



Newsletter of the Freshwater Mollusk Conservation Society
 Vol. 25 – No. 2 ISSN 2689-2936 Summer 2023

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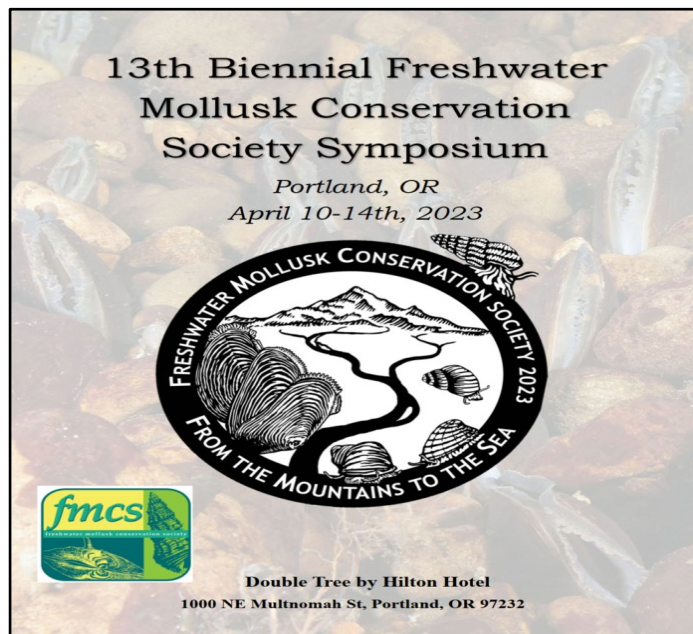
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First West Coast FMCS Symposium a Success

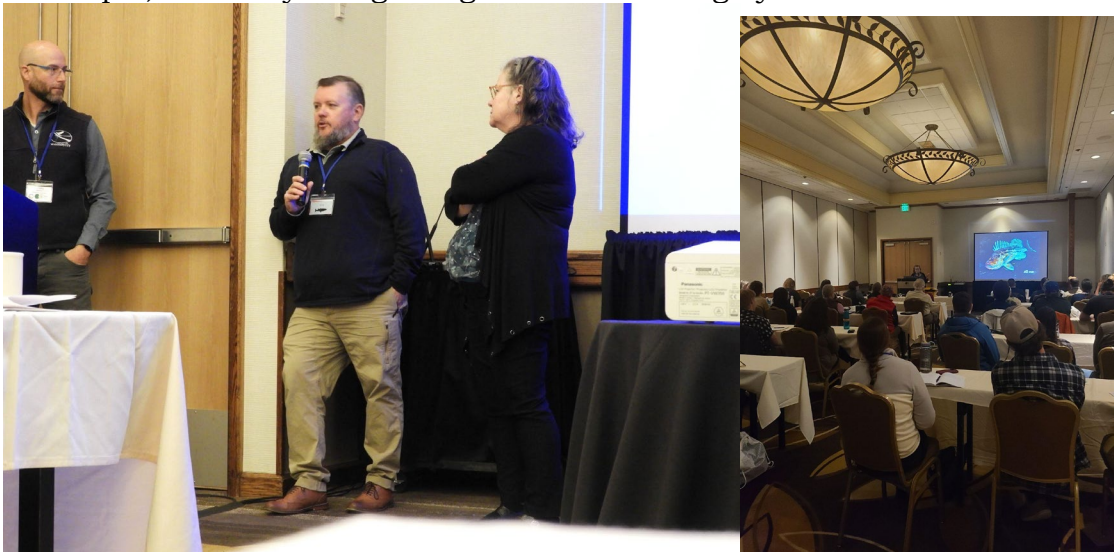
Despite the distance many attendees had to travel for the Portland, Oregon symposium, we had a great turnout at the first west coast edition! A total of 268 people attended in person, with 36 additional virtual attendees. Participants spanned 35 U.S. states (including Washington, D.C.) and 2 Canadian provinces (Ontario and Quebec), as well as 8 countries (including the US and Canada, as well as Finland, Italy, Luxembourg, Poland, Portugal, and Sweden). The program included 3 plenary speakers, 134 platform talks across three concurrent sessions, 14 lightning (5-minute)

oral presentations, and 50 posters. A total of 16 sponsors contributed more than \$14,000 to support the event.

In order to foster greater interaction and conversation during the symposium, we also piloted a new app and website. The app provided a digital schedule and program, as well as increased opportunities for communication, including scheduling meetups to tour the local sites, a platform to ask presenters questions, and a convenient way to share articles and photos with attendees.



On Monday, the meeting kicked off with the Underwater Photography and Filmography Workshop, with co-presenters Jeremy Monroe of Freshwaters Illustrated and Tim Akimoff and Laura Tesler of the Oregon Department of Fish and Wildlife sharing their extensive knowledge of equipment, technique, and storytelling using underwater imagery.



On Tuesday, the symposium opened with an invocation from Confederated Tribes and Bands of the Yakama Nation's Casey Wallahee. The first plenary speaker, Eric Quaempts of the

Confederated Tribes of the Umatilla Indian Nation (CTUIR), then shared CTUIR's approach to managing for first foods, emphasizing the importance of aquatic communities, including freshwater mollusks, to the ecology and culture of the tribes. Following the first plenary, Janine Castro of the US Fish and Wildlife Service treated attendees to a bird's eye, geological timescale view of the Pacific Northwest and the processes shaping the mountains, rivers, and mollusks in between.





The symposium also featured a Tuesday night movie hosted by Jeremy Monroe of Freshwaters Illustrated, *Hidden Rivers*, and a Thursday morning plenary hosted by the Diversity, Equity, and Inclusion committee, featuring speaker Laura Taylor from the West Multnomah Soil & Water Conservation District. The planning committee extends a special thank you to all of the invited speakers and presenters.

As the first in-person symposium since 2019, the event was particularly special for the opportunities to connect with acquaintances and make new friends at socials and mixers, including the Student/Mentor Mixer and Opening Mixer on Monday night. On Tuesday night, the poster session doubled as a social event featuring food and beverages of the Pacific Northwest.



The “world famous” FMCS Auction and Raffle took place Wednesday night, raising a total of \$7,850 for student and early career awards for the next symposium. A huge thank you to the many people and companies who supported the fundraiser!



The symposium also provided the opportunity for recognition of the incredible contributions of long-time FMCS members Teresa Newton (Meritorious Service Award) and Wendell Haag (Lifetime Achievement Award). Congratulations also to the winners of the Best Student Presentation Awards!

