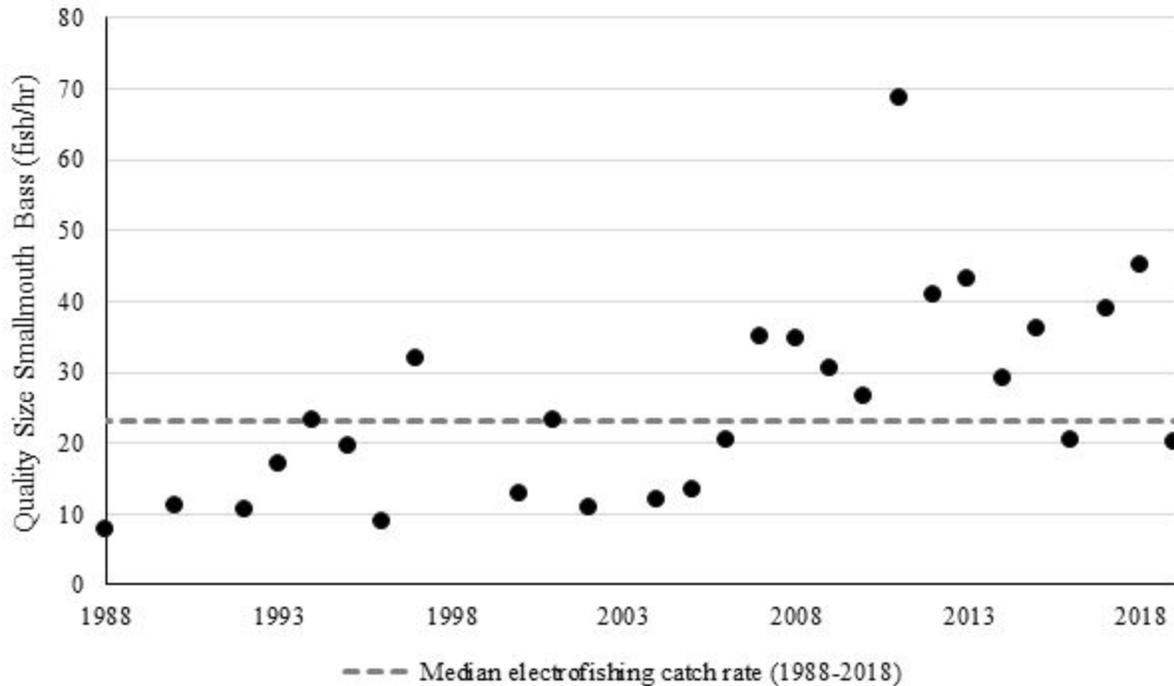


Freshwater Fisheries Monthly Report – November 2019

Freshwater Fisheries - Stock Assessment

Upper Potomac River - Completed the annual fall electrofishing survey of the upper Potomac River. This survey collects information on adult smallmouth bass at multiple sites from Seneca upstream to Paw Paw, WV. Unfortunately, as expected, catch rates for adult smallmouth bass were down compared to the long-term average. Poor juvenile recruitment for the past 10 years has been a major factor behind this decline. Planning efforts are underway to produce juvenile smallmouth bass at hatchery facilities to boost numbers in areas of the river that have experienced the biggest declines. The surveys did show good numbers of juvenile fish produced during the 2019 spring spawn in some sections of the river. This is positive news that the population can bounce back if river flows remain stable during the spawning period.



Average catch rate for adult smallmouth bass (greater than 11 inches) in the upper Potomac River (1988-2019).

Liberty Reservoir - Conducted a nighttime electrofishing survey on Liberty Reservoir (Baltimore and Carroll counties). Fourteen random sites around the entire perimeter of Liberty Reservoir were surveyed over three nights. Preliminary results show the proportional stock density (PSD) for smallmouth bass was 62 and the catch-per-unit-effort (CPUE) of stock size and larger

smallmouth bass was 3/hour. Only nine smallmouth bass were collected during the survey. The largest smallmouth bass collected measured 44.9 cm (17.7 inches, 2.7 pounds). The largemouth bass PSD was 56 and the CPUE was 26/hour. The largest largemouth bass collected measured 49.1 cm (19.3 inches, 4.2 pounds). Black crappie, chain pickerel, white perch and yellow perch were also observed throughout the reservoir.

Piney Run Reservoir - Conducted a seven site electrofishing survey for largemouth bass on Piney Run Reservoir (Carroll County). Preliminary results show PSD for largemouth bass to be 58. Catch per unit effort for stock size and larger largemouth bass was 89/hour and for quality size bass (30.0 cm, 11.8 inches) the CPUE was 52/hour. The largest largemouth bass collected was 44.8 cm and 1.39 kg (17.6 inches, 3.1 pounds). An excellent sunfish fishery was observed with many quality bluegill and redear sunfish throughout the lake.

