

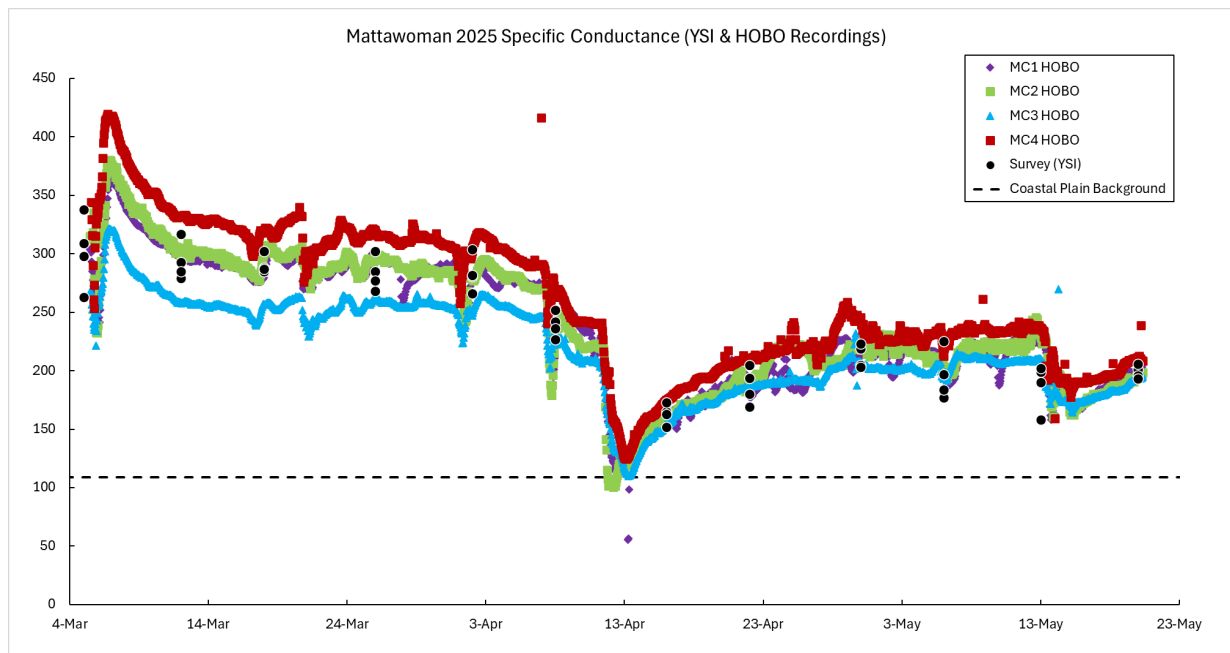
Fisheries Ecosystem Assessment Division

May 2025 Monthly Report

Last Month

Mattawoman Creek Monitoring in 2025 –Staff completed monitoring of the nontidal portion of Mattawoman Creek in May. Staff collected ichthyoplankton (IP) samples and eDNA samples for this monitoring. The eDNA sampling will be incorporated into this spring's presence/absence monitoring of anadromous fish nontidal stream spawning in Mattawoman Creek. Adding eDNA will provide more resolution of which herring species are using the stream for spawning and their spatial and temporal distribution. Currently, we cannot reasonably differentiate among herring species. Staff will also use this to evaluate the possibility of using eDNA as a rapid assessment tool. The first batch of eDNA filters were sent off to Jonah Ventures on 4/21 for processing. Results were provided to us on the first batch of filters on 5/16. The final batch of eDNA filters were sent off to Jonah Ventures on 5/19 for processing. We expect to receive these results in June.

Staff retrieved four conductivity loggers from Mattawoman Creek on 5/20 and downloaded the data. Specific conductance was elevated coming out of winter. Road salt use heavily influences the specific conductance readings in Mattawoman Creek. A heavy rain event lowered specific conductance in April and readings stabilized the remainder of spring. Overall, readings were higher than the background specific conductance for coastal plain streams. Site MC4 consistently had the highest specific conductance readings and it is the closest site to development in Waldorf.



Mattawoman Ichthyoplankton Sample Processing – Staff completed first and second picks of IP samples collected from Mattawoman Creek. Staff noted samples did not have much in terms of eggs or larvae. This may be a result of the low river flows and elevated specific conductance in Mattawoman Creek. Identification of eggs and larvae in the IP samples was initiated.

Choptank River Monitoring in 2025 – Staff completed Striped Bass egg sampling on the Choptank River on 4/28. Water temperatures exceeded the temperature cutoff for all sites after this date. The preliminary Striped Bass egg presence (Ep) for 2025 is 0.65. The 10-year running average (2015-2025) for the Choptank River is 0.61.

Staff sampled the Choptank River twice a week with the midwater trawl until 5/12 to collect Striped Bass post larvae to assess for feeding success. A good number of Striped Bass postlarvae have been present in midwater trawl sampling from the spawn. Whether this translates to a good abundance of juvenile Striped Bass is to be seen.

Staff subsampled half of the samples in the lab for picking due to the number of larvae in the samples. These samples will be picked to calculate length and species proportions in the subsample and then applied to the entire sample.

Summer Fieldwork Meeting – Staff met on 5/29 to discuss summer fieldwork, lab processing updates, and the federal aid report. Staff selected the Tred Avon River, Magothy River, Mattawoman Creek, Piscataway Creek, West-Rhode River, Severn River, St. Clements River, and Breton Bay as locations to sample this summer.