No gathering would be complete without field trips! Although most of the week featured typical Portland spring weather (i.e., all-day rain), we were fortunate to have warm and sunny weather for the Friday field trips! From a perfect day at the coast to waterfalls and big river views, the day did not disappoint!





We are thrilled so many were able to gather in Portland following a long break between in-person symposia! The value of gathering to exchange knowledge and make connections with each other is immeasurable, and we hope to see everyone in Michigan in 2025! Photos included here are courtesy of Janet Clayton, Emilie Blevins, and Monica Blanchard. Here are a few more photos from the week.









Society News

Freshwater Mollusk Conservation Society

Spring 2023 Board Meeting

Monday, April 10, 2023, Mt. Hood Room

Minutes

Call to order - Steve McMurray called the meeting to order at 4:36 PM.

In attendance: Steve McMurray, Alan Christian, Sarah Veselka, Jeremy Tiemann, Megan Bradley, Amy Maynard, Dan Symonds, Curt Elderkin, Heidi Dunn, Emilie Blevins, Carla Atkinson, Kentaro Inoue, Braven Beaty, Wendell Haag, Kevin Aitkin, Zachary Taylor, Nimanthi Abeyrathna, Jamie Bucholz, Taylor Kelley, Matt Lodate, John Harris, Jason Wisniewski, Madeline Pletta (virtual), Nathan Johnson (virtual), and Paul Johnson

Declaration of quorum - made by Steve McMurray

Motion to approve the Fall 2022 Board Meeting Minutes made by Heidi Dunn and seconded by Braven Beaty. Motion passed.

Treasurer's Report – Alan Christian previously submitted report. No questions / discussion.

Secretary's Report – Sarah Veselka previously submitted report. No questions / discussion.

Old Business

2023 Symposium – Emilie Blevins reported that there were 267 in person registrations, 36 virtual attendees, and FMCS is looking to profit from the symposium. Everything seems to be going well.

Mussel App Status Update – John Harris gave an update. Name changes are being updated.

Mollusk Certification Update – Becca Winterringer, 24 applications received for volunteer pilot study. Committee to meet April 11th to discuss plans moving forward. More information located in the Professional Development Committee report.

New Business

Scientific and Common Names of Freshwater Mollusks Subcommittee memberships – John Harris, Paul Johnson – two subcommittees. Several members with terms expiring in 2025.

Motion to reappoint Art Bogan and John Pfeiffer and appoint Dave Zanatta with terms expiring in 2027 made by Alan Christian and seconded by Curt Elderkin. Motion passes.

Gastropods: Motion to accept term extensions for Nathan Whelan, Ken Hays, and Kathryn Perez by Steve McMurray and seconded by Alan Christian. Motion passes.

FMCS Oral History Project – Rachel Muir gave a presentation on this proposed project. Seeking board approval, board appointed society historian, need to recruit and train volunteers / interns, need supporting institution to house archives, will seek grant support for hosting institution, publish articles / profiles on founders in Ellipsaria, need forms for contributing materials. Editing takes the most amount of time but can also be done by software.

Motion to establish and support an FMCS oral history project and Rachel Muir as the first board elected historian made by Steve McMurray and seconded by Wendall Haag. Discussion follows on current and extended financial support needs and finding a supporting institution. Publication or online housing, etc. All in favor, motion passes.

CASS membership value – Nine member societies to contribute funding to keep CASS going. MOU currently circulating. CASS increases interdisciplinary information exchange and creates a louder voice combined. JASM was successful and FMCS had about 32 people in attendance and received substantial profits. Next one planned for 2026. Financial commitment to CASS is based upon numbers of members and will range between \$0.5 – \$2.00 per member. With the current 925 FMCS members that would be \$462 - \$1,850. Leadership would rotate around member societies. Need larger committee to stay informed and involved i.e., monthly calls. Could fall under environmental quality committee. Any active members that could help? Form a CASS committee? Early July target for decision.

Motion for the FMCS ExCom to decide if the society will continue to participate in CASS and how that participation will occur made by Heidi Dunn and seconded by Steve McMurray. Motion passes. ExCom to review the MOU, Financial Committee to review costs, ExCom to determine how a CASS committee will fit into societal structure.

Future Sustainability (Charter, Location) – The FMCS non-profit charter is through the state of MO; however, we may not have ExCom members residing in MO in upcoming years. Washington DC does not have residency requirements. Society will also likely need legal and CPA services. Could we use a MO CPA as a resident address? ExCom to continue discussions.

Digitizing/Shared Platform for ExCom – Committees have identified needs for society emails. Web site transition has been slow. We also need digital document housing. Is there one platform that can do all of this? Form a small committee to develop digital storage policies. Cyber security insurance policy? DEI committee is aware of web site hosting for the blind. ExCom to continue discussions.

Elections/Establishing a Candidate Search Committee – Amy Maynard has been elected President, Alan Christian has been elected Treasurer, and Sarah Veselka has been elected Secretary. Need to develop a search committee for future elections. Wes is stepping down as Chair of the Elections Committee. Should we develop incentives for ExCom members such as travel,

registrations, and membership dues? Need for getting younger people involved. ExCom to continue discussions.

Standard Operating Procedures Revision – Jeremy Tiemann and Heidi Dunn have started a framework. Trying to finish by the end of the year. ExCom will review.

Committee Reports

Functional Committees:

Awards – new awards were added. Standard rubric being developed to be used for all awards. See committee report for additional information.

Chapters – potential regional chapters including European Chapter in discussions. More to follow during the symposium.

Elections – see summary above and committee report.

Diversity, Equity, and Inclusion – see committee report.

Outreach - HootSuite now charging for services. Cancelling subscription. Social media posts will now need to be independent of each other.

Finance – see committee report.

Professional Development – see committee report.

Publications – Wendell Haag provided an update. Looking for additional submissions for FMBC. See committee report.

Symposia and Workshops

- 2024 Workshop – Kaelyn Fogelman presented on the next Methods Workshop to be held at Auburn University on Ecophysiology and Environmental Tolerances for all aquatic organisms: fish, crayfish, mussels, oysters, etc. Stakeholders to be invited to encourage research around what data is needed for policy. March 4th – 8th. Open to help and suggestions.
- 2025 Symposium – Daelyn Woolnough presented on the next symposium to be held in Detroit, MI the second or third week in May 2025.
- 2027 Symposium – back to the southeast?

Technical Committees:

Conservation and Restoration – see committee report.

Environmental Quality and Advocacy – see committee report.

