TU Gets Things Going on the White

by Jacob Lemon, TU Eastern Angler Science Coordinator

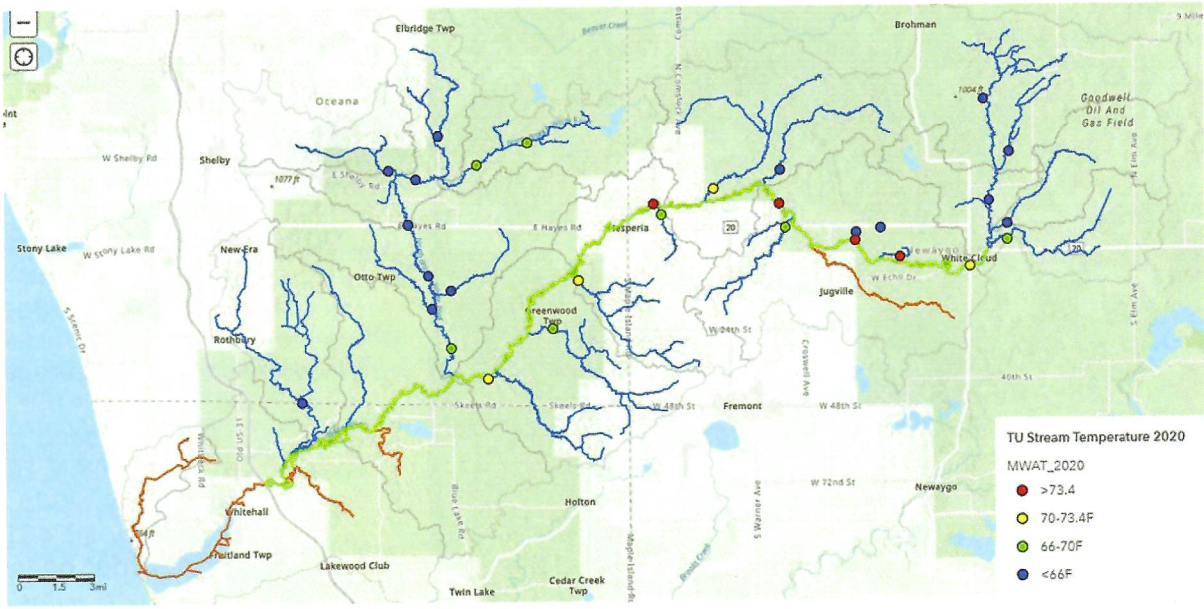
Where is the White River? You might have driven over it on M-37 on your way to the Pere Marquette River or perhaps on U.S. 31, heading to Ludington or Manistee to fish Lake Michigan. Maybe you've fished the salmon/steelhead runs on the lower South Branch or for wild browns/brookies on the North Branch or Upper South Branch. Either way, you should be glad to hear that Trout Unlimited is taking a closer look at this often-forgotten West Michigan river tucked between the better-known Pere Marquette and Muskegon Rivers.

Over the past couple of years, in partnership with the U.S. Forest Service, Fremont Area Community Foundation, Schrems West Michigan Chapter of TU (SWMTU), White River Watershed Partnership (WRWP), and Michigan Trout Unlimited (MITU), TU staff has been investigating the watershed and getting to know its stakeholders. The goal is to learn as much about the watershed and its habitat limiting factors, foster collaboration among the various groups doing good conservation work in the region, and bring more resources to the table to identify and implement data-driven projects.

In fall 2019, TU organized anglers and paddlers to inventory habitat issues, such as lacking riparian vegetation, erosion issues, and fish passage barriers, using TU's RIVERS app. A couple of dozen volunteers walked and paddled the North and South Branch White Rivers and many tributaries, taking georeferenced photos and helping identify and document potential future projects.

In the summer of 2020 and 2021, TU staff and volunteers deployed a network of nearly 50 temperature loggers throughout the watershed. The USFS funded this effort to understand the distribution of thermally suitable habitats for coldwater fish. The results of our 2020 deployments painted a clear picture of super cold headwaters and tributaries on both the South Branch and North Branch. The White Cloud Dam is an impoundment in the headwaters of the South Branch, and data showed an eight-degree Fahrenheit increase in stream temperature below the dam when compared to upstream. This effectively transitions a high-quality wild trout fishery into a marginal cool water stream supplemented by stocking.

In Fall 2020, TU took 28 environmental DNA samples to evaluate the distribution of coldwater fish in the watershed, shown in the photo above. Environmental DNA is a relatively new method for quickly and cheaply assessing the presence or absence of species within a waterbody. Fish and other aquatic species shed their DNA into the environment, such as skin sloughing off of fish into a stream. Samples are taken by pumping stream water through filters that capture the suspended material in the



Graph showing White River maximum weekly average temperature.

stream. Advanced genetic tools can search for specific genetic markers of species and detect DNA from just a couple of cells in a sample. A USFS lab analyzed TU's samples for evidence of brook, brown, and rainbow trout DNA.

Generally, brook and brown trout were found throughout the sampled watershed areas, including the North Branch, South Branch above Hesperia, and most of the major tributaries. In fact, samples were positive for these species at every sampled site except a tiny tributary that temperature data showed to be very warm. Rainbow trout DNA was detected at all samples in the North Branch and the South Branch watershed below Hesperia Dam. The Hesperia Dam blocks runs of steelhead and salmon and invasive species such as sea lamprey. A pocket of rainbow trout was also detected on the South Branch about halfway between Hesperia and White Cloud.

TU has supported the deployment of low-cost, real-time water quality monitoring stations that measure temperature, depth, and conductivity and upload data to a publicly accessible database. We deployed our first station on the North Branch of the White in 2020. TU is working with WRWP on a planned network of these long-term stations throughout the watershed, with a South Branch station scheduled for 2021. You can access the data by visiting www.monitormywatershed.org/browse.

Alongside efforts to understand this watershed and collect data that will aid future project identification and prioritization, TU has been getting to know the various stakeholders. Working with the Fremont Area Community Foundation, WRWP, MITU, SWMTU, DNR, and other groups, TU is establishing the White River Watershed Collaborative. The goal of the Collaborative is to facilitate a unified process for a cooperative and data-driven approach to the identification, prioritization, and evaluation of watershed restoration projects. TU seeks to include various stakeholders, including local municipalities, agencies, local conservation groups, economic development interests, and others.

A kickoff meeting was held in early 2021, which included a highly engaging facilitated consensus workshop and 46 watershed stakeholders. The workshop was designed to engage all participants in identifying shared priorities for the watershed. The priorities ranged from research and monitoring to inform strategies to promoting outdoor recreation and improving access. Other priorities included restoration, land protection, community building, education, dam removal, economic analysis, and sustainable funding. TU will continue to facilitate and lead this group to enable communication and collaboration among the varied interests in the watershed.

So what's next? TU is currently seeking funding to support the continued facilitation and development of the White River Watershed Collaborative. In the meantime, we continue to learn more about the watershed to develop a solid foundation for making data-driven decisions on where to focus our efforts. To facilitate this, we developed an online mapping application that assembles and summarizes the available data within the watershed (https://arcg.is/1eC8HL). We plan to continue working with partners to address data gaps through habitat mapping, identification of thermal refuge and coldwater inputs, continued eDNA sampling, water quality monitoring, and more.

The White River is a resource worth protecting and offers opportunities to make dramatic improvements to the coldwater fishery and function of the watershed. TU will continue to be a catalyst in the watershed, working to elevate the White to the excellent coldwater fishery that it can be. To learn more, contact Jake Lemon at jlemon@tu.org.