

# Freshwater Fisheries Monthly Report – September 2019

## Stock Assessment

**Trout stream assessments** - Trout population surveys were conducted within the Hoyes Run Embrace A Stream Restoration Area. Trout Unlimited and Georges Creek Watershed Association staff assisted with sampling a station within the livestock exclusion area as well as within the Savage Spring channel. Reproducing populations of brook trout and brown trout were found in the restoration area as well as abundant numbers of mottled sculpin and blacknose dace. The Savage Spring channel continues to be an important brook trout spawning and nursery area as 26 young-of-year (YOY) brook trout were collected and observed.



*Freshwater Fisheries Program, Trout Unlimited and Georges Creek Watershed Association staff sample Hoyes Run (left). A young of year brook trout collected in the Savage Spring channel (right).*

**Hoyes Run** - Trout populations were sampled upstream of the confluence with the Youghiogheny River as part of the long-term monitoring study. Students from Garrett College's Natural Resource and Wildlife Technology Program assisted with the survey. Wild brook trout, brown trout and rainbow trout were collected; Hoyes Run is one of the very few streams in Maryland supporting natural reproduction of three trout species. Fish numbers were very good with 61 trout, 167 mottled sculpin, 71 longnose dace, 15 blacknose dace, 11 creek chub, four river chub and one white sucker collected in the 75 meter station. The students also performed a rapid stream habitat assessment finding the stream was slightly impaired due to bar formation possibly from road anti-skid material and an adjacent lawn with few riparian canopy trees.



*Garrett College's Natural Resource and Wildlife Technology Program students with a couple of wild brown trout from Hoyes Run.*

**Federal Aid in Sportfish Restoration** - Staff performed data analysis and drafted FY19 Federal Aid Reports on North Branch Potomac River zero creel limit trout fishing area, catch and return black bass fishing area, and statewide trout population statistics.

**Use Class III Stream Re-designation** - Freshwater Fisheries has been working with Trout Unlimited to collect and compile candidate streams to submit to Maryland Department of the Environment for Use Class III re-designation consideration as part of the triennial review process. These newly identified coldwater streams meet the criteria by having either a reproducing trout population or the presence of coldwater benthic macroinvertebrate indicator taxa and appropriate coldwater temperatures during the course of the summer. Streams that have a Use Class III designation are afforded more protection from thermal impacts.

**Qualitative Electrofishing Surveys** - Conducted qualitative electrofishing surveys in West Branch Patapsco River, three unnamed tributaries to West Branch Patapsco River, an unnamed tributary to North Branch Patapsco River (Carroll County) and an unnamed tributary to Little Falls (Baltimore County). Brown trout adults were collected in the West Branch Patapsco River, unnamed tributary to North Branch Patapsco River and the unnamed tributary to Little Falls. Young-of-year brown trout were collected in the West Branch Patapsco River, the three unnamed tributaries to West Branch Patapsco River and the unnamed tributary to North Branch Patapsco River.

Conducted five qualitative electrofishing surveys in the Good Hope tributary to Paint Branch from the confluence upstream to the Intercounty Connector overpass, a distance of approximately 1.5 kilometers (0.93 mile). This is the second consecutive year surveys have been conducted to determine the density of brown trout remaining in the Good Hope tributary.

The Good Hope tributary historically provided the most reliable and consistent recruitment in the entire Paint Branch watershed. However no brown trout have been found in the established Hobbs Drive electrofishing station since 2016. Prior to 2016, brown trout were documented in the station for 39 consecutive years. More recently, the population has declined drastically since the early 2000s, averaging only one adult/year. Recruitment has also declined as only two YOY were found in 2015 and no YOY have been found during any other survey since 2011. Results of the 2019 qualitative surveys conducted in the Good Hope tributary were a complete reversal from 2018 as seven YOY brown trout but no adults were collected in the lower third of the 1.5 kilometers. In 2018, five brown trout adults ranging from 265 mm (10.4 inches) to 322 mm (12.7 inches) were found. No YOY were found in the entire 1.5 kilometers in 2018. No brown trout were found in the historical Hobbs Drive electrofishing survey station in 2019 for the third consecutive year.

