Newsletter of the Freshwater Mollusk Conservation Society
Vol. 27 – No. 2 ISSN 2689-2936 Fall 2025

COVER STORY

ss

Reflections on the 14th Biennial Freshwater Mollusk Conservation Society Symposium

Submitted by Daelyn Woolnough and Dave Zanatta - written by many incredible 2025 FMCS local-planning committee members

Registration:
We had a great group of mollusk enthusiasts attend the symposium! Students and professionals from academia, consulting companies, NGOs, state and federal agencies, and more showed up in full force to share their knowledge of all things mollusk. Representatives from 12 countries helped build international bridges to a future of global mollusk conservation.
Thanks to all of those that helped organize and participate in helping with registration.

Workshop:
The 6-hour workshop this Symposium on Monday was, "A Practical Introduction to Freshwater Snail Identification, Collection, and Conservation" and was led by FMCS members Kate Holcomb (MN DNR), Nate Shoobs (Curator of Mollusks, The Ohio State University Museum of Biological Diversity), and Russ Minton (Professor, Gannon University). The workshop had 40 attendees. See summary in this *Ellipsaria* edition.

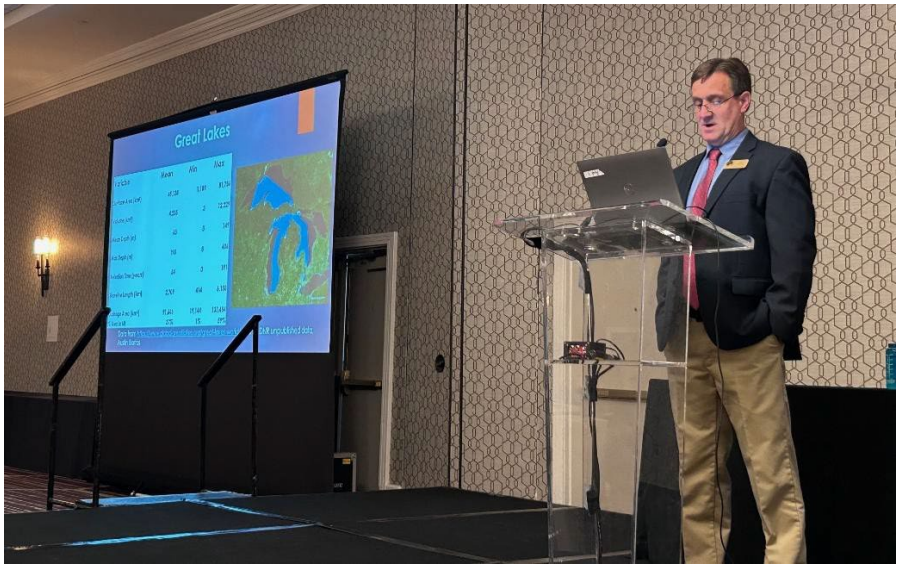
Mentor Mixer:
The first formal event of the Symposium was the Mentor Mixer on Monday evening. The 2025 Mentor Mixer brought together students, recent graduates, emerging professionals, and seasoned FMCS experts for a lively networking and collaboration session. Nearly 40 mentees connected with some of FMCS' most experienced mentors, exchanging ideas, insights, and inspiration. We continue to receive enthusiastic feedback from mentees, whose thoughtful suggestions have helped make the mixer more effective year after year. A special thank you goes out to everyone who joined the Outreach Committee meeting at the conference - especially the students and early-career malacologists who shared valuable feedback and fresh perspectives. We're incredibly grateful to the many (in excess of what the space could accommodate) mentors who volunteered their time and expertise. Your generosity, enthusiasm, and willingness to guide the next generation of malacologists embody the spirit of FMCS. The abundance of mentors eager to participate highlights what makes our society so special - a supportive, welcoming community that truly invests in its future. Here's to more connections, collaborations, and mentorship moments ahead!

Mixer:
The Symposium event to include all attendees was the Welcome Mixer on Monday Night. We were lucky to have great weather and an open-air event, with fire pits, especially in Michigan in May! It was a great opportunity to catch up with friends and colleagues and talk about the

upcoming week of Symposium events. The smiles and conversation were evidence that this is always a fun way to kick off the Symposium.

Welcome:
Tuesday morning started off with Tribal Welcome from Ms. Phyllis Davis from Match-E-Be-Nash-She-Wish Band of Pottawatomi (Gun Lake Tribe). Ms. Davis explained the importance of the surrounding land and water to Michigan and reminded us of the importance of understanding, even understudied organisms like mollusks, history and links to culture and society. She reminded us of the challenges Tribes have in the region and throughout the country and how FMCS members can take action to help protect nature.

Jim Francis (Michigan Department of Natural Resources) then gave a presentation about the history of the Great Lakes. He highlighted the importance of fisheries to the region and how invasive species have played a large role in shaping, and reshaping, this region's ecosystems.



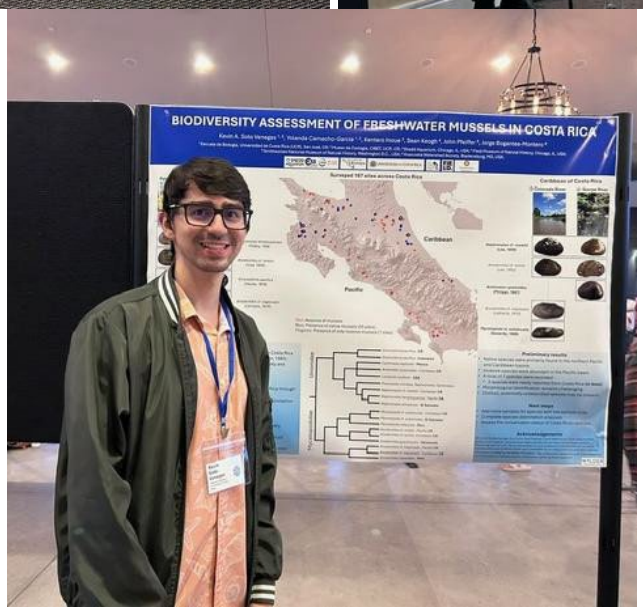
Scientific Program:
There were 124 oral presentations, 46 poster presentations, and 9 lightning talks at the Symposium. Seven of the oral presentations plus one of the lightning talks were given virtually; although this was only a small fraction of the talks at the meeting, it was an important option for people who couldn't attend the Symposium in person. Students gave 37 of the oral presentations and 11 of the poster presentations.
In addition to regular contributed presentations, this year's program included four special sessions: "Freshwater Mussel Data and Databases" (organized by Jocelynne Samu-Pittard, with support from staff of Michigan Department of Natural Resources, Central Michigan University, Michigan Department of Transportation, and Michigan Natural Features Inventory), "Bridges to Recovery: Innovative Strategies to Advance Freshwater Mussel Restoration and Conservation" (organized by Brandon Sansom, Allison Sieja, James Kunz, Mandy Annis, Jess Pruden, and Megan Bradley), "State of the science: environmental DNA for freshwater mussels" (organized by Nate Marshall, Katy Klymus, and Eric Waits), and "Natural History and Conservation of Freshwater Mollusks in the Laurentian Great Lakes System" (organized by David Zanatta, Isabel Porto-Hannes, and David Strayer).

Prior to the poster session on Tuesday evening, we had a great group of volunteers helping the poster folks set up in the open-air space. Luckily, we also had good weather for the poster session. For the first time, the FMCS poster session had a Virtual Reality (VR) display at the poster session from the Yates Mill Aquatic Conservation Center.

On Wednesday morning, FMCS hosted a lightning talk session, moderated by Nathan Ring and Meghan Martinski. This is the second FMCS Symposium that has had a lightning talk session. This session consisted of 5-minute talks, with nine presentations covering topics ranging from novel techniques, notable field observations, propagation methods, and public museum collections of bivalves and gastropods. All presenters utilized the concise lightning talk format to effectively communicate their message. Presentations prompted further conversation amongst audience members of varying experience levels in malacology.

We faced some special challenges this year from uncertainty arising from new and changing federal policies about funding and travel, with some people unsure whether they would be able

to attend the Symposium up to a week or two before the meeting. Several things helped us address these challenges and change the program on the fly: the flexibility of the Whova app, the availability of virtual options for attending the Symposium and giving a presentation (and the assistance of staff on-site to deal with glitches in virtual talks), and the willingness of the Organizing Committee to respond quickly to questions, changes, and minor crises in February-May.



Plenary Speaker:
Dr. Catherine Febria, Healthy Headwaters Lab, University of Windsor, Ontario, Canada, gave a notable and well received Plenary talk on Thursday morning entitled, “Unionids, People & Partnerships: Accelerating Freshwater Mussel Restoration in the Great Lakes Basin”. Dr. Febria’s talk highlighted her successful collaborative efforts with community partners. She was able to emphasize her lab’s work on ecosystem restoration and talk about what are the greatest predictors of ecosystem restoration successes, including her work with unionids. Dr. Febria was able to share the many ways tools can be used to work with the indigenous community to help with biodiversity conservation and how science can be communicated in various ways for restoration to succeed. We are grateful, with Dr. Febria’s busy schedule, that she was able to give the 2025 Plenary talk, answer many questions, and even attend the banquet and auction! Dr. Febria’s lab website can be found here: https://healthyheadwaterslab.ca/

Movie Night:
The FMCS Movie Night double feature kicked off with “Mussel Matters”, a collaboration between three Chicago-area organizations: The Conservation Foundation, Forest Preserve District of DuPage County, and North Central College. This 19-minute exploration of the challenges associated with conserving mussels in urban waterways in northeastern Illinois reminded us all of the importance of our work, and we were lucky enough to have one of the film’s stars, Jim Intihar of the Forest Preserve District, in attendance and those that work with Jim! As the smell of fresh popcorn wafted through the auditorium, the evening continued with a screening of the campy and delightful “The Scottish Mussel.” After a serious, thought-provoking start to the evening, this cheesy feature film had us all ending the night full of giggles and good cheer. The evening started with over 30 attendees and although the attendance trickled through the evening it was a new addition to FMCS 2025 that we feel was well liked by those that attended (we even had a couple of Marriott staff join and watch- maybe future FMCS members?).

