



# Channels

**6285**  
**Stream Teams**  
**Strong!**

Information for and about **Missouri Stream Teams** • Spring/Summer Issue 2021

## INSIDE THIS ISSUE

**2** Farewell, Jenna Stiek  
Welcome, Cassidy Miles  
Welcome, Tabitha Gatts  
Monitoring Minute:  
Disinfecting

**3** Riffle Review  
Team Snapshots

**4** Coalition Corner:  
Stream Teams United  
Announces Paddle MO  
Scholarships for Stream  
Team Members

### 2nd Quarter Prizes

- ◆ Canoe - Colorado
- ◆ Window Bird Feeder
- ◆ 4 Monster Camping/travel towel
- ◆ Youth Prize: Amazon gift card



Please keep sending us  
your Activity Reports . . .  
**You might win NEXT!**

## EPT TAXA RICHNESS METRIC - What Does it Mean?

By Randy Sarver, Stream Team, DNR VWQM Coordinator

EPT is an abbreviation that stands for the insect orders Ephemeroptera, Plecoptera, and Trichoptera. The respective common names for these orders are mayflies, stoneflies, and caddisflies. If you would like to learn more about these taxa, please see the recorded presentations from a four-part Stream Team Academy Creek Course about their identification, life history, and ecology on the [Missouri Stream Team YouTube Page](#).

Research and associated publications for the EPT taxa have a long history in the U.S., with roots in taxonomic and ecological research in Europe. One of the earliest publications about United States mayflies was written by H. Williamson in 1802. Many more significant taxonomic journal articles were subsequently published throughout the 1800s.

The 20<sup>th</sup> century in the United States brought more comprehensive publications about EPT. Among many others, Needham, Traver, and Hsu published a 759+ page book on *The Biology of Mayflies* in 1935 and researchers at the Illinois Natural History Survey published excellent books on the stoneflies (Frison, 1935); caddisflies (Ross, 1944); and mayflies (Burks, 1953) of Illinois. The abundance of historic research about EPT taxa indicates that these insects are interesting and ecologically important.

Benthic macroinvertebrates became a measurement tool to evaluate water quality in the U.S. as early as the 1920s. As using macroinvertebrates to monitor water quality became more widespread in the 1950s, there was a synchronous recognition that the EPT taxa were generally intolerant of pollution. Investigators further documented this when they began to classify organisms as tolerant, facultative, or intolerant (Surber, 1953; Beck, 1953; Weber, 1973); eventually resulting in the development of biotic metrics (Chutter, 1972; Hilsenhoff, 1977). A **metric** is defined here as a type of measurement index that responds to water quality changes.

The first published use of the EPT Taxa Richness metric is attributed to the North Carolina Division of Environmental Management (Lenat, 1983). Since that time, the EPT metric has become a widespread component of multi-metric indices to monitor water quality. Examples of the EPT Taxa Richness metric's widespread use are documentation that at least 58% of state water quality monitoring programs used this metric in 1996 (EPA 230-R-96-007); and when Googled currently, the EPT Macroinvertebrate Index returns ~75,300 returns. Undoubtedly, the EPT metric has become a useful measure of stream water quality.



Mayfly in the Family Heptageniidae. Photo by April Sevy, MDC VWQM Coordinator.



# Farewell, Jenna Stiek



John Enoch Powell once said, "As your ship sails from site, it doesn't mean your journey ends, it simply means the river bends." I wanted to take this opportunity to let you know that I have accepted another position with the Missouri Department of Conservation in the Education Branch. I will be serving as the Conservation Educator for the Central Region at the Boone County Nature School and for the Boone County School District.

I would like to thank everyone. My time with the Stream Team and the Volunteer Water Quality Monitoring Program was a wonderful experience and I will not forget the great people and memories that were made along the way. I am thankful for the volunteers and staff members I have been able to work with and the positive impact everyone has had on my career.

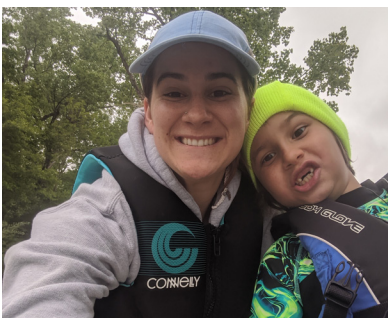
I am looking forward to continuing to have the opportunity to educate students, citizens, and teachers on the importance of our natural resources and the beneficial and proactive involvement they can take in their communities to improve water quality.

