improved ability to meet future resource challenges.

# Appendices

## Appendix 1: Agenda for State-Federal Commercial Landings Sampling Workshop

### State Federal Commercial Landings Sampling Workshop

September 22-23, 2025

#### Workshop Connectivity:

Googlemeets:

[meet.google.com/mox-nsqz-xdm](https://meet.google.com/mox-nsqz-xdm)

Phone Numbers:

[\(US\)+1 813-359-9693](tel:+18133599693)

PIN: 327 753 633#

### Agenda

- |          |                                                                                                                                               |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 10:00 AM | Workshop Introduction – <b>Russell Brown</b> , Workshop Moderator                                                                             |
| 10:20 AM | Background Presentation- <b>Russell Brown</b> , Ph.D., Northeast Fisheries Science Center, NOAA Fisheries                                     |
| 10:40 AM | Determination of AFMSC Sampling Requests – <b>Jeff Kipp</b> , Atlantic States Marine Fisheries Commission                                     |
| 11:10 AM | Determination of Federal Sampling Requests – <b>Brian Linton</b> , Ph.D., Northeast Fisheries Science Center, NOAA Fisheries                  |
| 11:40 AM | Commercial Landings Sampling in Maine – <b>Jesica Waller</b> , Marine Department of Marine Resources                                          |
| 12:00 PM | <b>Lunch Break</b>                                                                                                                            |
| 1:00 PM  | Commercial Landings Sampling in Massachusetts – <b>Micah Dean</b> , Ph.D., Massachusetts Division of Marine Fisheries                         |
| 1:20 PM  | Commercial Landings Sampling in Rhode Island – <b>Nicole Lengyel &amp; Nicole Ares</b> , Rhode Island Department of Environmental Management  |
| 1:40 PM  | Commercial Landings Sampling in New York – <b>Jesse Hornstein &amp; Kerri-Dobbs-Kazan</b> , New York Department of Environmental Conservation |

- 2:00 PM Commercial Landings Sampling in New Jersey – **Chad Power**, New Jersey Department of Environmental Protection
- 2:20 PM Commercial Landings Sampling in Delaware – **Garry Glanden**, Delaware Department of Fisheries and Wildlife
- 2:40 PM **Break**
- 3:00 PM Commercial Landings Sampling in Maryland – **Jodi Baxter**, Maryland Department of Natural Resources
- 3:20 PM Commercial Landings Sampling in North Carolina, **Tina Moore**, North Carolina Department of Environmental Quality
- 3:40 PM Discussion of Commonalities and Unique Approaches Among State Programs
- 4:30 PM Adjourn

**Tuesday, September 23, 2025**

- 9:00 AM Commercial Landings Sampling in Virginia – **Ethan Simpson**, Virginia Marine Resources Commission
- 9:20 AM Some Common Themes Among State Programs - Discussion
- 9:40 AM Federal Sampling: Northeast Port Biological Sampling Program (NEPBSP – **Victor Vecchio**, Greater Atlantic Regional Fisheries Office, NOAA Fisheries
- 10:10 AM Transition of the NEPBSP to the Northeast Science Center – **Katherine McCardle & Nichole Rossi**, Fisheries Monitoring and Research Division, Northeast Fisheries Science Center, NOAA Fisheries
- 10:40 AM Break
- 11:00 AM Data Flows and Databases - Federal, **Russell Brown** Ph.D., Northeast Fisheries Science Center, NOAA Fisheries
- 11:30 AM Data Flows and Databases – ACCSP, **Skye Thomas**, Atlantic Coastal Cooperative Statistics Program
- 12:00 PM Lunch Break
- 1:00 PM Communications and Technology Discussion
- 2:00 PM Funding Stability Discussion
- 2:40 PM Break
- 3:00 PM Open Discussion of Workshop Recommendations
- 3:30 PM Wrap Up Discussion and Workshop Report Generation
- 4:00 PM Adjourn

## Appendix 2: Participant List

|                         |                                                            |
|-------------------------|------------------------------------------------------------|
| Larry Alade             | NOAA Fisheries, Northeast Fisheries Science Center         |
| Katie Almeida           | Town Dock, Point Judith, RI                                |
| Josh Anderson           | Seafood Company                                            |
| Chris Batsavage         | North Carolina Division of Marine Fisheries                |
| Jodi Baxter             | Maryland Department of Natural Resources                   |
| Alan Bianchi            | North Carolina Division of Marine Fisheries                |
| Kristan Blackhart       | NOAA Fisheries, Northeast Fisheries Science Center         |
| Jason Boucher           | NOAA Fisheries, Northeast Fisheries Science Center         |
| William Brantley        | North Carolina Division of Marine Fisheries                |
| Russell Brown           | NOAA Fisheries, Northeast Fisheries Science Center         |
| Patrick Campfield       | Atlantic States Marine Fisheries Commission                |
| Jennifer Couture        | NOAA Fisheries, Northeast Fisheries Science Center         |
| Nancie Cummings         | Retired                                                    |
| Scott Curatolo-Wagemann | Cornell Cooperative Extension of Suffolk County            |
| Lucas Curci             | A.I.S. Inc.                                                |
| Jamie Darrow            | New Jersey Department of Fish and Wildlife                 |
| Maureen` Davidson       | New York State Department of Env Conservation              |
| Lorena de la Garza      | North Carolina Division of Marine Fisheries                |
| Micah Dean              | Massachusetts Division of Marine Fisheries                 |
| John Dearstine          | Virginia Marine Resources Commission                       |
| Julie DeFilippi Simpson | Atlantic States Marine Fisheries Commission - ACCSP        |
| Jacqui Degan            | NCDEQ Division of Marine Fisheries                         |
| Laura Deighan           | NOAA Fisheries, Greater Atlantic Regional Fisheries Office |
| Greg DiDomenico         | Lund's Fisheries                                           |
| Kerri Dobbs-Kazan       | New York Department of Environmental Conservation          |
| Steve Doctor            | Maryland Department of Natural Resources                   |
| Matthew Doster          | North Carolina Department of Environmental Quality         |