Banquet Luncheon and Awards:
At the 2025 banquet there were awards presented (see updates: https://molluskconservation.org/MServices_awardrecipients.html; they will be highlighted in a future *Ellipsaria* issue), updates on upcoming workshop 2026, FMCS/AMS combined meeting in 2027, as well as President (Megan Bradley) and incoming president (Amy Maynard) talked to the attendees about the trajectory of FMCS. See Spring 2025 *Ellipsaria* for the President's message by Amy Maynard.

Auction:
Auction an Outstanding Success!! Many thanks to all!!!
The 2025 auction earned a record breaking $9,253 for the student travel awards from the silent and live auctions, raffle tickets, and sales of vintage FMCS merchandise!!
Thanks to ALL who contributed and helped!!
And thanks for helping us get rid of all that FMCS paraphernalia accumulated over the years!

A SUPER big thanks to Nate Shoobs, *auctioneer par excellance*, he did an amazing job for the duration of the auction (no small task given the array of items and addition of FMCS swag) and delighted us with tales of the items and donors alike! Looking forward to having him back next time!! Auctioneering is a tough gig for the FMCS Auction and maybe in the future tag-team/2-person auctioneering may be an option.
As always, a big thanks to all the others that helped make the auction happen, from donating items, to selling tickets, to organizing the big event, and helping display the items. We will be needing more of the same for the next meeting, so start thinking now of what you would like to donate and keep an eye out for those 'rare and unusual' finds. Once again, THANKS to everyone, without you we could not do it!

Field Trips:
There were two field trips for 2025 FMCS Symposium one to the River Raisin and one to see the University of Michigan collections.

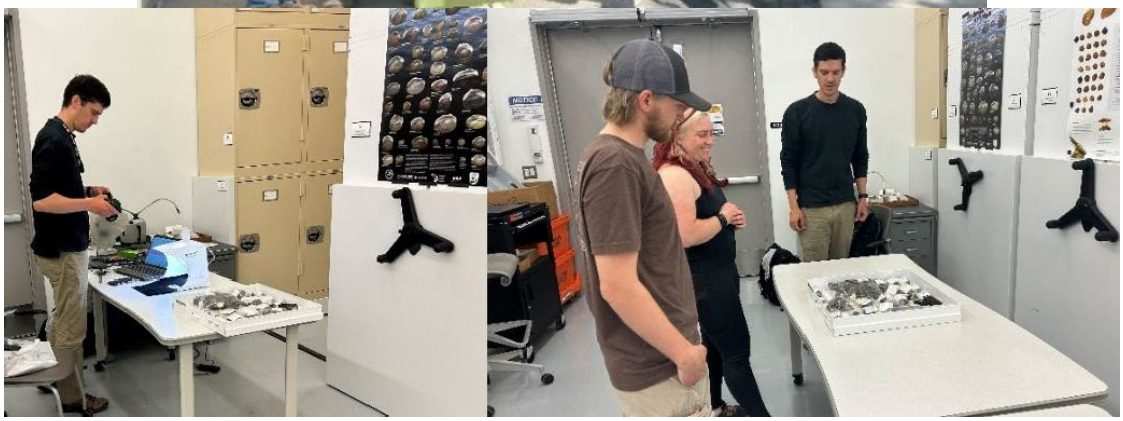
River Raisin Field Trip
On a sunny Friday (after a crazy rain on Thursday night) on the last day of the conference 41 folks gathered at the Sharon Mills County Park on the headwaters of the River Raisin to look for mussels and enjoy a few hours of malacological camaraderie. Water levels were a bit high,

but a combination of waders and divers still found a total of 844 mussels representing 9 species. Spike (*Eurynia dilatata*) and Wabash Pigtoe (*Fusconaia flava*) were the most common species found, as well as two State-threatened species, the Wavy-rayed Lampmussel (*Lampsilis fasciola*) and the Slippershell (*Alasmidonta viridis*). Snail and crayfish experts also shared their expertise. We were joined by two Washtenaw County Park employees who shared the history of the park and enjoyed learning about mussels. It was a great opportunity to get into the river and work with FMCS colleagues that we had not been in rivers with before; what was fascinating was the ability for everyone to work together to get all IDs and lengths of the mussels. Thank you to those that stepped up to help with the processing of the mussels- it gave us opportunities to have smaller groups and document the mussels found to the Michigan Department of Natural Resources. Many attendees of this workshop found new "life mussels" (new species to them- see photo with folks raising their hands). Central Michigan University Communications had photographers and videographers at the field trip; if you think they took some photos of you and would like high quality photos they likely did. Email Daelyn (wooln1d@cmich.edu) for more photos or data from the field trip. A special thanks goes to the leaders of this field trip for helping with logistics, planning, and in the field.

Attendees at the River Raisin Field Trip (and 4 we missed for the group photo)

UMMZ Collections Field Trip and University of Michigan Natural History Museum

The field trip to the mollusk collections at the University of Michigan's Museum of Zoology was a great success, filled with many fun conversations as we examined the many rows of shells from the UMMZ dry collection. We looked at and discussed many of the extinct *Epioblasma* shells in the collection, and Andy Lawrence was able to collect data on the *Gonidea* samples for his research. After visiting the dry collections, we were given a tour of the UMMZ wet collections by Diarmaid Ó Foighil before enjoying a picnic outside the facility. Afterwards we all drove to the Central Campus of the University of Michigan where we visited the Natural History Museum and explored downtown Ann Arbor.



Finances:
FMCS supporters showed up in full force for the 2025 symposium. Twenty-two amazing sponsors provided funds supporting the conference (see below). We are extremely grateful for the invaluable support of all our sponsors and their commitment to advancing mollusk research and fostering collaboration and education for FMCS members, students, and conference attendees. The success of the 2025 symposium would not have been possible without these generous donors and their investment in FMCS.

The 2025 symposium had a total income of $166,764, including $23,534 in sponsorship funding. Total expenses for the 2025 symposium were $162,347. This resulted in a profit of $5,417.

2025 Symposium Sponsors	
River level sponsors (≥ $2000)	
Stream level sponsors ($1000-1999)	Leroy Koch Rachel Muir, in honor of Jim Williams and Art Bogan for their many contributions to freshwater mollusk and fisheries science and with gratitude for their mentorship
Eddy level sponsors ($500-999)	
Mussel level sponsors ($100-499)	

Contributed Articles

Submitted by Kyle Clark, kyleclark@pa.gov

Lehigh River surveys result in range extension for the Green Floater, *Lasmigona subviridis*, a species proposed for federal listing.

The Lehigh River is the second largest tributary to the Delaware River draining approximately 3,533 km^2 of northeastern Pennsylvania. Historically, portions of the watershed were subject to impacts from industry including coal mining, canal navigation, cement manufacturing, zinc plating, and iron and steel production. Consequently, pollution and habitat alteration associated with these activities left the river largely devoid of aquatic life and it is assumed that much of the historical mussel community was lost (PFBC 2007). Since the passage of environmental laws (e.g., Clean Water Act) water quality improvements have spurred interest in the recovery of the river's fauna.

Mussel surveys of the Lehigh River and its larger tributaries conducted between the early 1900's and 2023 documented the presence of five species, *Alasmidonta heterodon*, *A. undulata*, *A. varicosa*, *Elliptio complanata*, and *Strophitus undulatus* (Walsh et. al 2018 (unpublished data), Blakeslee et al. 2018). Of these five species, only *A. varicosa* and *E. complanata* were known to occur in the mainstem of the river.

In 2024, Pennsylvania Fish Boat Commission biologists completed a qualitative assessment of the upper Lehigh River mussel community between White Haven and Gouldsboro, Pennsylvania (Figure 1). Thirty-minute time constrained searches were completed by three to five snorkelers at 19 sites along this 30 km reach. Three species were represented including *E. complanata*, *Pyganodon cataracta*, and *Lasmigona subviridis*, with the CPUE for total mussel catch averaging 4.33 individuals per person-hour across occupied sites (Figure 3).

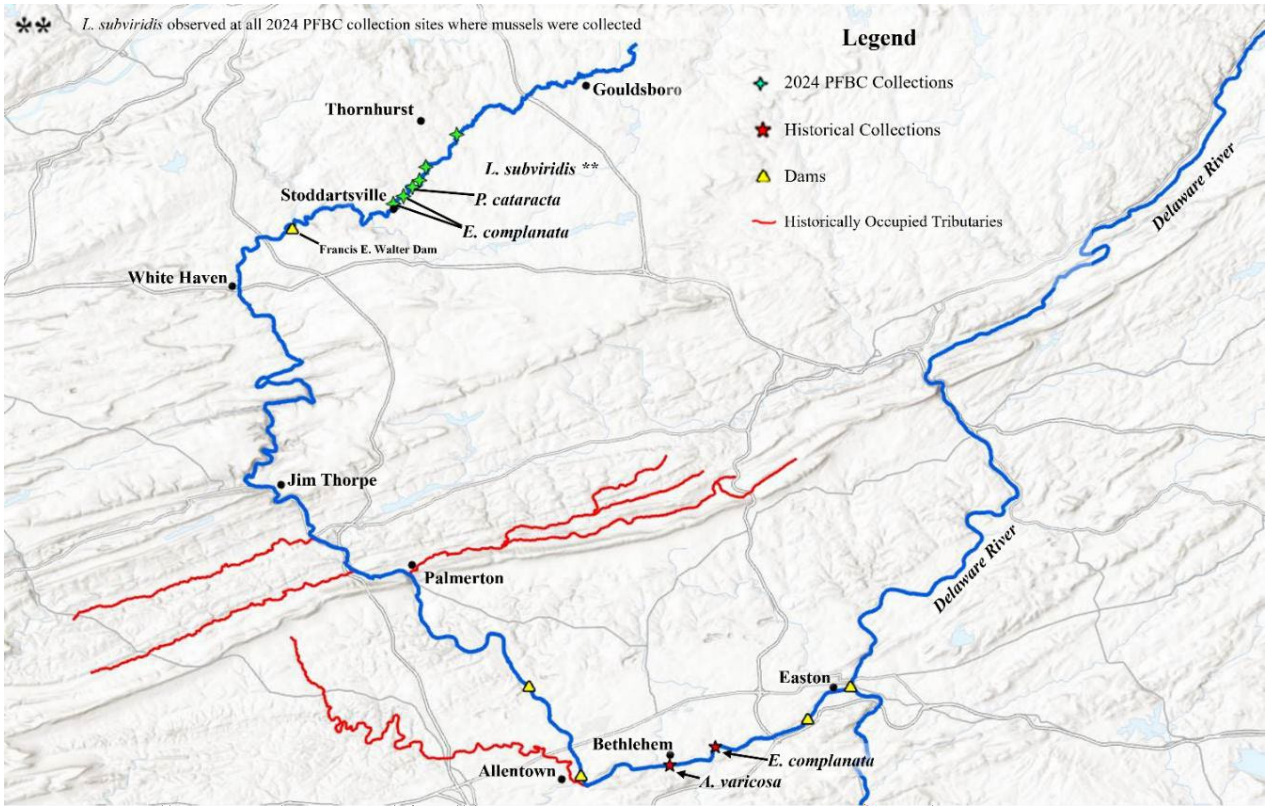
The occurrence of *L. subviridis* and *P. cataracta* in the Lehigh River documents a substantial range extension for both species. This increase in known occupied habitat bolsters these species' ability to withstand catastrophic events by having multiple populations spread over geographically distinct areas. This redundancy, a metric evaluated during species status assessments, minimizes extinction risk. These findings are timely as *L. subviridis* is currently proposed for protection as a threatened species under the U.S. Endangered Species Act.