Field Studies and Ecosystem Services – see committee report.

Genetics – no report.

Mollusk Status and Distribution – no report.

Reminder that only one person from each committee is a voting member of the board. Can have unlimited sub-committees within each committee. Asking committees to have chairs assigned before the business meeting. Please send updates to Sarah Veselka.

Motion to Adjourn

Alan Christian motioned to adjourn the meeting at 6:40 PM and Jeremy Tiemann seconded. All in favor.

**Spring 2023 FMCS Committee Reports
Submitted to FMCS ExCom**

Functional Committees**Awards Committee Report**

The Awards Committee met many times in the past months and corresponded many times by email. We accepted and evaluated the Student Travel Awards, and the Early Career Awards. The Awards committee members decided the student travel award winners using a new rubric for evaluations. We would like to change the future call for student travel awards to reflect the new and impartial rubric we will use in the future. After evaluation, we awarded nine students with travel awards out of fourteen applications and they have received an award letter. We then sent emails to encourage those with free hotel rooms to share, as of now all students have a free room. The early career awards were a bit more informal as there were not many applicants, we may have to advertise that better in the future. We have sent awards letters to both winners of the Early career Awards and notified the Treasurer. We sent out an email asking for Judges for the student Platform/Poster awards and got an overwhelming response. During two of our meetings, we assigned judges to student presentations and posters barring conflicts and schedules; we then sent emails this week to the judges with their assignments and a link to the electronic score sheets. Susan Oetker ordered plaques for the lifetime achievement award, the meritorious service award, best student poster, best student platform and outgoing president.

At this time all judges have been notified and assigned, small changes are being made as cancellations come in.

During the 2023 symposium long-time FMCS members were recognized for their incredible contributions to FMCS and mollusk conservation. Teresa Newton received the Meritorious Service Award and Wendell Haag received the Lifetime Achievement Award. Congratulations also to the winners of the Best Student Presentation Awards!



Chapters Committee – no report submitted.

Elections Committee Report

The 2023 FMCS officers' election was held from 3/7/2023 – 4/1/2023. There were 90 society voters for the three positions (President-Elect, Secretary, and Treasurer). The only position with two candidates was President-Elect with Emilie Blevins and Amy Maynard. Amy Maynard won a close election with 55.6% of the vote. Sarah Veselka was re-elected as Secretary, and Alan Christian was re-elected as Treasurer.

FMCS forms a Finance Committee!

FMCS now has a Finance Committee to assist the Treasurer and the ExCom with financial decisions and to review accounts, taxes, and budgets. Current members include Heidi Dunn (chair), Sara Craft (co-chair), and Nathan Johnson. Actions to date include reviewing the Profit/Loss, Balance sheets, and 990 form (form for 501(c)3 tax form) for 2022. These were all approved and the tax form submitted on time. Other financial needs that were approved include <\$1000 to remain a member of CASS and money to lock in fees with WHOVA (symposium/workshop app) for the next three years.

We are currently working on putting together a detailed budget, including symposium/workshop budgets to assist that committee with financial decisions. We are also discussing funds that need to be kept on hand vs invested vs available for committee projects.

We could use assistance, so if you are interested, please let Heidi or Megan know. Help keep us in the GREEN!

Outreach Committee Report

A subset of Outreach Committee members has been working to plan the fourth student mentor mixer event at the Portland Symposium. This time, incorporating both structured and unstructured time to network. Additionally, we provided a job posting board to display throughout the symposium for students to peruse/post resumes and for employers to advertise their position openings. One of our student committee members prepared a guide, "FMCS Networking Tips for Students", and generated a student Discord channel. The guide was shared with our student membership through the WhoVA App and will be retained within our cloud storage to be utilized and adapted for future meetings. The Discord communications channel was announced at the student mentor mixer. Since our November 2022 board meeting, social media administrators have made 28 posts to Facebook, Twitter, and Instagram collectively.



Finance Committee Report

The newly formed finance committee is off to a good start. We met in January and elected Heidi Dunn as chair and Sara Craft as co-chair. We also reviewed and approved the Profit and Loss sheet and Balance sheet prepared by Treasurer, Alan Christian. FMCS is in good financial shape! These reports were forwarded to the Ex Comm for approval. A slight modification was required due to PayPal income. Alan fixed the accounts and prepared the 990EZ (tax form). We met on March 31 to discuss the tax form. A few suggestions were made, and the form updated. The committee will vote to approve the 990EZ in Portland. Alan is modifying the QuickBooks accounts to make preparing the tax form easier in the future. Alan also prepared a budget, based on the last 3 years. The budget

was discussed and approved. The budget will assist the committee with decisions on membership dues, and money available to support committee activities. Thank you, Alan, for your hard work on all of this.

The committee will meet in Portland to review the committee's purpose and task list. We will also discuss membership fees, funds available for special projects, and the application process for funding requests.

Professional Development Committee Report

The Professional Development Committee (hereafter Committee) is actively working towards implementation of the Professional Mollusk Certification. During our December Committee call and review of the current iteration of the guidance document, it was realized the certification process would benefit from a pilot test. The goal of the pilot test was to ensure we are capturing ranking and scoring criteria effectively by appropriate certification tier level. Certification tiers are: Associate Mollusk Professional (AMP), Certified Mollusk Professional (CMP), Mollusk Professional – Emeritus (MP-E). Additionally, the pilot test aimed to identify areas within the guidance document that needed refinement such as instructions; directions on assessing one's education, qualifying experience, and professional performance; and applicant documentation.

Call for Volunteers and Pilot Test Status

A call for volunteers was sent to the FMCS membership in late February requesting student, retired, government affiliated, public and non-profit sector, and international members to participate in the pilot test. During the call for volunteer process, the government members pool was separated into state or federal government, and an additional membership pool was identified: tribal entity members.

- Pools were created based on the information provided in the FMCS membership list and primarily based on email domains.
- A total of 52 FMCS members volunteered.
- Volunteers were pooled into the seven categories and enumerated based on the order in which their email was received.
- The first five respondents within each target group were notified and provided instructions and the guidance document.
- There are 33 volunteers participating in the pilot test and the remaining 19 volunteers were notified and placed in a secondary backup pool in the event volunteers in the primary pool opted out during the process.
- It was requested applicants have documentation and feedback by March 31, and as of April 4, 2023, we have received 13 applications.
- An extension was issued to April 7.
- Committee members are reviewing applications independently, and applications will be reviewed by up to three separate reviewers.