Seasonal Technician - Zophia Galvan started as the seasonal technician for FEAD on 5/7. She will be helping us with sample processing in the lab and summer fieldwork sampling. We got her immediately immersed in sample collections with two trips to do midwater trawl sampling on the Choptank River and one trip to Mattawoman Creek to collect eDNA and IP samples. Her office location is at Matapeake.

Comprehensive Plans – Staff reviewed and submitted comments on a Comprehensive Plan for Somerset County.

Access Databases – Staff compiled data sets into Access databases for each sampling project. These data sets will incorporate all historical data collected. Staff began digital collection of data with an iPad during their spring fieldwork. Overall the process went smoothly and streamlined data sharing and checking data. The process also allows the easy addition of this data to the Access databases.

Federal Aid Report – Staff are continuing to work on data analysis and editing for the 2024 Federal Aid Report.

Atlantic States Marine Fisheries Commission - Staff attended the ASMFC Striped Bass Management Board Meeting virtually on 5/6.

State Wildlife Action Plans - Staff reviewed the key habitat descriptions from the 2015 SWAP update. Staff provided recommendations to update the Pelagic - Open Water habitat description to Chesapeake Bay Estuarine Connecting Waters habitat.

Climate and Ecosystems Discussion – Staff participated in a meeting on 5/23 with Fishing and Boating Services policy staff on opportunities to incorporate more fisheries ecosystem management into planning for the future of fish populations in Maryland.

Traffic Light Index (TLI) For Resident Striped Bass and Menhaden Balance in Maryland's portion of the Bay -Core indices were obtained for the 2025 TLI. Biomass (the PRFC index) was poor (red), the relative availability of ages 1+ Menhaden to Striped Bass was uncertain, and recruitment, availability of age 0 Menhaden to Striped Bass, and Striped Bass condition were good (green). The index of relative fishing mortality was not available since it needs an estimate of biomass one year into the future. However, relative fishing mortality has been low (in the good range) during 2018-2024, Supplemental indices are not available yet.

Critical Areas Commission (CAC) - We met with CAC to initiate a discussion about the need to extend protection to anadromous fish spawning streams. Staff identified 5 or 6 areas that could be useful to protect anadromous fish spawning streams. A Google sheet will be circulated to meeting participants to add additional insight into their areas. The CAC would like FEAD to present information to the commissioners and local planners

Blue Catfish - Staff provided 18 Blue Catfish incidentally caught in the midwater trawl from the Striped Bass spawning grounds on the Choptank River to the Invasive Species group. These fish will be processed to look at their stomach contents.

White Perch Tumor Analysis -All percent cover estimates and inverse distance weighted (IDW) adjustments for proximity to water bodies were completed for zoning categories, land use/land cover, and impervious surfaces. Watershed areas included all or portions of the Chickahominy, Choptank, Nanticoke, Patapsco, Patuxent, Piscataway, Potomac, Sassafras, Severn, and Wicomico eastern shore tributaries of Chesapeake Bay and Albemarle Sound in North Carolina. The draft manuscript detailing neoplasm occurrence in white perch and association with watershed development was reviewed for edits including addition of the GIS and IDW methodologies.

Targeted Ecological Areas - Staff attended the Chesapeake and Coastal Services' (CCS) meeting to review and update the state's identified Targeted Ecological Areas. We will review the existing GIS layers for Priority Anadromous Spawning Watersheds and High Priority Blue Infrastructure Shorelines and Watersheds. Additionally, CCS has interest in the inclusion of existing statewide 12-digit watershed percent impervious surface estimates produced by FEAD.

Chesapeake Bay Program - Staff attended the charette on linking the Bay water quality model segment outputs (TMDLs) to fish habitat. The outcome was limited by lack of funding and a short timeline. The option that best met these conditions was to use existing habitat suitability models for several species to judge habitat adequacy in each segment.

GIS Data Inventory Workgroup - DNR staff who use GIS are interested in developing a reference worksheet of geospatial data that are not available through the MDiMap portal. The intent is for intra-agency collaboration, identification of duplicative efforts, and peer technology support. Data format can vary so long as spatial attributes (address, coordinates, watershed code, etc.) are included.

Mapping of Horseshoe Crab Spawning Habitat - Held check-in meetings with mentee STEM students from South River High School. They completed preparation of Anne Arundel county (except Rhode/West rivers) shoreline hardening data from the 1980s/90s, 2003-2006, and 2020-2023. They are currently analyzing change over time of horseshoe crab spawning beach availability. The analysis is part of a larger project to revise the current MD horseshoe crab habitat map and provide guidance to DNR staff conducting environmental review.

Atlantic Coastal Fish Habitat Partnership (ACFHP) - Staff attended the spring ACFHP Steering Committee meeting. A significant portion of the meeting involved review and revision to the 2025-2026 Action Plan. Other topics discussed were SAV seed-based restoration and how ACFHP can contribute, proposed development of a story map to enhance the website, and funding/fundraising options.

Looking Forward

Staff will continue data analysis and report editing for the 2024 Federal Aid Report.

Staff will continue assembling master Access datasets and developing metadata summaries for each survey.

Staff will continue processing IP samples and Midwater Trawl samples in the lab.

Staff will retrieve temperature loggers on the Choptank River Striped Bass spawning grounds and download the data.

Staff will prepare sampling gear for summer fieldwork and sample the Tred Avon River on 6/24 to train our seasonal technician and an intern on gear deployment and fish identification.