Aquatic connectivity is a major issue facing the Lehigh River mussel community as natural recolonization is unlikely to occur from Delaware River source populations due to numerous dams without adequate fish passage facilities (Figure 1). During the 2024 surveys, no freshwater mussels were collected downstream of Francis E. Walter Reservoir, which suggests that mussels observed upstream of the reservoir may either be a remanent population or are recolonizing from unknown tributary source populations. Although natural recolonization in isolated reaches is unlikely, the recently detected mussel population could act as a source for potential restoration efforts. Future Lehigh River mussel recovery efforts should target assessment of areas presumed to be defaunated by historical impacts, host fish passage improvements, and potentially species reintroduction via translocation or mussel propagation.

Literature Cited

Blakeslee, C. J., E. L. Sildorff, and H. Galbraith. 2018. Changes in Freshwater Mussel Communities Linked to Legacy Pollution in the Lower Delaware River. Northeastern Naturalist 25(1): 101-116. DOI:10.1656/045.025.0106

Pennsylvania Fish and Boat Commission (PAFBC). 2007. Lehigh River Fisheries Management Plan. Division of Fisheries Management, Bureau of Fisheries, Pennsylvania Fish and Boat Commission, Harrisburg, PA.



Range expansions for freshwater mussels in Pennsylvania. 1. Map of the Lehigh River drainage showing historical and contemporary mussel occupancy. 2. Typical reach of the upper Lehigh River between Stoddartsville and Thornhurst showing slow moving runs and submerged aquatic vegetation. Substrate at these sites was predominantly sand. 3. Lehigh River, Luzerne County. *Lasmigona subviridis* collected (one kept and vouchered in the Carnegie Museum) near Thornhurst, PA.

Table 1: Freshwater mussel species occurrence for 2024 PFBC Lehigh River surveys

River Mile	*Lasmigona subviridis*	*Pyganodon cataracta*	*Elliptio complanata*
102.57			
101.09			
99.88			
98.55			
97.81			
96.38			
95.04	30 individuals		
93.78			
92.47			
91.70	2 individuals		
90.59	6 individuals		
89.78	103 individuals	1 individual	
88.73	3 individuals		40 individuals
87.98	7 individuals		198 individuals
78.97 (**F. E. Walter Dam**)			
77.21			
76.31			
75.44			
74.67			
72.89			

Flow

Submitted by Nathaniel F. Shoobs

Improvements to Data Accessibility at The Ohio State University Museum of Biological Diversity

The Ohio State University Museum of Biological Diversity, Columbus, Ohio, USA
shoobs.1@osu.edu

The Ohio State University Museum of Biological Diversity (OSUM) maintains the largest collection of freshwater bivalves in the world. The collection currently contains approximately 488,000 specimens in 80,746 lots, with North American collections from 984 HUC8 watersheds between 1800-2025. About 20% of all the endangered and extinct freshwater mussel lots held by North American museums are those in our collection, more than any other single institution, and more than many other institutions combined (Pfeiffer et al., 2024). The OSUM collection is, and has historically been, an essential tool for freshwater mussel conservation in the United States, providing much of the baseline distributional data necessary for understanding the often-enigmatic declines of many species and populations throughout North America (Haag, 2019).

Despite the importance of the OSUM collection to the freshwater mussel community, until recently, our data was only accessible online via a legacy FileMaker Pro database that was difficult for most users to query effectively. Additionally, the old database was limited in its ability to export data, and crucially, did not allow indexing by the Global Biodiversity Information Facility (GBIF) or other biodiversity aggregators, which hindered the findability, accessibility, interoperability, and reproducibility of our collection data (Kunkel et al., 2025).

To ameliorate these issues, last year we completed the transition of our collection data from our old FileMaker Pro database to a new Specify 7 database hosted at OSU. On July 22nd, 2025, we pushed our first export to GBIF (Shoobs, 2025), and shortly thereafter the Symbiota Portal InvertEBase. Users can now search all available OSUM bivalve collection data by visiting the portals on our website at go.osu.edu/molluskdata.

Our Specify 7 database (invertebrates.osu.edu) will always have the most complete version of our data, though many users may find the interfaces of InvertEBase or GBIF more user-friendly. On the Specify 7 portal, users can examine thousands of pages of the original collection catalogues and archived field notes directly within the database, in addition to high resolution photographs of many specimens.

Malacologists can visit the collection in person in Columbus by scheduling a visit using the scheduling tool at go.osu.edu/mbd-iz-bookings, or request loans or publication-quality photographs of specimens via email by contacting me at shoobs.1@osu.edu. Requests to conduct destructive sampling (i.e. thin-sectioning dry shell valves, tissue clipping of wet specimens, stable isotope or radiocarbon analyses) are considered on a case-by-case basis, but are generally approved for lots of extant species containing multiple specimens, especially when the request entails sampling less than 50% of the specimens in the lot and would generate valuable data which would not be possible to obtain by other means.

References

Haag, W. R. 2019. Reassessing enigmatic mussel declines in the United States. Freshwater Mollusk Biology and Conservation, 22, 43–60. https://doi.org/10.31931/fmbc.v22i2.2019.43-60

Kunkel, D. M., Long-Fox, B. L., Pittman, C., Portmann, J., Sheik, M., Bates, J. M., et al. 2025. Integrating biological and environmental data to solve key scientific and societal challenges. *BioScience*, biaf150. https://doi.org/10.1093/biosci/biaf150

Pfeiffer, J., Dubose, T. P., & Keogh, S. M. 2024. Synthesis of natural history collections data reveals patterns of US freshwater mussel diversity and decline. *Biological Conservation, 291,* 110462. https://doi.org/10.1016/j.biocon.2024.110462

Shoobs, N. F. 2025. Invertebrate Zoology Collections at the Museum of Biological Diversity (OSUM). Museum of Biological Diversity, The Ohio State University. Occurrence dataset https://doi.org/10.15468/mupdkc

---

Submitted by Mimi Dill

Toxolasma parvum in Virginia

A small complete bivalve would lead me down a path I didn't know I wanted to go. It would eventually be identified as *Toxolasma parvum* (Barnes, 1823); the Lilliput. After working as a technician at the North Carolina Science Museum's research lab in Raleigh, NC, with Jamie Smith and Art Bogan, I finally brought the shells in so we could compare them to the specimens he had on hand to ensure we had the correct identification. Since there was no Virginia specimen to look at, Art and I looked at the NC specimens (from Falls Lake, Neuse River), NCSM lots: 45580, 45585, 46688, 46768, 47151, and 46807. For these little guys, since they will become part of the collection, getting cataloged as NCSM 221189, their lat/long is 36.69/-78.65; Staunton River State Park Site 1, found October 29, 2019. This pair measured 27 mm in length and 11.7 mm wide. Art's comments lead me to believe that the Lilliput was introduced to the Dan/Staunton Rivers since it's native range is restricted to the Mississippi River basin from Minnesota to southern Louisianna and Texas, from the headwaters of the Ohio in western Pennsylvania, west to the Missouri River drainage of South Dakota and Kansas and tributaries to Lake Erie and Lake Michigan (Bogan, et al 2017)[1] and has been somewhat successful.

The description is listed in *Workbook and key to the freshwater bivalves of North Carolina*[1].

I'd like to thank Brian Watson and Staunton River State Park for their assistance.

[1] Bogan, A.E. 2017. *Workbook and key to the freshwater bivalves of North Carolina.* North Carolina Freshwater Mussel Conservation Partnership, Raleigh, NC, p83, plate 8 #46.
[2] Virginia's Department of Wildlife Resources (dwr.virginia.gov)

Figure 1: Top view of NCSM 221189 taken by Mimi Dill

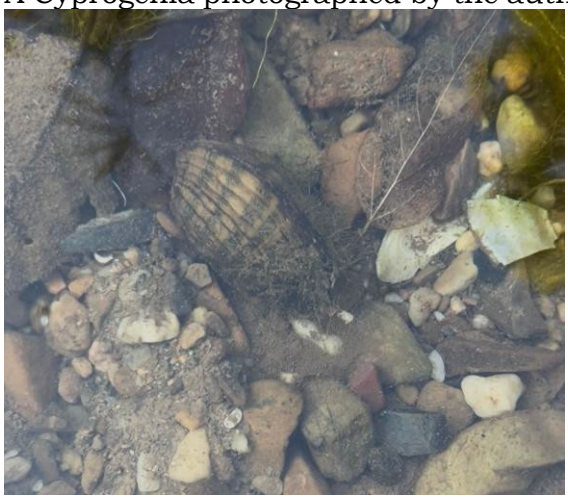
Figure 2: Bottom view of NCSM 221189 taken by Mimi Dill

Submitted By Jackson Roe (Jacksoneroe@gmail.com)

Cyprogenia cf. aberti of the Saline River

The Saline river is a smaller river in South central Arkansas with several forks in the upper portion. This river, along with the Ouachita river, offers probably the most diverse assemblage of federally listed mussel species in the state of Arkansas. However, as diverse as this assemblage is currently, there are signs that this may not be the case in the future. The Saline river is home to populations of the federally listed *Cyprogenia cf. aberti*, *Quadrula fragosa*, *Lampsilis abrupta* and *Lampsilis powellii* among others. The focus of this short article will be on *Cyprogenia cf. aberti* (Ouachita fanshell) and the apparent condition of the Saline river. While the river has a diverse assemblage of mussels, increasing urban growth in the surrounding cities and a growing threat of yearly droughts threaten the future of this assemblage. The Benton-Bryant area, where the upper Saline river is situated, is one of the fastest growing areas of Arkansas. Couple this with climate change and the future of the Saline river does not seem bright. In my experience, summer and fall droughts in these river systems are getting worse by the year. In 2024, the upper portion of the North fork of the Saline river entirely dried up leaving just a few pools as possible refugia for any remaining mussels. Cyprogenia cf. aberti seems to be directly affected by these unusually low water levels already. When I visited the Saline river in August of 2025 near Benton, the water level was critically low. Above the interstate bridge, I located three recently dead Cyprogenia that had recently perished due to receding water levels. These shells still had the ligament intact. I saw three more live individuals in the shallows that were in immediate danger of becoming stranded. Further downstream I located several older valves.

