



Newsletter of the Freshwater Mollusk Conservation Society
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COVER STORY

14th Biennial FMCS Symposium

“Bridges to the Future of Freshwater Mollusk Conservation”

May 12-16 (Monday-Friday), 2025
Ann Arbor Marriott Ypsilanti at Eagle Crest
Ypsilanti, Michigan

We are looking forward to hosting the FMCS membership at the 14th Biennial Symposium and welcoming you to the Great Lakes watershed, southeast Michigan, and the Ann Arbor-Ypsilanti Area.

The theme for the symposium is *“Bridges to the Future of Freshwater Mollusk Conservation”*. This theme incorporates the near completed Gordie Howe International Bridge that connects Michigan and Ontario across the Detroit

River. Bridges have numerous literal and metaphoric relationships to our interests in freshwater mollusk biology and conservation: from relocations during bridge construction projects, to linking our expertise while helping conserve these imperiled species, to linking our research that ranges from molecules to ecosystems, microhabitats to watersheds, stream reaches to continents, and ancient to contemporary timescales. The theme of FMCS 2025 is to reflect on the last quarter-century of the society and its role in freshwater mollusk conservation and build bridges moving the society toward another successful 25 years.

LOCATION AND LODGING

May 12-16 (Mon-Fri), 2025 at the Ann Arbor Marriott Ypsilanti at Eagle Crest ([link here](#)). The hotel and conference center are within a combined facility that backs onto the Huron River.

Hotel, if booked before reserved room block closes will be \$154 + tax for a standard room. Hotel booking will be available [HERE](#) until April 14th or until block is full.

Parking for those staying at hotel is FREE (minimal cost for those driving at \$10 per day).

Closest airport (19 min): Detroit DTW ([link](#)).

Closest train station (20 min): Amtrack Ann Arbor stop ARB ([link](#))

About the area: <https://www.annarbor.org/> (scroll down to the bottom map and Ypsilanti has its own link for “play, eat, and stay”).

General Schedule:

Monday- May 12th

- Workshop 9am-2pm with general gastropod identification, sampling techniques, and morphometrics.
- Evening: Student Mentor/Mentee Mixer and Welcome Mixer

Tuesday- May 13th

- Morning: Welcome
- Throughout Day: Concurrent Sessions
- Lunchtime: Committee Meetings
- Evening: Poster Session

Wednesday- May 14th

- Morning: Lightning Talks
- Throughout Day: Concurrent Sessions
- Lunchtime: Committee Meetings
- Evening: Banquet and Auction

Thursday- May 15th

- Morning: Plenary Speaker- Dr. Catherine Febria (see below)
- Throughout Day: Concurrent Sessions
- Lunchtime: FMCS Luncheon

Friday- May 16th

- 3-4 optional Field Trips

For a more detailed schedule see below (zoom in for details) and if you have any questions about the schedule, please feel free to email organizers.

Registration (in US Dollars):

Attendee Status	Early Bird Registration Rate (until March 1st)	Regular Registration Rate (after March 1st through April 1st)
Member	\$525	\$600
Non-Member	\$625	\$700
Student/Retiree Member	\$375	\$450
Student/Retiree Non-Member	\$425	\$475

Virtual: \$300 (see WHOVA events in the general schedule above, all times listed in Eastern Time zone)

PLENARY TALK- Thursday May 15th 8am

Dr. Catherine Febria- Healthy Headwaters Lab- University of Windsor, Ontario, Canada (<https://www.healthyheadwaterslab.ca/catherine-febria>).

Dr. Febria is a Tier 2 Canada Research Chair in Freshwater Restoration Ecology and leads a dynamic lab that conducts research in Canada, USA, New Zealand on headwater ecosystems including drains, wetlands, streams, and the interfaces between surface and groundwater. Dr. Febria's talk will focus on the people and partnerships her lab has developed in the Sydenham River, which is a river that supports one of the greatest areas of species-diversity in Canada, and throughout her research program.

Dr. Febria's talk is for FMCS 2025 is titled, "*Unionids, People, Partnerships & Place: How inclusive Approaches to freshwater mussel science is advancing restoration and reconciliation in the Laurentian Great Lakes*".



Photo credit: University of Windsor, Public Affairs & Communications

WORKSHOP

Gastropod themed workshop with details to follow. Want to learn general anatomy for snail identification (specific to the Great Lakes region- native and invasive species), standardized snail sampling techniques, and morphometric analyses of gastropods? This workshop will be for you! Hands on workshop.

The workshop will be 9am-2pm on Monday May 12th (boxed lunch included). No missing out any other FMCS Symposium events as this is scheduled before the evening Welcome Mixer.

Cost: See registration when it opens online (not included with general Symposium registration).

FIELD TRIPS

There will be 3-4 field trips offered at an extra cost for Friday May 16th. These will include trips to local rivers and/or highlight mollusk and/or areas of interest in southeast Michigan. Busses and lunches will be included in the costs (expected to be ~\$50-75 per person). Details to follow on registration page.

PRESENTATIONS/ ABSTRACT

We invite participants to present talks and posters on a wide range of topics related to freshwater mollusk conservation and biology, encompassing subjects such as life history and ecology, species status and distribution, surveys and monitoring, propagation, ecosystem and community ecology, genetics and phylogeny, ecosystem services, mollusk community and habitat restoration, contaminants and ecotoxicology, outreach, climate change, non-native mollusks, and mollusk kills.

Instructions for authors

Abstracts must be submitted by **11:59 pm Eastern U.S. on Wednesday, February 12, 2025** using the Whova app at <https://tinyurl.com/244xskeu>. Participants may choose to present a traditional talk, either in person or virtually, poster, a 5-minute "lightning talk" for those wanting to share quick updates or early results on a project, or a poster. Traditional talks will have 20-minute slots: 15 minutes for presentations plus 5 minutes for questions. **Virtual attendees are required to provide a pre-recorded talk** prior to the conference start date. Those opting for a traditional talk (in person or virtual) or poster must submit a full abstract, with a limit of 2,100 characters (with spaces, ~300 words). A full abstract is not necessary for lightning talks, but a title, authors' names, and a brief 1-2 sentence description are required by the abstract deadline.

If you have any questions regarding abstract submission, please reach out to Dave Strayer at strayerd@caryinstitute.org.

SPONSORSHIP

Our Symposium provide great opportunities to network and build relationships with conservation professional from state and federal governments, industry, universities, and conservation organizations. The Society has a membership of over 500, of which about 300 generally attend the biennial Symposium. These professionals are constantly working to conserve freshwater mollusks, attendees of the Symposium are scientists, biologists, national and international that work outside and in labs that are constantly working to conserve freshwater mollusks and we need your help. We are asking if you know of any organizations, or maybe your organization, that may want to be a sponsor for FMCS 2025 please see the sponsorship options below.

Below is a breakdown of our sponsorship levels.

River >\$2000 Two Complimentary Registrations (One Virtual and One In-Person), Logo on Website Registration Page, Recognition in the Virtual Program

Stream \$1000-\$2000 One Complimentary Registration (Virtual or In-Person), Logo on Website Registration Page, Recognition in the Virtual Program

Eddy \$500-\$999 Logo on Website Registration Page and Recognition in the Virtual Program

Mussel \$100-\$499 Recognition in the Virtual Program

SPONSOR A SPECIFIC PART OF PROGRAM OR EVENT (e.g., student-mentor mixer, poster session, coffee breaks, banquet). Amount TBD in consultation with symposium sponsorship committee.

Please contact Kiara Cushway (FMCS 2025 Sponsorship Chair) to confirm you will be sponsoring or with questions: cushkia1@gmail.com

AUCTION ITEMS

Do you have an item or know an artist that may want to donate an item to the FMCS 2025 Auction? All proceeds of the auction go towards supporting FMCS students (awards, travel, etc.). Please contact Daelyn Woolnough (wooln1d@cmich.edu) if you have donations you would like to make to the auction to make arrangements for the FMCS 2025 Auction. The auction is always a fun, action packed, and raises funds for the students! For FMCS 2025 the Auction will be Wednesday evening after the banquet.

DIVERSITY, EQUITY, AND INCLUSION (DEI)- FMCS 2025

DEI is at the forefront of all planning for the 14th Biennial Symposium. The **Whova app** being used for the conference will outline immediate contacts if you have any safety, access, or DEI concerns.

Code of Conduct for the Conference ([link](#))

FMCS has a Diversity, Equity, and Inclusion Committee ([link](#)) and any FMCS member is welcome to join this committee.

FMCS 2025 SOCIAL MEDIA

Follow Freshwater Mollusk Conservation Society on Instagram ([@freshwatermollusk](https://www.instagram.com/freshwatermollusk)),

X ([@FMCS_Mollusk](#)), or Facebook ([Freshwater Mollusk Conservation Society](#)) for updates and information on the 2025 Symposium.

Please use the following HASHTAG when posting about the 2025 Symposium
#FMCS2025

SYMPOSIUM CONTACTS

For more information about the symposium or specific symposium planning committee contacts, please get in touch with the meeting organizers below.

Amy Maynard, FMCS Meeting Chair and President Elect, U.S. Fish and Wildlife Service
Amy_maynard@fws.gov

Daelyn Woolnough, FMCS Co-chair, Central Michigan University
wooln1d@cmich.edu

Dave Zanatta, FMCS Co-chair, Central Michigan University
zanat1d@cmich.edu

We have a great local planning group of Michiganders and look forward to welcoming you to the Great Lakes region for FMCS 2025!



Awards Announcements for Upcoming Symposium

The Awards Committee has several items for membership attention in preparation for the upcoming Symposium in Michigan. Please note the deadlines; they are coming up sooner rather than later!

Call for 2025 FMCS Professional Award Nominations

Do you know someone who has made worthwhile contributions to mussel conservation or to the Society, either through donating their professional time or expertise or through their scientific endeavors? If so, consider nominating them for one of the three following FMCS Professional Awards.

The **Meritorious Service Award**—given to an individual for singular accomplishments or long-term contributions to the Society. The recipient of this award must be a past or present FMCS member who has performed long-term, exceptionally high-quality service to the Society.

The **William J. Clench Memorial Award**—given to an individual for singular accomplishments or long-term contributions that have advanced the natural history and understanding of freshwater mollusks at an academic or non-academic level. The recipient of this award must have had (1) activity in one or more aspects of freshwater mollusks for a substantial period of time, with a recommended minimum guideline of 20 years, and (2) made substantial contributions to the field of freshwater malacology.

