

Fisheries Ecosystem Assessment Division

Last Month

Federal Aid Report - Staff are completing a final draft of the 2024 Annual Report, incorporating feedback from division management.

Mattawoman Creek Monitoring in 2025 - Staff received the results of the second/final batch of eDNA from Mattawoman Creek. Staff combined these data into one file and will begin analyzing the results soon to compare with stream ichthyoplankton samples from Mattawoman Creek.

Midwater Trawl (Larval Feeding) Sample Processing - Staff have completed picking midwater trawl samples for larval Striped Bass on the Choptank River. Staff have commenced identifying Striped Bass and White Perch larvae to species (tedious and not always easy) and processing larvae guts to see what zooplankton they have eaten (cladocerans, copepods, or other items).

Summer Fieldwork – Staff are sampling nine systems for 2025; Tred Avon River, Magothy River, Mattawoman Creek, Piscataway Creek, West River, Rhode River, Severn River, St. Clements Bay, and Breton Bay. All systems are sampled with beach seines and bottom trawls, except Mattawoman Creek and Piscataway Creek where SAV precludes beach seining. Sampling data are preliminary and subject to change.

Over 12,980 fish were caught from 50 total species during the second round of summer fish community sampling, which occurred July 23-30. The most common species were Atlantic Menhaden (3,262), Atlantic Silverside (1,906), Mummichog (1,814), Spottail Shiner (1,217) and juvenile White Perch (1,039). Fifty-one young-of-year (YOY) Striped Bass were caught in the seine, leading to an overall arithmetic mean (AM) of 2.22. An additional 55 YOY Striped Bass were caught in the trawl in Mattawoman Creek, Piscataway Creek and Tred Avon Rivers. Temperatures ranged between 29.1 and 34.1°C, averaging 31.0°C. Bottom DO was poor in many systems, averaging 4.29 mg/L overall, with a third of measurements being below 4 mg/L. However, only 2 sites had surface DO below 4 mg/L, with an average of 6.36 mg/L.

Round 3 of summer fieldwork sampling was completed from 8/4 to 8/13. A total of 16,126 fish and crabs were captured, comprising 51 species. The top 5 species encountered in sampling were: Atlantic Menhaden (5,348), Bay Anchovy (3,201), Atlantic Silverside (2,319), Striped Killifish (1,138) and Mummichog (1,127). A total of 51 YOY Striped Bass were collected in 23 seine samples (overall arithmetic mean or AM = 1.69). Striped Bass arithmetic means for each individual system were: Tred Avon River = 6.25, West-Rhode Rivers = 0, Severn River = 1.25, Magothy River = 0.5, Breton Bay = 0.5, and St. Clements Bay = 1.25. An additional 145 YOY Striped Bass were collected in trawl samples, all in Tred Avon River.

Surface water temperatures lowered considerably from July. No measurement exceeded 30°C, whereas last month, 43 out of 54 samples had a surface water temperature above 30°C. Water temperatures ranged from 25.69 to 29.22°C with an average of 28.17°C for all systems. The

highest average surface water temperatures were on Breton Bay and Severn River (both at 29.22°C). The lowest average surface water temperature was on Piscataway Creek.

Unlike surface temperatures, bottom dissolved oxygen levels remained unfavorable in August. It ranged widely across all sites in Round 3, from 0.35 mg/l to 9.79, with an average of 4.76 mg/l for all systems. The Magothy River had the lowest bottom DO (0.35 mg/l) and the lowest average bottom DO (3.60 mg/l). Mattawoman Creek had the highest average bottom DO (7.23 mg/l). Nine total stations were recorded below 3 mg/l, the ecological threshold determined by FEAD to have serious impacts on fish communities. These were all 4 trawls in Magothy and Severn Rivers, the most developed subestuaries being sampled this year, as well as one of the trawls in West River.

Surface dissolved oxygen was good at all sample sites in Round 3, averaging 6.53 mg/l. Breton Bay and St. Clements Bay had the lowest surface DOs (4.89 and 4.9 mg/l), and West River had the highest (9.8mg/l). Only four sites fell below the target DO of 5 mg/l - in Tred Avon, Breton Bay, and St. Clements Bay. With the substantial SAV present in Breton Bay and St. Clements Bay, low values during this round are likely due to extended overcast conditions from Hurricane Erin (see picture below).

Round 4 of sampling started on 8/18 and was completed on 8/27. Data are currently being entered and checked.



Left to Right: Cownose Rays captured in the seine in Rhode River; storms over the Severn River preceding Hurricane Erin; a Diamondback Terrapin captured in the trawl in St. Clements Bay.

YOY Striped Bass Collection - A subsample of young-of-year Striped Bass are being collected from Tred Avon River over the summer season for study in the fish health lab at the Cooperative Oxford Laboratory.

AFS National Conference - Due to extenuating circumstances, staff was unable to attend the American Fisheries Society meeting in San Antonio this year as planned, but submitted a recorded presentation titled “Exploring the Role of Zooplankton Abundance in Recent Striped Bass Year-Class Failures”.

School of Rock (fish) - The Striped Bass Program put on a Juvenile Abundance Index Demo day for stakeholders at Liverpool Point on the Potomac River. FEAD staff participated in the event and provided additional details on the goals of our rotational summer estuarine sampling and work on the middle Bay areas this year (and in past years).

Mattawoman Creek Watershed Conservation Area - Staff presented at a meeting intended to protect the Mattawoman Creek Watershed Conservation District (WCD), which FEAD had a role in establishing in 2017. The WCD is a 36,000 acre, largely in forest, that was created for resource protection. DNR will engage with Charles County to determine the next steps of this process.

Yellow Perch Article - Staff were interviewed about Yellow Perch and ecosystem concerns for an article in What’s Up?

Tax Index for Impervious Surface - Staff began to process the Chesapeake Conservancy’s 2021/2022 land use land cover data. All prior spatial data (2013/2014 and 2017/2018) were reclassified using the most recent methodology and existing data have been deprecated. Tax index calibrations for each time period are being recalculated.

Looking Forward

Staff will finalize drafts of sections for the 2024 Federal Aid Report.

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

Staff will continue processing Midwater Trawl samples in the lab.

Staff will conduct Rounds 5 and 6 of summer fieldwork sampling in September, beginning on 9/2. Each system is sampled biweekly for a total of 12 weeks. Sampling will be carried out until the end of September.

Staff will participate in a Chesapeake Bay workshop for the development of a Shallow Water Habitat Sentinel Site Program.