# Welcome, Cassidy Miles

Hello! My name is Cassidy Miles. I use pronouns she, her, and hers. I am the new Stream Team Assistant for the Missouri Department of Conservation in Jefferson City, Missouri! I am also finishing up my Master's degree from Western Illinois University. My thesis evaluates three sampling methods for aquatic macroinvertebrates in the Upper Mississippi River. I received my Bachelor's degree in Biology from Southern Illinois University in Edwardsville, Illinois in 2013. I have worked as a fisheries field technician at two river stations in Illinois and as an aquatic biologist for an environmental consulting firm in Missouri. I am originally from Colorado and come from a big military family, so we have moved around a lot! I ended up in the Midwest when I started high school. I am an active member of the American Fisheries Society and recently was elected the Communications Officer for the Equal Opportunities Section and the Diversity and Inclusion Officer for the Student Subsection. I am very passionate about outreach and education, as well as increasing diversity, equity, accessibility, and inclusion efforts within the field of conservation. My hobbies include picking up trash while hiking, walking, or roller skating with my partner and dog! I hope to buy a kayak soon and start paddling!



# Welcome, Tabitha Gatts



Hi! My name is Tabitha, I grew up in Moberly, Missouri, where my 3 siblings and I would spend many weekends at state parks camping, boating, fishing, and 4-wheeling. I came from a home-schooling family that taught me the beauty of self-guided learning and creating my own at-home science experiments.

Continuing on the path of learning and the outdoors, I graduated from the University of Missouri with my degree in Environmental Science and then worked for the MU Limnology Lab as a field and lab technician. I spent many hours on lakes and streams sampling for physical and chemical parameters and macroinvertebrates, and in the lab analyzing for nutrient and chlorophyll-a concentrations. This experience taught me the great value of the water resources we as humanity get to steward and protect, and I am thrilled to be working with volunteers to educate and equip them for this purpose. I will assist the Program by helping process and review VWQM data, and to develop and teach workshops.

# Monitoring Minute

## Disinfecting

By Jenna Stiek, MDC Stream Team Biologist

It's that time of year! This means water quality monitors are venturing out. Water quality monitoring requires the use of several pieces of equipment to complete the necessary testing at one's site. Some monitors have more than one site they sample in a day and there are some equipment items that will need to be disinfected when traveling between different monitoring sites. Disinfecting equipment helps reduce the risk of introducing invasive species to a new water source. There are several aquatic nuisance species in Missouri that can easily be transferred between water ways by not disinfecting sampling equipment thoroughly. A few of these invasive species in Missouri streams include: zebra mussels, Chinese mystery snails, and hydrilla. Any of these invasive species can have detrimental effects on water quality, habitat, and ecosystems.

It is important to disinfect your equipment after every monitoring trip and especially if you are sampling multiple streams in a day. Please remember that disinfecting equipment is something we can all participate in to halt the spread of invasive species.

There are a few different ways to disinfect monitoring equipment properly. Safety glasses and gloves are recommended when completing the disinfecting process.

- Vinegar - soak your equipment in one gallon of vinegar for approximately 20 minutes.
- Chlorine - use 4 ounces of bleach to 1 gallon of water and let the equipment soak for 10 minutes. Before use please rinse off with water, but do not let the bleach solution run into a body of water.
- Air drying - let your equipment air dry for 3-5 days. The equipment must be fully dry in order for this method to work properly.
- Freezing - must freeze for 24 hours and the temperature needs to be below 32°F
- Salt bath - 1/8 cup of salt in 1 gallon of water and equipment must be submerged for at least 24 hours.

Have a Safe and Happy Monitoring season!

# The Riffle Review

a bi-monthly glimpse of Stream Team activities

Since our last issue of Channels, Stream Team members reported:

- 380 total activities
- 27 tons of trash collected
- 9,545 total participants
- 55 water quality monitoring trips
- 24,139 total hours
- 67 trees planted

Check out more highlights below . . .

**Team 5** In a partnership between Open Space Council, MDC, and community volunteers, an area recently annexed into the Young Conservation Area along LaBarque Creek got a major cleanup, yielding more than 12 TONS of trash including 40 cubic yards of debris, 17,000 pounds of tires, a farm truck tire, and 5,740 pounds of metal. Wowsers!

**Team 278** The Hickman High School Biology Club spent their Earth Day giving back to the earth by cleaning up along Hinkson Creek and a busy highway intersection in Columbia, picking up about 20 bags of trash. The earth thanks you for your service!

**Team 1780** Hazel Creek Access in Kirksville has had a lot of action lately with multiple cleanups over the spring season, and several wildlife sightings as well, including a bobcat footprint and several geese, who made sure Sally Cook was aware she was in their space during her cleanups.

**Team 2477** The Terry Mosier Team cleanups at Taum Sauk and Big Creek in Iron County always come up with exciting outdoor experiences, including owl and eagle sightings while they picnic after they pick up trash. A rewarding way to spend time outdoors!