Feedback from applicants has been very positive. Questions that have come from volunteers during the process were consistent on topics for where clarity was needed: relevant coursework definition and description, guidance for letters of recommendation and references, page limitations of CV, instructions on documentation forms, mechanics of how the self-scoring sheet, and recognition of COVID for timeframes of Professional Performance.

Next Steps- Analysis of the applications by the reviewers will be initiated in late April. The Committee will be working on a strategic plan for Committee operations, including the certification process, and identify capacity and resources needed to implement the Mollusk Professional Certification Program. It is anticipated that synthesis of the pilot test will be provided in the September 2023 issue of Ellipsaria.

Publications – no report submitted.

Symposia and Workshops – no report submitted

Diversity, Equity and Inclusion (DEI) Committee Report – 2023 Activities April 2023

- Committee: Tamara Smith (USFWS, Chair), Sara Craft (KY DOW), Jer Pin Chong (University of Illinois - Chicago), Mark Hove (UMN), Xenia Rangaswami (TAMU), Alex Franzen (University of Oklahoma), Daelyn Woolnough (Central Michigan University), Kaelyn Fogleman (Auburn University), Jeremy Tiemann (ILNHS), Megan Bradley (USFWS - GNFH), Kentaro Inoue (Shedd Aquarium), John Pfeiffer (Smithsonian), Nora Straquadine, Traci DuBose (Virginia Tech), Brittany Trivisonno Muncy (ODOT), Erin McCombs (American Rivers), Curt Elderkin (TCNJ), Makayla Plekes (USFWS), Katherine Bockrath (USFWS), Amanda Goldsmith (TAMU), Jennifer Bronson-Warren (TPWD), Chantelle Rondel (NC Wildlife), and many others on our mailing list.

- The last full group meeting via phone call was March 2023. We continue to meet monthly via calls/Teams/Zoom. We will meet during the Portland meeting. Our May call date is TBD, after the symposium. Everyone is welcome.

Committee Tasks (2023): *Summary. Most of our recent tasks have focused on preparing for the 2023 symposium.*

- Keeping DEI issues on the forefront.
 - o Follow up to 2020 pilot survey, the new DEI survey was sent out this fall, with 163 respondents. The data were analyzed and a presentation will be given during the 2023 FMCS symposium (point of contact – Sara Craft, Thursday 12:20 pm).
 - o Prepare a presentation and special topic discussion on better common mollusk names for the FMCS symposium (point of contact – John Pfeiffer, Tuesday 1-2 pm).
- Foster a welcoming environment for FMCS members (and other interested people)
 - o Participate in 2023 symposium local planning committee meetings (points of contact - Daelyn Woolnough and Tam Smith).
 - ♣ We worked with symposium planners to have well-labeled gender-neutral restrooms in near proximity to the concurrent sessions, availability of childcare known to attendees, and lactation/quiet room facilities available.
 - ♣ We have also worked to mentor match those students (n=7 now) that requested a mentor for navigating their first conference and/or attending alone.
 - o Develop and award new student travel award for 2023 FMCS symposium. (Points of contact – Chantelle Rhondel and Mark Hove)
 - ♣ Award recipients: Namanthi Abeyrathna (Clarkson University) and Irene Sanchez Gonzales (Crimson University)

- ♣ Assign mentors for the 2 awardees (Nimanthi and Irene, mentored by Nathan Whelan and Daelyn Woolnough, respectively).
- ♣ We are already getting feedback on this award program from the award recipients, to improve it for future years. May set up video interviews of recipients to gain interest in sponsors. (Points of contact – Chantelle Rhondel and Mark Hove)
- o Invite and host a DEI speaker for the 2023 FMCS symposium.
 - ♣ Laura Taylor from West Multnomah S&W Conservation District. (Thursday morning.) (Point of contact – Xenia Rangaswami).
- o Prepare for DEI committee meeting at the FMCS symposium (Wednesday 12-1 pm. Point of contact – Sara Craft)
- o Continue to develop the DIVE Fellowship Program (See previous committee reports) Finalized a proposal for a student scholarship program, presented draft to ExCom in Dec 21, 2021, and later the FMCS board. The board was supportive. Pilot year will be 2023. (Points of contact – Xenia Rangaswami, Sara Craft, and Kaelyn Fogelman).
- o Participate in DEI committees of other scientific societies to share resources and ideas.
 - ♣ International malaco-diversity survey – Continue to work with an international group to establish a world-wide malacologist demographic (and attitudes to DEI issues) survey, with plans to publish results. (Tam Smith – point of contact).
- Please see previous committee reports for additional items that this committee is working on.
- We occasionally revisit our draft strategic plan and update our committee goals and actions.

FMCS Information Exchange Committee Report on Freshwater Mollusk Biology and Conservation (FMBC)

Editor in Chief: Wendell Haag

Managing Editor: Ani Escobar

Associate Editors: David Berg, Robert Bringolf, Serena Ciparis, Traci DuBose, Daniel Hornbach, Caryn Vaughn, and Alexandra Zieritz

Website posting and maintenance: Sophie Binder

New managing editor

Megan Bradley has stepped down as Managing Editor after serving in this role for several years. We truly appreciate her hard work for the journal. Ani Escobar (Georgia Department of Natural Resources) has graciously agreed to take Megan's place. We are very excited about working with Ani, and we appreciate her willingness to take on this duty.

Recent, current, and upcoming issues

Volume 25, Number 2 (September 2022), was published about three weeks late (October 25, 2022). We can't blame this on Allen Press as in the past; they seem to have recovered from Covid challenges and have been prompt about returning proofs. Rather, the lateness was due almost exclusively to the Editor in Chief's busy field and travel schedule this past summer.

Volume 26, Number 1 (March 2023) was published on time. The issue had four papers. Allen Press was superb in turning around proofs quickly and helping us meet our deadline.

Since adopting our new editorial structure, we are now two for three in getting issues published on time. Previously, only one issue had been published on time in the history of FMBC.

Currently, we have about 12 live manuscripts at some point in the review process. Several of these papers are in an advanced stage, so we should be in good shape for the September issue.

Copy editors

We continue to be pleased with the copyediting service provided by Two Herons Consulting. Our copy-editing procedures are running smoothly and effectively. We've been able to reduce our copy-editing charges by about half in the last year.

Early View

We have established an Early View page within the FMBC portion of the FMCS website (<https://molluskconservation.org/FMBC-early.html>). We post here the final version of all accepted papers after copyediting. We first post a final .pdf version of the manuscript, then we replace this with unpaginated proofs when they become available. This is important to give authors and readers earlier access to accepted papers.