Lifetime Achievement Award—given to an individual for singular accomplishments or long-term contributions that have advanced the conservation and science of freshwater mollusks at a national or international level. The recipient of this award must have had (1) activity in one or more aspects of freshwater mollusk research and/or conservation for a substantial period of time, with a recommended minimum guideline of 20 years, and (2) made substantial contributions to the scientific understanding of freshwater mollusks and/or their conservation.

Nominations and supporting documentation for each of these awards are due by **January 31, 2025**. See the Awards Committee website at: https://molluskconservation.org/Mservices_awards.html for procedures and requirements. For more information or answers to questions about this nomination process, contact Susan Oetker, Susan_Oetker@fws.gov, Curt Elderkin, curtelderkin@gmail.com, or David Hayes david.hayes@eku.edu.

Other Society Awards

Early Career Professional Travel Awards – The Freshwater Mollusk Conservation Society is pleased to announce the Early Career Professional Travel Award. Two individuals with less than five years of post-graduate service and in good standing as members of the Society will be awarded free registration to attend our upcoming Symposium. To apply for this award, send an email application to fmcsawardscommittee@gmail.com with “Early Career Professional Award Application” in the subject line. In this application, provide a short statement (350-500 words) that addresses your: 1) financial need for this assistance and any other source(s) of support for attending, 2) conference participation plan (e.g., presentation, committee meetings), 3) anticipated benefits on future work to your employer, and 4) intended plan to disseminate your experience to others (e.g., post-conference presentation, etc.). Make sure to include your name, present affiliation, years of post-graduate service, and any previous involvement within FMCS (This information will not be counted as part of the word limit). The deadline for submitting these applications is **January 31, 2025**. If you have any questions, please feel free to contact Jeremy Tiemann (jtiemann@illinois.edu), Curt Elderkin

(elderkin@tcnj.edu), Susan Oetker (susan_oetker@fws.gov), or David Hayes(david.hayes@eku.edu).

Student Travel Awards Available

CALLING ALL STUDENTS - To facilitate your participation in the 2025 Symposium, travel awards are being offered by FMCS. Support is provided in the form of Society-paid lodging accommodations for the duration of the meeting. It is anticipated that up to nine awards will be made for this Symposium. A complete application package must be submitted by e-mail as a PDF file to Dave Hayes (david.hayes@eku.edu) on or before **January 31, 2025**. Please see the Awards Committee website at https://molluskconservation.org/Mservices_awards.html for application forms and procedures or contact Dave Hayes (david.hayes@eku.edu), phone 859/622-1016, for more information. Please use “FMCS 2025 Student Travel Award” as the subject line in your email.

Call for Judges of Student Presentations

The Awards Committee needs judges for the Best Student Platform and Poster Awards during the Michigan Symposium. If you are interested in serving as a judge for these awards, please email fmcsawardscommittee@gmail.com. Please note that all student presentations are scheduled as early as possible during the meeting so that we can finalize results in time for the awards presentation during the banquet. With that in mind, please indicate which general topics you would prefer to judge, and if you are arriving late to the conference so we don't schedule you to judge before you arrive. Once the meeting schedule is out, please let us know of any conflicts that will not be obvious in the schedule, and if you request any changes in the schedule. The Awards Committee greatly appreciates the volunteer judges who make it possible to recognize outstanding student contributions at the meeting! If you are a student interested in having your platform paper or poster judged, please indicate that on your abstract. If you are presenting more than once, please select only one for judging.

Announcements

MCS Officer Elections: Call for Nominations

Readers of this newsletter have probably noticed that a Call for Officer Nominations was sent out via email earlier this month. We are still accepting nominations for each of the three Executive Committee positions (President-elect, Treasurer, and Secretary) until November 15, 2024. Following the nominations process, candidate biographical sketches and statements of candidacy will be distributed to FMCS members, and an online election will be held in early 2025. The results of the election will be announced during the FMCS Symposium in Michigan, and the newly elected officers will assume their duties.

The Election Committee Chair and members of the Executive Committee thank the current nominees for their willingness to serve in these important roles and we strongly encourage other Society members to consider running for one of these positions. These positions allow the officeholders to take an active role in the administration of the Society, gain insight on the variety of research and conservation measures being conducted by our membership, and provides valuable connections for personal and professional growth.

Duties and estimated time requirements associated with each of these positions are provided below for consideration during the nomination process:

As President-elect (first and second years of the six-year term):

- Chairs the Symposium Committee, which includes helping secure the location, hosts, and topic for the even-year Workshop and odd-year Symposium.
- Can require a few hours a week when planning the Workshop and Symposium and zero hours most other times.

As President (third and fourth years):

- Presides over both yearly meetings of the Board of Directors and the biennial Symposium.
- Ensures that committees make progress on their tasks, keep their respective committee pages on the FMCS website updated, and reporting their progress to the membership.
- Coordinates work on various personal initiatives.
- The amount of time needed is highly variable and depends on what you want to put into it.

As Past-President (fifth and sixth years)

- Coordinates the review and update to the Society Bylaws and Procedures Manual.
- Helps identify potential presidential candidates.
- Maybe require 30 minutes or so a week, just to check in with people.

Treasurer

- Oversees and manages memberships and meeting registrations, Society's management system, and debit and credit systems.
- Enters and reconciles financial transactions (income and expenses) in our financial management system (QuickBooks).
- Compiles, reports, and submits annual budget reports, IRS 990 tax form filings, renewal of society registrations/memberships.
- Attends (ex-officio) and provides guidance at FMCS committee meetings.
- Requires a few hours a month on the position.

Secretary

- Ensures Board Meetings are effectively organized and reported in the Minutes.
- Maintains membership records and administrative files.
- Handles Society communications and correspondence.
- Requires a few hours a month on the position, potentially more during the Workshop and Symposium.

These are important roles within the Society, and they can each be performed with reasonable time commitments.

Please email your nominations or willingness to volunteer for these offices to the Elections Committee Chair, Matt Johnson at matthew_s_johnson@fws.gov.

Announcement: FMBC editorial changes

The editorial board at Freshwater Mollusk Biology and Conservation has undergone several changes this year. First, Dr. Wendell Haag stepped down as Editor in Chief after more than ten years of service to the Journal. Thank you, Wendell, for the time, care, and attention you gave to each manuscript. Your presence will be missed!

Dr. Caryn Vaughn will assume the role of EIC in June. Caryn has served the Journal for years as an associate editor, and we are thankful to have her step into this new responsibility. The editorial board would also like to welcome Jeremy Tiemann, who is now serving as an associate editor. Between now and June, questions related to FMBC can be directed to Ani Escobar, managing editor: anakela.escobar@dnr.ga.gov. Thank you for your patience as we navigate this transition.

The latest issue of FMBC has been published and may be found on the FMCS website: <https://molluskconservation.org/FMBC-current.html>

Current members of the editorial board are listed below. Thanks to all for their service!

Associate Editors:

David Berg, Miami University, Ohio
Serena Ciparis, U.S. Fish & Wildlife Service
Traci DuBose, U.S. Geological Survey

Daniel Hornbach, Macalester College Emeritus
Jeremy Tiemann, Illinois Natural History Survey
Caryn Vaughn, University of Oklahoma
Alexandra Zieritz, University of Nottingham

Managing Editor: Ani Escobar, GA Dept of Natural Resources (anakela.escobar@dnr.ga.gov)

From: Rachel VanKirk Mathews <rvmathews@livingriver.org>

Subject: Re: Advertising a Freshwater Research Site

Great Freshwater Research Location at Living River: A Retreat on the Cahaba
Living River is a camp and retreat center in Central Alabama surrounded by 4.5 miles of the Cahaba River, one of the most biodiverse waterways on Earth. Dr. Paul Johnson, Alabama Aquatic Biodiversity Center Director, reports, "That section of the river around Living River is the most diverse anywhere in the Mobile River Basin. There are more federally threatened and endangered species in that section than anywhere else- fish, mussels, and snails, they're all there." Living River has a lodge, bunk housing, and a desire to be a resource for ongoing science and research. Visit www.livingriver.org for more information and email office@livingriver.org with any questions. We'd love to welcome more researchers and be more hospitable to science and research. We hope to see you at Living River soon!

Upcoming Meetings

SDAFS 2025 – Asheville, NC-The North Carolina Chapter of the American Fisheries Society kindly invites you to the 2025 Southern Division AFS meeting in Asheville, NC from February 18 – February 21, 2025.

May (12-16) 2025 – The 14th FMCS Biennial Symposium will be held in Ann Arbor/Ypsilanti, Michigan.

Contributed Articles

The following articles were contributed by FMCS members and others interested in freshwater mollusks. Contributions like this are incorporated into Ellipsaria without peer review and with little editing. The opinions expressed are those of the authors.

Drought in the Duck River Watershed

Submitted by Don Hubbs, DJH Environmental Services LLC.

A prolonged drought during the summer of 2024 raised concern over balancing current and future water supply needs and reduced river flow impacts on aquatic habitat in the Duck River watershed. These concerns lead to several news articles by local and statewide media outlets including impacts on freshwater mussel communities. In support of conservation organizations represented by the Southern Environmental Law Center I was contracted to survey the impact of sustained below median flows in the Shelbyville to Centerville reach of the Duck River. The following is an abbreviated version of the report from this survey.

Duck River Low Flow Mussel Mortality Survey

Bedford, Marshall, Maury and Hickman Counties, Tennessee

July 16 – 17, September 5, 2024



Introduction

This survey was conducted in order to provide the Southern Environmental Law Center with documentation of Duck River low flow mussel mortality data on freshwater mussel

communities found in the Duck River near eight existing or proposed municipal water intakes between Shelbyville and Centerville, TN (DRM 221 to 71) including all listed and proposed listed federal threatened and endangered mussel species.

The Duck River in south-central Tennessee remains one of the most biologically diverse rivers on the North American continent. Its watershed covers 3,127 square miles or approximately two million acres of the Interior Low Plateau Physiographic Province. Beginning in the Eastern Highland Rim subsection in Coffee County, the Duck River flows westward across the Central Basin for approximately 290 miles passing through six counties before joining Kentucky Reservoir on the Tennessee River in the Western Highland Rim subsection in Humphreys County at Sycamore Landing, adjacent to the Tennessee National Wildlife Refuge. The Duck River is largely free flowing for much of its length, except for the Tennessee Valley Authority (TVA) Normandy Dam (located at Duck River mile 249) and reservoir impounding much of the headwaters. It is the longest river wholly contained within Tennessee's borders and drains 8% of Tennessee's land area. Sinkhole plains and limestone bluffs, year-round springs characterize the Duck watershed. The mineral-rich geology and eroding limestone base of the watershed add abundant calcium carbonate and nutrients to its water – primary drivers for the river's exceptional mussel fauna. Freshwater mussels filter the water for nutrients to construct their shells, in turn providing food for waterfowl, fish, and mammals. Mussels also provide habitat in the form of shelter and nesting sites for small fish, insects, and other aquatic organisms. Because they are sensitive to pollution, mussels serve as water quality indicators in this river, which also serves as the main water supply for a rapidly growing population of more than 250,000 people.