**Team 3025** They may not have had much luck finding antler sheds during their excursion near the Burr Oak Woods Nature Center, but the Fortner Fishing Floaters did feel good about cleaning up around the parking lot and the stream even though the wind chill was zero degrees that day. Brrr!

**Team 4794** As part of the bi-annual James River Basin Partnership Adopt-A-Highway cleanup, Josette Coffman was excited to see what kind of trash treasures she might find near the confluence of Finley Creek and the James River. This year, it was an eight-track tape (vintage), and an iPhone 12 (brand new technology).

**Team 5246** The Sugar Maple Stream Team had a great start to their cleanup season on the Big Piney River, filling up seven large bags and picking up two tires with some new Team members, but the best part was the folks stopping to ask questions about what they were doing and being able to share their experiences. Sounds like an uplifting trip!

**Team 6059** Alecia Totten of Al's Stream Team enjoys her "me" time tromping along the Thompson River in Grundy County, and tends to get quite a haul each time she's out and about. She has collected about 100 cans, 50 plastic bottles, 100 cigarette boxes, and lots of paper trash and glass. "Every time is special for me," she said.

**Team 6132** It's amazing what a small crew of just three people can collect in a short time, as the Rubbish Wranglers did on Sugar Creek in Saint Louis County. They pulled five tires, two mattresses, 17 bags of trash, two vacuum cleaners, a 37" flat screen TV, two older TVs, a full set of speakers, two sets of bench weights, and much more, totaling half a ton!

# Team Snapshots



The Moreau River Outfitters Stream Team 6197 took advantage of a mild January Day for their very first cleanup with an impressive haul including an old computer monitor, a tire, and several buckets in addition to the usual bottles and cans. Nice work!



Blue River along 87th Street in Kansas City was about a quarter-ton lighter of trash and debris after the inaugural cleanup event for the Waldo Stream Team 6188. The Team came back for more on Thanksgiving, collecting another 18 bags of trash for a new Thanksgiving holiday family tradition.



The newly revived Lincoln University Ag Club Stream Team 138 joined forces with additional FFA students for a day on Wears Creek in Jefferson City. Included in the day's activities were a cleanup that brought in 11 bags of trash, four tires, and the remnants of a washing machine, plus a water quality demonstration by Stream Team staff. The students were in great spirits, said Amy Bax.



Not only did the McKee Stream Team 3496 plant 235 trees along an eroding bank of Joachim Creek in Jefferson County, but they still had the energy to pick up 25 tires and a load of scrap metal totaling half a ton. Talk about a productive day!





# COALITION CORNER

News from Stream Teams United

## Stream Teams United Announces Paddle MO Scholarships for Stream Team Members

By Mary Culler, Stream Teams United Executive Director

Stream Teams United is once again hosting two multi-day educational river adventures on two of our state's great waterways in the fall of 2021. We are announcing the opportunity for Stream Team members to apply for two memorial scholarships this year. The Greg Poleski Memorial Scholarship is for participation in the five-day Paddle MO trip down the last 100 miles of the Missouri River, September 22-26; and the David Risberg Memorial Scholarship is for participation in the three-day Paddle MO Ozarks trip on 25 miles of the upper Current River, October 9-11.

The Greg Poleski Memorial Scholarship is in honor and memory of river advocate Greg Poleski (founder of Greenway Network, Stream Team #463), who passed away in 2020. The David Risberg Memorial Scholarship is in honor and memory of David Risberg, and is sponsored by the [CFM David Risberg Memorial Affiliate Grant Program](#), which was created to support stewardship and education efforts of [CFM Affiliates](#). To apply for these memorial scholarships, applicants must be a registered Stream Team that started their Team prior to 2021. Online applications will be available at the [Paddle MO Scholarships](#) webpage, with this year's application period beginning on June 1, 2021 and ending on July 31, 2021.

The Paddle MO program began in 2016, with the inaugural Missouri River trip, and the upper Current River trip began in 2019. In just the first five years of the program, Stream Teams United has welcomed paddlers from 17 U.S. states, and over 400 people have participated in these one-of-a-kind educational river adventures. Each year, Stream Teams United seeks opportunities to grow the number of scholarships available for this program.

Registration opened on January 1, 2021 for this year's [Paddle MO trips](#). Registration for the upper Current River trip is full with the exception of the David Risberg Memorial Scholarship. There are still about ten spots left for the Missouri River trip, including options for weekend, three-day, or full five-day trips. Paddle MO trips serve as a fundraiser for Stream Teams United, provide an opportunity to connect people to rivers in a unique multi-day educational experience, help promote the Missouri Stream Team Program, and promote the state of Missouri as "The Great Rivers State." Learn more at [paddlemo.org](#).



Greg Poleski, founder of Greenway Network Stream Team 463, paddling the Missouri River.