Survey papers

We'd like to continue to encourage authors to submit survey papers. Survey papers are increasingly difficult to publish in other journals, and we see an important function of FMBC is to provide an outlet for such papers. We are planning to establish a special section in each issue devoted to survey papers, in an attempt to advertise that fact that FMBC gladly publishes surveys.

Outreach

We plan to conduct outreach to publicize and promote FMBC to increase its visibility and increase submissions. Madi Polera and Amy Maynard on the Outreach committee have agreed to lead outreach efforts for FMBC, including establishing a social media presence.

Impact factor

This issue has been in limbo for some time, but Dave Berg recently agreed to revisit this issue with Clarivate Analytics.

Editorial structure

Our new editorial structure, which was implemented last year, is working well. It results in a lighter workload for the Assistant Editors, and it has a clearer chain of command and division of responsibilities.

Additional discussion item:

FMBC has documentation related to the initial founding of the journal, including contracts and agreements with Allen Press and other documents that should be preserved and available. Greg Cope currently is in possession of these documents. Other committees or groups within FMCS probably also have documentation that should be preserved. FMCS should consider establishing a repository for such documents.

Technical Committees**Conservation and Restoration**

The Conservation and Restoration committee did not meet this quarter, and without chair-person representation to the FMCS – the committee will plan to meet with its members in coming weeks. At this time, the committee will discuss potential information sharing ideas from grey literature to instructional PowerPoints that discuss concepts used at propagation and restoration facilities/field offices. Case studies and success stories from recent habitat management work will also be reviewed. Additionally, we will elect a new committee chair for representation on the ExCom.

Environmental Quality and Affairs Report

The Environmental Quality and Affairs Committee has primarily focused on Consortium of Aquatic Science Societies (CASS) participation. The Committee participated in the 2022 Joint Aquatic Societies Meeting in Grand Rapids, Michigan and represented FMCS during discussions about the future of CASS. The major work of CASS over the past year has been development of an organizational structure enabling sustainability rather than reliance on primary voluntary support from one society, which was AFS in the past. This effort has drafted an MOU for review by member societies (attached below). Major components of the proposed CASS structure include: requirement of at least 2 participating representatives from each society with staggered service terms of multiple years; a rotating leadership role where coordination of meetings and CASS business activities will be borne by 'all' member societies; a membership fee structure based on membership numbers of each society so that societies contribute financially proportional to size; and hiring of a part-time administrative support person, probably through a service contract.

Leadership of the Environmental Quality and Affairs Committee will need to change. Braven Beaty has exceeded the designated term limits for Committee Chairmanship and is required to step down. In addition, due to increased workloads and other constraints, neither co-chair has been able to effectively carry out the full range duties at a level FMCS deserves. At least one new Chair needs to be recruited.

Field and Ecosystem Services Committee

The Field Studies and Ecosystems committee has not been active in the last quarter. This is partially due to a misunderstanding of leadership/organization. However, members of the committee that made up the Ecosystem Service committee published a paper in FMBC in the last issue. The committee will be meeting Tuesday of the conference.

Genetics – no report submitted.

Mollusk Status and Distribution – no report submitted.

Report from the Scientific and Common Names Subcommittee

From: Paul Johnson and John Harris

The FMCS Bivalve and Gastropod Scientific and Common Names Subcommittee's resumed in-person meetings at the FMCS Portland Symposium last March. The subcommittees track systematic and taxonomic changes for the freshwater mollusk fauna of North America. New publications are appearing in the literature at an rapid pace, and the subcommittee's charge is to keep membership abreast of these changes. Potential changes are considered via formal petitions that subcommittee members review every 2 years. The goal is to produce a consensus list of names for the FMCS membership. This process is open to any FMCS member and instructions can be found on the society webpage: https://molluskconservation.org/MServices_Names.html. A

copy of the petitions reviewed by each subcommittee in 2023 are also available on this webpage. The interim checklists are updated and available on the webpage every 2 years. Every 6 years FMCS will publish a list of updated names, plus tentative historic state distributions for each species. These reviewed checklists are scheduled to be published in 2025.

The Bivalve Subcommittee heard 4 petitions regarding generic placement for 1 species and recognizing *Elliptio nasutidus* (I. Lea, 1863), from North Carolina. This inclusion was proposed from a review of Isaac Lea type material by Rudiger Bieler in 2021. The bivalve subcommittee now recognizes 2 Families; 60 Genera; 299 species of freshwater mussels for Canada and the United States. To date the Bivalve Subcommittee has reviewed a total of 36 petitions since 2019.

The Gastropod Subcommittee heard 42 petitions regarding multiple species, generic and even family level changes. The subcommittee also incorporated a recently published Mexican freshwater gastropod checklist (Czaja et al., 2020) into the FMCS list. The gastropod subcommittee now recognizes 17 families, 115 genera, and approximately 844 species of freshwater gastropods for Canada, Mexico and the United States. Since 2019 the gastropod subcommittee has reviewed 85 petitions for the checklist.

We should have the updated Bivalve and Gastropod checklists placed on the FMCS website by the end of August.

FMCS Secretary Report Submitted by: Sarah Veselka

**Freshwater Mollusk Conservation Society
Spring 2023 Board Meeting
Secretary’s Report**

Current membership numbers as of April 5, 2023, are listed below. The large number of renewal overdue / lapsed memberships is likely due to symposium registrations not being applied to membership renewals yet.

Once a digital platform for document housing is decided, old minutes need to be scanned in. Use a scanning / copy service?

