

Fisheries Ecosystem Assessment Division

Last Month

Larval Striped Bass Feeding - With summer sampling completed, staff have dug into processing spring midwater trawl samples to identify larval fishes and the gut contents of larval Striped Bass and White Perch. A new microscope was recently acquired to expedite this work. Thus far, 12 of 53 samples/subsamples have been fully identified and processed.



This Striped Bass post larvae fed on cladocerans (water fleas, circled).

Summer Fieldwork – Fieldwork for summer sampling was completed on 9/25. Staff sampled 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. Data entry and verification has been completed.

The sixth and final round of summer sampling was conducted September 15-25. A total of 10,165 fishes and crabs were collected, comprising 48 species. The top 5 species encountered were Bay Anchovies (3,287; nearly 75% of the total organisms captured in the trawl), Atlantic Silversides (3,013), Atlantic Menhaden (863), Striped Killifish (751) and Banded Killifish (362). Only 13 Young-of-Year Striped Bass were collected by beach seine in Round 6, leading to an overall AM of 0.55. Twelve of those were caught in Tred Avon River, with a system AM of 3.0. The other was captured in St. Clements Bay, with an AM of 0.25. Fifty five additional YOY Striped Bass were caught in the trawl - 17 from Tred Avon and 38 in Mattawoman Creek.

Water temperatures dropped and oxygenation improved in late September as most systems underwent fall turnover. Surface temperatures went as low as 23.0°C (Mattawoman Creek), had a maximum of 25.5°C (Breton Bay), and an average temperature of 24.05°C. Minimum bottom dissolved oxygen (DO) was still extremely low in Magothy River (0.54 mg/L) and Severn River (0.59 mg/L), but minimum DOs in the other 6 subestuaries were all above 4 mg/L. All 7 samples below 4 mg/L were from trawls in those 2 systems. Average bottom DO was 6.29 mg/L. Surface dissolved oxygen averaged 7.91 mg/L in the final round of sampling, with a minimum of 6.38 mg/L in Rhode River, and a maximum of 12.44 mg/L in Piscataway Creek.

Over the full twelve week sampling season, 71,636 fishes and crabs were collected in 186 bottom trawls and 136 beach seines, representing 70 species. The overall most abundant species were Bay Anchovy (15,549), Atlantic Silverside (15,213), Atlantic Menhaden (10,633), Striped Killifish (5,811), and Mummichog (5,171). Surface water temperature ranged between 21.98°C (St. Clements Bay) and 34.13°C (Breton Bay), with an average of 27.34°C. Seventy eight out of 322 total surface temperature measurements were above 30°C (24%). Bottom DO averaged 4.8 mg/L, dropping to a minimum of 0.12 mg/L (Magothy River). Overall, 31% of the 297 bottom DO records were below 4 mg/L. Surface DO fell between 2.1 mg/L (St. Clements Bay) and 13.75 mg/L (Severn River), averaging 6.61 mg/L. Only 10 surface DO readings were at or below 4.0 mg/L.

The boat has been winterized and stored until spring work.

Outreach - As part of Maryland Science Week, staff presented our summer work to students from Huntingtown High School's AP Environmental Science class at the Smithsonian Environmental Research Center. Enthusiastic STEM students were shown how to pull a beach seine, common fish identification, and sampled in the Rhode River with their own seine nets. A post was circulated on DNR social media platforms, and a DNR article about the outreach experience is forthcoming.



Staff pull a beach seine on the Rhode River; Students look on as Zophia (left) explains how to handle a Blue Crab.

Federal Aid Report – 2024 Federal Aid report is undergoing final review. Staff met in October to discuss plans for the 2025 Annual Report.

Data Requests - Once the 2025 summer data went through quality checks, last month's data requests from Magothy River Association and DNR's Striped Bass Program were completed. Magothy River Association had previously been sent beach seine data from earlier years of sampling (2003 and 2024) in that system. The Striped Bass Program requested data on the summer seine landings of Young-of-Year Striped Bass annually.

Journal Article - Current and former staff have authored an article accepted for publication in the AFS Marine and Coastal Fisheries' Striped Bass themed issue. The article is entitled

Influence of feeding on zooplankton on Striped Bass postlarval mortality, growth, and year-class success in Choptank River, Maryland, during the 1980s and 2023-2024. High feeding incidence of first-feeding Striped Bass post larvae on zooplankton and low mortality did not always translate to better year-class success during the 1980s and 2023-2024. A prominent role of poor larval feeding success on zooplankton was not suggested for continuous poor year-class success during 2019-2024. The article is in production.

Maryland Climate Report - Staff contributed to a section on the impact of climate change on Striped Bass and Yellow Perch egg and larval dynamics in 2024.

ASMFC Management Board Meetings - Staff listened in to the Atlantic Menhaden and Striped Bass Management Board Meetings.

ASMFC Habitat Committee - Staff attended the Habitat Committee's meeting where final content for the Habitat Management Series document "Atlantic States Shell Recycling: A practitioner's guide to oyster shell recycling programs along the U.S. Atlantic coast". The Committee will develop a proposal of projects to advance inclusion of fish habitat in the management process.

Atlantic Coastal Fish Habitat Partnership (ACFHP) Steering Committee - The ACFHP Steering Committee reviewed the revised and compressed National Fish Habitat Action Plan project funding timeframe and adjusted the RFP framework for alignment. Update was given for the SAV seed transport special section at the Zosterapalooza Conference in 2026 and follow-up workshop. The focal species is *Zostera marina*, but some attention may be given to *Ruppia maritima*.

AFS Webinar - Staff attended a webinar from American Fisheries Society, "Higher-Level Thinking for Better Problem Solving".

State Wildlife Action Plan Meetings - Staff attended the SWAP Coastal Habitat Species and Concerns, Habitat Loss and Preservation, Urban/Suburban, and Coordination/Collaboration meetings to discuss fish habitat priorities.

Comprehensive Plan Review - Staff submitted comments for the Town of Easton Comprehensive Plan. Staff suggested using infill for development and concentrating future growth to the Tred Avon watershed as an ecological tradeoff to avoid extensive growth on the eastern side of Easton that drains into King's Creek and the Striped Bass spawning grounds.

Environmental Review (ER) Coordination - Staff met with DNR ER staff to streamline review of projects that may impact anadromous fish spawning. Not all projects MDE screening has flagged as having potential impacts are being forwarded to DNR. A memo clarifying the procedure has been requested by MDE. A meeting with FEAD, ER, and MDE has been scheduled for November 12.

Stormwater - Staff attended a series of webinars regarding the management of stormwater sponsored by the Chesapeake Stormwater Network.

Looking Forward

Staff will work with the Fish Health Program at Cooperative Oxford Laboratory in November and December to examine stomach contents of adult Striped Bass.

Staff are preparing a poster titled “Practicality of Using eDNA to Assess Anadromous Herring Stream Spawning Habitat” to present at the Maryland Water Monitoring Council conference in November.

Staff will begin data analysis for the 2025 Federal Aid Report.

Staff will continue to examine gut contents of larval Striped Bass and White Perch.