The Duck River watershed is home to approximately 77 native freshwater mussel species with 62 remaining extant (TN SWAP 2015). The river has a long history of anthropogenic perturbations including habitat loss due to impoundment, landscape clearing and conversion, increased impervious surfaces, agricultural runoff, phosphate mining, gravel dredging, and municipal and industrial wastewater discharge. Currently 27 mussel species known from the watershed are federally listed as endangered or threatened under the Endangered Species Act (ESA), three are currently proposed to be listed as endangered and six species are presumed extinct.

Globally, the Duck River contains the only known population of Duck River Dartersnapper (*Epioblasma ahlstedti*) (Jones and Neves 2010), the largest known population of Birdwing Pearlymussel (*Lemiox rimosus*) (Jones et al. 2009), and the last viable population of Cumberland Monkeyface (*Theliderma intermedia*) (Johnson 2011). Nineteen federally endangered, threatened, or proposed endangered or threatened mussel species remain extant in the Duck River including: Spectaclecase (*Cumberlandia monodonta*), Fanshell (*Cyprogenia stegaria**), Duck River Dartersnapper, Cumberland Combshell (*Epioblasma brevidens**), Snuffbox (*E. triquetra**), Pink Mucket (*Lampsilis abrupta**), Birdwing Pearlymussel, Cumberland Moccasin (*Medionidus conradicus*) proposed endangered, Round Hickorynut (*Obovaria subrotunda*), Sheepnose (*Plethobasus cyphus*), Slabside (*Pleuroaia dolabelloides*), Tennessee Clubshell (*Pleuroaia oviforme*) proposed endangered, Tennessee Pigtoe (*Pleuroaia barnesiana*) proposed endangered, Fluted Kidneyshell (*Ptychobranhus subtentus**), Winged Mapleleaf (*Quadrula fragosa**), Rabbitsfoot (*Theliderma cylindrica*), Cumberland Monkeyface, Pale Lilliput (*Toxolasma cylindrellus**), and Rayed Bean (*Villosa fabilis**). Species recently

reintroduced or augmented into the river above are marked by *. Wisniewski (2020) noted, these animals were introduced through captive propagation and/or translocation from the closest viable populations throughout their ranges. The Duck River plays an important role in the global conservation for a number of freshwater mussel species in Tennessee and the southeastern United States and is a vital component in multiple management and species recovery plans (e.g., Plan for the Population Restoration and Conservation of Imperiled Freshwater Mollusks of the Cumberlandian Region and Tennessee Freshwater Mollusk Strategic Plan). The Duck River is a primary source for many species propagation brood stock and individuals for translocation, as well as a recipient stream of previously extirpated mussel species (i.e., reintroductions or translocations).

A substantial portion of the Duck River was designated as critical habitat by the U.S. Fish and Wildlife Service for five federally protected mussel species. The most expansive designation was made for the Fluted Kidneyshell and Slabside (78 FR 59556). This designation extends from the confluence with Kentucky Reservoir in Humphreys County upstream through Perry, Hickman, Maury, Marshall, and Bedford Counties, Tennessee. This reach includes approximately 216 river miles of the Duck River from its inundation at DRM 11.7 in Kentucky Reservoir in Humphreys County, TN, upstream to its confluence with Flat Creek (DRM 228) near Shelbyville in Bedford County, TN. Critical habitat has also been designated for Duck River Dartersnapper, Cumberland Combshell (46 miles from ~DRM 179 to 133), and Pale Lilliput (69 FR 53136, 78 FR 57076). Additionally, the Round Hickorynut was recently listed as threatened by the U.S. Fish and Wildlife Service and the Duck River was proposed as critical habitat in 59 river miles (~DRM 201 to 142) in Bedford, Marshall, and Maury Counties (85 FR 61384).

The Duck River remains one of the more productive freshwater mussel communities in the southeastern United States. A substantial portion of the mussel community occupies the shallow habitats found along the river banks and margins of islands and in-stream gravel bars and is vulnerable to take according to the ESA (personal observation) and (Moles 2016-17). AST Environmental found during their 2023 Duck River mussel survey that mussel populations occupying the shallow marginal habitat areas are similar to those found in the channel, and that ESA and proposed ESA mussel species made up 55.4% of the quantitative sample population occupying marginal habitats (AST 2024). Knight and Kingsbury (2007) explain the importance of sustained minimum flow releases to the Duck River reach below Normandy Dam:

“Historical and recent streamflow data indicate that during extended base-flow conditions the Duck River does not gain an appreciable amount of flow and may lose flow between Shelbyville and Columbia, which is a distance of about 85 river miles with a drainage area of about 700 mi². Flow conditions for the Duck River for the period of this study (2003 through 2005) are considered average when compared to streamflow conditions observed since Normandy Dam was closed (1977 through 2005).”

“The combination of base-flow synoptic discharge measurements and flow-duration analysis of tributary streams indicates that Fountain Creek and Big Rock Creek are the highest yielding tributary basins in the study area. At base flow, however, about 14 percent of the flow from Big Rock Creek is attributable to

wastewater discharge from Lewisburg, Tennessee. Other tributary streams contribute little to no flow, particularly those streams on the north side of the river. Discharge measurements on the mainstem indicate a loss of flow below Pottsville; however, the flow at Columbia suggests that this water returns to the river in a relatively short distance at the conditions during which these data were collected. Other tributary streams in the study area, such as Garrison Fork Creek or Flat Creek at Highway 231, had higher yields based on base-flow synoptic measurements alone.”

“Two periods of base flow were evaluated during this study to estimate the contribution to the total flow in the Duck River from releases at Normandy Dam, tributaries, wastewater discharges, and ground-water discharge. Results from this analysis suggest that the streamflow during base-flow periods in the lower portion of the mainstem of the Duck River (between Pottsville and Columbia) consists of as much as 40 percent ground-water discharge. The increase in streamflow at Columbia was entirely accounted for by ground-water discharge from submerged springs to the river between Pottsville and Columbia. Some of this water likely enters the subsurface in the northern parts of the basin where the surface-water drainages are lacking and sinkholes are prevalent. Fountain Creek is the only tributary that contributes substantial flow in this part of the study area.”

TDEC recognizes that flows at or below 175 cfs at the USGS Milltown gage can lead to the loss of critical habitat which can lead to mussel mortality in the reach downstream from Milltown Dam.¹ In order to better inform interested parties regarding potential impacts of reduced flows on the freshwater mussel community in the Duck River, DJH Environmental Services (DJHES) selected ten Duck River mussel habitat sites where mussels might be stranded during periods of below median river flow levels. These sites were located near existing and proposed municipal water intakes between Shelbyville (DRM 221) extending downstream to the new proposed downstream Columbia intake and three sites downstream of Centerville (DRM 51), covering approximately 170 river miles. Five of the ten sites surveyed are located at quantitative mussel monitoring sites (four monitored by TWRA and 1 by AST Environmental).

¹ : “Aquatic Resource Alteration Permit NRS20.177 Pursuant to the Tennessee Water Quality Control Act of 1977 (T.C.A. §§ 69-3-101 et seq.) and supporting regulations, a permit is required to alter the properties of waters of the state. Also, pursuant to section 401 of the Clean Water Act (33 U.S.C. § 1341), an applicant for a federal license or permit which may result in a discharge into the waters of the U.S., shall provide the federal licensing or permitting agency a certification from the State in which the discharge will originate. Accordingly, the Division of Water Resources requires reasonable assurance that the activity will not violate provisions of the Tennessee Water Quality Control Act of 1977 (T.C.A. §§ 69-3-101 et seq.) or provisions of sections 301, 302, 303, 306 or 307 of the Clean Water Act. Subject to conformance with accepted plans, specifications, and other information submitted in support of the application, the state of Tennessee hereby certifies pursuant to 33 U.S.C. § 1341, and permits pursuant to T.C.A. § 69-3-108(b), the activity described below: PERMITTEE: Marshall County Board of Public Utilities 624 West Commerce Street Lewisburg, Tennessee 37091 AUTHORIZED WORK: The authorized work includes construction of a mid-river, passive screen water intake in the Duck River and to withdraw drinking water at the instantaneous rate of up to 2,100 gallons per minute. A minimum flow of 175 cubic feet per second at the USGS gage 03599240 Duck River Above Milltown, must be maintained to preserve critical habitat.”

Methods

DJHES monitored the Duck River USGS gages between Shelbyville and Columbia via USGS real time stream data web page (<https://waterdata.usgs.gov/monitoring-location/03599240/>) and identified an extended below median daily flow event recorded at the USGS Milltown gage 03599240 that occurred from July 4 through July 17, 2024. While the river was below median flow, DJHES personnel surveyed seven sites, each near an existing or proposed water intake between Shelbyville and Columbia. Three additional sites were added on September 5, 2024 after drought conditions worsened and Centerville area residents expressed concern over mussel strandings on their properties. Sites were surveyed by collecting all mussel shells encountered during meandering wading/walking transects along stream banks and exposed shoal areas. Wetted stream width and transect lengths were measured and recorded to the nearest meter (m) with a laser range finder. Each site was photo documented including areas with exposed live and fresh dead mussels. All collected mussel shells from each site were placed in labeled bags for post survey processing. Samples were processed by site, identified to species, quantified as fresh dead or weathered dead, then tabulated by site with federal protected status noted (Endangered/Threatened, Proposed Endangered/Proposed Threatened).

Summary

Thirty-nine mussel species, including nine already under federal protection, were recorded from the ten monitored sites between Shelbyville to Centerville; seven federal endangered, two federal threatened, and three federal proposed endangered. A total of 777 mussels representing 36 species collected were classified as fresh dead (Tables 1 and 2), many of which still had tissue attached to the shells (Figure 1). The federal endangered Birdwing was the most abundant species collected comprising 24.6% of the sample from the Shelbyville to Columbia reach sampled July 16-17, 2024 followed by the federal threatened Round Hickorynut (19.65%) and Painted Creekshell (11.5%). The remaining seven federal protected species comprised 14.15% of the sample. Together, the nine federal protected species comprised 58.4% of the sample from this reach. This total percent abundance of federal protected mussel species is similar to the percent abundance AST Environmental documented during their 2023 Duck River mussel survey. In the AST survey ESA and proposed ESA mussel species made up 55.4% of the quantitative sample population occupying shallow marginal habitats in the Duck River (AST 2024).

