

Freshwater Fisheries Monthly Report – November 2021

Freshwater Fisheries - Stock Assessment

Upper Potomac River Survey - Completed the annual upper Potomac River electrofishing survey. Stations from Edwards Ferry to Little Orleans were sampled to monitor gamefish populations. The average adult smallmouth bass catch rate was higher than last year at 44 fish/hour. Unfortunately, catch rates for juvenile smallmouth bass remained low, particularly in the Washington and Frederick county sections of the river. Flathead catfish and walleye were also collected during the sampling. Additional data analysis and summaries will be conducted through the winter.



Adult smallmouth bass from the upper Potomac River

Prettyboy Reservoir Survey - Conducted multiple nighttime electrofishing surveys on Prettyboy Reservoir (Baltimore County) for largemouth and smallmouth bass. Twenty-one random sites around the entire perimeter of Prettyboy Reservoir were surveyed over three nights. Multiple year classes of smallmouth bass from young-of-year (YOY) to 48.5 centimeters and 1.6 kilograms (19.1 inches, 3.5 pounds) and largemouth bass from YOY to 51.4 centimeters and 2.1 kilograms (20.24 inches, 4.6 pounds) were collected during the survey. A total of 109 stock size (180 millimeters, 7.1 inches) and larger smallmouth bass and 117 stock size (200 millimeters, 7.9 inches) and larger largemouth bass were collected over the three-night period. Other species observed included black crappie, bluegill, white perch, and yellow perch.



Conducting night electrofishing survey on Prettyboy Reservoir.

Gunpowder Trout Survey Data - Continued processing data on 2021 Gunpowder Falls, tailwater trout surveys. Preliminary data indicate the dam/Falls site had a 16% decrease in adult brown trout density from the 2020 survey. The YOY density decreased from four YOY in 2020 to one collected in 2021. The dam/Falls station has always had a low rate of recruitment. The Masemore Road station had a 14% increase in adult density from 2020 and YOY density declined 85% from the 2020 survey results. Brown trout adult density increased 3% in the Blue Mount survey site compared to the 2020 results. Brown trout YOY density declined 79% in 2021 compared to the 2020 survey results. The overall outcome suggests the brown trout adult density remained consistent with the 2020 survey but brown trout recruitment was poor in 2021.

Trout Movement Study - Met with the Interstate Commission on the Potomac River Basin to discuss assisting with a trout movement study on the North Branch of the Potomac River tailwater trout fishery. Preliminary plans involve the use of radio telemetry to track tagged trout over a 1-2 year period to determine seasonal movement patterns, specifically in response to summer water temperatures.

Freshwater Fisheries - Habitat and Water Quality

Environmental Review - Provided aquatic resource information for the following environmental review projects:

- An application was submitted by Maryland Department of Transportation, State Highway Administration (MDOT-SHA) for a sediment removal project on Minnow Creek in Friendsville. A site visit was conducted to assess current conditions of the stream finding a coldwater stream with clean substrate and low embeddedness. After a full review,

Fisheries was not supportive of the project as the stream would have been channelized resulting in a loss of coldwater habitat. A similar project was conducted downstream in 2020 and the finished product was less than favorable for aquatic life.