Level	Total	Active	Renewal overdue	Lapsed	Pending			New in last	
					New	Renewal	Level change	7 days	30 days
Author-Non-Member	<u>15</u>	<u>9</u>	-	<u>6</u>	-	-	-	-	-
Contributing	<u>13</u>	<u>9</u>	<u>3</u>	<u>3</u>	<u>1</u>	-	-	-	-

Level	Total	Active	Renewal overdue	Lapsed	Pending			New in last	
					New	Renewal	Level change	7 days	30 days
Lifetime	<u>6</u>	<u>5</u>	-	-	<u>1</u>	-	-	-	-
Lifetime - Free	<u>16</u>	<u>16</u>	-	-	-	-	-	-	-
Paper Register Members	-	-	-	-	-	-	-	-	-
Regular	<u>637</u>	<u>289</u>	<u>346</u>	<u>344</u>	<u>3</u>	<u>1</u>	-	<u>1</u>	<u>8</u>
Student/Retiree	<u>238</u>	<u>89</u>	<u>147</u>	<u>147</u>	<u>2</u>	-	-	-	<u>3</u>
Total	<u>925</u>	<u>417</u>	<u>496</u>	<u>500</u>	<u>7</u>	<u>1</u>	-	<u>1</u>	<u>11</u>

FMCS Treasurer Report Submitted by: Alan Christian

2022 Treasurer Report Final

Due to a ghost (existed in QuickBooks, but had no balance) PayPal account, I am presenting an updated 2022 treasurer report. For 2022 calendar year, FMCS assets total \$147,501.85 broken into major assets of Bank of America savings (\$10,017.82) and Bank of America checking (\$137,484.03) (Tables 1 and 2). In terms of liability and equity, we have no liability, and our equity is \$147,501.85 in retained earnings going into 2023. The FMCS calendar year 2022 Profits & Losses included a total income of \$88,0960.14 and total expenses of \$65,032.31 resulting in a net income of \$23,063.83 (Table 1). Major income sources were memberships (\$6,610.00), our share of proceeds from the 2022 JASM meeting (\$16,893.00), and income from the 2022 Workshop (\$50,302.13). Major expenses included: Third-party credit card and processing payment fees (\$2,909.98), web page maintenance (\$4,588.56), 2023 symposium expenses (\$12,669.00), 2022 workshop expenses (\$34,039.21), and Walkerana/FMBC expenses (\$8,951.42).

Table 1. A revised balance sheet for 2022.

Dec 31, 22 ASSETS	Current Assets	Checking/Savings BofA savings	10,017.82
	BofA checking		137,484.03
	PayPal income Total	Checking/Savings	147,501.85
	Total Current Assets		147,501.85
	TOTAL ASSETS		147,501.85
LIABILITIES & EQUITY	Retained Earnings		124,438.02
	Net Income		23,063.83
	Total Equity		147,501.85
	TOTAL LIABILITIES & EQUITY		147,501.85

Table 2. FMCS Profit & Loss Sheet for 1 January to 31 December 2022.

2022 P&L Report Jan - Dec 22 Income Joint Meeting Proceeds 2022 Joint Meeting	16,893.00
Total Refunds	16,893.00
Bank Adjustment	0.70
Amazon Smile income	234.48
Donations	1,600.00
Interest income	4.01
Memberships 2022 Memberships	5,810.00
Lifetime Memberships	800.00
Total Memberships	6,610.00
Workshops and Symposiums 2023 Symposium Sponsorship	3,860.00
Registration	8,591.82
Total 2023 Symposium	12,451.82
2022 TN Workshop Venue Refund	900.00
Field Trip Vendor Refund	500.00
Registration	48,902.13
Total 2022 TN Workshop	50,302.13
Total Workshops and Symposiums	62,753.95
Total Income	88,096.14
Gross Profit	88,096.14
Expense Fliers	79.91
Service Fees Third-Party Payment Processor	2,909.98
Total Service Fees	2,909.98
Award expenses Student award expenses	590.00
Total Award expenses	590.00
Shipping	480.56
Webpage International Bank Service Fee	61.56
Webpage - Other	4,527.00
Total Webpage	4,588.56
Office supplies Book Keeping	592.92
Office supplies - Other	29.90
Total Office supplies	622.82
Tax expenses	100.85
Symposium/Workshop expenses 2023 Portland Symposium Venue Expenses	8,370.00
Virtual Vendor	4,299.00
Total 2023 Portland Symposium	12,669.00
2022 TN Workshop Field Trip Expenses	500.00
Workshop Refund	2,735.40
Workshop Supplies	1,380.59
Venue Expense	29,423.22
Total 2022 TN Workshop	34,039.21
Total Symposium/Workshop expenses	46,708.21
Walkerana/FMBC costs BioOne	1,230.00
Editing	2,205.00
Allen Press	5,516.42
Total Walkerana/FMBC costs	8,951.42
<u>Total Expense</u>	<u>65,032.31</u>
	23,063.83

Announcements

Submitted by: Matthew Patterson



Freshwater Mussel Propagation for Restoration *CSP 1102.*

The National Conservation Training Center will be offering the Freshwater Mussel Propagation for Restoration course the week of October 16 - 20, 2023 on the campus of Virginia Tech. The course will include hands-on laboratory exercises as well as tours of the Virginia Tech and Marion, VA mussel propagation facilities and a field trip to the Clinch River. NCTC courses are open to anyone and everyone.

Course Description

Freshwater Mussel Propagation for Restoration is an introductory course designed to explore all culture activities associated with freshwater mussels. Participants will explore the latest culture techniques as they follow freshwater mussels through their entire life cycle in a culture facility, from the collection of gravid females to stocking cultured juvenile freshwater mussels. Following a basic introduction on mussel biology and the goals of mussel propagation, the course will cover the basics of building a culture facility, collecting and maintaining brood stock, collecting host species, infesting host species with larval mussels, collecting and culturing juvenile mussels, and releasing juveniles to the wild.

Course Objectives

Upon completion of this course, participants will be able to:

- describe the internal and external anatomy of a freshwater mussel
- collect and maintain freshwater mussel brood stock in captivity
- collect and maintain host species in captivity
- harvest freshwater mussel larvae and infest host species
- collect newly metamorphosed juvenile mussels and culture them for release
- describe the advantages and disadvantages of the various techniques, equipment, and culture units used in freshwater mussel propagation throughout the United States.
- release and monitor cultured juvenile freshwater mussels maintain accurate records and publish results

Who Should Attend? **Biologists interested in freshwater mussel biology and freshwater mussel culture techniques.**

Tuition: Tuition for FWS, NPS and USGS employees is prepaid. For participants from other DOI agencies, there is a tuition charge of \$1,195.00.

To Register

To register for the course, go to DOI Talent.

Contact Information

For content questions: matthew_patterson@fws.gov

Reasonable Accommodations

The U.S. Fish and Wildlife Service is committed to providing access to this training for all participants. Please direct all requests for sign language interpreting services, closed captioning, or other accommodation needs to the course contact.

Submitted by: Nate Snoobs

Dear Malacologists,

A date has been set for the Fall 2023 OSU Freshwater Mussel Workshop.

It will be held at:

The Ohio State University Museum of Biological Diversity
1315 Kinnear Rd., Columbus, OH 43212

Monday, September 25th to Thursday September 28th, with an optional advanced fieldwork day on Friday the 29th.