A Cyprogenia photographed by the author in shallow water.



In the days that followed, I found a mussel bed further upstream. As the water level was critically low, I noticed dozens of shells laying on the banks and gravel bars. As I approached closer I saw that many of these shells were in fact *Cyprogenia cf. aberti.* I counted over 100 recently dead *Cyprogenia* in this mass stranding. These included individuals of all age ranges. I saw several stranded coin-sized *Cyprogenia* juveniles all the way to large individuals whose color had faded from age.

The *Cyprogenia* mass stranding, August 2025.

I noticed about a dozen live Cyprogenia in immediate danger of becoming stranded. As I do not possess a permit to move these, I contacted an Arkansas based malacologist with USFWS. He assured me that he would personally relocate the remaining mussels. Cyprogenia cf. aberti is a genetically distinct, but physically identical species of Cyprogenia that has recently been separated from the Western fanshell (Cyprogenia aberti). So far unofficially referred to as the "Ouachita fanshell," it has yet to be given an official scientific name. I have been referring to the Ouachita fanshell as "Cyprogenia ouachitaensis." These are a quite beautiful species, with

distinctive green rays, a thick shell and tubercles that give the sculpturing a warty appearance.

According to the USFWS, the range of the Ouachita Fanshell has decreased by 47% since it was first differentiated from the Western fanshell. I predict that we are looking at a doomed species. Given the critical yearly water levels in association with climate change, along with nearby urbanization, it seems unlikely that this species can survive indefinitely.

Submitted By Mark Hove, Mark_Hove@umn.edu
2025 St. Croix River Research Rendezvous abstracts

The following abstracts were selected from presentations and posters given at the 2025 St. Croix River Research Rendezvous. This meeting brings together scientists, resource managers, agency staff, high school teachers and students, and interested public to learn about research in the St. Croix River watershed. For more about the event visit https://new.smm.org/scwrs/programs/rendezvous.

FRESHWATER MUSSELS - PUBLIC ENGAGEMENT AND EDUCATION RESOURCES

Zoe Schroeder[1], Bernard Sietman[1], Isabel Boyce[1], Kathryn Holcomb[1], Jordan Holcomb[1], Zeb Secrist[1], Lindsay Ohlman[1]

[1] Minnesota Department of Natural Resources (MnDNR) – Center for Aquatic Mollusk Programs (CAMP)

This poster will highlight the updated edition of the Field Guide to the Freshwater Mussels of Minnesota and the new Clam Counter Minnesota mobile app. Both resources are intended to be used by the public and amateur malacologists to increase knowledge and awareness about the native freshwater mussels of Minnesota.

The new edition of the field guide will be released to the public in the spring of 2026 and will be available in PDF format on the MnDNR's website. This is a revision of the previous 2003 guide and has updated information about mussel biology, photographs and descriptions of shell morphology, and maps of species distribution. CAMP plans to print these guides in the near future for public distribution.

The new Clam Counter Minnesota mobile app became available on the Google Play Store and Apple Store in Fall 2024. This app includes information about mussel biology, history, and lifecycle, as well as species descriptions and morphology. This app has a special feature that allows the user to "report a mussel"; this information is then sent to CAMP to verify the identification of the reported mussel and will potentially be used to identify populations of rare and endangered mussel species. Revision of this app is ongoing.

REARING ZEBRA MUSSELS TO SUPPORT AQUATIC INVASIVE SPECIES CONTROL RESEARCH

Ben Minerich[1,2], Seth Stapleton[1,2], John Gerritsen[1,2]

[1] Minnesota Zoo

[2] University of Minnesota – Aquatic Invasive Species Research Center

Zebra mussels are one of the most damaging invasive species in Minnesota lakes and rivers. Current responses are limited to localized chemical treatments and efforts to reduce their spread to new water bodies. To explore biogenetic control methods, researchers from the Minnesota Zoo and the University of Minnesota Aquatic Invasive Species Research Center have been developing methods to lab rear these animals. Despite their rapid spread in the wild, we currently cannot maintain cultures in the lab over multiple generations. Thus, we have also been developing methods for zebra mussel cultivation, including testing different algal diets and experimenting with ways to get zebra mussels to successfully spawn and reproduce in the lab. These efforts are laying the groundwork for a safe, effective, and species-specific way to manage zebra mussels in the future.

NAMEKAGON RIVER MUSSELS: A PEEK BELOW THE SURFACE

Abigail Charleson[1], Mark Hove[1], Marian Shaffer[2], Toben LaFrancois[3], Byron Karns[4], and Dan Hornbach[5]

[1] University of Minnesota – Department of Fisheries, Wildlife, and Conservation Biology [2] National Park Service — Saint Croix National Scenic Riverway

[3] Burke Center for Ecosystem Research

[4] One Pine Aquatic Resources Assessments

[5] Macalester College – Department of Environmental Studies

Native freshwater mussels play an important role in aquatic ecosystems of Minnesota and Wisconsin. Their presence is often reflective of high-water quality. Currently, these mollusks face several threats, including climate change, habitat degradation, and invasive species. A lack of understanding and public awareness is contributing to their decline. To improve our understanding of and ability to manage these bivalves, we studied the status and distribution of mussels in the Namekagon River in northwest Wisconsin. We had several project objectives. First, to understand the relative distribution and abundance of mussels in the river, we snorkeled its length, except for the reservoirs, because our resources were limited and reservoirs usually have relatively few mussel species. Second, we used information from the snorkel reconnaissance to select survey sites among high-density mussel beds where there is frequently greater mussel diversity. Our third objective was to study the possible impact(s) of high visitor use between the landings at the towns of Earl and Trego on mussel abundance and diversity. To measure the impact of visitor use on mussels, we collected random quadrat samples from the study reach and a similar river reach just upstream. Finally, throughout the summer, our team collected photos and videos of Namekagon River mussels to improve NPS outreach. Our snorkel reconnaissance revealed that mussels were more patchily distributed than expected and that large, dense mussel beds were fairly uncommon. The mussel survey identified several important and diverse mussel beds, and we found that nearly all mussel species reported historically still occur in the river, including a possible new species not reported before from the river. No invasive mussels were observed. Results from the visitor impact study were inconclusive, possibly due to the low number of mussels collected. We are currently editing video footage in conjunction with the NPS to produce a mini-documentary for outreach. Project results will enable better NPS Riverway management through improved land use planning and visitor stewardship. In 2026, we plan to return to the Namekagon River to

collect our remaining field data. We will use 2025 snorkel reconnaissance data to improve our objectives by enabling (1) stratified sampling of high mussel density reaches for the Earl-Trego visitor impact study, and (2) identification of reaches with high mussel density for more accurate species surveys.

METICULOUSLY MANAGING MINNESOTA'S MUSEUM MOLLUSKS FOR MAXIMAL MOBILIZATION

Dakota M. Rowsey[1], Catherine M. Early[1]
[1] Science Museum of Minnesota – Biology Department

The mollusks of Minnesota are economically and ecologically important, helping to filter water of suspended organic matter and toxic substances. Despite their critical role in aquatic ecosystems, many mollusks in Minnesota are threatened, endangered, or of special concern, with some species completely extirpated from the state. It is therefore imperative to have high quality and spatially detailed data regarding the present and historical distribution and natural history characteristics of our native mollusks. This is especially important for the mussels of the Saint Croix River watershed, as several species formerly abundant throughout the state of Minnesota have their final refuge in the Saint Croix River or its tributaries. The Biology Department of the Science Museum of Minnesota is undertaking a project to digitize approximately 9000 mollusk specimens in our collection into publicly accessible databases. Many of these specimens contain detailed data regarding not only date and location of collection, but also stream and other habitat characteristics at the time of collection. Those data are currently inaccessible as they exist only in the museum's physical archives. We will discuss the data we will collect as a part of this project and our plan to mobilize these data, and will solicit feedback for additional data that would be useful for managers of mollusks in the upper midwest. By making these data available to the public, we hope to augment the ability of managers of mollusks to protect these important animals in the Saint Croix River watershed and beyond.