|                      |                                                                                   |
|----------------------|-----------------------------------------------------------------------------------|
| Hayden Dubniczki     | Mid-Atlantic Fishery Management Council (staff)                                   |
| Michelle Duval       | Mid-Atlantic Fishery Management Council (member)                                  |
| Cynthia Ferrio       | NOAA Fisheries, Greater Atlantic Regional Office                                  |
| Garry Glanden        | Delaware Division of Fish & Wildlife                                              |
| Mark Hager           | New England Marine Monitoring                                                     |
| Rebecca Hailey       | A.I.S. Inc.                                                                       |
| Emerson Hasbrouck    | Cornell University Marine Extension Program                                       |
| Michele Heller       | Massachusetts Division of Marine Fisheries                                        |
| William Hoffman      | Massachusetts Division of Marine Fisheries                                        |
| Jesse Hornstein      | New York Department of Environmental Conservation                                 |
| Siobhan Keeling      | New York Department of Environmental Conservation                                 |
| Chad Keith           | NOAA Fisheries, Northeast Fisheries Science Center                                |
| Capt. Jim Kendall    | New Bedford Seafood Consulting                                                    |
| Jeff Kipp            | Atlantic States Marine Fisheries Commission                                       |
| Christine Kircun     | NOAA Fisheries, Northeast Fisheries Science Center                                |
| Elise Koob           | Massachusetts Division of Marine Fisheries                                        |
| Alexander Law        | Atlantic States Marine Fisheries Commission                                       |
| Nicole Lengyel Costa | Rhode Island Department of Environmental Management, Division of Marine Fisheries |
| Savannah Lewis       | NOAA Fisheries, Greater Atlantic Regional Fisheries Office                        |
| Chengxue Li          | Stony Brook University                                                            |
| Emily Liljestrand    | NOAA Fisheries, Northeast Fisheries Science Center                                |
| Davy Lowry           | NOAA Fisheries, West Coast Regional Office                                        |
| Amy Martins          | NOAA Fisheries, Northeast Fisheries Science Center                                |
| Katherine McArdle    | NOAA Fisheries, Northeast Fisheries Science Center                                |
| Tara McClintock      | Cornell University Marine Extension Program                                       |
| Caitlin McGarigal    | New Jersey Department of Environmental Protection                                 |
| Luca McGinnis        | Commercial Fisheries Research Foundation                                          |
| Tina Moore           | North Carolina Division of Marine Fisheries                                       |

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|--------------------|---------------------------------------------------------------|
| Michael Murphy     | NOAA Fisheries, Office of Communications                      |
| Robert Murphy      | NOAA Fisheries, Northeast Fisheries Science Center            |
| Jay Odell          | Monmouth University Urban Coast Institute                     |
| Virginia Olsen     | District 4, Maine Lobstering Union                            |
| Michael Opiekun    | Atlantic States Marine Fisheries Commission - ACCSP           |
| Stephen Parker     | Big Fin Scientific                                            |
| Chad Power         | New Jersey Dept of Environmental Protection                   |
| Marc Renaghan      | A.I.S. Inc.                                                   |
| Kelsey Roberts     | University of Massachusetts Dartmouth                         |
| Eric Robillard     | NOAA Fisheries, Northeast Fisheries Science Center            |
| Colleen Rodenbush  | NOAA Fisheries, Northeast Fisheries Science Center            |
| Kaitlin Rogers     | NOAA Fisheries, Northeast Fisheries Science Center            |
| Nichole Rossi      | NOAA Fisheries, Northeast Fisheries Science Center            |
| Phillip Shantz     | New England Marine Monitoring                                 |
| Michael Simpkins   | NOAA Fisheries, Northeast Fisheries Science Center            |
| Ethan Simpson      | Virginia Marine Resources Commission                          |
| Renee St. Amand    | Connecticut Department of Energy and Environmental Protection |
| Luke Szymanski     | A.I.S., Inc.                                                  |
| Chris Tholke       | NOAA Fisheries, Northeast Fisheries Science Center            |
| Skye Thomas        | Atlantic States Marine Fisheries Commission - ACCSP           |
| Kristina Thorpe    | NOAA Fisheries, Northeast Fisheries Science Center            |
| Scott Travers      | Rhode Island Saltwater Anglers Association                    |
| Victor Vecchio     | NOAA Fisheries, Greater Atlantic Regional Fisheries Office    |
| Nicholas Velseboer | Connecticut DEEP                                              |
| Jesica Waller      | Maine Department of Marine Resources                          |
| Geoff White        | ASMFC / ACCSP                                                 |
| Kelly Whitmore     | Massachusetts Division of Marine Fisheries                    |
| Meredith Whitten   | North Carolina Division of Marine Fisheries                   |
| Kate Wilke         | The Nature Conservancy                                        |

Angel Willey

Maryland Department of Natural Resources

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Stony Brook University