



# THE CLAM CHRONICLE



# IN-PERSON TRAINING TO RETURN ON A LIMITED BASIS FOR 2021

By Jesse Weinzinger, WMMP Coordinator & Lisie Kitchel, Aquatic Species Expert

The Wisconsin Mussel Monitoring Program (WMMP) is part of the Wisconsin Department of Natural Resources (DNR). We recognize the seriousness of the COVID-19 pandemic and our responsibility to protect our staff, volunteers and the public while pursuing our mission of monitoring and protecting native mussels.

Our goal is to ease back into operation consistent with safety precautions required by the Department of Health Services, the governor's directive to state agencies and the DNR's operating plans. As COVID-19 restrictions continue to adapt and evolve, the WMMP is staying up to date with what has worked for other volunteer programs. We will continue to explore ways to improve interactions with volunteers through the 2021 field season.

At this time, the WMMP does plan to host in-person training in 2021. Please visit our "Event Calendar" to explore training opportunities in your area. Before each activity, volunteer coordinators will provide specific safety guidelines for volunteers, staff and the public.

Due to the fluidity of the COVID-19 virus situation, guidance and directives will be evaluated weekly. Any changes will be shared on the mussel monitoring website and our volunteer email distribution list.

We are grateful for our volunteers and the important information they provide to advance the conservation of native mussels in Wisconsin. We look forward to the coming season and getting back out in the field with volunteers.



Jesse Weinzinger



Lisie Kitchel

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Learn more about the Wisconsin Mussel Monitoring Program at: <https://wiatri.net/inventory/mussels/>.

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Please contact [Jesse.Weinzinger@wisconsin.gov](mailto:Jesse.Weinzinger@wisconsin.gov) to share your suggestions.

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# VIRTUAL TRAINING & RESOURCES AVAILABLE



Lisie Kitchel, in red life jacket, trains mussel monitoring volunteers in northern Wisconsin in 2019. Training will be offered both in person and remotely in 2021.

The Wisconsin Mussel Monitoring Program (WMMP) wants to provide water-loving enthusiasts as many opportunities as possible to conduct monitoring and surveys for native mussels around the state. Although in-person training will resume at a limited capacity in 2021, we also provide additional training and resource materials online for people to complete the training remotely. To become a volunteer:

- Read the Volunteer Manual
- Watch training videos
- Explore local mussel observations
- Contact a Mussel Monitoring Coordinator

The WMMP Coordinator will provide additional guidance if you have any questions about monitoring. If you are looking for local monitoring sites, we can provide you with site suggestions based on your available time and interest.

If you'd like to be added to the WMMP's email distribution list or if you have questions about the program, please

contact Jesse Weinzinger, DNR Conservation Biologist, at [jesse.weinzinger@wisconsin.gov](mailto:jesse.weinzinger@wisconsin.gov) or 608-397-0198.

For questions regarding permitting or other information, contact Lisie Kitchel at [lisie.kitchel@wisconsin.gov](mailto:lisie.kitchel@wisconsin.gov) or 608-220-5180.

For more information about the WMMP, visit the webpage [here](#).



# 2020 Native Mussel Reports Reach Record Levels Despite Pandemic Precautions

Although COVID-19 safety precautions reduced mussel monitoring events in 2020, volunteers contributed the highest number of mussel observations (763) from the most observers (110) to date!

Wisconsin Mussel Monitoring Program volunteers reported several state and federally listed mussel species, including:

- Elktoe (*Alasmidonta marginata*)
- Yellow sandshell (*Lampsilis teres*)
- Ellipse (*Venustaconcha ellipsiformis*)
- Eastern elliptio (*Elliptio complanata*)
- Mapleleaf (*Quadrula quadrula*)
- Higgins' eye (*Lampsilis higginsii*)
- Pistolgrip (*Tritogonia verrucosa*)



Ellipse was one of the rare mussel species found and reported in 2020.  
Credit: Marty Honel



University of Wisconsin-Stevens Point students identify native mussels in the Plover River.  
Credit: Jesse Weininger

## FEATURED SPOTLIGHT – ONEIDA & VILAS COUNTIES

Oneida and Vilas counties contain one of North America's highest concentrations of glacial lakes and 1,543 miles of streams, including the headwaters of the Wisconsin and Manitowish-Flambeau-Chippewa river systems.

