2019 Beaver Creek Summary

Washington County's Beaver Creek is one of the largest limestone streams in Maryland. The underlying karst (limestone) geology in the watershed is a major factor influencing the stream. Beaver Creek is primarily spring fed, receiving water from the second largest natural spring in Maryland. This supply of groundwater provides steady cold temperatures throughout the year. The water chemistry is slightly alkaline and high in calcium carbonate. Calcium is often a limiting resource for benthic aquatic insects. When it is found in high concentrations, the resulting benthic aquatic insect community is generally low in diversity, but extremely high in density. The unique combination of cold temperature conditions and high benthic insect biomass create ideal conditions for a very productive trout fishery.

Scenic view of Beaver Creek in Washington County

Beaver Creeks supports a naturally reproducing wild brown trout population. Brown trout from the Gunpowder River were originally stocked into Beaver Creek from 2002 to 2005 following restoration activities in the stream. Since then, their numbers have steadily increased with documented natural reproduction. Additionally, as part of the Put-and-Take Program, hatchery raised rainbow trout are stocked in the stream during the spring and fall stocking periods. Habitat conditions within the stream can vary, but deep pools, woody debris, and undercut banks all hold good numbers of fish.

Electrofishing surveys are conducted annually at several stations on Beaver Creek to monitor both adult and young-of-year (YOY) numbers. Adult brown trout typically average 8-10 inches in length with the largest reaching close to 20 inches in size. Over the past 10 years, brown trout densities for Beaver Creek have been some of the highest in the state. Both the Put-and-Take and Catch-and-Release sections of Beaver Creek support very high numbers of fish relative to the overall size of the stream (Figure 1, Figure 2). Following a slight drop in adult numbers due to low flow conditions in 2017, brown

trout numbers rebounded in 2019 following a wet year and return to normal discharge levels from the upstream spring. This highlights the importance that stream flow has on maintaining a successful fishery. High flow conditions lead to high trout densities, while low flow conditions can cause a reduction in trout numbers. Efforts to protect the underlying aquafer in the watershed are key to maintaining this unique trout resource.

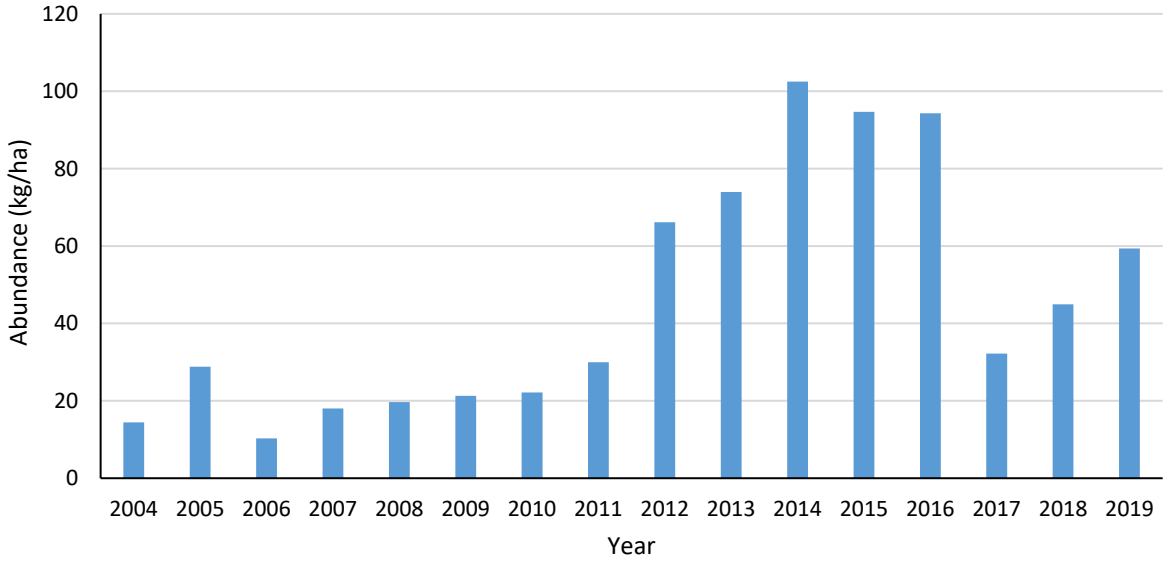

Figure 1. Adult brown trout abundance (kg/ha) at Beaver Creek Catch-and-Release sample station (2004-2019).