- A timber company submitted an application for a temporary bridge to span the South Branch Casselman River. Comments were provided for proper installation/placement, sediment and erosion control, and desired site conditions after removing.
- MDOT-SHA submitted an application for a road resurfacing/drainage improvement project to take place on MD Route 42 near Friendsville. The project consisted of several culvert replacements mostly around driveways draining small intermittent streams. Comments were provided for sediment and erosion control, maintaining fish passage, and potential pH spikes with pouring concrete for new inlets and endwalls.
- Two Project Open Space properties in Garrett County.
- Two revetment projects on Deep Creek Lake to address shoreline erosion. Comments were provided to avoid the working during the spring spawning period (March 1 - June 15) and to maintain and enhance near shore fish habitat.
- A Frederick County Department of Public Works project to replace an existing single lane bridge over Little Hunting Creek with a wider box culvert design. A bridge replacement was recommended over the box culvert design to protect instream habitat and substrate as well as unrestricted fish passage.
- A project to conduct dam repairs for a pond on a golf course in Frederick County. The pond drains to Little Benett Creek. Sediment and erosion control measures were recommended to protect the habitat in the receiving stream during construction.
- An application for a stream restoration project on several unnamed tributaries to North Fork Linganore Creek in Frederick County. Recommendations stressed sediment/erosion control, fish passage, and adequate buffer replanting with native vegetation.
- A culvert removal project planned for an unnamed tributary to Blue Lick Run. The project was designed by Trout Unlimited and will remove the existing culverts at a stream crossing and replace them with a box culvert. The existing culverts have a substantial drop on the downstream side that prevents fish passage. A box culvert will both improve the safety of the crossing and open the stream for fish passage. Guidance was provided to improve sediment and erosion control, minimize disturbance to the riparian buffer, and limit impacts to aquatic resources in the project area. Removal and relocation of brook trout in the work area prior to project activities was also requested.
- An electric transmission line replacement project planned by Baltimore Gas and Electric Company from Five Forks substation to the Windy Edge substation. The project will replace the existing transmission lines on parallel lattice structures with new transmission lines on single steel poles. The project area crosses several streams that support brook trout populations, including Rock Hollow Run and an unnamed tributary to Little Gunpowder Falls at Moores Road. Several streams that support wild brown trout are also in the work area. Guidance was provided to avoid scheduling work activities near streams in the Use Class III time of year closure period (October 1 to April 30), minimize disturbances to the riparian buffer, immediately stabilize and revegetate any disturbed areas in the riparian buffer, and employ strict sediment and erosion control best management practices when in close proximity to streams with sensitive resources.

Little Laurel Run - Performed a site visit for a stream fencing project on Little Laurel Run located in Jennings. Little Laurel Run is home to a population of brook trout in the Casselman River watershed that has public fishing access in its headwaters. The landowner was concerned that recent high water events have altered the conditions of the finished project and was unsure if anything needed to be addressed. Staff intends to assist the landowner with any necessary improvements.

Muddy Creek Liming - Worked with Garrett County Roads Department and Trout Unlimited to place 10 tons of high calcium lime in Muddy Creek. The purpose of the liming project is to buffer the stream pH during spring melt/runoff events in order to prevent fish kills from acidification.



Garrett County Roads Department dumps lime in Muddy Creek

Freshwater Fisheries - Outreach

Customer Service - Provided customer service information for inquiries regarding:

- Deep Creek Lake information
- Fishing license information
- Primitive fishing question
- Provided angler with information on tiger musky opportunities in Garrett County
- Directed a student that was seeking information on studies conducted for largemouth bass containing lead to the proper person(s)
- Potomac River conditions and fishing opportunities for muskellunge
- Obtaining a Fee Fishing Permit

Envirothon - Provided materials for the Garrett County Envirothon training. A training kit was provided to the Hickory Environmental Education Center that included fish for dissection, aquatic insects, and informative literature to educate participants for future testing.

Trout Signage - Worked with Stakeholder Outreach and Services Division to develop an informative sign for Maryland's popular trout fisheries. The purpose of the sign is to educate

anglers about the potentially negative effects of trout fishing while water temperatures are at their highest during summer months. Guidance on when to fish and proper fish handling techniques are included in the signage.

Electrofishing Demonstration - Provided a stream electrofishing demonstration for Envision Frederick County. Commonly found stream fish species were collected and identified for the group members.

American Fisheries Society Conference - Provided virtual presentations for the 2021 American Fisheries Society national conference. Presentations entitled “Development of Maryland coldwater resources mapping tool” and “Seasonal movement patterns and use of thermal refuge for muskellunge (*Esox masquinongy*) in the non-tidal Potomac River, Maryland” were presented at the meeting.

Smallmouth Bass Presentation - Provided virtual presentations to two local angling groups. A 2021 Upper Potomac River smallmouth bass update was given to the Potomac River Smallmouth Bass Club and to the Antietam Fly Anglers.