Although there is an abundance of water bodies in these two counties, we know little about the native mussel diversity. Thankfully, volunteers are helping fill informational gaps on many lakes and streams. We've received reports from individuals in recent years, and organized a 2018 volunteer Mussel Blitz on the Eagle River and Three Lakes Chain, all of which have significantly added to understanding of native species richness in county waters.

Volunteers and WMMP staff documented 11 species of native mussels on the Eagle River and Three Lakes Chain, including providing important information about the abundance of the newly discovered Eastern pondmussel (*Ligumia nasuta*). Data collected during the event increased the known native species richness to 13 on what is regularly considered to be the world's largest chain of freshwater inland lakes.

Volunteers documented various common mussel species in waters in Oneida and Vilas counties. These observations represented the first records turned in for the species on the following lakes.

- **Oneida County:** Maple Lake, Sand Lake, Shishebogama Lake, Squash Lake, Two Sisters Lake, and Upper Kaubashine Lake
- **Vilas County:** Big Lake, Big Sand Lake, Birch Lake, Deerskin River, Kentuck Lake, Long Lake, Presque Isle Lake, Scattering Rice Lake, and Star Lake

The most frequently observed mussel species in these counties:

1. Giant floater (*Pyganodon grandis*)
2. Fatmucket (*Lampsilis siliquoidea*)
3. Paper pondshell (*Utterbackia imbecillis*)
4. Lake floater (*Pyganodon lacustris*)
5. Spike (*Eurynia dilatata*)
6. Wabash pigtoe (*Fusconaia flava*)
7. Plain pocketbook (*Lampsilis cardium*)



Fatmucket  
Credit: Brenton Butterfield



Spike  
Credit: Jesse Weininger



Giant floater  
Credit: Brenton Butterfield

# STUDENTS GAIN MONITORING EXPERIENCE & BOOST LOCAL MUSSEL KNOWLEDGE



UW-Green Bay students look for freshwater mussels in the Kewaunee River. Credit: Dr. Amy Wolf

University of Wisconsin (UW) System students got their feet wet in mussel monitoring in 2020 and added to the scientific understanding of mussel biodiversity in local waters. The UW system campuses followed recommendations from state and federal health officials and local guidelines or restrictions regarding social distancing, travel and activities.

Several UW System campuses initiated or continued mussel monitoring as part of their curriculum, research or volunteer opportunities. For instance, students at UW-Stevens Point started a mussel monitoring subchapter of The Wildlife Society.

The program aims to study the distribution and health of freshwater mussels in Portage County while providing students with the opportunity to learn and experience firsthand conservation efforts to protect the resource. Additionally, UW-Whitewater and UW-Green Bay include mussels in their curriculum. UW-Green Bay students recently documented three new mussel species not previously found in Kewaunee County streams where surveys took place. The three new species include round pigtoe (*Pleurobema sintoxia*), white heelsplitter (*Lasmigona complanata*), and cylindrical papershell

(*Anodontoidea ferussacianus*).

UW-Platteville has incorporated mussels to build inter-agency, organizational and international collaborations around these organisms. The university is implementing several important projects to better understand the distribution and status of native mussels in Southwest Wisconsin.

UW-Platteville is working with several collaborators, including the Wisconsin Department of Natural Resources (DNR), UW-Madison's Trout Lake Field Station and the National Mississippi River Museum and Aquarium.



UW-Platteville students give the thumbs up after a day looking for freshwater native mussels. Credit: Dr. Rebecca Doyle-Morin

# RIVER DRAWDOWNS & MUSSEL SALVAGES



Staff from Domtar, the Wisconsin Department of Natural Resources (DNR), and volunteers braved chilly water temperatures in October 2020 to save native mussels and other aquatic species from being stranded while water levels were drawn down on the Wisconsin River above the Nekoosa dam.

Dam maintenance and repair projects to improve power generation for hydropower plants can involve lowering water levels on the upstream reservoir several feet. These maintenance and repair projects can also include using heavy equipment to re-shape an existing area by digging or dredging.