**Multiple-pass Electrofishing Surveys** - Conducted annual multiple-pass electrofishing surveys in the Gunpowder Falls tailwater at the dam/Falls Road, Masemore Road and Blue Mount Road stations. The standing crop of adult brown trout was 155 kg/ha (139 pounds/acre) in the dam/Falls station with an adult density of 1195 brown trout/ha (483 trout/acre). Only 14 YOY brown trout were collected during the survey. Two adult rainbow trout from previous fingerling stockings and two rainbow trout fingerlings from the 2019 stocking were also collected in the dam/Falls station. The standing crop of adult brown trout in the Masemore Road station was 77 kg/ha (68 pounds/acre) and the density was 745 adult brown trout/ha (301 trout/acre). Recruitment was very low for the Masemore station as only 30 YOY brown trout were collected during the survey. One adult rainbow trout from stocked fingerling origin and 14 rainbow trout fingerlings from the 2019 stocking, one adult brook trout and a rare brook trout YOY were also collected in the Masemore Road station. The standing crop of adult brown trout in the Blue Mount Road station was 31 kg/ha (28 pounds/acre) with an adult density of 209 brown trout/ha (85 trout/acre). Thirty-nine brown trout YOY, three stocked adult rainbow trout and one rainbow trout fingerling were also collected during the Blue Mount survey. The Freshwater Fisheries Director, staff from Freshwater Fisheries Western Region II, Eastern Region, Freshwater Fisheries Statewide Operations, Maryland Biological Stream Survey (MBSS) and Baltimore County Department of Environmental Protection and Sustainability assisted with the surveys.

Conducted the annual multiple pass electrofishing survey in Bee Tree Run in Baltimore County. The 2019 survey was conducted in an established station above Bee Tree Road. The standing crop for adult brown trout was an excellent 51 kg/ha (46 pounds/acre) with a density of 462 trout/ha (188 trout/acre). Recruitment of brown trout YOY was very good with a density of 1782 YOY/ha (724 YOY/acre). Bee Tree Run is considered one of the best freestone brown trout streams in the central region.

Conducted a multiple pass electrofishing survey in the Patuxent River above Mullinix Mill Road (Howard/Montgomery counties). The Patuxent River is managed as a catch-and-return, artificial flies/lures only trout stream from Route 97 upstream to Route 27. Wild brown trout can be found throughout the managed area but the population increases with upstream progression. Stocked brown and rainbow trout provide anglers a better opportunity to catch trout in the spring and summer months from Route 94 downstream to Route 97. The Mullinix Mill Road site was last electrofished in 2014. Brown trout adult standing crop in 2019 was 21 kg/ha (19 pounds/acre) with a density of 179 adult trout/ha (72 trout/acre). Young-of-year brown trout recruitment was

good with a density of 245 YOY/ha (99 YOY/acre). The results were considered good despite the lack of quality habitat and low flow within the survey site.

**Stream Surveys** - Eastern Region staff completed several coldwater stream surveys in Cecil County. Reproducing populations of brown trout were documented in two reaches of a tributary to the Susquehanna River where they were not previously found. Routine coldwater sampling was also completed in Basin Run, a tributary to Octoraro Creek, which has supported a wild brown trout population for many years. Many brown trout were collected from Basin Run, representing a variety of sizes and ages.



*Wild brown trout collected in Basin Run*

## **Habitat and Water Quality**

**Environmental review** - Provided aquatic resource information for environmental review projects:

- The Georges Creek Stream Restoration Project which involves the reclamation of abandoned mine lands (water filled strip mine pits) and restoration of about 2,275 linear feet of Georges Creek and 324 linear feet of an unnamed tributary to Georges Creek. A total of 12.43 acres of wetlands will be restored and 6.02 acres will be developed into three small ponds to be used as a public fishing resource. Past mining practices have altered the natural stream channel and floodplain of Georges Creek in the project location. This proposal will restore Georges Creek as a meandering natural stream channel with connectivity to wetlands and the floodplain.
- A request for a partial in-stream construction waiver to install culverts and endwalls to complete a stream crossing on Pikes Branch in the Ballenger Creek watershed. No coldwater resources currently exist in this urban tributary.