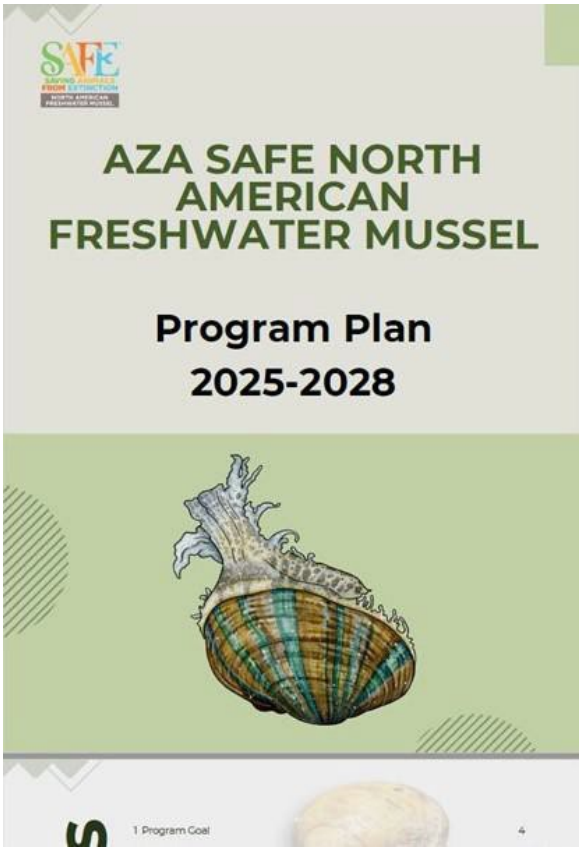
Submitted By Monika Böhm (mbohm@indyzoo.com), **Jacob Harmon** (jharmon@rivermuseum.org) **and Megan Bradley** megan_bradley@fws.gov)

Shell yeah! The publication of the first AZA SAFE North American Freshwater Mussel Project Plan

The published plan is available here: https://assets.speakcdn.com/assets/2332/sf2025-2028noramfrwtrmussfpp.pdf. If you would like to find out more about the work of AZA SAFE North American Freshwater Mussel, please do not hesitate to contact the program leads via email.

In September 2023, the Association of Zoos and Aquariums (AZA) welcomed its 37th SAFE program into its fold, focusing on North American Freshwater Mussels (Böhm & Harmon 2024). AZA is dedicated to the advancement of zoos and aquariums in the areas of conservation, education, science and recreation. Of its more than 235 member facilities in the USA and overseas, more than 200 are based in the USA and Canada alone. AZA's Saving Animals From Extinction (SAFE) program is one of its main ways to organize concerted conservation among its members (Ripple et al., 2021). At the time of its announcement, AZA SAFE North American Freshwater Mussel was the 4th program with an invertebrate focus, after Coral, North American Monarch, and Sunflower Sea Star. SAFE programs are designed to build on and support established recovery plans and history of commitment, prioritize

collaborations and knowledge sharing between AZA institutions and partners, implement strategic conservation and stakeholder engagement and measure conservation progress. In 2024, following the assembly of a Steering Committee, work began to prepare the first three-year plan for the program, with a vision for "a world where native freshwater mussels and their habitats thrive, and people appreciate their contribution to healthy aquatic ecosystems" and where "AZA facilities collaborate with partners in freshwater mussel conservation through outreach, education, research and propagation". From the start, the plan aimed to support the Freshwater Mollusk Conservation Society's *National Strategy for the Conservation of Native Freshwater Mollusks*.



The program plan went through consultations across the AZA network, several online and one in-person planning meetings (Fig. 1) and dedicated sessions at the 2024 AZA Annual Meeting in Calgary, Canada, to garner additional support for the program. Additionally, after constructive review by several AZA working groups (the Social Science Research and Evaluation Scientific Advisory Group (SSRE), the Conservation and Education Committee (CEC), the Wildlife Conservation Committee (WCC) and the Aquatic Invertebrate Taxon Advisory Group (AITAG)) and mussel experts, the team finally presented the inaugural three-year program plan at this year's AZA Annual Meeting in Tampa, Florida (Fig. 2). The interest and enthusiasm we encountered was nothing short of inspirational, and showed that we were on the right track with our goals, objectives and actions! Given that the plan aims to provide an entry point for more AZA members to engage in SAFE North American Freshwater Mussel, enthusiastic buy in from our community is key to the success of the program.

In the first three years, the program will focus on four goals:

1. develop a resilient network of organizations and individuals to advance the conservation of North American freshwater mussels;

2. build the capacity of AZA partners to assess the conservation status and extinction risk of freshwater mussels;

3. grow a community of practice in freshwater health and freshwater mussel conservation across AZA;

4. develop and activate a resilient coordinated community to advance the conservation education and communication about freshwater mussels and healthy freshwater systems across AZA.

Education and outreach are undoubtedly the mainstay of the program, given that AZA members collectively draw more than 200 million visitors every year and the collective know how of the AZA community to deliver conservation programming and messaging to their visitors. In addition, the plan also aims to increase capacity within AZA for conservation assessments: we are actively working with the IUCN Biodiversity Assessment and Knowledge Team, as well as the IUCN Species Survival Commission's Mollusc Specialist Group, to draft Red List assessments for around 150 species of North American Freshwater Mussel, in preparation for an IUCN Red List workshop in 2026. This effort will help to complete the IUCN's Global Freshwater Mollusk Assessment, hot on the heels of a publication on the status of freshwater species derived from comprehensive global assessments of freshwater fish, crustaceans and dragonflies and damselflies (Sayer et al. 2025). Needless to say, assessment processes like this provide important data for conservation action, as well as create a "splash" for communications about the importance of freshwater conservation!

The program further aims to create an active community of practice for healthy freshwaters and freshwater mussels. We will work with partners to establish pathways and connections by which AZA partners can "exhibit" healthy freshwater habitat, and assist local partners to restore mussel populations. This builds on the work already undertaken by several AZA institutions that are successfully involved in active freshwater and freshwater mussel restoration.

References

Böhm, M. & Harmon, J. 2024. Saving Animals From Extinction through AZA SAFE – North America's freshwater mussels. Tentacle 32: 4-5.

Ripple, K.J., Sandhaus, E.A., Brown & Grow, S. 2021. Increasing AZA-accredited zoo and aquarium engagement in conservation. Frontiers in Environmental Science 9: 594333.

Sayer, C.A., Fernando, E., Jimenez, R.R., Macfarlane, N.B.W., Rapacciuolo, G., Böhm, M., Brooks, T.M., Contreras-MacBeath, T., Cox, N.A., Harrison, I., Hoffmann, M., Jenkins, R., Smith, K.G., Vié, J.-C., Abbott, J.C., Allen, D.J., Allen, G.R., Barrios, V., Boudot, J.-P., Carrizo, S.F., Charvet, P., Clausnitzer, V., Congiu, L., Crandall, K.A., Cumberlidge, N., Cuttelod, A., Dalton, J., Daniels, A.G., De Grave, S., De Knijf, G., Dijkstra, K.-D.B, Dow, R.A., Freyhof, J., García, N., Gessner, J., Getahun, A., Gibson, C., Gollock, M.J., Grant, M.I., Groom, A.E.R., Hammer, M.P., Hammerson, G.A., Hilton-Taylor, C., Hodgkinson, L., Holland, R.A., Jabado, R.W., Juffe Bignoli, D., Kalkman, V.J., Karimov, B.K., Kipping, J., Kottelat, M., Lalèyè, P.A., Larson, H.K., Lintermans, M., Lozano, F., Ludwig, A., Lyons, T.J.,

Máiz-Tomé, L., Molur, S., Ng, H.H., Numa, C., Palmer-Newton, A.F., Pike, C., Pippard, H.E., Polaz, C.N.M., Pollock, C.M., Raghavan, R., Rand, P.S., Ravelomanana, T., Reis, R.E., Rigby, C.L., Scott, J.A., Skelton, P.H., Sloat, M.R., Snoeks, J., Stiassny, M.L.J., Tan, H.H., Taniguchi, Y., Thorstad, E.B., Tognelli, M.F., Torres, A.G., Torres, Y., Tweddle, D., Watanabe, K., Westrip, J.R.S., Wright, E.G.E., Zhang, E. & Darwall, W.R.T. 2025. One-quarter of freshwater fauna threatened with extinction. Nature 638: 138-145.

Submitted By **Nathaniel F. Shoobs [1], Kate Holcomb[2], Russel L. Minton[3]**

[1]The Ohio State University Museum of Biological Diversity, Columbus, Ohio, USA; shoobs.1@osu.edu
[2]Minnesota Department of Natural Resources, Lake City, Minnesota, USA
[3] Department of Biology, Gannon University, Erie, Pennsylvania, USA

The 2025 FMCS Freshwater Gastropod Workshop: Summary and Insights

On May 12 at the 2025 FMCS Symposium in Ypsilanti, we ran a 6-hour workshop titled “An Introduction to the Freshwater Gastropods”, which aimed to provide participants with a general introduction to the biology, evolutionary ecology, and taxonomy of the native and invasive freshwater gastropods in North America, the most common techniques used to collect, preserve, and measure them, and the considerations that should be made when monitoring and managing their populations.

As North American freshwater gastropods are a tremendously diverse group which is still poorly understood taxonomically, it has historically been difficult to introduce to newcomers in an engaging and pragmatic way (even those with expertise in identifying unionids, which are famously difficult to identify). Previous FMCS gastropod ID workshops in 2004 and 2017 have attempted to cover the fauna of North America comprehensively (Perez, Clark & Lydeard 2004, Whelan & Tiemann, 2017). While this was a heroic effort, some attendees in these workshops reported feeling overwhelmed by both the magnitude of the diversity and the taxonomic confusion in many freshwater snail families (D. Zanatta, pers. comm, R. Minton, Pers. Obs.). Many mussel biologists have unfortunately learned to steer clear of the bewildering thickets of gastropod taxonomy entirely given the apparent difficulty in getting to know our freshwater snails.

Considering the time available (a half-day workshop), and our experiences with other identification workshops (i.e. The Ohio Freshwater Mussel Workshop, Ohio EPA Gastropod workshop, previous FMCS Gastropod Workshops), we purposefully pared down the 18 families, 129 genera, and 886 currently recognized species of North American freshwater gastropods to a more manageable 12 families, 27 genera, and 31 species (27 native spp., 4 invasive spp.), which we considered demonstrative of the essential elements of the morphological and phylogenetic diversity of the freshwater gastropods of North America north of Mexico, with a slight bias towards the fauna of the Midwest and Great Lakes, given the location of this year’s symposium and our own expertise.

The principal goal of the workshop was to have participants learn to identify the major groups of freshwater snails, basic snail anatomy, and how to find and use reliable information about snails (i.e. keys, scientific papers, regional checklists, etc.). The format of the course was an introductory lecture on gastropod biology, ecology, phylogeny, and conservation/collecting techniques, followed by a guided examination of 11 sets of 7 boxes of representative specimens, organized phylogenetically by family / superfamily, with opportunity at the end for participants to examine and sort unidentified shells.