Such actions can put native mussels and other river dwellers, particularly those that can't move far on their own, in a pickle.

Regulators and operations staff try to save as many species as possible by collecting and moving animals to new homes where water levels won't drop drastically and habitats won't be disturbed during the project.

This type of operation is called a 'salvage.' Fish salvages are most common, while mussels have historically been forgotten. The good news is that freshwater mussels are starting to get more attention from stakeholders. With



rising awareness, efforts to save mussels before beginning river modification projects are becoming more common.

To fulfill state and federal regulatory compliance, dam operators must complete stranded organism surveys, especially if protected species are present within the project boundary. Outside of regulatory compliance, the Wisconsin Mussel Monitoring Program (WMMP) staff see these drawdowns as an opportunity to better identify suitable habitats, mussel beds and introduce mussel conservation to the public.

On Oct. 26, 2020, the Nekoosa Reservoir was drawn down to make repairs at the local dam. Staff from Domtar, the DNR and volunteers collected and relocated over 1,200 mussels to deeper waters to avoid further stranding. Salvage efforts observed seven common species of native mussels; six of them represented the first time these native mussel species had been documented in this river reach.



The most common species were fatmucket (*Lampsilis siliquoidea*) and lilliput (*Toxolasma parvus*). Fatmuckets were primarily found near the lowered waterline, while lilliputs were commonly found in water less than 2 feet, partially buried in sediments normally inundated by water.



The highest density of mussels occurred in complex substrates mixed with woody debris. Eleven non-mussel species were recorded and returned to water during salvage efforts, including various fish, turtle and frog species.



More drawdowns are scheduled for 2021, and many will involve stranded organism surveys. The WMMP wants to organize additional events to conduct voluntary salvages throughout Wisconsin. Jordan Pond near Stevens Point and the Nekoosa Reservoir are scheduled for 2021 voluntary salvages.

If you'd like to participate in a salvage effort, please contact Jesse Weinzinger, DNR Conservation Biologist, at [jesse.weinzinger@wisconsin.gov](mailto:jesse.weinzinger@wisconsin.gov) or 608-397-0198.



Volunteers look for mussels to salvage during a drawdown on the Embarrass River.  
Credit: Jesse Weinzinger

Top: Wabash pigtoe shell.

Middle: Mussels to be relocated by DNR staff during a Mississippi River dredging project.  
Credit: Jesse Weinzinger

Bottom: Fish salvaged during the Nekoosa Reservoir drawdown.  
Credit: Jesse Weinzinger

# SPECTACLECASE MUSSELS: ACCELERATING RECOVERY OF AN ENDANGERED SPECIES

The Wisconsin Department of Natural Resources (DNR) and partners are moving full-speed ahead to recover populations of the spectaclecase mussel (*Margaritifera monodota*), which was recently listed as a federally endangered species.

Unlike most mussels, which usually live in mussel beds in stable gravel-sand substrates, spectaclecase live among and under large rocks protected from currents. Their distribution and status in the Mississippi River and Saint Croix River are poorly known because the appropriate habitat is infrequently sampled compared to other habitats.

The Wisconsin DNR is assisting the Minnesota Department of Natural Resources in providing critical and necessary data for spectaclecase recovery and implementing conservation, restoration and propagation priorities.

Between 2019 and 2020, the Wisconsin DNR surveyed 46 locations on the Saint Croix River between Saint Croix Falls and Prescott and found several hundred spectaclecase. The Minnesota DNR surveyed 12 sites in the Upper Mississippi River in Pools 4 and 5, and no spectaclecase were found.

Additionally, Minnesota partnered with the U.S. Geological Survey and the U.S. Army Corps of Engineers to sample 50 Mississippi River sites using environmental DNA, or eDNA for short. As mussels interact with the environment, DNA is expelled and accumulates in their surroundings. By collecting and analyzing water samples for DNA, resource managers can look for signs of freshwater mussels instead of the animals themselves.

In addition to surveys, this project evaluates laboratory and field rearing techniques to improve the culture of juvenile spectaclecase. The Minnesota DNR Center for Aquatic Mollusk Programs in Lake City, Minnesota, will host trials to inoculate host fish with microscopic *spectaclecase glochidia* (baby mussels).