The three Centerville reach sites sampled on September 5, 2024 totaled 212 individuals of 19 species including three federal threatened Rabbitsfoot. Fragile Papershell was the most abundant mussel collected from this reach (26.42%) followed by Purple Wartyback (16.98%), Wavyrayed Lampmussel (12.74%), and Pimpleback (11.32%). The documented presence of federal threatened Rabbitsfoot at the Centerville reach sites, along with the additional eight federal protected mussel species documented from the Shelbyville to Columbia reach sites, indicates that federal ESA protected mussel species are being impacted by reduced flows over at least 170 river miles, extending downstream from DRM 221 to 51.



Figure 1. Fresh dead mussel shells with tissue attached including federal threatened Round Hickorynut, endangered Slabside and Cumberland Monkeyface.

Table 1. Fresh dead Duck River mussels collected July 16-17, 2024 low flow event. *e* = endangered, *t* = threatened, *pe* = proposed endangered *fd* = fresh dead, *wd* = weathered dead

Site	SVB	TB	LMD	VS	SH	CMD	KM		
River mile	221.2	207.2	179.2	176.3	165	133.5	105.6		
Species								Total	% Abundance
Birdwing <i>e</i>			41	71	27			139	24.60%
Creeper					1			1	0.18%
Cumberland Combshell <i>e</i>				2				2	0.35%
Cumberland Moccasinshell <i>pe</i>	17			2	2			21	3.72%
Cumberland Monkeyface <i>e</i>			6	6	7			19	3.36%
Deertoe			1					1	0.18%
Duck River Dartersnapper <i>e</i>			4	17	2			23	4.07%
Fanshell <i>e</i>			1					1	0.18%
Flutedshell	1	1	4	8	1	2		17	3.01%
Fragile Papershell				2	1	6	4	13	2.30%
Fluted Kidneyshell <i>e</i>			3					3	0.53%
Kidneyshell						1		1	0.18%
Mountain Creekshell	1			3	3			7	1.24%
Painted Creekshell	23	6	11	14	11			65	11.50%
Pimpleback			8	11		1		20	3.54%
Pink Heelsplitter				1				1	0.18%
Pistolgrip	1		4		1	1		7	1.24%
Purple Wartyback			2	4		1		7	1.24%
Pyramid Pigtoe				4				4	0.71%
Rabbitsfoot <i>t</i>			5	3	1	1		10	1.77%
Rainbow					1			1	0.18%
Rock Pocketbook			1					1	0.18%
Round Hickorynut <i>t</i>			13	84	14			111	19.65%
Slabside <i>e</i>			8	9	5			22	3.89%
Spike			8	2	2			12	2.12%
Tennessee Clubshell <i>pe</i>			2	3	6			11	1.95%
Tennessee Pigtoe <i>pe</i>			1	22	6			29	5.13%
Wavyrayed Lampmussel	1	2	1	9	1	2		16	2.83%
Total	44	9	124	277	92	15	4	565	
# Species	6	3	19	20	18	8	1	28	

Table 2. Fresh dead Duck River mussels collected during Centerville area low flow event, September 5, 2024. e = endangered, t = threatened, pe = proposed endangered fd = fresh dead, wd = weathered dead

Site	Paces Island	Downstream Field Island	Lovets Shoal		
River mile	69.1	51.9	51.0		
Species				Total	% Abundance
Black Sandshell	1			1	0.47%
Butterfly	1	1	1	3	1.42%
Deertoe	3		6	9	4.25%
Ebony	2	1	wd	3	1.42%
Elephantear	3			3	1.42%
Flutedshell	2			2	0.94%
Fragile Papershell	5	29	22	56	26.42%
Mapleleaf		1		1	0.47%
Paper Pondshell		1		1	0.47%
Pimpleback	11		13	24	11.32%
Pink Heelsplitter	2	2	4	8	3.77%
Pistolgrip	2	5		7	3.30%
Pocketbook	1	2	4	7	3.30%
Purple Wartyback	20	2	14	36	16.98%
Rabbitsfoot t	2	1	wd	3	1.42%
Threehorn Wartyback	5	3	8	16	7.55%
Threeridge	1	1		2	0.94%
Washboard	3			3	1.42%
Wavyrayed Lampmussel	6	1	20	27	12.74%
Yellow Sandshell	1			1	0.47%
Total	70	50	92	212	
# Species	17	13	9	19	

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Submitted by Sawyer Lorentz

Fish Host Analysis of the Painted Creekshell, *Cambarunio taeniatus*

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Introduction

Cambarunio taeniatus is a species of Unionid mussel restricted to the Tennessee and Cumberland River drainages in Kentucky, Tennessee, and Alabama (Parmalee and Bogan, 1998; Williams et al., 2008). Currently, little is known about the fish species that *C. taeniatus* uses as hosts, with the only known host for this species being the rock bass, *Ambloplites rupestris* (Parmalee and Bogan, 1998). The goal of this study was to add to our understanding of potential fish hosts for *C. taeniatus*.

Gravid *C. taeniatus* females from Kentucky Fish and Wildlife Services in Frankfort, Kentucky were used to extract glochidia. The glochidia was flushed from the gills using a hypodermic needle and filtered through a 150µm net until a concentrated sample was obtained. Then, three longear sunfish, *Lepomis megalotis*, four largemouth bass, *Micropterus salmoides*, and five Johnny darters, *Etheostoma nigrum* individuals were acquired from fish hatcheries and streams in the middle Ohio River drainage (Outside of the native range of *Cambarunio taeniatus* to avoid host immunity). Before infecting the fish, they were anesthetized for approximately 1-2 minutes using MS-222. The operculum was then held open to efficiently flush 0.25mL of glochidia (approximately 437 individuals) on the gills. To avoid potential damage to both sides of the fish's gills, we only flushed one side. The twelve fish were then monitored to determine glochidia attachment over the course of two to three weeks. The tanks were siphoned each day to inspect any detritus for juvenile mussels that had fallen off the fish host, and the number of

juveniles off each host was recorded. Tanks were monitored until no juveniles were found for three days in a row.

Table 1 shows the species used, the date that the fish were infected, if attachment occurred, how long the attachment lasted, the time span it took for juveniles to finish falling off, and the total number of juveniles found off each fish. The results of the experiment show that the fish-host and mussel interaction occurred on all three species, *Micropterus salmoides*, *Lepomis megalotis*, and *Etheostoma nigrum*. Based on the collected data, we can confirm three host species for *Cambarunio taeniatus*.

Table 1. *Cambarunio taeniatus* host suitability trial results.

Species	No. Fish Inoculated	No. of Fish Survived	No. Juveniles	Max. No. of Juvenile Dropping Days
<i>Micropterus salmoides</i>	3	3	153.8	11
<i>Lepomis megalotis</i>	4	4	74.6	13
<i>Etheostoma nigrum</i>	5	5	29.8	5

All of the fish used in the experiment dropped at least eight live, juvenile mussels. The average number of live juvenile mussels dropped per fish was 86.1. *Micropterus salmoides* had the greatest output of live juveniles compared to *L. megalotis* and *E. nigrum*. The most productive method of juvenile *C. taeniatus* would be to use the largemouth bass, *M. salmoides*, as a fish host, though results indicate that the *L. megalotis* and *E. nigrum* are viable options as fish hosts for *C. taeniatus* as well. This study helps add to our understanding of *C. taeniatus* host relationships. We added three new host fish species and an entire new host family (Percidae) to the list of suitable hosts for *C. taeniatus*. Identifying new fish host requirements for *C. taeniatus*

will help lay the foundation for its conservation in the future by providing an efficient reproduction method.

We would like to thank the Kentucky Department of Fish and Wildlife Services, and specifically Monte McGregor for providing us with gravid female mussels to use in this study. We also like to thank the Thomas More University Biology Field Station for funding and support.

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Submitted by Sean M. Hartzell

New Records for the Watercress Snail (*Fontigens nickliniana*, Lea 1838) in Pennsylvania

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The Watercress Snail, *Fontigens nickliniana* (Lea 1838) is a minute Hydrobiid with an affinity for cold hardwater springs (Dillon et al. 2019). Although *F. nickliniana* is known from parts of the Atlantic Slope basins in southcentral and southeastern Pennsylvania, records of this

species are rare in this region (Hershler et al. 1990; Evans and Ray 2010; Dillon et al. 2019). The limited abundance and geographic distribution of this species in Pennsylvania has led to its listing as a “species of greatest conservation need” (S2 rank; vulnerable) in the 2015-2025 Pennsylvania Wildlife Action Plan.

During surveys from 2022-2024 evaluating the geographic distribution of the invasive New Zealand Mudsnailed (*Potamopyrgus antipodarum*, Gray 1843) in Pennsylvania (S.M. Hartzell, unpublished data) previously undocumented populations of *F. nickliniana* were incidentally discovered within two novel watersheds of the Juniata River Sub-basin of the Susquehanna River. On 15 April 2022, populations of *F. nickliniana* were documented associated with two springs feeding into Piney Creek in Blair County, Pennsylvania. On 11 September 2024, a population of *F. nickliniana* was discovered in association with a small spring feeding into the Little Juniata River in Huntington County, Pennsylvania. Records with specific locality information and voucher photographs have been submitted to the Pennsylvania Natural Heritage Program and Freshwater Gastropods of North America databases.

Upon review of other documented records for *F. nickliniana* in Pennsylvania (reported in Hershler et al. 1990 and in Dillon et al. 2019), this species has previously been documented among seven counties (Berks, Chester, Centre, Clinton, Cumberland, Franklin, and Huntington). Therefore, the Blair County collection reported here represents a new county record for this species in Pennsylvania. *F. nickliniana* has previously been collected in two other locations in Huntington County outside of the Little Juniata River. Given the status of this rare snail species in Pennsylvania, it is also of note that the recent invasion of *Potamopyrgus antipodarum* into waters occupied by *F. nickliniana* such as Spring Creek, Centre County, Letort Spring Run, Cumberland County, Fishing Creek, Clinton County, and Valley Creek, Chester County (Hartzell and Macelko 2022) may be of concern for the conservation of this species.

Acknowledgements

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Submitted by Arthur E. Bogan
A Provisional List of the Mexican Sphaeriidae: Common and Scientific Names, and distribution.