- A compliance issue to remove unpermitted culverts that convey an intermittent tributary to Antietam Creek and replace with a stabilized ford crossing. The stabilized crossing will reduce erosion and more efficiently convey flows.
- The renovation of four small ponds on a tributary to Dipping Pond Run. Dipping Pond Run supports a naturalized population of brown trout. Staff discussed design options with the contractor and the Maryland Department of Environment that will restore safe conditions to the ponds and protect the thermal conditions in the tributary and Dipping Pond Run. These options use design elements between and below the ponds that convey water underground until discharged to a forested stream channel. Pond level will be controlled using a bottom siphon design to pass the coldest available water downstream.
- Two stone revetments on the shoreline of Deep Creek Lake to reduce wave erosion. Habitat elements such as rockpiles are recommended to maintain fish habitat.
- The replacement of a natural gas utility line nearing the end of its usable life in the Jennings Creek watershed. The replacement line will be placed in the existing right of way, largely in upland areas. Strict erosion control measures were recommended to prevent sedimentation of downslope areas.
- A Maryland Department of Transportation project to replace the MD 831 bridge over the Jennings Run mainstem. Jennings Run is managed as a put-and-take trout fishery by the department. Recommendations were made to divert roadway stormwater runoff from bridge scuppers to vegetated areas that allow infiltration prior to reaching the stream.
- An Allegany County Division of Public Works project to replace a failing culvert that conveys an unnamed tributary to Winebrenner Run in the Georges Creek watershed. The headwaters of Winebrenner Run support a population of native brook trout and coldwater obligate macroinvertebrates. However, the tributary is isolated from these populations by acid mine drainage. Strict sediment and erosion control measures were recommended to protect water quality.
- A proposed subdivision stormwater management plan in the Grindstone Branch watershed. Although no coldwater aquatic resources have been documented in Grindstone Branch, Freshwater Fisheries supports the use of subsurface stormwater treatment through submerged gravel wetlands to protect the coolwater environment in Grindstone Branch..
- A dye test to check for water leaks in National Park Service's recently renovated Conococheague Aquaduct that carries the Chesapeake and Ohio Canal over Conococheague Creek in Williamsport. Informational signs were posted to alert the public to the dye.

**Lands Reclamation Committee** - Participated in the Phase II bond release field evaluations for thirteen strip mines totaling 265 acres in Garrett and Allegany Counties. The committee members walked these strip mine reclamation sites to ensure revegetation standards were met prior to the bond being released to the operator. Votes on the bond releases took place during the September monthly meeting. Ten of the sites met revegetation standards and bonds were released. Three of the reclaimed sites did not meet the revegetation requirements and will be evaluated again during spring 2020.

**Stream Temperature Monitoring** - Temperature monitors were retrieved and data were downloaded from six sites in the North Branch Potomac River from the lower catch and return trout fishing area to Pinto. These data will help with coldwater management in both the catch

and return and zero creel limit trout fishing areas. Temperature monitors were also retrieved from the Youghiogheny River from eleven sites from Swallow Falls downstream to Sang Run Bridge to monitor the effectiveness of temperature enhancement releases from the Deep Creek Lake hydroelectric station.

Staff retrieved temperature loggers deployed through the summer from streams and rivers in Frederick and Washington counties. Temperature data collected from these loggers will be used for stream use class re-designation, trout optimal temperature analysis, and identification of thermal refuge habitats in the upper Potomac River. This work is part of statewide efforts to conserve and protect coldwater habitats.

**Georges Creek Watershed Association** - Attended monthly meeting of the Georges Creek Watershed Association where potential tree planting on reclaimed strip mines could be conducted. The group will work with local landowners to involve students with a tree planting project within the watershed. Other potential environmental outreach projects were also discussed to get the Georges Creek Watershed communities more involved with stream protection.

**Little Laurel Run Riparian Zone Restoration Project** - A hardened stream crossing on Little Laurel Run has recently been completed and paid for by a generous donation from Trout Unlimited, thus completing the entire project. About 1,600 linear feet of stream and 2.23 acres are protected by having livestock exclusion fencing installed and planted with 1,100 tree and shrub species through a grant received from the National Fish and Wildlife Foundation. The Youghiogheny River Watershed Association funded a concrete livestock watering trough away from the stream as well. Grants from the Keep Maryland Beautiful Program have been received to fund high school student interns to help monitor the stream. Northern Garrett High School students planted the trees and shrubs within the riparian zone. These trees and shrubs have shown remarkable growth and survival, with many of the trees at least ten feet tall providing shade for Little Laurel Run. Our surveys show a reproducing brook trout population throughout the restoration area. Thanks to all partners, this was a very successful brook trout conservation project.



*The hardened livestock crossing on Little Laurel Run will reduce sediment and nutrient loads into the stream.*

**Outreach** - Responded to customer service inquiries regarding: didymo in the North Branch Potomac River; Allegany College regarding fish sampling in Evitts Creek; Trout Unlimited regarding temperature enhancement releases from the Deep Creek Lake Hydrostation; fishing opportunities in Deep Creek Lake; angler access to the North Branch Potomac River zero creel trout fishing area; and smallmouth bass fishing in the nontidal Potomac River.

## **Angler Access**

**Fishery Management Area Maintenance** - Continued to mow, remove trees, remove trash, conduct road and boat ramp maintenance, and replace fishing regulation informational signs at the North Branch Potomac River and Evitts Creek Ponds fishery management areas.