Rocky Gorge Reservoir - This large impoundment in Howard, Montgomery and Prince George's counties is owned by the Washington Suburban Sanitation Commission (WSSC) and was surveyed by department fisheries biologists and WSSC staff. The reservoir is a popular fishing location in central Maryland and is surveyed biennially. Though the data are still being analyzed, the population of largemouth bass appears to be fairly stable; crappie numbers may be increasing while fewer yellow perch and white perch were observed.

Freshwater Fisheries - Habitat and Water Quality

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

- Met with Baltimore County Natural Resource Conservation Service staff and landowner to discuss removal of a fish passage barrier on a tributary to Bee Tree Run in Baltimore County.
- Met with Maryland Department of the Environment, United States Fish and Wildlife Service and stream restoration contractor to discuss repairs to stream restoration structures in the Gunpowder River and a tributary at River Valley Ranch in Carroll County.
- Met with Maryland Department of the Environment, United States Fish and Wildlife Service and stream restoration contractor to discuss repairs to stream restoration structures in Piney Run at Springfield State Hospital in Carroll County.
- Spring Meadows Wastewater Treatment Plant discharge permit renewal. Plant discharges into Rock Hollow Branch which supports a thriving population of brook trout. No changes to existing limits were proposed.
- A joint permit application to repair 46 linear feet of existing stone revetment on Deep Creek Lake to protect the shoreline from erosion.
- A time of year waiver request to complete US219 bridge repairs over Wilson Run in the Town of Oakland.
- Replace a failing metal culvert and a failing box culvert that convey Wilson Run just upstream of the Wilson Run confluence with the Youghiogheny River. The box culvert conveys Wilson Run underneath of the historical society building and is badly damaged.

- Two water appropriation permits for coal mining operations in Garrett County. Resource information for both waterbodies was provided.
- Maryland Department of Environment, Abandoned Mine Land Division regarding two abandoned mine site projects: a mine seal emergency repair and a landslide emergency project.
- Replacement of nine deteriorated and undersized culverts in Green Ridge State Forest with culverts capable of passing 10 year storm flows. The new culverts will be depressed below the stream invert to facilitate fish passage.
- Updated stormwater management facilities at the Garrett County Airport located in the headwaters of Bear Creek, an important coldwater resource. Maximizing infiltration and subsurface treatment of stormwater is recommended to reduce the temperature of runoff reaching the stream.
- Installation of an eight inch sewer and water line in the 100 year floodplain of a tributary to Antietam Creek near Funkstown to facilitate proposed development.
- Construction of a wildlife and agriculture irrigation pond on an unnamed tributary in the headwaters of the Hunting Creek watershed, a coldwater resource.
- Construction of a communications tower and associated access road in the Ballenger Creek watershed in Frederick County. The proposed 20 foot wide access road would cross an unnamed tributary to Ballenger Creek with the stream conveyed via a culvert pipe. The access road will be constructed on an existing farm access lane to reduce impact and need minimal tree clearing.
- A wastewater treatment plant discharge permit that now has effluent temperature requirements to meet Use III temperature criteria. Recommendations were also made to reduce the impact of occasional maintenance flushing of allochthonous material and sediment from storage reservoirs into the receiving stream.

Riparian Buffer Planting - Attended a meeting with Maryland Forest Service, Carroll County Soil Conservation District, and Alliance for the Chesapeake Bay to discuss riparian buffer planting plans for a property in the Upper Gunpowder watershed. The proposed planting would buffer a tributary of the Gunpowder Falls where Freshwater Fisheries staff have documented brook trout presence.

Temperature Monitoring - Met with staff from Hood College's Center for Coastal and Watershed Studies to discuss stream temperature monitoring and data analysis. Hood College is working on several projects in Frederick and Washington Counties examining stream temperatures in restoration areas. Freshwater Fisheries is assisting with these efforts and helping compile stream temperature monitoring data across the state.

Concluded the stream temperature monitoring index period by removing for evaluation 25 WaterTemp Pro water temperature recorders from streams within the central region.

Fish Tissue Testing - Staff arranged for fish tissue testing to be performed by the Maryland Department of the Environment from a small pond located in southern Maryland owned by Maryland-National Capital Park and Planning Commission (Prince George's County).