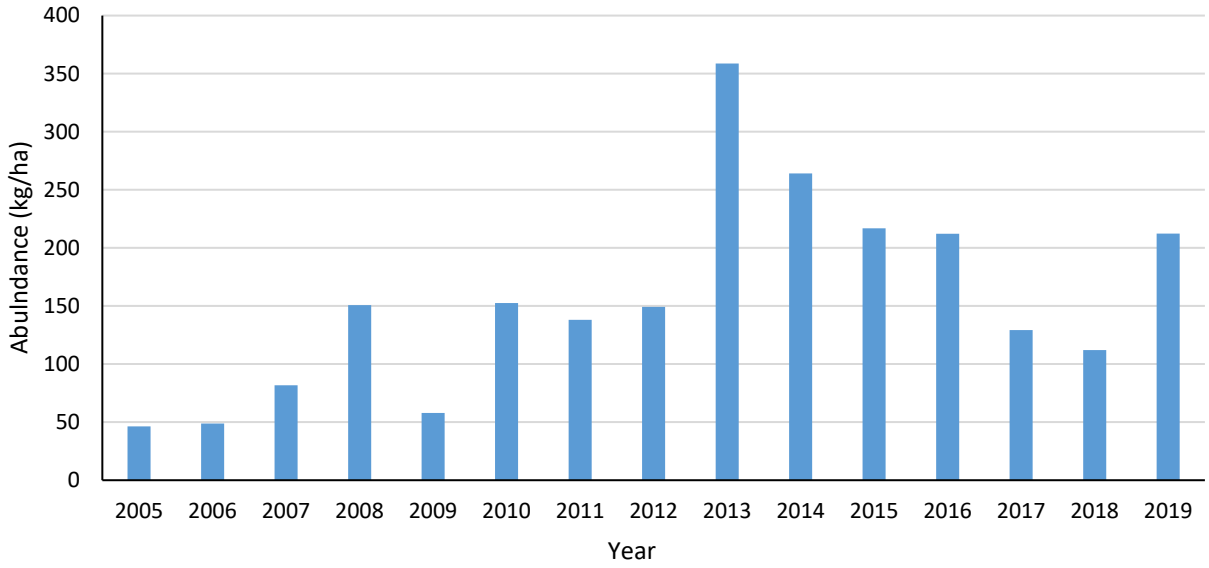

Figure 2. Adult brown trout abundance (kg/ha) at Beaver Creek Put-and-Take sample station (2005-2019).

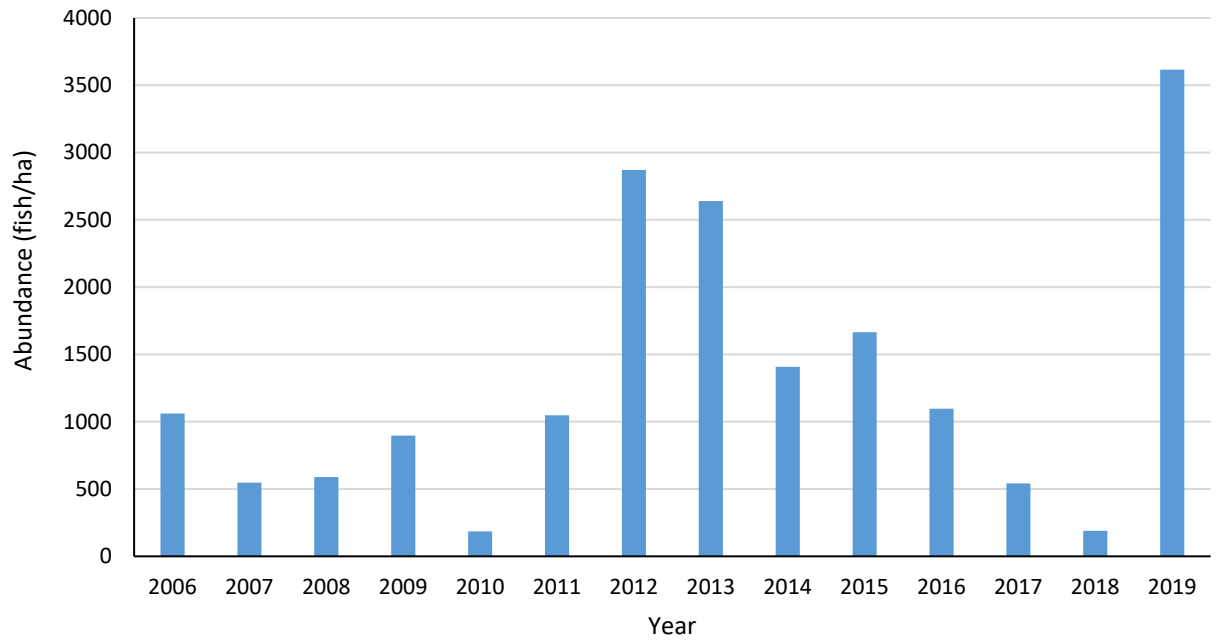

Figure 3. Young-of-Year (YOY) brown trout abundance (fish/ha) at Beaver Creek Put-and-Take sample station (2006-2019).

Adult brown trout in Beaver Creek, Young-of-year brown trout from 2019 survey

Young-of-year (YOY) numbers for 2019 were some of the highest observed since 2004 (Figure 3). These results show the importance of instream flow conditions for juvenile recruitment. 2018 was a very wet winter and spring, resulting in above average flow conditions. Higher flows in the stream created more available spawning habitat. Numerous spawning reds were observed in gravel riffle areas through the creek. YOY numbers in both the Catch-and-Release and Put-and-Take sections looked excellent with densities as high as 3600 juveniles/ha. These high juvenile numbers should support a very strong fishery for the next several years as these fish mature to a large size and distribute throughout the length of the stream.

Anglers are reminded of regulations for Beaver Creek

- Catch-and-Release Fly Fishing Only section – confluence of Black Rock Creek downstream to 160 m upstream from Beaver Creek Road
- Put-and-Take sections – Albert Powell Fish Hatchery downstream to confluence of Black Rock Creek; Beaver Creek Rd downstream to confluence of Antietam Creek

For those interested in helping with the preservation and stewardship of Beaver Creek, there are several non-profit groups that are actively involved in the watershed

- Beaver Creek Watershed Association (www.beavercreekwatershedassociation-md.org)
- Seneca Valley Trout Unlimited (www.senecavalleytu.org)
- Antietam Creek Fly Anglers (www.afa-md.org)

Please contact them if you would like to contribute or volunteer with conservation projects. Any questions about fishery resources in Beaver Creek please contact Michael Kashiwagi (Michael.kashiwagi@maryland.gov).