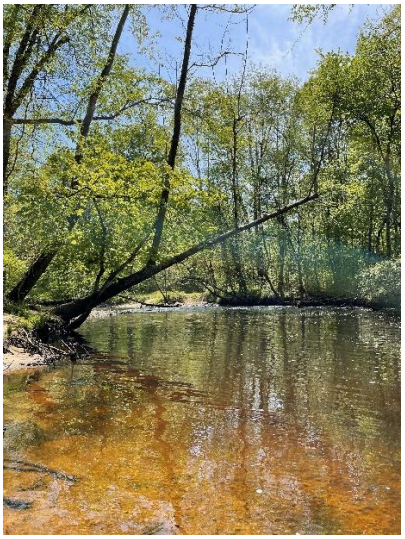
Fisheries Ecosystem Assessment Division

Last Month

Mattawoman Creek Monitoring in 2025 – Staff continued monitoring Mattawoman Creek in April. A Yellow Perch larvae presence/absence survey is conducted on the tidal portion of Mattawoman Creek. This survey was completed on 4/22 when water temperatures exceeded 18 degrees. The preliminary Yellow Perch larval presence was 0.78. The historical average for Mattawoman Creek is 0.74.

Staff continued monitoring the nontidal portion of Mattawoman Creek in April. Staff are collecting ichthyoplankton 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 to determine the presence of anadromous fish in Mattawoman Creek. Staff collected a positive control for Alewife to send for processing with the rest of the eDNA filters. The first batch of eDNA filters were sent off to Jonah Ventures on 4/21 for processing.

Staff observed Alosids spawning in Mattawoman Creek on 4/16 and 4/22.



Collecting a positive Alewife control, Site MC01 on Mattawoman Creek, and a Yellow Perch larvae

Choptank River Monitoring in 2025 – Staff are sampling the Choptank River twice a week for the presence/absence of Yellow Perch larvae and Striped Bass eggs. Staff began midwater trawl sampling on 4/9 to collect Striped Bass postlarvae to assess for feeding success.

Yellow Perch larvae sampling concluded on 4/24 when water temperatures exceeded 18 degrees. The preliminary Yellow Perch larval presence was 0.73. The historical average for the Choptank River is 0.59.

Significant Striped Bass spawning was observed on 4/4. The water temperatures then dropped, but it appears Striped Bass prolarvae survived to the postlarval stage during the first spawn. Spawning was reported over Easter weekend and staff observed additional Striped Bass spawning on 4/21. A large number of Striped Bass prolarvae were observed on 4/24 from the second spawn.

A good number of Striped Bass postlarvae have been present in midwater trawl sampling for larval feeding success from the first spawn. Whether this translates to a good abundance of juvenile Striped Bass is to be seen. Midwater trawl sampling will continue to capture postlarvae from the second spawn and to evaluate feeding success of these larvae.

Choptank Potluck (Yellow Perch, Herring, Morone, Striped Bass eggs) and Midwater Trawl samples from 4/24 (mostly Morone postlarvae)

Cooperation with Chesapeake Biological Laboratory (CBL) Striped Bass research - We have been aiding a CBL research project that has been testing a plankton scope for monitoring zooplankton and Striped Bass eggs and larvae. We have aided egg and larvae identifications, supplied Choptank River sampling station coordinates, and provided regular updates on what we have seen in our surveys to aid their sampling.

Cooperation with North Carolina Striped Bass Investigation - We were contacted by staff from the NC Division of Marine Fisheries about how to identify live and dead Striped Bass eggs. North Carolina has been undergoing an extended period of poor recruitment, similar to the dearth MD has experienced. They are investigating early life history dynamics to understand the underlying cause or causes. We supplied them with some pictures of live and dead eggs, exchanged other information, and offered to help with live and dead egg identification via the web.

Comprehensive Plans – Staff reviewed and submitted comments on Comprehensive Plans for Fruitland and Charlestown.

Seasonal 2025 – Our seasonal technician will start on 5/7.