Pre-registration is now available. Please visit [this link to sign up](#).

Workshop goals and organization

This workshop provides an introduction to the taxonomy and diversity of freshwater mussels in Ohio and an overview of field sampling techniques for mussels. It has been developed to provide the foundation for inventories and surveys of mussels in Ohio. Participants will be qualified to conduct Group 1 mussel surveys and will be prepared to take the Ohio identification test for Mussels (scheduled separately).*

The workshop will have the following components:

- 3 days of mussel identification and museum study led by Dr. Michael Hoggarth, (Professor, Otterbein University and co-author of “The Freshwater Mussels of Ohio”) and myself (Nate Shoobs, Curator of Mollusks at the Ohio State Museum of Biological Diversity) focusing on OH mussels.
- 1 day of basic field techniques led by Megan Michael (ODOT) and Becca Winterringer (The Nature Conservancy) with assistance from Kyla Maunz (ODNR) and others.
 - There will be an **optional day covering advanced field techniques on Friday, September 29th**. Space is limited and spots will be assigned on a first-come first-served basis.

The basic field techniques component will include hands-on sampling of a local waterway. Participants should bring their own waders or wetsuit but need no other field supplies. (Though bringing a viewing tube / snorkel / waterproof camera is encouraged!)

Cost: Registration is **\$500**. Costs include course materials, breakfast and coffee every morning, and a box lunch for the first day and the field day. Lunch on the other 2 days is on your own—a list of nearby spots will be shared.

A discounted rate of \$300 is available to students and non-professionals.

* There are a limited number of slots available for workshop participants to sit for the Ohio Freshwater Mussel ID Test during the week of the workshop. Please reach out to Nate Shoobs shoobs.1@osu.edu beforehand to sign up.

Please don't hesitate to let me know if you have any questions.

Best wishes,
Nate Shoobs

Nathaniel F. Shoobs

Curator of Mollusks

College of Arts & Sciences Dept. of Evolution, Ecology, and Organismal Biology

Museum of Biological Diversity, 1315 Kinnear Rd, Columbus, OH 43212

614-688-1342 (Office)

mbd.osu.edu

Submitted by: Jennifer Johnson

This announcement is being sent on behalf of the Michigan Freshwater Mussel Committee which is an interagency committee designed to address freshwater mussel management issues within the State of Michigan.

Hello Everyone,

The Michigan Freshwater Mussel Committee has been working diligently on establishing a test for mussel identification certification in Michigan. Beginning on January 1, 2025, a certification is required for contractors hired to conduct mussel surveys in Michigan prior to obtaining a Scientific Collector's Permit. It is also highly recommended for anyone (e.g. students, naturalists) conducting freshwater mussel surveys in Michigan. Please read the attached document which will also be available soon on the Michigan DNR's [Scientific](#)

[Collector's Permit website](#). Testing dates are currently scheduled (info and registration link provided within document).

If you have any follow-up questions, feel free to contact anyone listed within the document.

A special shout out and thanks to Dave Strayer, whose help was invaluable and greatly appreciated during this process!

Thanks,
Jen Johnson

Jennifer Johnson

Fisheries Biologist, Northern Lake Michigan Management Unit

Norway Field Office

Michigan Chapter American Fisheries Society President

(906-239-0472 work cell)

Johnsonj17@michigan.gov

Submitted by: Kaelyn Fogelman

Environmental Tolerance and Ecophysiology Guidelines and Techniques Workshop

March 4-8th, 2024

Auburn University, Alabama



Natural Resource Managers are in need of environmental tolerance data to identify threats to species of concern and to develop species assessment and recovery plans. Such data is often lacking. Academic researchers may collect this type of information in a way that is valuable for answering interesting ecological questions, but challenging to interpret in an applied manner. The 2024 FMCS Guidelines and Techniques Workshop, in the #1 state for

aquatic biodiversity, is intended to bring researchers and managers together to discuss environmental tolerance and ecophysiology assay methodology, data collection, and interpretation from academic and management points of view.

While this Workshop is designed for malacologists, the techniques and approaches covered can be applied to a variety of aquatic taxa and we aim for this to be an interdisciplinary meeting. Topics covered will include but are not limited to methods for measuring and interpreting data from assays focused on: energy reserves, enzymatic and biochemical endpoints, lethal tolerance (i.e., LT50 or CTmax), filtration and clearance rates (metabolic rates), valveometry, respirometry, and exposure regimes. We will also cover useful theoretical and modeling frameworks for managers and regulatory agencies within which these data can be used, including: adverse outcome pathways, scope for growth, dynamic energy budgets, aerobic scope, and cellular energy allocation.

In addition to organized presentations and discussions between stakeholders to define what type of data is needed and how it can be collected, we aim to provide a hands on-technique workshops which will include introductions to experimental systems such as Loligo® Systems respirometry, micro respirometry and MOSSELMONITOR® valveometry.

Tentative schedule overview*:

Monday, March 4 – Arrival, Registration, Evening Mixer

Tuesday, March 5 – Breakfast, Introduction and Lectures, Lunch, Lectures, Poster Session and Mixer

Wednesday, March 6 - Breakfast, Lectures, Lunch, Lecture and Panels, Fish fry dinner at the EW Shell Fisheries Center

Thursday, March 7 – Breakfast, full day of Field Trip OR Hands-on Techniques, Departures

*Dates are subject to change within the week of March 4-8th as we confirm venue location

Registration: Registration will open in Fall 2023. FMCS members will be notified when registration opens and of the rates.

Location, Lodging & Transportation: The Workshop will be held at Auburn University in Auburn, Alabama. We are working diligently on confirming lodging location & rates and we will notify all FMCS members when this information is available. Lodging accommodations will be located within <10 minutes of the meeting venue and will be located near and/or within Auburn's downtown. Auburn University is located 100 miles (1.5 hours) from Atlanta, - the closest major airport. Airport shuttle service (Groome Transportation) between the Atlanta Airport and Auburn is available and easy to schedule and reserve.

Sponsorships: The FMCS is a not-for-profit society, dedicated to the advocacy and conservation science of freshwater mollusk resources. Our Workshops 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 150 generally attend the biennial Workshops. Instructors for the Workshops are members of the Society and other leaders in Conservation. These professionals are constantly working to conserve freshwater mollusks and we need your help. We are requesting monetary sponsorships to help cover the costs of the Workshop facilities and student attendance.

Further Information: For further information about the Workshop content and specific curriculum, venue, lodging, transportation or sponsorships, please contact Jim Stoeckel (jas0018@auburn.edu) or Kaelyn Fogelman (kjf0021@auburn.edu).