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During the FMCS Bivalves Common and Scientific Names Subcommittee meeting held 10 April 2023 in Portland, Oregon, we discussed expanding the FMCS list of freshwater bivalves to include the Sphaeriidae. These are Fingernail, Pill or Pea clams and have a global distribution excluding Antarctica. This family was included in Turgeon et al. (1988, 1998) volumes of common and scientific names but was not included in Williams et al. (2017) or the FMCS (2019, 2021, 2023) lists of freshwater bivalves of North America. We also discussed at the FMCS meeting adding the freshwater mollusks of Mexico to the common and scientific names list.

Sphaeriidae is the second largest freshwater bivalve family currently containing 260 recognized modern species in two subfamilies and eight genera (MolluscaBase, 2024). Bogan (2008) reported 196 species, while Graf (2013), Lee (2019), and Graf and Cummings (2021) estimated current worldwide Sphaeriidae diversity at 227 species. The most recent Sphaeriinae phylogeny was by Bespalaya et al. (2023).

Publications on the Sphaeriidae of North America (Burch (1973, 1975) only included taxa found in Canada and the United States and made no mention of the Mexican sphaeriid fauna. Herrington (1962) mentioned *Euglesa obtusalis* from Mexico. and Mackie (2007) mentioned Mexican records for *Conventus insigne*, *Euglesa casertana*, *Euglesa compressa*, *Sphaerium transversum*.

The literature on Sphaeriidae of Mexico is limited. Two recent papers provide the most recent lists of this fauna (Contreras-Arquieta, 2000; Czaja et al., 2023). Older literature mentioned and described new species and provided some locality information.

Pisidium atlanticum Sterki, 1905 was described from Veracruz and recognized as valid by Pilsbry (1926). MolluscaBase (2024) and Musselp (2024) list *P. atlanticum* as a junior synonym of *Euglesa casertana* (Poli, 1791).

Sphaerium (Eupera) yucatanense (Crosse and Fischer in Fischer and Crosse (1894 2: 653, pl 63 -1-1a; pl. 64, figs. 1, 1a, b) was published as a replacement name for *Cyclas maculata* Morelet, 1851 not Anton, 1837). Musselp (2024) listed the name as a synonym of *Eupera singlyi*. MolluscaBase (2024) has listed *S. yucatanense* as a *taxon inquirendum*. Bequaert and Clench (1933) treated this species as valid from the Yucatan.

Peláez Parra (2020) noted in her unpublished honors thesis on the archaeological freshwater mollusks of Tlatelolco, Mexico City, that four species were recorded from the Basin of Mexico: *Pisidium casertanum*, *Pisidium milium*, *Sphaerium transversum* and *Sphaerium striatinum* (Lozada Flores, 2010). She identified specimens of two species *Pisidium casertanum* [= *Euglesa casertana*] and *Sphaerium striatinum* from the archaeological deposits examined. Peláez Parra (2020) also recorded *Sphaerium (Musculium) lacustre* from Tlatelolco, Mexico City.

Pisidium obtusale Pfeiffer, 1821 was mis-identified and the earliest name available is *Euglesa obtusalis* (Lamarck, 1818) (MolluscaBase 2024; Musselp 2024). It was listed from Mexico by Herrington (1962) and Contreras Arquieta (2000) but no specific localities or provinces were given.

Herrington (1962) listed *Sphaerium transversum* (Say, 1829), *Pisidium casertanum* (Poli, 1791), *Pisidium compressum* Prime, 1851, *Pisidium nitidum* Jenyns, 1832, *Pisidium obtusale* Pfeiffer, 1821, *Pisidium punctiferum* (Guppy, 1867) from Mexico without specific locality given.

Table 1. Presents an update of the taxonomy of the Sphaeriidae listed by Contreras-Arquieta (2000) and Czaja et al. (2023) compared with the taxonomy presented by MolluscaBase (2024) and MUSSEPP (2024). These results are the basis for Table 2 to list any known common names and the reported distribution in Mexico.

Table 1. List of Sphaeriidae reported by Contreras Arquieta (2000) and Czaja et al. (2023) compared with, the taxonomy used in Musselp (2024) and MolluscaBase (2024).

Contreras-Arquieta (2000)	Czaja et al. (2023)	Mussel p	MolluscaBase	Revised list
<i>Pisidium casertanum</i> (Poli, 1791)	<i>Euglesa casertana</i> (Poli, 1791)	<i>Euglesa casertana</i> (Poli, 1791)	<i>Euglesa casertana</i> (Poli, 1791)	<i>Euglesa casertana</i> (Poli, 1791)
<i>Pisidium compressum</i> Prime, 1852	<i>Euglesa compressa</i> (Prime, 1852)	<i>Euglesa compressa</i> (Prime, 1852)	<i>Euglesa compressa</i> (Prime, 1852)	<i>Euglesa compressa</i> (Prime, 1852)
	<i>Eupera cubensis</i> (Prime, 1865)	<i>Eupera cubensis</i> (Prime, 1865)	<i>Eupera cubensis</i> (Prime, 1865)	<i>Eupera cubensis</i> (Prime, 1865)
<i>Eupera insignis</i> Pilsbry, 1926	<i>Eupera insignis</i> Pilsbry, 1926	<i>Eupera insignis</i> Pilsbry, 1926	<i>Eupera insignis</i> Pilsbry, 1926	<i>Eupera insignis</i> Pilsbry, 1926
	<i>Eupera singleyi</i> (Pilsbry, 1889)	<i>Eupera singleyi</i> (Pilsbry, 1889)	<i>Eupera singleyi</i> (Pilsbry, 1889)	<i>Eupera singleyi</i> (Pilsbry, 1889)
		<i>Conventus insigne</i> (Gabb, 1868)	<i>Conventus insigne</i> (Gabb, 1868)	<i>Conventus insigne</i> (Gabb, 1868)
	<i>Musculium partumeium</i> (Say, 1822)	<i>Sphaerium partumeium</i> (Say, 1822)	<i>Sphaerium partumeium</i> (Say, 1822)	<i>Sphaerium partumeium</i> (Say, 1822)
<i>Sphaerium subtransversum</i> Prime, 1860	<i>Musculium subtransversum</i> (Prime, 1860)	<i>Sphaerium subtransversum</i> Prime, 1860	<i>Sphaerium subtransversum</i> Prime, 1860	<i>Sphaerium subtransversum</i> Prime, 1860
<i>Musculium transversum</i> (Say, 1829)	<i>Musculium transversum</i> (Say, 1829)	<i>Sphaerium transversum</i> (Say, 1829)	<i>Sphaerium transversum</i> (Say, 1829)	<i>Sphaerium transversum</i> (Say, 1829)
<i>Pisidium abditum</i> Haldeman, 1841		<i>Euglesa casertana</i> (Poli, 1791)	<i>Euglesa casertana</i> (Poli, 1791)	<i>Euglesa casertana</i> (Poli, 1791)
<i>Pisidium nitidum</i> (Jenyns, 1832)	<i>Pisidium nitidum</i> (Jenyns, 1832)	<i>Euglesa nitida</i> (Jenyns, 1832)	<i>Euglesa nitida</i> (Jenyns, 1832)	<i>Euglesa nitida</i> (Jenyns, 1832)
<i>Pisidium obtusale</i> Pfeiffer, 1821		<i>Euglesa obtusalis</i> (Lamarck, 1818)	<i>Euglesa obtusalis</i> (Lamarck, 1818)	<i>Euglesa obtusalis</i> (Lamarck, 1818)

<i>Pisidium punctiferum</i> (Guppy, 1867)	<i>Pisidium punctiferum</i> (Guppy, 1867)	<i>Pisidium punctiferum</i> (Guppy, 1867)	<i>Pisidium punctiferum</i> (Guppy, 1867)	<i>Pisidium punctiferum</i> (Guppy, 1867)
<i>Pisidium vegae</i> Pilsbry, 1926		<i>Pisidium vegae</i> Pilsbry, 1926	Not listed	<i>Pisidium vegae</i> Pilsbry, 1926
<i>Sphaerium jalapensis</i> Pilsbry, 1904		<i>Sphaerium jalapensis</i> Pilsbry, 1904	<i>Sphaerium striatinum</i> (Lamarck, 1818)	<i>Sphaerium striatinum</i> (Lamarck, 1818)
<i>Sphaerium luridum</i> Martens, 1900		<i>Sphaerium luridum</i> Martens, 1900	<i>Sphaerium striatinum</i> (Lamarck 1818)	<i>Sphaerium striatinum</i> (Lamarck, 1818)
<i>Sphaerium martensi</i> Pilsbry, 1899	<i>Sphaerium martensi</i> Pilsbry, 1899	<i>Sphaerium martensi</i> Pilsbry, 1899	<i>Sphaerium martensi</i> Pilsbry, 1899	<i>Sphaerium martensi</i> Pilsbry, 1899
<i>Sphaerium mexicanum</i> Dall, 1905	<i>Sphaerium mexicanum</i> Dall, 1905	<i>Sphaerium mexicanum</i> Dall, 1905	<i>Sphaerium mexicanum</i> Dall, 1905	<i>Sphaerium mexicanum</i> Dall, 1905
<i>Sphaerium novoleonis</i> Pilsbry, 1904		<i>Sphaerium novoleonis</i> Pilsbry, 1904	Not listed	<i>Sphaerium novoleonis</i> Pilsbry, 1904
<i>Sphaerium queretaronis</i> Pilsbry, 1926		<i>Sphaerium queretaronis</i> Pilsbry, 1926	Not listed	<i>Sphaerium queretaronis</i> Pilsbry, 1926
<i>Sphaerium striatinum</i> (Lamarck, 1818)	<i>Sphaerium striatinum</i> (Lamarck, 1818)	<i>Sphaerium striatinum</i> (Lamarck, 1818)	<i>Sphaerium striatinum</i> (Lamarck, 1818)	<i>Sphaerium striatinum</i> (Lamarck, 1818)
	<i>Sphaerium triangulare</i> (Say, 1829)	<i>Sphaerium triangulare</i> (Say, 1829)	<i>Sphaerium triangulare</i> (Say, 1829)	<i>Sphaerium triangulare</i> (Say, 1829)

Table 2. Updated list of Sphaeriidae reported from Mexico with their scientific and common names, and distribution. English common names are from Turgeon et al., 1998. Spanish common names are from the literature or were newly constructed (ENG). Distribution is based on Pilsbry (1899, 1904, 1926); Sterki (1905); Bequaert and Clench (1933, 1936); Jacobson (1952); Contreras-Arquieta (1995, 2000); Cózatl-Manzano and Naranjo-García, (2007); Oseguera, Alcocer and Escobar (2016); Cuezco et al. (2020); Peláez Parra (2020); Czaja et al. (2022, 2023).