Eastern Region Freshwater Fisheries and Unicorn Hatchery Staff built and installed new informational sign boards at Wye Mills Lake and Rising Sun Pond. The signboards are populated with fishing regulations and educational material for anglers and other visitors.

## **Invasive Species**

Presented information about invasive fishes to the Sport Fisheries Advisory Commission, a special meeting held on September 24.

Met with U.S. Geological Survey's Leetown Science Center to discuss planning and coordination for an upcoming blue catfish tagging project. The project aims to determine movements and identify over-wintering and spawning habitats of the invasive fish in the tidal Patuxent River using a combination of radio and acoustic telemetry. Additional work exploring diet and growth of these fish will also be performed. The tagging project is slated to begin fall 2019 and extend into summer 2020.

In response to concerns about tag shedding during an upcoming project exploring over-winter and spawning habitats and movement of blue catfish, staff initiated a small tag retention study. A dozen fish were surgically implanted with dummy internal tags and are currently being held in an outdoor aquaria for observation. Thus far, no tags have been lost from fish, but some mortality not associated with tagging has occurred. The project will continue into October 2019.

## Brook Trout Program

Completed annual brook trout population monitoring in the Upper Savage River watershed, Maryland's premier brook trout angling resource. Overall the number of fish collected was good, and the number of YOY brook trout collected was outstanding. Once the data are analyzed, this could be a record year class.

Participated in an in-house meeting with relevant state agency representatives to roll out 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 completed in 2018. Comments, suggestions and ideas were very helpful and are being incorporated into the next draft. This updated draft will be presented to resource and angling stakeholders for comments and input. It will then be presented at the October Sport Fisheries Advisory Commission meeting. Development of this plan follows the strategies described in our statewide [Brook Trout Fishery Management Plan](#).

Work was completed on the Big Run large woody debris project, the culmination of research from a brook trout State Wildlife Grant project initiated in 2013 that was rolled into a multi-faceted restoration project that combined streambank and roadside restoration with increasing large woody debris retention and additional instream habitat for brook trout. This project went through many iterations, and involved numerous partners to come to fruition, highlighting the effort, time, multiple entities and many years needed to make this happen.



*Instream large woody debris addition from the Big Run project. This creates brook trout habitat, stream bank armoring, and trapping of natural addition of more large woody debris.*



*Instream large woody debris addition in conjunction with streambank protection to add brook trout habitat, protect the streambank and roadside, and improve stream channel character.*

Met with students and instructors from Hood College to discuss careers in resource management and the work of the Brook Trout program.

Completed annual F-48-R Federal Aid reports for the Brook Trout Program and the northern pike work.

Met with representatives from Trout Unlimited and the Maryland Ornithological Society to discuss a habitat improvement project and possible dam removal on a tributary to the upper Savage River on Carey Run. Temperature monitoring has shown a negative impact on water temperatures downstream of the instream pond. A reproducing brook trout population has been documented by staff electrofishing efforts for the first time in lower Carey Run since a low water fish blockage was breached, a positive addition towards meeting the Bay Agreement's Brook Trout Outcome Goal.

Participated in an environmental review site meeting at Fore Sisters golf course in Rawlings to discuss a water withdrawal request. A good discussion amongst the attendees generated some ideas on how to provide water to the golf course with maximum resource protection for the stream and its existing brook trout population.

The program's eDNA research proposal is being funded through the State Wildlife Grant program. This work is a partnership with University of Maryland Center for Environmental Science Appalachian Laboratory researchers, and will focus on the feasibility and utility of using eDNA techniques to determine/monitor brook trout presence and/or absence in Maryland streams. The project will be funded for two years and work will be initiated soon.

## **Tidal Bass Program**

Discussed survey details with Virginia and D.C. for a cooperative project aimed at managing the Potomac River largemouth fishery. The project details have been written into a draft proposal and will be reviewed by participating members of the workgroup in October.

Delivered weigh-in supplies to Glenn Cove (Conowingo Reservoir). These supplies, as part of the department's Director's Black Bass Conservation Award, will help improve survival of black bass weighed at Glenn Cove, particularly during summer. An official inaugural use of the weigh-in station is being developed by the award's recipient, Director of Precision Tackle Open Series Herb Weichmann.

Completed analysis of a project requested by Black Bass Advisory Subcommittee to examine the effects of gear (e.g., boat props, seine nets) on submerged grass beds. Some results will be presented at the subcommittee's meeting on October 7.

Obtained GPS coordinates to refine a regulation proposal that would slightly expand the fish refuge at Chicamuxen Cove to shore.

Began the annual electrofishing survey of black bass in the tidal Potomac River. The survey is conducted annually to monitor the population, and to determine spawning success of this recreationally and economically important fishery of Maryland.