Fisheries Ecosystem Assessment Division

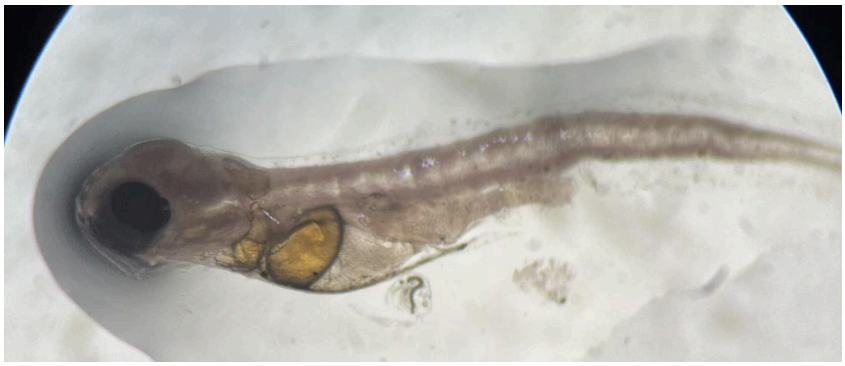
Last Month

Federal Aid Report – Staff began data verification and data analysis for the 2024 Federal Aid Report.

Ichthyoplankton Samples/Midwater Trawl - Staff completed picking ichthyoplankton samples from Mattawoman Creek and identified larvae and eggs found in these samples. A random subsample was selected for ID verification and completed. Sample processing for these samples is complete and data has been checked; preliminary results show that herring/shad eggs were present in 77% of samples and herring/shad larvae were present in 45% of samples.

Staff picked samples from the Midwater Trawl on the Choptank River to examine gut contents of feeding Striped Bass and White Perch larvae. Examination of gut contents and larval ID is ongoing.

Midwater trawl sample with larvae.



This Striped Bass postlarvae fed on cladocerans (water fleas).

Summer Fieldwork – Round 6 (the final round) of summer fieldwork sampling started on 9/16 and was completed on 10/1. A total of 14,339 fish and crabs were captured during this round of sampling, comprising 39 species. The Tred Avon River had the greatest diversity of species (26). The top 5 species encountered in sampling were Spot (6,595), Atlantic Menhaden (4,376), Bay Anchovy (1,366), juvenile White Perch (634), and Hogchoker (274). Atlantic Croaker dropped with only 111 caught.

Overall for the entire survey, a total of 91,103 fish and crabs were captured comprising 58 species. The Miles and Tred Avon River had the greatest diversity of species (34 species each). The top 5 species encountered in sampling were Spot (40,225), Atlantic menhaden (25,141), Bay Anchovy (6,645), juvenile White Perch (6,322), and Atlantic Croaker (2,488).

Surface water temperatures were the lowest at all sites in Round 6 compared to the first five rounds. Water temperatures ranged from 21.34℃ to 24.54℃ with an average of 23.32℃ for all systems in Round 6. The highest average surface water temperature in Round 6 was on the Magothy River (23.98℃). The lowest average surface water temperature was on the West River in Round 6 (21.74℃).

Bottom dissolved oxygen (DO) samples were mostly good with some sites having anoxic conditions. Bottom DO ranged from 0.00 mg/l to 7.94 mg/l with an average of 5.32 mg/l for all systems in Round 6.

The Magothy River had the lowest bottom DO (0.00 mg/l) and the lowest average bottom DO (2.99 mg/l). The West River had the highest average bottom DO for the round (6.86 mg/l).

Surface dissolved oxygen was good at most sites in Round 6 (above 5 mg/l). Surface DO ranged from 4.40 mg/l to 9.46 mg/l with an average of 7.27 mg/l for all systems in Round 6. The Miles River had the lowest average surface DO (5.68 mg/l). Piscataway Creek had the highest average surface DO for the last round (8.41 mg/l).

Data verification was completed and data analysis has begun.

Boat has been winterized and stored until spring work.

Stomach Content Analysis for Striped Bass – Staff worked with COL to collect Striped Bass stomachs for forage analysis. Striped Bass were caught via hook and line and brought back to COL. Staff cut open stomachs to determine forage eaten by these fish; 49 fish were sampled. Most identified prey items were Atlantic Menhaden, though a Butterfish was also identified in the stomach of one fish.

Partially digested Butterfish found within Striped Bass stomach.

Marisa Ponte processes a Striped Bass stomach containing an Atlantic Menhaden.

Webinars – Staff participated in Part 1 (10/3) and Part 2 (10/31) of the webinar "Portfolio Theory as a Tool to Advance EBFM in U.S. Fisheries Management."

Outreach - J. Uphoff gave a Powerpoint presentation to the Midshore Anglers Club, *What are we doing to understand what's going on with Striped Bass year-class success? Applying lessons of the past to understand now.* It described the work that FEAD is doing to help understand how six years of poor year-class success have come about.

Centreville Annexation - We reviewed a proposal by the Town of Centreville to annex land for development. There are 1,032 housing units available for future growth in Centreville under water supply limitations. We project that if all these units are built out, impervious surface coverage for the whole watershed will be about 5%. Growth outside of town (including areas to be annexed into town and Queen Anne's County) should be limited as much as possible to keep the watershed near 5% impervious surface. This is considered a safe target for fish habitat. Ten percent impervious coverage

should not be considered as a growth target if aquatic resources are a concern; this is the tipping point for increasingly intractable aquatic habitat degradation that should be avoided.

ArcGIS Online Course – Staff completed the ESRI GIS Massive Open Online Course (MOOC) "Spatial Data Science: The New Frontier in Analytics".

Atlantic Coast Fish Habitat Partnership Meeting – USFWS encouraged a review of sections pertaining to estuarine fishes and their habitat in State Wildlife Action Plans (SWAPs). The Science and Data Committee proposed two actions regarding SAV: 1) support for efforts/projects to assess synergistic effects between oyster reefs and SAV beds (a positive interaction would benefit funding opportunities for SAV restoration) and 2) an analysis of a potential interaction between Striped Bass (with emphasis on young of year) and SAV. Interaction is not really supported in the literature, but in light of several years of poor juvenile indices the analysis is going to be explored.

ASMFC Meeting – Staff attended the Atlantic Menhaden and Striped Bass Management Board ASMFC meetings in person and virtually. The Habitat Committee meeting was focused on discussion of shell recycling programs among the states, the topic of the next Habitat Management Series (HMS) document), framework of the HMS document, and writing assignments. Maryland's program is exclusively operated by the Oyster Recovery Partnership and their Executive Director has agreed to prepare most of the section for MD.

Marine Spatial Planning – Staff attended the Central Atlantic Marine Spatial Planning Workshop. Several hundred data layers have been acquired to date. Attendees were asked to review what data has been missed and to provide insight into their planned analysis. Chesapeake and Coastal Services has been the point unit for this assessment. The whelk fishery was not represented and was brought to the analysts' attention; they may reach out regarding that topic. Also brought up was the current conflict in west Ocean City and the need to incorporate cumulative impacts to port access.

Anadromous Spawning Webmap – The Nontidal Anadromous Spawning Fish Data webmap is being rebuilt using ESRI's Experience Builder application due to the current platform, Web App Builder, being retired. While the functionality remains consistent, the interface and symbology will have some modifications.

Looking Forward
Staff will continue to work with Cooperative Oxford Lab to examine stomach contents of Striped Bass.

Staff will continue data analysis for the 2024 Federal Aid Report

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

Staff will attend Maryland Water Monitoring Council annual meeting on 11/21. Staff will present "Agriculture, development, and local fish habitat conditions in Chesapeake Bay" at the conference.