Revised list for Mexico	Common names [English]	Common names [Spanish]	Mexican distribution
<i>Conventus insigne</i> (Gabb, 1868)	Tiny Peaclam		VER
<i>Euglesa casertana</i> (Poli, 1791)	Ubiquitous Peaclam		EDOMEX, VER
<i>Euglesa compressa</i> (Prime, 1852)	Ridgebeak Peaclam	Almeja Comprimida	COAH, NL, SLP
<i>Euglesa nitida</i> (Jenyns, 1832)	Shiny Peaclam		COAH
<i>Euglesa obtusalis</i> (Lamarck, 1818)		Almeja obtusa	?
<i>Eupera cubensis</i> (Prime, 1865)	Mottled Fingernailclam		COAH
<i>Eupera insignis</i> Pilsbry, 1926		Almeja distinguida	VER
<i>Eupera singleyi</i> (Pilsbry, 1889)		Almeja de singley	YUC
<i>Pisidium punctiferum</i> (Guppy, 1867)	Striate Peaclam		SIN
<i>Pisidium vegae</i> Pilsbry, 1926		Almeja de vega	QR
<i>Sphaerium martensi</i> Pilsbry, 1899		Almeja de martens	MICH
<i>Sphaerium mexicanum</i> Dall, 1905		Almeja mexicana	SLP
<i>Sphaerium novoleonis</i> Pilsbry, 1904		Almeja de Nuevo León	NL
<i>Sphaerium partumeium</i> (Say, 1822)	Swamp Fingernailclam		TAB
<i>Sphaerium queretaronis</i> Pilsbry, 1926		Almeja de Querétaro	QRO, VER
<i>Sphaerium striatinum</i> (Lamarck, 1818)	Striated Fingernailclam		JAL, QRO, VER
<i>Sphaerium subtransversum</i> Prime, 1860		Almeja subtransversa	EDOMEX, MICH, TAB, YUC
<i>Sphaerium transversum</i> (Say, 1829)	Long Fingernailclam		QRO, TLAX
<i>Sphaerium triangulare</i> (Say, 1829)		Almeja triangular	EDOMEX, GTO, JAL, MICH,

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Submitted by Jackson Roe (jacksonroe@gmail.com)

Two Scaleshells Discovered in the Fourche La Fave River, AR

The scaleshell mussel (*Potamilus leptodon*) is a critically imperiled species that has seen a drastic decline in its range over the past few decades. While it could once be found in many states, it is now only be reliably found in few rivers in Missouri. That is, until now.

I reported the discovery of a female scaleshell relic in October of 2023. Since that was published, I have discovered three recently dead specimens on the Fourche La Fave River in central Arkansas. Two of these shells were discovered within one month of each other.

The three shells discovered in 2024 are composed of recently dead specimens apparently scavenged by predators, their nacre being quite purple and iridescent. The specimens are two males and one female, which brings the total over the past year to 2.2 discovered.

This is unusual as the males seem to outnumber females 6 to 1 in Missouri. The females seem to sacrifice themselves to the host fish to spread their glochidia. The first female relic discovered in 2023 seemed to have gone through this process as most of the anterior of the shell had been broken off. The 2023 specimen was relatively small, at about three inches, while the specimens discovered in 2024 were all about maximum adult size at four inches.

Two shells (one male and one female) were partially broken on the bank of the river, having recently been opened by raccoons. As this is a species that remains burrowed for most of its life, the ability of raccoons to locate these specimens possibly indicates a decent population size. Indeed, they are not the rarest mussel species in the Fourche La Fave assemblage as far as I can tell. That distinction belongs to the bankclimber and spike mussels, of which I have only ever found two of each species.

That a new, apparently viable population of such a species should be discovered like this gives hope to other mussel species as well. The fact of the matter is that not many people are actively searching for mussels, or know how to identify them correctly. How many other populations unknown to science are out there?

Submitted by Hannah Grosser

New Mussel Species Occurrences Observed in Lower Rice Creek, a Minnesota Metropolitan Stream

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Many mussels are native to Minnesota and are entwined in aquatic ecosystems. For example, they filter water, improve habitat, and provide food for other organisms (see reviews in Nobles and Zhang 2011, Haag 2012). Recent survey work in Rice Creek, a large stream in the Twin Cities Metro area, has shown that the diversity of mussels in this stream is greater than previously realized (Neira et al. 2022). The purpose of this project was to better describe the extant and historical distribution of the mussel species in the lower reaches of Rice Creek.

We performed mussel surveys of several reaches of lower Rice Creek throughout the September and October of 2023. We surveyed most reaches in thirteen-minute increments, starting downstream and moving upstream. Wading in a line, we used clear-bottomed buckets to block the glare of the water, and we collected live mussels, dead shells, and shell fragments. Additionally, we searched the banks for shells. All mussels were identified to species, live mussels were placed in the age categories of <5 and ≥5 years, and stream bed composition was estimated (Wentworth 1922). All live mussels, and most shells, were returned to the section where they were found. For some searches, we only recorded a species list. Survey length was estimated using Google Maps. Mussel nomenclature followed Williamson et al. (2017).

We observed twelve mussel species during our survey. Giant Floater, Fatmucket, and White Heelsplitter had the widest distributions (Table 1). These three species were also the most commonly observed at most sites, followed by Fragile Papershell. Four species were only observed at Rice Creek West Regional Trail. Also, we observed the greatest mussel recruitment and mussel abundance at Rice Creek West Regional Trail (west) (Table 2). Rice Creek West Regional Trail (east) had the most diversity.

We observed a variety of stream habitats among our survey reaches. Stream discharge changed considerably over the course of our survey. Although stream discharge was low during mid-September, 0.5 ft³/s, it climbed to 15 ft³/s by early October, and on October 14 it was 60 ft³/s (USGS 2024). Generally, the bed of Rice Creek consisted of silt, sand, gravel, and cobble. Rice Creek is an urban stream, but at our study sites the riparian area was consistently surrounded by vegetation: forest with largely buckthorn understory and grassy areas.

Table 1. Mussel species observed in Rice Creek, September-October, 2023. Live and dead collection rates (CPUE: number of mussels/person hour) are reported for each study reach.

Site Name		Black Sandshell	Creek Heelsplitter	Fatmucket	Fragile Papershell	Giant Floater	Lilliput	Paper Pondshell	Plain Pockerbook	Pink Heelsplitter	Threeridge	Wabash Pigtoe	White Heelsplitter	Unknown spp.
Creekview Park	Live		0.63		0.94								0.63	
	Dead			0.94	4.7								7.8	3.4
Rice Creek West Regional Trail (west)	Live		0.77		1.6								1.5	
	Dead	0.38	1.5	1.9	26					0.38			24	7.7
Rice Creek West Regional Trail (east)	Live									0.67				
	Dead		1.3	3.3	1.3	4		1.3	0.67	1.3	0.67	3.3		
Upstream of Creekview Park	Live													
	Dead			5.9	12								12	
Rice Creek North Regional Trail South Segment	Live													
	Dead		4.7	3.3	4.7	2	3.3						4.7	1.3
Manomin County Park	Live		0.38		0.38	0.38	0.38		0.38					
	Dead			0.77	0.38				0.38					
Locke Park (west bridge)	Live													
	Dead		1.3		2.5	0.42		0.42					1.7	4.2
Locke Park (central bridge)	Live		0.42											
	Dead		1.3		1.3								1.7	9.2

Table 2. Live mussels observed in Rice Creek, September-October, 2023. Age (no. <5 yr and no. ≥5 yr) collection rates (CPUE: number of mussels/person hour) are reported for each study reach.

Site Name		Mussel Species							Total CPUE
		Fatmucket	Giant Floater	Lilliput	Paper Pondshell	Pink Heelsplitter	Threeridge	White Heelsplitter	
Creekview Park	No. <5 yr	0.31	0.94					0.31	1.56
	No. ≥5 yr	0.31						0.31	0.62
Rice Creek West Regional Trail (west)	No. <5 yr	0.38	0.77					1.6	2.75
	No. ≥5 yr	0.38	0.38					0.38	1.14
Rice Creek West Regional Trail (east)	No. <5 yr								0
	No. ≥5 yr					0.67			0.67
Upstream of Creekview Park	No. <5 yr								0
	No. ≥5 yr								0
Rice Creek North Regional Trail South Segment	No. <5 yr								0
	No. ≥5 yr								0
Manomin County Park	No. <5 yr	0.38	0.38	0.38	0.38				1.52
	No. ≥5 yr					0.38			0.38
Locke Park (west bridge)	No. <5 yr								0
	No. ≥5 yr								0
Locke Park (central bridge)	No. <5 yr								0
	No. ≥5 yr	0.42							0.42

The purpose of this study was to better describe the extant and historical mussel assemblage of lower Rice Creek. Although significant efforts have been undertaken to survey sections of Rice Creek, e.g., Neira et al. (2022), we found the following previously unreported mussel species: Creek Heelsplitter, Pink Heelsplitter, Threeridge, and Wabash Pigtoe. One Park, Rice Creek West Regional Trail, may hold species formerly thought to be extirpated from this basin. One reach held shells of the four unreported mussel species. We were surprised to find one Threeridge still living at this site. Another reach in this park showed the highest total mussel recruitment rate. We recommend further survey work be conducted in Rice Creek, especially at Rice Creek West Regional Trail, to determine if other mussels thought to be extirpated from Rice Creek still live in this stream.

We have two recommendations for future Rice Creek mussel surveys, especially if they will be done by students with little specialized equipment. First, for deeper sections of the creek, there needs to be a better method of finding mussels, rather than a bucket with a clear bottom to block glare. It did not reach down far enough so we were unable to search as well as might be possible. Also, when the stream had faster currents, greater depth, and murkier water, our methods of finding mussels were hindered. Alternatively, survey work should be conducted when stream flows are low and people can better survey the stream with water scopes. Secondly, surveying more of Rice Creek, especially unsurveyed stretches, would better document the ranges of mussel species within the stream.

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Submitted by **Trisha Gibson**

New and Confirmed Host Identifications for Freshwater Mussels

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Columbus Zoo and Aquarium Watters Aquatic Conservation Center & The Ohio State University

New and confirmed host laboratory transformations are reported for *Elliptio complanata*, *Lampsilis cardium*, *Strophitus undulatus*, and *Lampsilis fasciola*. Glochidia were flushed from the female's gills using a water-filled syringe. The glochidia were placed in a bucket of aerated water with potential host fish for fifteen minutes.