Freshwater Fisheries – Stocking and Population Management

Smallmouth Bass - Met with researchers from the U.S. Geological Survey (USGS) Leetown Science Center to plan smallmouth bass juvenile stocking efforts in 2020. This is a collaborative effort between the Maryland Department of Natural Resources and USGS to produce supplemental smallmouth bass juveniles for the Upper Potomac River and for use with ongoing fish health research. Hatchery ponds at the USGS facility will be used to hold both adult smallmouth bass broodfish and any hatchery produced juveniles. The goal is to produce and raise smallmouth bass juveniles until they are four to five inches long. These fish will then be marked and released into the Upper Potomac River. Monitoring efforts will look for these marked fish to determine the contribution that smallmouth bass stocking has to the overall population.

Trout - Assisted state hatchery personnel with stocking trout into central region streams for the fall trout stocking season.

Freshwater Fisheries – Angler Access

Fishery Management Area Maintenance - Cleaned leaves and debris from the intake pipe to Evitts Creek Ponds (Allegany County) on two separate occasions. Yearly fall maintenance is required to ensure maximum flow.

Freshwater Fisheries – Invasive Species

Blue Catfish Tags - Performed preliminary range testing of acoustic tags to be used for an upcoming movement project on invasive blue catfish. The study aims to determine springtime spawning movements and overwintering habitats of the fish in the tidal Patuxent River (Anne Arundel, Calvert, Charles, Prince George's and St. Mary's counties). Preliminary testing shows that tags can be detected as far as 250 to 300 meters away from the receiver.

Freshwater Fisheries – Brook Trout Program

Continued work on the draft statewide brook trout management strategic plan following the completion of our first comprehensive population status update from the five year statewide monitoring effort (2014-2018) completed in 2018. November efforts focused on reviewing and editing the five proposed ranking criteria, including review and discussion of comments from the volunteer stakeholder group. Next steps include revising and finalizing the rating criteria, performing analysis of statewide brook trout populations, assigning a level, then finalizing the plan and taking it to various stakeholders. Development of this plan follows the strategies described in our statewide [Brook Trout Fishery Management Plan](#).

Staff participated in several environmental review requests, responded to numerous customer service inquiries on Maryland coldwater resources, and assisted with documenting wild trout spawning activities in the western Maryland region.

Provided updates and comments for the next two year work plan to the Brook Trout Action Team committee for the brook trout outcome of the Chesapeake Bay Agreement.

Continued working with co-authors on a manuscript on the statewide genetics of Maryland brook trout populations entitled “Genetic Structure of Maryland Brook Trout *Salvelinus fontinalis* populations”. The paper was submitted for consideration for publication in the peer reviewed American Fisheries Society journal “Transactions of the American Fisheries Society”.

Continued working on the submittal process for our eDNA statewide brook trout research project. The project will be funded through the State Wildlife Grant program in partnership with University of Maryland Center for Environmental Science Appalachian Laboratory researchers. The focus will be on the feasibility and utility of using eDNA techniques to determine/monitor brook trout presence and/or absence in Maryland streams. The project funds are for two years and work is scheduled to begin November 2019.

Freshwater Fisheries – Tidal Bass Program

Staff issued 20 black bass fishing tournament permits for 2019 and upcoming 2020 fishing seasons. These permits are a requirement for larger fishing tournament events and allow the department to estimate fishing effort across the state and monitor fisheries using catch data from anglers. The process also allows for a direct line of communication with tournament anglers, an important stakeholder group of black bass fisheries in Maryland.

Sampled 45 randomly selected tidal black bass sites during October in the Middle River (seven sites), Gunpowder River (15 sites), Bush River (nine sites), Swan Creek (two sites), upper Chesapeake Bay (three sites), lower Susquehanna River (six sites) and Furnace Bay (three sites). Largemouth bass were collected in all areas with the largest coming from the lower Susquehanna River (20.9 inches, 5.99 pounds). Three smallmouth bass were collected in the lower Susquehanna River (two) and Furnace Bay (one). Northern snakehead were found in all river systems except Swan Creek and upper Chesapeake Bay during the 2019 surveys with the Gunpowder River having the highest density (62 fish found in 12 of 15 sites) followed by the Bush River (16 snakeheads found in three of seven sites). The largest northern snakehead measured also came from the lower Susquehanna River (30 inches, 10.5 pounds).

Freshwater Fisheries – Other

Attended the first annual Diversity and Inclusion in Natural Resources Careers event at the University of Maryland Eastern Shore (UMES, Somerset County), held in conjunction with the 2019 Waterbird Society Conference. The event was organized by the Maryland Department of Natural Resources UMES and the Waterbird Society and funded by the National Science Foundation. Department staff spoke with college students about career opportunities in natural resources fields and early-career guidance.