

A New Fish Survey at ACLT: Forage Sampling

by Emily Dunsmore, 2023/2024 CCCC Member

Often, when you think of the fish who call the Parkers Creek watershed home, you think of the bigger fish. Black drum, Atlantic croaker and spot are all common creatures to find in Parkers Creek and its many tributaries. Often overlooked, however, are the ‘little guys.’ The small fish and aquatic bugs, called ‘forage’ species, are the unsung heroes of the aquatic ecosystem of Parkers Creek and beyond.

These small fish and aquatic insects are the main food source for the larger predator fish and are chronically understudied in fish surveys. Surveys that do focus on forage species are usually limited to sandy beach habitats. This has left a critical gap in the knowledge of the forage species present in other ecosystems. As a part of a project initially started by the Patuxent Environmental Aquatic Research Lab (PEARL), both ACLT and the Watershed Friends Groups have been participating in forage surveys. These surveys include setting out unbaited minnow traps for 24 hours and recording the number of fish and invertebrates found, along with water quality data at each site. While this effort to survey for forage is part of the larger project initiated by PEARL, the information gathered is also valuable to ACLT. ACLT has conducted several fish surveys over the years, but sampling specifically for forage fish has never been done before on ACLT property.

Clark Creek was the backdrop of forage surveying at ACLT. Clark Creek runs through Flint Trail on ACLT’s south side and bisects the North-South Trail near its confluence with Parkers Creek. Nearly every week from mid-May to late July, six unbaited minnow traps were set out and retrieved a day later. Then, the fish, invertebrates, and other species were identified, counted, recorded, and released safely back into the stream. The sites chosen represent a range of different habitats, with sites in shallow, sandy areas near the headwaters, a ponded area behind a beaver dam, and muddy, deep waters close to where Clark Creek meets Parkers Creek.

This surveying effort has given ACLT lots of information about the kinds of small fish and invertebrates present in our non-tidal ecosystems. 13 species were caught in total, with 9 of those being fish species and 4 being invertebrates. Of the fish species, 8 were native species, like Mummichogs, Eastern mosquitofish, and American eel. There were no invasive fish species found during sampling, although one species is considered non-native but naturalized in the area.

Aside from fish, the minnow traps also revealed other creatures living in the waters of Clark Creek. At the site in the ponded area created by a beaver dam off Flint Trail, Eastern red spotted newts were often found in the trap alongside numerous fish. Also caught on a regular basis were crawfish, and the occasional frog as well. Most of the crawfish caught were a native species of burrowing crawfish called Devil Crawfish, but one invasive species, the Red Swamp Crawfish, was also caught on occasion. Although fish were the primary forage species caught in each trap, the other creatures found highlight how diverse and complex these small stream ecosystems can be.

Sampling with minnow traps only captures a small fraction of the diverse wildlife that calls Clark Creek home. Another component of ACLT’s forage survey included sampling for benthic macroinvertebrates to get a more comprehensive view of what forage species are found in the stream. This sampling was conducted near the headwaters of Clark Creek – the first macroinvertebrate sampling conducted on ACLT’s south side properties. Results from the macroinvertebrate survey are still forthcoming.

Although the results of the survey have yet to be fully analyzed, there are some initial conclusions that can be drawn. Almost every fish species caught is tolerant of pollution. Because the stream lacks fish species sensitive to pollution, it could suggest that the quality of Clark Creek has room for improvement. Despite this, the pres-



CCCC Member Emily Dunsmore holding a minnow trap with numerous fish.



Banded killifish caught during forage sampling

ence of Eastern red spotted newts at one site is a good sign, as they are very sensitive to pollution due to their porous skin. With more replications, forage surveying can prove to be a useful tool to track potential changes in water and habitat quality within our waterways.

Overall, forage surveying in Clark Creek shed light on one of the most important groups of creatures found in non-tidal streams. In addition, it served as an invaluable learning experience for me and everyone else involved. Learning how to identify fish (which is especially tricky when they’re small!), exploring the intricacies of dissolved oxygen levels, and finding out which habitats fish prefer really highlighted how incredible these aquatic ecosystems are and why it’s so crucial to understand, preserve, and protect them.