* Denotes apparent new host identification

Elliptio complanata

Fish species	Days to transformation	# juveniles	% transformed	Temp C	Infected
Scarlet shiner *	12	8	42.10%	22	June
Spotfin shiner	15	11	61.11%	22	June
Striped shiner	15	8	57.14%	22	June
Blacknose dace	15	2	100.00%	22	June

The following yielded no results: Bullhead catfish, longear sunfish, striped shiner, black crappie, and creek chub.

Lampsilis fasciola

Fish species	Days to transformation	# juveniles	% transformed	Temp C	Infected
Black crappie *	14	20	8.10%	22	July
Largemouth bass	15	293	43.54%	22	July

The following yielded no results: yellow perch, rockbass, top minnow, bluntnose minnow, and sunfish.

Strophitus undulatus

Fish species	Days to transformation	# juveniles	% transformed	Temp C	Infected
Scarlet shiner *	11	4	57.14%	22	April
Green sunfish	11	2	6.13%	22	April

The following yielded no results: bluntnose minnow, fathead minnow, rainbow darter, and brindled madtom

Lampsilis cardium

Fish species	Days to transformation	# juveniles	% transformed	Temp C	Infected
Striped bass *	14	89	60.50%	22	June
Largemouth bass	14	11	34.40%	22	June
Largemouth bass	14	14	48.28%	22	June
Largemouth bass	14	21	60.00%	22	June

Largemouth bass	14	13	46.43%	22	June
Largemouth bass	14	22	3.97%	22	June

Submitted by **Martin Stenske**

First observations of *Lampsilis siliquoidea* metamorphosis on Silver Lamprey and Central Mudminnow

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Lampsilis siliquoidea, or Fatmucket, are thought to be host generalists (INHS 2022), using a wide variety of fish species to facilitate metamorphosis during their parasitic stage of growth as glochidia. While the list of suitable hosts for *L. siloquoidea* is long, further research provides evidence for understudied host species being suitable for glochidia metamorphosis. In this study, we tested several fish species that currently have little or incomplete data on their host-parasite relationship to *L. siliquoidea*.

Test fishes were collected from a variety of locations. *Ambloplites rupestris* and *Perca flavescens* were collected from the St. Croix River, MN in two locations using trap nets. Eight *Icthyomyzon unicuspis* were provided by the Minnesota Dept. of Natural Resources and Tim Adams, a commercial fisherman. We obtained four *Culaea inconstans* and two *Umbra limi* from Minnesota bait stores.

Inoculation of fishes followed standard procedures (Hove et al. 2012, Hove et al. 2016). Fishes were held in species-specific aquaria. *Ambloplites rupestris* and *P. flavescens* were fed worms and bait minnows; *U. limi* and *C. inconstans* were given bloodworms. *Catostomus commersonii* were used to feed *I. unicuspis* throughout the study. Water temperature was gradually raised from 20° C to 22° C over the first fourteen days of the study after which time it was held at 22° C. The University laboratory team checked aquaria for glochidia two days after inoculation and twice weekly thereafter. At Grantsburg High School, the first glochidia check occurred 19 days after inoculation and checks continued once or twice a week. Since *P. flavescens* is an established *Lampsilis siliquoidea* host (Coker et al. 1921), this species served as a positive control to demonstrate that glochidia consistently metamorphosed. The glochidia metamorphosis percentage was calculated as $\frac{\text{observed juveniles}}{\text{observed juveniles} + \text{glochidia}} \times 100$. For data collected in 2023 and for trials conducted at GHS, there were incomplete glochidia counts so glochidia

metamorphosis rates could not be determined. Mussel and fish nomenclature follows Williams et al. 2017 and Page et al. 2023, respectively.

We had mixed results in this study. Glochidia metamorphosis was observed for all *P. flavescens* positive controls (Table 1), and percent glochidia metamorphosis calculated for *C. inconstans*, *U. limi*, and *I. unicuspis*, was 39%, 33%, and 21%, respectively. No metamorphosis was observed on *Margariscus nachtriebi*, *Ameiurus melas*, *A. nebulosus*, *Ambloplites rupestris*, and *Lepomis macrochirus*.

We identified two unknown suitable hosts and confirmed previously determined potential hosts for *Lampsilis siliquoidea*. To our knowledge, this is the first report of *Ichthyomyzon unicuspis* and *Umbra limi* serving as potential hosts. We verified *L. siliquoidea* metamorphosis on *Culaea inconstans*, *Pomoxis nigromaculatus*, *Etheostoma exile*, *E. nigrum*, and *Perca flavescens* (Coker et al. 1921, Draxler et al. 2006, Wilke et al. 2021, Wilson-Thieroff et al. 2022). *Pimephales notatus* and *Ambloplites rupestris* did not support glochidia metamorphosis in our study, but these species were suitable hosts in other analyses (O'Dee and Watters 2000, Woolnaugh 2002, McNichols et al 2009). *Catostomus commersoni*, *Ameiurus melas*, and *A. nebulosus* appear to be unsuitable *L. siliquoidea* hosts (Coker et al. 1921, Wilke et al. 2021, Wilson-Thieroff et al. 2022). Although the glochidia host relationships for *L. siliquoidea* are one of the most thoroughly studied with nearly 70 fish species (18 families) tested (INHS 2024, this study), there are nine fish families and over 100 fish species co-occurring with *L. siliquoidea* that have not been studied (Williams et al. 1993, Page and Burr 2011).

Several groups supported our work. We thank Joel Stiras, Minnesota Dept. of Natural Resources, Tim Adams (commercial fisherman), Joe's Sporting Goods, and Walleye Willy's Bait & Tackle, who were essential in obtaining study fishes. Data collection in 2024 was supported by the University of Minnesota's Office of Undergraduate Research.

Table 1. *Lampsilis siliquioidea* host suitability trial results. For suitable host species the range of days juveniles were released are reported. For unsuitable hosts the ending of the glochidia attachment period is reported. Trials conducted in 2023 are marked with an asterisk and those conducted at GHS are marked with a ^G.

Fish species	No. fish inoculated	No. fish survived	No. juveniles recovered	Percentage glochidia metamorphosis	Juvenile release/glochidia attachment period (days)
<i>Ichthyomyzon unicuspis</i>	8	7	23	21%	17-21
<i>Chrosomus eos</i> [*]	3	2	0		8-11
<i>Margariscus nachtriebi</i> ^G	5	5	0		24-31
<i>Notemigonus crysoleucas</i> [*]	1	1	0		14-18
<i>Notropis hudsonius</i> [*]	2	2	0		11-14
<i>Pimephales notatus</i> [*]	2	1	0		8-11
<i>Catostomus commersoni</i> [*]	4	4	0		8-11
<i>Ameiurus melas</i> [*] I	2	2	0		8-11
<i>A. melas</i> ^G II	4	4	0		24-31
<i>Ameiurus natalis</i> [*]	3	3	0		11-14
<i>Ameiurus nebulosus</i> [*] I	1	1	0		14-18
<i>A. nebulosus</i> ^G II	1	1	0		27-34
<i>Esox lucius</i> ^G	1	1	19		19-34
<i>Umbra limi</i> I	2	1	21	33%	14-21
<i>U. limi</i> ^G II	8	8	32		1-24
<i>Culaea inconstans</i>	6	4	63	39%	14-21
<i>Ambloplites rupestris</i> I	5	5	0	0%	3-10
<i>A. rupestris</i> II	4	1	0	0%	3-14
<i>Lepomis macrochirus</i> ^G	2	2	0		27-34
<i>Micropterus nigricans</i> ^G	1	1	13		19-34
<i>Pomoxis nigromaculatus</i> [*]	4	1	65		11-29
<i>Etheostoma exile</i> [*]	12	12	3		11-14
<i>Etheostoma nigrum</i> [*]	4	3	2		11-14
<i>Perca flavescens</i> I [*]	10	10	1041		11-22
<i>P. flavescens</i> II	4	3	83	36%	17-21
<i>P. flavescens</i> III	4	3	110	17.3%	14-21

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Submitted by **Sara R. Craft**

SURVEY RESULTS ON THE POTENTIALLY PROBLEMATIC USE OF “MONKEYFACE” IN FRESHWATER MUSSEL COMMON NAMES

Sara R. Craft¹ and John M. Pfeiffer²

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INTRODUCTION

In the [Spring 2024 issue of Ellipsaria](#), the Diversity, Equity, and Inclusion (DEI) Committee encouraged members to complete a survey regarding the use of “Monkeyface” in five freshwater mussel common names currently recognized by FMCS. Presented here is a brief summary of results capturing attitudes towards the use of “Monkeyface”, the potential name change, and suggestions for alternative names.

SURVEY METHODS

The survey collected voluntary, anonymous responses to four multiple-choice and three short answer questions during an approximate 10-week period. The survey was distributed to all active FMCS members via email in April 2024. An associated article (Pfeiffer et al. 2024) and request for participation was published in the Spring 2024 issue of *Ellipsaria* (Vol 26, #1). One reminder email was distributed in May 2024, and the survey was closed in June 2024. Results for multiple-choice questions and a summary of written comments are presented here. Full results can be accessed [here](#).

SURVEY RESULTS

In total, 78 survey responses were collected. When asked whether participants found the use of “Monkeyface” in common names to be problematic, distribution of responses was fairly even (Figure 1). The most common response (38%) was that participants perceived the name as problematic. Comparatively, 32% of participants did not find the name offensive, and 30% were unsure. Participants who found the name problematic and provided a written response (n=20) cited known racial connotations of the term, its use alongside other more overtly racist common names, and a desire to proactively avoid names perceived as offensive. Participants who were unsure and provided a written response (n=20) were frequently unaware of any potential racial connotation but were open to the possibility of the name being offensive. Those who did not perceive the name as offensive and provided a written response (n=17) primarily commented that they had only ever considered the name as a literal reference to a primate and did not find the historical context relevant.

When asked whether participants would support changing the common names of the five “Monkeyface” species, 67% of participants were in favor of changing the names, 13% were unsure, and 20% did not support changing the names. Participants who supported the changes and chose to comment (n=33) predominantly expressed a desire to avoid potentially exclusionary names even if they did not personally find the names offensive. Those who were unsure and chose to comment (n=6) also generally expressed a lack of personal offense but were willing to change the names if offense was demonstrated. Those who commented and did not support changing the names (n=11) cited a variety of reasons including disbelief in the offensiveness of the names, reluctance to change well-established names, and potential for changes to create confusion.