Figure 1. Examples of some of the 11 identical sets of specimens used in the workshop. Each specimen is labeled by its common and scientific name, and the label for each box sometimes contains additional information about the species (i.e. invasion history, distribution, etc.).

We had 43 participants at the workshop (Fig. 2) from the following groups: government employee: 37% (16), private sector employee (consultant): 14% (6), nonprofit employee: 7% (3), educator/academic/student: 42% (18).

After the workshop, we sent out an anonymous feedback survey to gauge attendees experience. We had 17 respondents from the following groups: government employee: 35% (6), private sector employee (consultant): 29% (2), nonprofit employee: 12% (2), educator/academic/student: 12% (2). 15 were FMCS members and 2 were nonmembers. 100% of respondents reported being satisfied with the content of the workshop, with 71% reporting they were extremely satisfied. 100% of respondents said they would “Definitely” or “Probably” recommend the workshop to a colleague, student, or friend. 82% of respondents said that they think FMCS should “Definitely” continue to provide short taxonomic identification workshops like this in the future, underscoring the importance of this kind of programming to the society. Free text feedback praised the enthusiasm of the instructors, the

usefulness of the presentations and content, and the prepared box sets of specimens. 53% said they were “Extremely Satisfied” with the organization of the workshop, with 41% saying they were “Somewhat Satisfied”, and 6% (1 person) “Neither Satisfied nor Dissatisfied”.

Figure 2. Participants of the 2025 FMCS Gastropod workshop, with instructors at front of room: left, standing: N. Shoobs, right, seated: K. Holcomb, R. Minton

The most common complaints, somewhat predictably, concerned lack of adequate time to cover the amount of information presented. In particular, some participants felt that the identification portion was too short compared to the general introduction to biology and phylogeny presented. Different pacing may improve that perception; however, we think this could also indicate that the 6-hour format with a 1-hour lunch break is perhaps too short for even truncated identification workshops.

The list of participants, and raw anonymous feedback survey data, and workshop materials are available from the corresponding author (Shoobs) on request, for the benefit of future FMCS ID workshops, and are archived in the Division of Invertebrate Zoology of The Ohio State University Museum of Biological Diversity.

References:

Perez, K. E., S. A. Clark, & C. Lydeard, editors. 2004. “Showing your shells” A primer to freshwater gastropod identification. *Freshwater Mollusk Conservation Society Gastropod Identification Workshop*. pp. 1-70.

Whelan, N.V. & Tiemann, J.S. 2017. Gastropod Status & Distribution Committee. [Committee Reports]. *Ellipsaria* Vol. 19(2) p. 13

Submitted By Matt Ashton

FMCS 2026 workshop planning committee needs your feedback!
At a recent workshop planning committee meeting several planning team members expressed concern regarding budget uncertainties and travel restrictions for a portion of the FMCS membership. This concern was also conveyed to the FMCS Executive Committee who shared a similar sentiment. As a result, we will be soliciting feedback in the form of a poll in the next few weeks on both interest in, and ability to attend, a workshop on freshwater mollusk propagation and restoration. The goal is to determine if non-traditional workshop delivery (e.g., virtually, hybrid, or paired with the 2027 Symposium) would better serve the FMCS membership than continuing to plan a traditional, in-person meeting for October (19-22) 2026.

Submitted By Caryn Vaughn

***Freshwater Mollusk Biology and Conservation* news**
Our society journal is alive and well! The latest issue includes articles on mussel population genetics and demographics, PIT tag case studies, age and growth studies, and habitat and co-occurrence patterns of mussels, fish and crayfish. Check them out at *Freshwater Mollusk Biology and Conservation*, and consider submitting your work to the journal. Your all-volunteer editorial board is here to help you and includes Caryn Vaughn (Editor in Chief), Ani Escobar (Managing Editor), Dave Berg, Traci DuBose, Serena Ciparis, Dan Hornbach, Kathryn Perez, Jeremy Tiemann, and Alexandra Zieritz. Queries about appropriate submissions and other questions can be sent to FMBCJournal@gmail.com. Finally, we want your articles published in a timely manner, but we often have trouble finding reviewers. We know everyone is busy, but please serve your society when asked to review. We need your expertise!

Submitted By David Foltz Co-Chair, Professional Development, dafoltz@edge-es.com

Mollusk Certification Deadline for 2025 Submissions:

Applications for the 2025 Professional Malacologist Certification Program are Due December 15th, 2025. Information regarding submissions can be found at the link below. Please note that submitting an application requires you have an active FMCS membership. Completed application packets and/ or any questions regarding the process or for the committee can to be submitted to: fmcspdcomm@gmail.com Freshwater Mollusks Conservation Society

---

Submitted By Alan Christian FMCS Symposium Chair 2027, achristian@ursinus.edu
Paul Callomon AMS President, 2027, prc44@drexel.edu

The FM/AM meeting in Philly!

After years of folks thinking about it, we are going ahead with the first joint meeting of the American Malacological Society (AMS) and the FMCS in 2027. It will take place from Monday April 12 to Friday 16 in Philadelphia PA, and promises to be a packed event.
This will be a great opportunity for a large community of folks who work on mollusks in many different ways to get together and share knowledge, have fun and network in America's restaurant capital.

The venue will be the DoubleTree by Hilton Center City, on Broad Street a stone's throw from iconic City Hall.https://www.hilton.com/en/hotels/phlbldt-doubletree-philadelphia-center-city/.We have secured a good room rate, and occupation up to four people is allowed so students should also be able to afford to stay in the hotel. Nearby attractions include the Parkway museum district, with the Philadelphia Art Museum, the Rodin Museum, the Barnes Foundation, the Franklin Institute, the Academy of Natural Sciences and the newly opened Calder Gardens. A short ride or walk brings one to Independence Hall and the Liberty Bell, the National Constitution Center, the Museum of the American Revolution, the Independence Seaport Museum and many more. Philly is a great tourist town and we encourage you to bring the family and stay on a while. Access could not be easier; there are direct trains from Philadelphia International Airport and Atlantic City Airport to center city, Philadelphia is an Amtrak hub and sits on I-95.

Conference facilities have been reserved to allow for three concurrent sessions on each full day, and both societies will collaborate on evening events like the banquet and auction as well as the poster and plenary sessions. We are hoping to arrange field trips, either on the Friday afternoon or Saturday, to nearby points of molluscan interest including the mussel hatchery at the Philadelphia Waterworks and the storied Wagner Free Institute of Science.

We will be mapping out the broad plan from now, so if you have an idea for a session theme or questions about any aspect of the conference, feel free to email us. Topics that span marine and freshwater taxa are especially of interest, including matters of taxonomy, technology and technique. There will be a call for presentations in due course.

Submitted By Claire Waterhouse
Fall 2025 Diversity, Equity, & Inclusion Committee Updates
For continuing education on DEI-related topics and development of the projects listed, the DEI committee holds monthly meetings that are open to all. For any inquiries or to be added to our Discord — which includes affinity group channels — please contact Sara Craft via email (sara.craft@ky.gov).

Ongoing Projects	**Initiated**	**Purpose**
FMCS website accessibility updates	2019	Make FMCS webpage accessible and inclusive for all
Participate in planning committees for upcoming symposia	2025	Planning of DEI-related content and inclusive accommodations for the 2026 workshop and 2027 joint symposium with AMS
FMCS Code of Conduct updates	2023	Make contacts and resources available to members for reporting and mediating misconduct
DEI Discussion sessions	2025	Devote committee meeting time to discussions which offer perspectives and strategies for advancing DEI-related learning and work within the society
Discord channel, affinity groups	2025	Foster community and belonging among society members, offer resources and spaces for engagement and discussion
Outreach to Tribes and local environmental/watershed groups (workshops and symposia)	2025	Use member networks to foster engagement with and participation of tribal and other local watershed groups at meetings

FMCS Committees and Their Chairs/Co-chairs

Freshwater Mollusk Conservation Society
Fall 2025 Board Meeting

November 5th, 12 PM CST

Minutes

Call to order, roll call for attendance, and declaration of quorum – Amy Maynard

In attendance : Amy Maynard, Megan Bradley, Alan Christian, Sara Craft, Heidi Dunn, Matt Ashton, Nathan Click, Sarah Douglass, Becca Winterringer, Matt Johnston, Ani Escobar, Lisie Kitchel, Brian Watson, Brian Carlson, Jamie Bucholz, Kate Holcomb, Manual Lopes-Lima, David Foltz, Emilie Blevins, Jonathan Lopez, Michael Gangloff, Nathan Eckert, Jesse Weinzinger

Approval of the Spring 2025 Board Meeting Minutes – Amy Maynard
Motion to accept the spring 2025 board meeting minutes made by Heidi Dunn and seconded by David Foltz.

Treasurer's Report – Alan Christian (enclosed)

Secretary's Report – Traci DuBose (enclosed)

Old Business

2026 Portugal Meeting - Manuel Lopes-Lima
Dates are set for 9/7 - 9/10/2026 and organizers have invited the keynote speakers. Create a summary of the success of the previously planned meeting. Still have to sort out integration with FMCS. There is a provisional schedule and fees etc. available. Would like to launch website by the end of November.

2026 Workshop - Matt Ashton (report enclosed)
Had a planning meeting two weeks ago. There are concerns that travel restrictions could limit attendance from membership. Alternative options are being considered. There will be a poll that goes out to potential attendees. Still moving forward, but it expected speakers are also being reconsidered.

2027 Symposium - Alan Christian
Acquired the venue (Doubletree by Hilton Central City, in downtown Philadelphia). It has a ballroom for large pieces, and 3 rooms for presentations. Working on bringing together local committees and planning committees. April 11-17, 2027. Can consider hosting a workshop at the start (none yet planned). Have added Friday to allow for additional day of presentation. Some cultural melding is required for the program organization (presentations and socials). Right now, FMCS typical presentations, proposed sessions (one will be the special sessions that are typical for AMS), dinner is planned, and the auction is still being sorted out.

CASS Activities - Megan Bradley
CERF (Coastal and Estuarine Research Federation) has left CASS. The changes that we are all facing under the current administration have hit CASS particularly hard. The loss of funding for CASS grant has resulted in a decline in motivation.

FMCS Website Update - Nora Straquadine and Amy Maynard

Approved spending the $ to update the website and an ad hoc committee was formed at spring 2025 board meeting. Added DEI and Outreach committee members and have begun discussing the structure of the website. Sophie Binder (web developer) has just begun building the structure and has shared a sneak peak of what it could be. Fall 2026 is the target for releasing it.