This facility has 4,000 square feet of space dedicated to mussel propagation, rearing and life history research and includes over 2,000 gallons of capacity for juvenile mussel production.

Facilitating the recovery of spectaclecase populations is a goal of this work. The results will directly benefit the propagation and reintroduction plan for spectaclecase currently in development by the U.S. Fish and Wildlife Service and provide valuable information for future surveys and periodic status reviews.



DNR Conservation biologists Jesse Weinzinger, left, and Lisie Kitchel, right, survey the St. Croix River for spectaclecase mussels. Credits: Greg Seitz



# FLEXING YOUR MUSSELS: TALKING ABOUT MUSSEL MONITORING

Featured Volunteer: Kelly Renner



I have always been curious about nature! I am originally from the Milwaukee area, and now I live in Prairie du Chien along the beautiful Mississippi River. I have a degree in Conservation Environmental Science/Biology and just completed my coursework to become a science teacher.

My first passion was insects, and I am part of a monitoring program. Since moving to a Mississippi River town, I have discovered mussels, and my fascination has grown to learn more about them.

## Why Did You Start Monitoring Freshwater Mussels?

I started monitoring for freshwater mussels because I realized that there was variation among individuals as I found them. They have beautiful coloring, markings and shapes! I began by finding them along the banks of the Mississippi River and in tree roots from trees that had fallen over. I tried to identify them on my own and realized there are many more species out there than I was aware of. I started using iNaturalist to help ID the mussels.

## What Do You Find Most Interesting About Mussels?

My first curiosity and one of the things I find most interesting about freshwater mussels began when I met a gentleman who explained to me the lifecycle of a freshwater mussel. I was amazed that the mussels used a “lure” to attract fish and then use the fish as part of its lifecycle! I couldn’t wait to learn more!

## What Is Your Favorite Native Mussel Species?

My favorite mussel species is the Higgins’ eye (*Lampsilis higginsii*). When I began researching freshwater mussels, this is the first species I became familiar with. I learned that it is listed as an endangered species in Wisconsin, and I was hoping to find one.



I appreciated many mussel species because there is something that makes each one unique, whether it’s the iridescent coloring on the inside of the shell, the beautiful green ray displayed on the outside of the shell, the various sizes or the different textures and shapes.

## Is There A Mussel Species You Want To Monitor?

A mussel species I would like to see, although there are many, is the Fawnsfoot (*Truncilla donaciformis*). It is a beautiful species with green rays that zig-zag across the shell. It’s beautiful!

**“ I WAS AMAZED THAT THE MUSSELS USED A ‘LURE’ TO ATTRACT FISH AND THEN USE THE FISH AS PART OF ITS LIFECYCLE! ”**

## What Do You Think Is Important For Monitoring Mussels?

Important skills for monitoring freshwater mussels are natural curiosity, understanding that they are important for our river systems, and sharing knowledge with others to help protect them.





Plain pocketbook



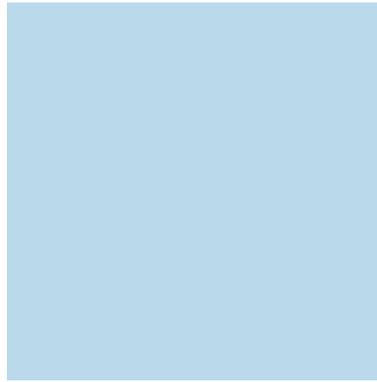
Paper pondshell



Higgins eye



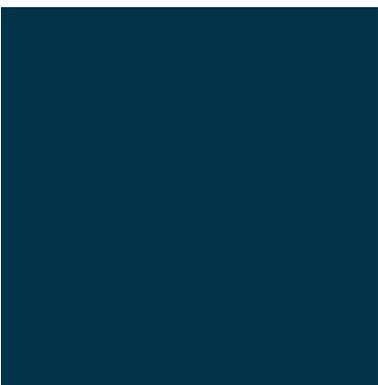
Threeridge



Pink papershell



Salamander mussels



Monkeyface



Slippershell



Giant floater



Wabash pigtoe