Participants were also asked if they thought “Rockshell”, a previously used common name for a species in this group (Neves et al 1997), was a suitable alternative for “Monkeyface”. About 19% of participants did not believe any changes should be made. Of those who were not opposed to common name changes, 56% indicated that they supported “Rockshell” as a possible alternative, whereas 18% were unsure, and 7% were opposed. Finally, participants were asked to contribute alternative common names for the Monkeyface group. Other suggested names included “Knobbyface/Knobbyshell”, “Duckfoot”, “Goosefoot”, “Chitlinshell”, “Hawshell”, “Popcornshell”, “Enlistedshell”, “Pebbleshell”, and “Toadshell”.

SUMMARY

Overall, while many survey participants were not personally offended by the use of “Monkeyface” in freshwater mussel common names, two-thirds of participants supported changing the common names of the five species. Most who supported the name changes perceived the use of “Monkeyface” as having racial connotations and wanted to avoid potentially offensive language. Most who opposed name changes rejected the idea that “Monkeyface” was used with racist intent or did not perceive historical context as relevant to current usage.

The FMCS DEI Committee plans to submit a petition to the FMCS Common and Scientific Names Committee to change the common names of the five currently recognized species that include the word “Monkeyface”. As with all petitions, members will have 60-90 days to review the petition before the FMCS Scientific and Common Names Committee holds an open discussion at the 2025 biannual symposium and makes a final vote. Please reach out to the FMCS DEI and Scientific and Common Names committees if you have any questions, concerns, or suggestions. The DEI committee thanks all participants of the survey for their time and hopes those interested in this topic will continue to engage with the process as it moves forward.

FIGURES

Do you find the use of "Monkeyface" in freshwater mussel common names to be problematic?

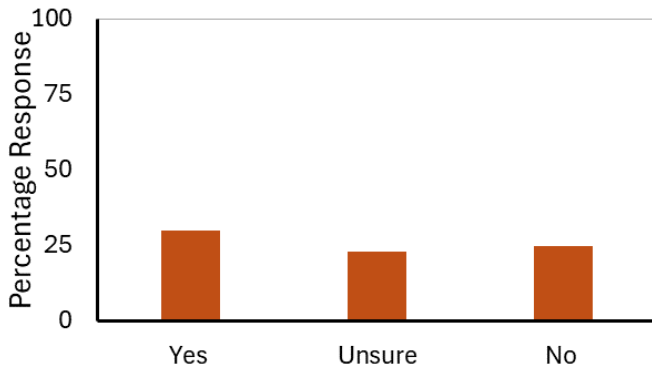


Figure 1. Attitudes towards perceived offensiveness of “Monkeyface” in common names (n=78).

Would you support changing the five common names that include "Monkeyface"?

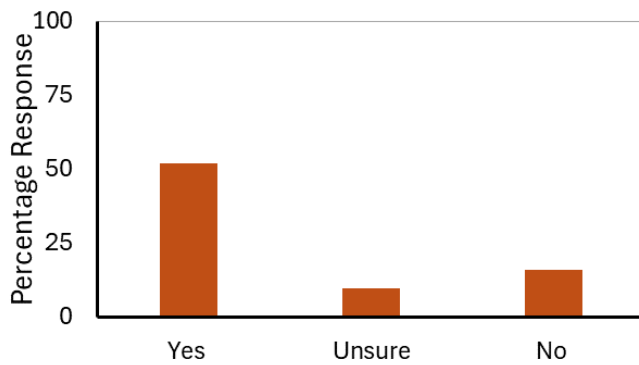


Figure 2. Support of potential common name change for five species including “Monkeyface” (n=78).

Do you think “Rockshell” could be an alternative to “Monkeyface”?

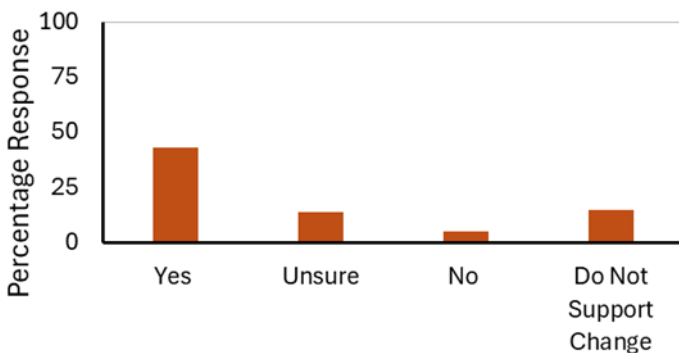


Figure 3. Opinions regarding replacement of “Monkeyface” by “Rockshell” in five common names (n=77).

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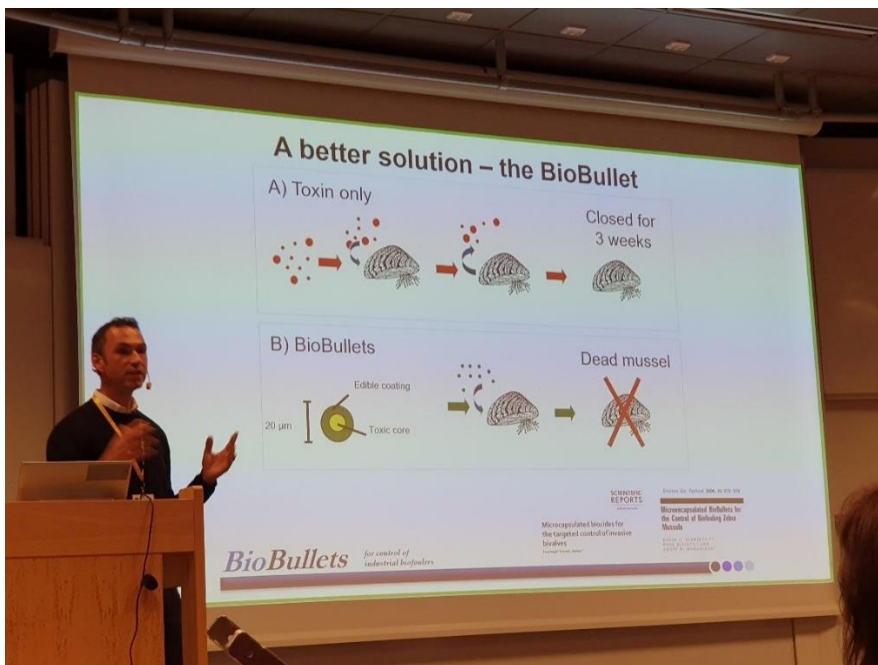
Submitted by **Martin Österling**

Second European Freshwater Mollusk Conservation Society Meeting – A Success Story

Despite the distance most attendants had to travel to arrive in the sunny city of Karlstad, Sweden, we had a phenomenal turnout to the Second European Freshwater Mollusk Conservation Society Meeting! A total of 103 participants registered for the conference, with 7 virtual attendants! This was a truly international gathering with 21 countries represented, predominantly from the European continent, but with participants from far flung countries like The Philippines, Uruguay and Morocco! The program included 6 keynote speakers and 45 talks across three days and a poster session and 25 posters. Five sponsors contributed over 5000 Euro to the conference, which helped sponsor 6 student travel grants. Paired with the conference was an event on the Whova app which helped participants network further, follow the schedule and share pictures.



The Monday before the conference began, we arranged an informal icebreaker in the central square of Karlstad to get everyone familiarized with both each other and the city. On the following Tuesday morning the meeting started with keynote talks by Dan Hua (Tennessee Wildlife Resources Agency, USA) and David Aldridge (University of Cambridge, UK). These two sessions, on mussel breeding and invasive mussel species, respectively, each served as a foundation to set the stage for the talks to follow. Following that was the first of our many organized social events with dinner and a few drinks



On Wednesday, we had two more keynote talks by Niklas Janz (Stockholm University, Sweden) and Carla Atkinson (University of Alabama, USA), again serving to set the stage for the following sessions on parasitology and ecosystem functions of freshwater mollusks. Wednesday also included a Special Session, led by Tadeuz Zajac, head of the recently ended COST – CONFREMUS project (an EU funded freshwater mussel research network), reviewing the ultimate results and stimulating discussions on where to go next. Among other things, it was approved that the European branch of FMCS and FMCS will continue to organize “trans-Atlantic” meetings! Closing off our busy Wednesday was the poster session which also served as a second social event, which highlighted a particular interest in the posters on freshwater mussel mass mortality events.



Thursday again featured two keynote talks by Wendell Haag (US Forest Service, USA) and Manuel Lopes-Lima (University of Porto, Portugal), setting the stage for two sets of talks on freshwater mollusk conservation along with genetics and diversity of freshwater mollusks more generally. Following that was our third organized social event, the conference dinner at the beautiful restaurant Terrassen in Mariebergsskogen overlooking lake Vänern with students of the local music school playing us a soundtrack of local folk music. Here, we also hosted the world famous FMCS Auction, raising over 18000 Swedish Kroner for future student travel grants!



Despite being known for its sunshine, Friday in Karlstad was quite foggy starting the fieldtrip off in a misty mystery. First, we went to a recently restored river sporting a large *Margaritifera margaritifera* population, and then off to get lunch with Älgå Hembygdsförening, which treated us to a wonderful warm soup in the mist. As the day went on and the fog started lifting, participants were treated to the full spectrum of views across the beautiful lake Glafsfjorden, visiting a local cultural museum and seeing one of Sweden's early fish-passage solutions from the 1950, still fully functional and essential to the upriver *M. margaritifera* populations.



We were incredibly thrilled to host as many people from as many counties as we did at this edition of the Freshwater Mollusk Conservation Society Meeting and hope to see everyone again soon! The knowledge exchange that happened and networking opportunities we got to experience were memorable to everyone here in the organizing committee and we hope they were for all the participants as well! Thank you all for taking pictures with our (now world famous) mussel statue, and for sharing them with us! Photo credits to Åsa Bongnell-Höjer, Lea D. Schneider, Maria Garcia Alvarez, Andreas Dobler, Stefan Fernandes, Martin Österling, Keiko Nakamura, Miguel Gomez, Juha Syväranta, Michaela Tille, Kristi Dobra, Anna Maria Łabecka and Patrik Olofsson.

Cheers!

Sebastian, Raviv and Martin

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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.

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If you are interested in participating in committee activities, please contact one of the appropriate chairs.

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Parting Shots

Submitted by **Tim Lane**

Virginia Department of Wildlife Resources biologists and partners assessed the Clinch River at Pendleton Island, in early September. Over 20 species were detected alive. The site isn't what it used to be but still supports a diverse mussel community.



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.