New Business

DEI Code of Conduct- Sara Craft

The update has continued over the last 4 years. The main change has been the development of a reporting form from the website. There was discussion on report timeliness, location, and application to non-attendees. The procedures manual will need to be updated.

Motion to approve the DEI code of conduct made by Heidi Dunn and seconded by Sarah Douglass.

Mollusk Certification Review Board follow up- David Foltz and Nathan Click

Motion to approve adding Art Bogan to the Mollusk Certification review committee made by Lisie Kitchel and seconded by Kate Holcomb.

Potential for Treasure Elect position- Matt Johnson

As mentioned at 2025 meeting, would the board consider a treasurer-elect position that is offset from typical election schedule? There was discussion about adherence to the Society's by laws but general support for someone working with Treasurer to ease transition (potentially an informal role). The by-laws would become a challenge if the position rolled over for 2 years. The executive committee is researching the scope and cost of an executive director for the Society. Executive Directors manage the day-to-day business of the society. The idea came up at CASS that a person could be shared in that role among societies.

In regards to the treasurer position, we need to outline the options for the by-laws change and what would be required to bring on an executive director before the next board meeting.

Committee Reports

Functional Committees:

National Strategy - Sarah Douglass (report enclosed)

Looking for gastropod and Sphaeriid folks- can send a note out to the membership email list.

Regional Associations - Manuel Lopes Lima

See update in old business.

Diversity, Equity, and Inclusion – Sarah Craft (report enclosed)

Membership of the committee is currently low, with the upcoming meetings- please include a representative on your planning teams. Please add representative to the procedures manual.

Elections- Matt Johnson and Brian Carlson (report enclosed)

voter participation was better in 25 than in 23. Still only moderate participation in the election. On hold for the next year.

Finance- Brian Watson (report enclosed)

Had the first meeting with Brian Watson as the chair on 11/3/25. This meeting provided updates on the 2025 budget and informed the committee members about the process for developing the budget within the committee. Also discussed the 2025 profit/loss statements and the schedule for meetings to meet IRS reporting requirements.

Professional Development- David Foltz and Nathan Click (report enclosed)

Voted on adding one additional reviewer (Art Bogan). Included a note in *Ellipsaria* that this round of certification will end December 15. Will coordinate with treasurer about the processing of payments and with the secretary about confirming membership status. Have received at least 2-3 who didn't complete the pilot program process. There isn't a mountain yet. This is something to consider for the website update: currently manually send invoices but would appreciate automation.

Publications- Ani Escobar (report enclosed)

Caryn Vaughn stepped up with a full associate editor board but could use additional editors. September issue published and expect a strong spring issue. Would like to update author guidelines, and potentially creating other categories for publications. Discussing data availability as well. Alan needs to reach out to KGL. Have an *FMBC* email that both Caryn and Ani can access.

Technical Committees:

Conservation and Restoration- Nathan Eckert and Jesse Weinzinger

Talked with Matt Ashton about the propagation workshop and facility database updates (adding species), and the mussel kill book that is due for update in 2027.

Environmental Quality and Advocacy- Michael Gangloff and Emilie Blevins

The committee has not met since spring but will meet the week of 11/10/25

Field Studies and Ecosystem Services- Jonathan Lopez (report enclosed)

Has met with the editorial board of *FMBC* to advocate to make data publicly available for publications. Will provide a template and tutorial to publicly share their data or ease contact to access the dataset. Has not met since the symposium. Publishing short-form survey papers is another interest that has been brought to *FMBC*. The data availability statement is standard for other journals, just bringing it in line with other journals.

Genetics- Jamie Bucholz

Nothing to report

Ad Hoc Committees

Guidelines and Techniques- Lisie Kitchel

Have not met since symposium. Want to clarify which techniques would be good for consideration by the committee moving forward.

Website Update – Nora Straquadine (report enclosed)

See information in new business

IUCN Redlisting-

Please do not hesitate to reach out to Megan Bradley if you would like to participate

Jesse Weinzinger raised that there is continuous spoofing of leadership emails — beware. We will not reach out for payment.

Motion to Adjourn –

Motion made by Lisie Kitchel and seconded by Alan Christian

FMCS ExCom & Committee Reports

Fall 2025

Treasurer's Report

As of October 1, 2025, the FMCS Balance Sheet shows that the FMCS Total Liabilities and Equity is $140,512.63. Meanwhile, the FMCS Profit and Loss statement shows that from January 1 - September 30th, 2025, we had an income of $313,096.67 and expenses of $261,799.95, resulting in a profit of $51,296.72.

Secretary's Report

As of October 31, 2025, we currently have 453 active members, 23% of which are student members, and 635 renewal overdue members. This number is about 100 less memberships than October 2023. I echo the previous Secretary's suggestion of conducting a membership drive between symposium years emphasizing what membership dues pay for (e.g., professional development programs, FMCS publications). If you are having trouble accessing your membership profile (email, password, etc.), please do not create a new profile and instead email Traci DuBose.

Old Business

2026 Workshop Update

During a virtual meeting on August 8th, a workshop budget was scoped and modified by planning committee co-chair Matt Ashton, Treasurer, Alan Christian, and president elect Dave Berg. It will be discussed at the upcoming board meeting and presented for approval. Also, during this meeting, Matt, Alan and Dave review the finances, terms, and accommodations provided by the workshop venue. All were in agreement that the facility is suitable and of reasonable cost. A contract was signed and a deposit will be made by the time of the board meeting.

Planning committee members have reached out to several facilities for field trip options, developed the workshop's website text and a call for poster abstract announcement, and set a date for a virtual meeting that will have members begin work on program development, fundraising, etc. following the FMCS symposium and workshop manual timeline.

A planning committee meeting was virtually held on October 22nd. Several members expressed concern over potential financial risk to the Society for having an in-person workshop that is under-attended given budget uncertainties and potential travel restrictions for a considerable portion of the FMCS members. As a result, the planning committee is

considering soliciting feedback on both interest in, and ability to attend, the workshop on mussel propagation and restoration in October of 2026 in the very near future. The goal is to determine if non-traditional workshop delivery (*e.g.*, virtually, hybrid) or postponement until the Symposium would better serve the FMCS membership.

Functional Committees

Awards

No written update submitted.

Diversity Equity and Inclusion (DEI) Committee Report

The last committee meeting via Teams was October 16th, 2025. The next meeting will be in November 2025. We meet approximately monthly via Teams. All are welcome.

Committee Tasks (2025):

Keep DEI issues on the forefront

- Continue discussions on better mollusk common names
    - Names petition was submitted, voted on, and passed at May symposium, common name of "Monkeyface" group changed to "Rockshell"
- Participation in website planning committee to ensure accessibility and representation
    - Chantelle and Claire have been attending website planning meetings
        - New website will be accessible for visually impaired, incorporates Code of Conduct Incident Report form, and features diverse membership
- Participation in CASS DEIJ work group
    - Claire and Sara have attended CASS DEIJ work group meetings
        - Activity has been minimal due to loss of federal funding, but may be opportunities for participation/collaboration in webinars etc. in future
- Planning of DEI-related content for 2027 joint symposium with AMS
    - Sara, Mark, and Claire have joined planning group for 2027 meeting
- Summarize FMCS 2024 demographic survey results
    - Survey results summarized and presented at 2025 symposium
    - No major changes to demographics; contact Sara if interested in full results

Foster a welcoming environment for FMCS members and event participants

- Disburse travel awards to FMCS symposia (points of contact - Mark Hove and Chantelle Rondel)
    - Julie Morin and Bijit Khadka received awards at attendance of 2025 symposium
- Participate in 2026 workshop local planning committee meetings

- Update Code of Conduct and establish system for reporting/addressing instances of misconduct
    - Code of Conduct has been revised from 2019 version, Incident Report Form has been created, and workflow for response to reports has been drafted
- Continue topical discussions and determine focus for next year
    - Dedicated one summer committee meeting to a DEI-related discussion exercise and will plan to incorporate similar meetings approximately 2-3 times per year
- With some recent focal projects winding down, DEI comm will discuss focal project(s) for 2026 at the November meeting (all are welcome!)
    - Potential focal project: making student/mentor mixers more inclusive and intentional to foster collaborations beyond the mixer

Election Committee Report

The 2025 FMCS officers' election was held from 2/13/2025 through 3/28/2025. When compared to the 2023 election, voter participation increased by almost 30% in 2025 and included ballots cast by 128 society members for the three available positions (President-Elect, Secretary, and Treasure).

The elected officers, including Dr. David Berg as the society's new President-Elect, Traci DuBose as Secretary, and Alan Christian as Treasurer, were introduced by the Election Committee at the 2025 Symposium in Michigan.

Finance Committee Report

The committee met virtually and all voting members, but one, and all executive committee members were present. Since the committee has a few new members, including the Chair, Alan suggested that we review how the 2025 budget was constructed, since the 2026 budget will be developed relatively soon. Alan went over the specifics for how the 2025 income and expense figures were developed from 4-year averages, with alternative forecasts based on any budgeting anomalies. Committee members asked clarifying questions. The committee clarified that we plan to meet four times each year – twice in the 1st quarter to review the 2025 P&L statement, balance sheet, and the 990, as well as any assistance with the development of the 2026 budget; and once in the summer and fall to review expenses and income versus budget projections. Other necessary business will be conducted at each of these meetings, like reviewing and voting on funding requests.

The committee also reviewed the P&L Statement from January through August 2025, and all current expenses and income are on track with the 2025 budget. Amy indicated that Sophie plans to start working on the web page, and the Society likely will see those expenses soon. No new funding requests were submitted to the committee.

National Strategy Committee Report

- Sarah Douglass and Kate Holcomb, the National Strategy committee co-chairs, met on October 30, 2025.
- Sarah and Kate will meet with Becca Winterringer in December 2025 to discuss how the Conservation by Design tool can assist with committee planning and organization.
- Proposed timeline for Strategy completion – 3 yrs for writing (2026-2028); 1 year for publication (2029/2030). This would meet the 15-year Strategy update expectation.
- An email about committee objectives and scheduling for the first meeting will be sent to those who signed up for committee participation during the 2025 FMCS Symposium. The email will be sent in November 2025.
- Committee membership is currently dominated by folks with freshwater mussel experience. The committee encourages anyone with snail or Spharaeriidae experience to participate (email Kate: Kathryn.holcomb@state.mn.us).
- First committee meeting is expected mid-January 2026.