Access Databases – Staff are working on compiling 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. This should streamline data checks and entry in the Access databases.

Federal Aid Report – Staff are working on data analysis and editing for the 2024 Federal Aid Report.

Seminars – Staff attended a virtual seminar on 4/16 from the American Fisheries Society titled "Applied Genetics in Fisheries Management". One of the presentations was a study of the comparison of electrofishing and eDNA sampling for determining abundance estimates of fish in streams. This seminar has direct implications for the eDNA comparison work on Mattawoman Creek. Staff also attended a NOAA seminar on 4/23 on "A practical approach for integrating eDNA into stock assessment and fishery management advice".

Traffic Light Index (TLI) For Striped Bass and Menhaden Balance in Maryland's portion of the Bay - We began an update for 2024. The Potomac River Fisheries Commission (PRFC) provided their pound net catch per effort that we use as a core biomass index. This index was low and fell in the red region. The MD juvenile index and Striped Bass condition indices were good (green). Two core indices (Menhaden to bass ratios) and all supplemental indices are pending. An index of relative fishing mortality (F) for 2024 cannot be completed until the 2025 PRFC index is available. The index through 2023 had all six indicators in the green zone.

We had enough information to conduct a "what if" analysis to determine how much Bay landings had to increase to produce the drop in the PRFC biomass index between 2023 and 2024. The estimated increase needed was very high and implausible, indicating an alternative explanation such as a change in migration should be considered.

Staff provided information (on short notice) on Menhaden status in MD to one of our ASMFC commissioners for an ASMFC workgroup to address possible changes in Bay management to address ecosystem concerns (Osprey nesting failure).

Reviews - FEAD provide comments to RAS on an article (written jointly by staff of both) on the effect of temperature and dissolved oxygen changes in the Bay on habitat for resident Striped Bass.

We worked with Fisheries Management Plans staff on a section of their legislative review that described the impact of development on fish habitat and fisheries management.

Critical Areas Commission (CAC) - We met with CAC to initiate a discussion about the need to extend protection to anadromous fish spawning streams. The meeting was encouraging and we will be meeting with them in the near future to continue the discussion and see what can be developed to increase conservation in the face of development.

Blue Catfish - We participated in a long, informal, interesting email discussion with FABS biologists on harvest of Blue Catfish dynamics in the Potomac River. Based on this discussion, FEAD developed two prototype biomass dynamic models that may be useful for evaluating the effect of harvest and forage.

Oxford Day - Staff manned the fish display. This display is always a big hit with the public. Fish were provided by the Anadromous Fish Restoration Program.

White Perch Tumor Analysis - Staff provided percent cover of watershed features including zoning categories, land use/land cover, and impervious surface along with Inverse Distance Weighted (IDW) adjusted values that account for feature proximity to the mainstem shoreline and tributaries to staff at the Oxford Cooperative Lab. Watershed areas included portions of the Chickahominy, Choptank, Nanticoke, Patapsco, Patuxent, Piscataway, Potomac, Sassafras, Severn, and Wicomico eastern shore tributaries. Albemarle in North Carolina has been partially completed.

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 Fish GIT - Staff attended two meetings to discuss, clarify, and finalize the CBP Fish Habitat Outcome. Issues at hand included the separation of tidal and nontidal areas and potential consolidation of several categories.

Mapping of Horseshoe Crab Spawning Habitat - Met with mentee STEM students from South River High School who are analyzing impacts to and availability of horseshoe crab spawning beaches in Anne Arundel county from the 1980s to the present. A portion of the meetings included instruction in the use of ArcGIS Pro to prepare the historic data for the analysis. Time permitting, additional counties will be examined.

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 spring sampling once a week on Mattawoman Creek and twice a week on the Choptank River.

Staff will retrieve conductivity loggers from Mattawoman Creek and temperature loggers from the Choptank River.

Staff will review a comprehensive plan for Somerset County and submit comments by the deadline.