Freshwater Fisheries - Angler Access

Fishery Management areas (FMAs) - Continued to monitor and maintain the Evitts Creek, Urbana Lake, Black Oak, and McCoole FMAs. Trash cleanup and lawn maintenance have been completed at all locations. Each FMA received a final clean up along with one last mowing prior to equipment being put away for the winter.

Freshwater Fisheries - Invasive Species

Blue Catfish Program - Maryland Public Television and Outdoors Maryland debuted a story about invasive blue catfish and a recent Freshwater Fisheries Service project to determine movement patterns and habitat use, and diet of the invasive fish in the Patuxent River, Maryland. The story can be viewed online (<https://video.mpt.tv/video/episode-3302-pxnlij/>).

Blue Catfish Aging - Continued work aging Patuxent River blue catfish otoliths. Otoliths from roughly 2,000 of the invasive fish were collected as part of a diet study and will be used to estimate growth and assess population structure.

Blue Catfish DNA-sequenced Diet Study - Staff will meet with biologists at the U.S. Geological Survey’s Eastern Ecological Science Center (Leetown, WV) to discuss DNA-sequenced diet results from Patuxent River blue catfish stomachs. The samples were collected from 2019—2020 on the tidal, freshwater and brackish Patuxent River as part of a cooperative study to determine diet, as well as movements and habitat use of the invasive species.

Commercial Catfish Harvest - Staff are compiling and organizing commercial catfish harvest data from Maryland waters to determine effort and spatial patterns of harvest.

Presented infrastructure capability for a statewide eDNA monitoring system for invasive species at the 151st American Fisheries Society meeting. This information will also be presented to the Mid-Atlantic Panel on Invasive Species on December 2nd.

Purchased tags to support a collaborative effort of the department and U.S. Fish and Wildlife Service to encourage harvest of northern snakehead in the upper Chesapeake Bay and Blackwater River, and learn the impact of exploitation on population size.

Staff presented information to the Susquehanna River Anadromous Fish Restoration Cooperative on the potential impacts of blue catfish, flathead catfish, and northern snakehead to the Susquehanna River ecosystem.

Freshwater Fisheries - Brook Trout Program

Conducted electrofishing surveys in Koontz Run and Staub Run to collect brook trout fin clips. The fin clips will be sent to the U.S. Fish and Wildlife Service Northeast Fishery Center in Lamar, Pennsylvania for genetic analysis. The results will be used to determine the effective population size (N_e) for the brook trout populations in these streams. This information will fill data gaps in the statewide brook trout patch assessment. Regional staff also assisted with samples from Crabtree Creek.

Attended a meeting with Downstream Strategies and Canaan Valley Institute to discuss a stream restoration project in the Savage River upstream of Bear Pen Run. Downstream Strategies and Canaan Valley Institute are pursuing grant money for a project that will stabilize approximately 1,500 feet of stream bank, enhance in-stream habitat, and plant riparian vegetation. Fishing and Boating Services supports this effort and pledged annual fish and habitat monitoring for three years after project completion as long as the landowners in the project area continue to allow access to anglers.

Attended the 151st meeting of the American Fisheries Society in Baltimore. Presented a talk on “Brook Trout Distribution in MD-Identifying Restoration Opportunities” that was co-authored by partners from MDE and USGS.

Freshwater Fisheries - Tidal Bass Program

Conducted a site visit at Northeast Park in Northeast to develop schematics for constructing a temporary bass release chute system for Ike Foundation's youth bass tournament in 2022.

Begin quality assurance and quality control checks of tidal bass survey data entered into the Freshwater Fisheries Program's Geographic Inland Fisheries Survey (GIFS) database.

Freshwater Fisheries - Other

Creel Survey - Provided data collected during an eight month angler creel survey on the North Branch of the Potomac River to Vic DiCenzo (Survey Solutions, LLC) for analysis. The creel survey was conducted to better understand angler effort, attitudes, catch and harvest on the very popular North Branch of the Potomac River tailwater trout fishery from Jennings Randolph Reservoir, downstream to the Gary A Yoder Fishery Management Area at Black Oak. This information will provide valuable information directly applicable to the management of the trout resource.