Outreach

No written update submitted.

Professional Development Committee Report

The Professional Development Committee (hereafter Committee) worked in the Spring and early Summer of 2025 finalizing the Mollusk Professional Guidelines (Guidelines). The Certification and Guidelines are now fully integrated as approved at the Board Meeting during the symposium in Ann Arbor. The Committee is actively accepting certification applications for review. A final call for applications for 2025 will be announced in the coming issue of *Ellipsaria* with the submission cutoff being December 15th, 2025. The review panel is composed of FMCS members who will begin reviewing applications in January of 2026. Please contact David Foltz or Nathan Click if you are interested in becoming a member of the Committee.

Publications Committee Report

The September issue of *Freshwater Mollusk Biology and Conservation* was posted on time with 5 articles. Looking ahead, we have one accepted article, 7 articles in revision, and 6 articles in review in the pipeline for future issues.

The FMBC Editorial Board met via Zoom on 10 September 2025. All board members were present at the meeting (Caryn Vaughn (Editor in Chief), Ani Escobar (Managing Editor), Dave Berg, Traci DuBose, Serena Ciparis, Dan Hornbach, Jeremy Tiemann, Alexandra Zieritz) along with President Maynard and Field Studies and Ecosystems Committee Chair Jonathan Lopez.

At the meeting we agreed to move to Fall and Spring issues of the journal in the future (rather than September and March issues).

We went over the editorial workflow and discussed Associate Editor workloads, expertise gaps, and issues with the PeerTrack editorial management system. As an outcome of this discussion, Associate Editors updated their preferred and non-preferred areas of expertise for manuscript assignments. We also added an additional Associate Editor, Kathryn Perez, who brings needed gastropod expertise to the EB. Caryn and Ani met with the team at KGL on October 27 to go over and fix PeerTrack issues.

We discussed the journal scope and the inclusion of mollusk survey papers and species lists. Such contributions would list the purpose of the study, methods and site descriptions, and results, but would not need to have lengthy introductions and discussions. One solution would be to have different types of contribution categories for journal submissions such as Research Articles, Survey and Species Lists, and Notes. Caryn will work on a draft plan for this and send it to the EB for feedback. Also, Caryn and Ani will work on updating the editorial procedures and instructions to authors documents over the winter and send the revisions to the EB for comment.

Field Studies and Ecosystems Committee Chair Jonathan Lopez discussed the need for a data availability policy and possible ways to move forward with this. We discussed different formats for making data available online. Jonathan also led a discussion of the need for a structure and template for mollusk survey papers. The Field Studies and Ecosystems Committee will work on this and provide us with a draft plan.

President Maynard described suggested changes to how the journal is presented and accessed from the website and asked for feedback. EB members can look at other society journal websites to see what they do and get ideas for FMCS/*FMBC*. We will keep EB members names and affiliations on the website but won't list their contact information. As an outcome of this discussion, we have created a shared journal email address – FMBCJournal@gmail.com – that will replace Caryn and Ani's personal email addresses on the website.

Caryn submitted a note for the fall issue of *Ellipsaria* discussing the editorial changes at the journal (new EIC, some new AEs) and reminding members of their responsibility to provide reviews. Related to this, we'll start posting the journal table of contents in *Ellipsaria* along with a link to that issue of the journal.

Regional Associations

No written update submitted.

Symposia and Workshops

No written update submitted.

Technical Committees

Conservation and Restoration

No written update submitted.

Environmental Quality and Advocacy

No written update submitted.

Field Studies and Ecosystems Committee Report

The Field Studies and Ecosystems Committee met with the *FMBC* Editorial board to discuss the potential adoption of the journal of a data availability statement requirement for all submitted manuscripts. The draft statement initially proposed by the committee is currently under revision.

Genetics

Nothing to report at this time.

Mollusk Status and Distribution Committee Report

Scientific and Common Names Subcommittee Update:
The Gastropod Subcommittee of the FMCS Scientific and Common Names Technical Committee is in the process of preparing their summary of 2019-2025 petitions and updated list of recognized species names for publication in FMBC. The subcommittee heard 112 Petitions during this first 6-year iteration: 23 in 2019, 20 in 2021, 42 in 2023, 23 in 2025. Subcommittee members are currently reviewing the final Checklist and Record of Decision and will initiate manuscript reviews shortly thereafter. The checklist includes taxonomic status, common names, and tentative distribution of freshwater gastropods across 18 different families found across Canada, Mexico, and the United States. The list considers 875 species in 126 genera. Target date for submission to the journal is late January-early February 2026.

The Bivalve Subcommittee is also in preparation of a separate but similar manuscript for the bivalve name changes during the 2019-2025 period. The Bivalve Subcommittee reviewed eight petitions in 2019, 18 in 2021, four in 2023, and 10 in 2025 for a total of 40 petitions across the 6-year period. The Bivalve Subcommittee has revised the 2025 bivalve checklist now consisting of two families, 66 genera, and 303 species, and it is currently updating the tentative species distributions across the United States and Canada. The Bivalve Subcommittee target date for manuscript submission to the journal is also late January-early February 2026.

Ad Hoc Committees

Website Update Committee Report

The ad hoc Website Committee is excited to announce that the process has started for our updated FMCS website! Our web designer, Sophie Binder, has begun to move the site from Wild Apricot to WordPress to make it easier to manage and update. The ad hoc website committee has already met to discuss organizational needs, agree on updates to the general structure, and outline ideas for future content. The updates will be a lengthy process due to the rich history and size of our current site. The society can look forward to a fresh

appearance, updated photos, content that better fits our organization, and improved accessibility. The plug-ins for how we manage membership and events should not be impacted by the platform change. The website committee is planning on reaching out to other committee groups in the future to collaborate on updates to individual pages. This update is planned to be completed by the Fall of 2026.

FMCS Officers

Ellipsaria is posted on the FMCS web twice a year: with a Spring issue in May, and a Fall issue in October of each year. The newsletter routinely includes Society news, meeting notices, pertinent announcements, and informal articles about ongoing research concerning freshwater mollusks and their habitats. Anyone may submit material for inclusion in *Ellipsaria* and all issues are accessible to anyone on the FMCS website (http://molluskconservation.org).

Articles contributed to *Ellipsaria* should be preliminary or initial observations of note (e.g., natural history observations, meaningful new distribution records, interesting finds, etc.) concerning freshwater mollusks, their habitats, and/or their conservation. Articles that include quantitative analyses, draw conclusions based on analyses, or propose taxonomic revisions should not be submitted to *Ellipsaria* and, instead, should be submitted to a peer-reviewed journal such as *FMBC*. Please limit the length of contributed articles to about one page of text (i.e., excluding pertinent tables, figures, and references).

Information for possible inclusion in *Ellipsaria* should be submitted via e-mail to the editors, Bob Anderson and Don Hubbs, at Ellipsaria@gmail.com. Contributions may be submitted at any time but are due by the 15th of the month before each issue is posted. MSWord is optimal for text, but the editor may be able to convert other formats. Graphics should be in a form that can be manipulated using Photoshop. Note that submissions are not peer-reviewed but are edited for clarity and checked for appropriateness for posting in this freshwater mollusk newsletter. Feel free to contact the editor with questions about possible submissions or transmission concerns.

Functional Committees

Awards
Curt Elderkin - elderkin@tcnj.edu
David Hayes - david.hayes@eku.edu
Susan Oetker - susan_oetker@fws.gov

Chapters
Emilie Blevins - emilie.blevins@xerces.org
Manuel Lopes-Lima - manuelpmlopeslima@gmail.com

Diversity, Equity and Inclusion
Sara Craft – sara.craft@ky.gov

Elections
Matt Johnson – matthew_s_johnson@fws.gov
Brian Carlson – brian.carlson85@gmail.com

Finance
Heidi Dunn – HeidiDunn005@gmail.com
Brian Watson – brian.watson@dwr.virginia.gov

National Strategy
[vacant at present]

Outreach
Madi Polera – mpolera2@ncus.edu

National Strategy
Sarah Douglas - sabales@illinois.edu
Kate Holcomb – kathryn.holcomb@state.mn.us
Becca Winterringer - beccawint6@gmail.com

Professional Development
David Foltz dafoltz@edge-es.com
Nathan Click – nathan.click@ky.gov

Publications
[vacant at present]

Symposia and Workshops
David Berg – bergdj@miamioh.edu

Ad Hoc Committees

Guidelines & Techniques
Lisie Kitchel- Lisie.Kitchel@wisconsin.gov

Webpage
Nora Straquadine - nrstraquadine@gmail.com

Technical Committees

Common And Scientific Names
Paul Johnson Gastropod sub-committee
paul.johnson@dcnr.alabama.gov
John Harris Bivalve sub-committee
Omibob1@gmail.com

Conservation and Restoration
Tyler Hern - tyler_hern@fws.gov
Nathan Eckert - nathan_eckert@fws.gov
Jesse Weinzinger - jesse.weinzinger@wisconsin.gov

Environmental Quality and Advocacy
Michael Gangloff - elliptio@gmail.com
Emilie Blevins - emilie.blevins@xerces.org

Field Studies and Ecosystems
Jonathan Lopez- jlopez2411@gmail.com

Genetics
Jamie Bucholz -jbucholz@proton.me
Kentaro Inoue – kinoue@sheddaquarium.org
Sean Keogh -keogh026@umn.edu

Mollusk Status and Distribution
Jason Wisniewski - jason.wisniewski@tn.gov
Wesley Daniel - wdaniel@usgs.gov

Parting Shots

In the news:

Photo by Effie Houston

The National Park Service (NPS) discovered a *Pleuronaia dolabelloides* - the Slabside Pearlymussel in the Obed River, TN. A first for this river!

If you would like to contribute a freshwater mollusk-related image for use as a Parting Shot in *Ellipsaria*, e-mail the picture, informative caption, and photo credit to Ellipsaria@gmail.com.

Freshwater Mollusk Conservation Society Newsletter