All Sponsor Contributions Include Recognition in the Workshop Program		
River	>\$2000	One Complimentary Registration, Logo on Website Registration Page Stream
Stream	>\$1000	One Registration Reduced by 25%, Logo Displayed at the Welcome Social, Logo on Website Registration Page
Eddy	>\$500	Logo on Website Registration Page
Mussel	>\$100	Recognition in the Workshop Program

We look forward to seeing you in the “Loveliest Village on the Plains” in Auburn, Alabama!

Upcoming Meetings

October 15 – 18, 2023 – Southeastern Association of Fish and Wildlife Agencies 77th Annual Conference, Omni Hotel, Corpus Christi, Texas, USA.
<http://www.seafwa.org/conference/overview/>

March 3-9, 2024 – 9th World Fisheries Congress. Organized through the World Council of Fisheries Societies, every four years delegates from around the world meet to exchange ideas and perspectives about new research, emerging issues, scientific breakthroughs, and governance related to fisheries science, industry, conservation, and management

June (23-28) 2024 – Society for Conservation Biology North American Sectional Meeting, 7th biennial North American Congress for Conservation Biology. Vancouver, BC.
<https://scbnorthamerica.org/>

FMCS 2025 14th Biennial Symposium- Save the Date – The 14th Biennial FMCS Symposium will be in Detroit Monday May 12th to Friday May 16th so save these dates! We are looking forward to an exciting week in Detroit known for Motown music, the automobile industry, and being a hub of innovation. The closest airport is the Detroit Metro International Airport (code: DTW) which is an international hub for Delta airlines and hosts multiple airlines with flights coming from around the USA and up to 30 countries daily. Co-organizers, Drs. Daelyn Woolnough and Dave Zanatta have a great crew of Michiganders helping to plan this Symposium however, if you wish to be added to the list of folks helping please email them at wooln1d@cmich.edu and zanat1d@cmich.edu

Contributed Articles

The following article was 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.

Submitted by: Dr. Paul Johnson

Alabama Aquatic Biodiversity Center 2023 Culture Update

The Alabama Aquatic Biodiversity Center (AABC) is anticipating completion of the following releases in 2023. Ongoing Tennessee River Basin stocking efforts will be focused in Bear Creek, Colbert County Alabama (*Lampsilis virescens*, *Medionidus conradicus*, *Toxolasma cylindrellus*), and the Paint Rock River, Jackson and Marshall Counties, Alabama (*Lampsilis virescens*, *Toxolasma cylindrellus*, *Venustaconcha trabalis*). The AABC will donate cultured animals to the Tennessee Wildlife Resource Agency to augment reintroduction efforts in the Duck River, Maury County, Tennessee (*Toxolasma cylindrellus*) and Elk River, Giles County, Tennessee (*Lampsilis virescens*).

Ongoing AABC Mobile River Basin recovery efforts are planned for Big Canoe Creek, St. Clair County, Alabama (*Pleurobema atearni*) Cahaba River, Bibb County, Alabama (*Leptoxis compacta*), and the Little Cahaba River, Bibb County, Alabama (*Medionidus parvulus*). The AABC may donate cultured animals to the Georgia Department of Natural Resources to initiate a reintroduction effort in Armuchee Creek, Walker County, Georgia (*Medionidus parvulus*), but that plan has not yet been finalized.

The 2023 Mobile Basin culture efforts are underway with *Cambarunio nebulosus*, *Epioblasma penita*, *Hamiota perovalis*, *Leptoxis compacta*. Additional culture work is planned for *Pleurobema atearni* and a 2nd host trial effort will be made for *Pleurobema rubellum*. Tennessee River Basin culture activities currently underway for 2023 are: *Athearnia anthonyi*, *Lampsilis virescens*, *Medionidus conradicus*, and *Venustaconcha trabalis*. Additional culture work is planned in 2023 for *Toxolasma cylindrellus*.

Juvenile *Venustaconcha trabalis* left, right *Pleurobema atearni*, Big Canoe Creek watershed, St. Clair County, Alabama and a few Conasauga *Medionidus parvulus* (with blue tags) cultured at AABC.



Submitted by: Zach Taylor, Maryland Freshwater Mussel Hatchery Manager and Propagation Director

Low-level mussel propagation and culture has occurred with a few species of mussels from the Susquehanna and Potomac Drainages at the Joseph Manning Hatchery, as the primary focus of efforts has been the planning and development of the State's propagation program, procurement and outfitting of a new mussel propagation trailer, and fieldwork. Spring transformation totals are as follows: *P. cataracta* 12,017, *U. implicata* 5,291, *L. radiata* 1,400, *S. nasutas* 307. Opportunistic propagation of *L. cariosa* for the state of Pennsylvania may also occur in early summer if partners with the PAFBC collect gravid females during their fieldwork in the West Branch Susquehanna River.

Low propagation goals presented an opportunity to test new culture systems at the hatchery and to test host fish viability. Both white perch and bluegill x green sunfish hybrids were used to successfully transform *S. nasutas*. To the knowledge of DNR biologists, neither species was a known host for *S. nasutas*. Bluegill x green hybrid sunfish also transformed *P. cataracta*. Which, while not documented, is not surprising given two known host fish for *P. cataracta*, Bluegill and Pumpkinseed, are both in the genus *Lepomis*.

The State's mussel propagation trailer will be fully outfitted by mid-summer and will be transported to Susquehanna State Park in early fall. Propagation and early culture of Susquehanna basin mussels will occur from the trailer for up to two months before the trailer returns to the Joseph Manning Hatchery for the winter.

CONTINUED ASSESSMENT OF SOCIETY DEMOGRAPHICS AND ATTITUDES TOWARDS DIVERSITY, EQUITY, AND INCLUSION

Sara R Craft¹, Jer Pin Chong²

¹Kentucky Division of Water, Frankfort, KY; ²University of Illinois Chicago, Chicago, IL.

Introduction

The need to foster a diverse, safe, and inclusive environment in professional societies has received widespread attention across many disciplines (Madzima and MacIntosh 2021). White, male, and

socioeconomically advantaged individuals have traditionally dominated many professional societies and their associated fields, especially in the sciences (Bronstein & Bolnick 2018; Abernethy et al. 2020). Under such circumstances, underrepresented and marginalized groups often face additional challenges in joining or advancing in academic societies, primarily due to unwelcoming social climates caused by implicit and explicit biases (Carlone and Johnson 2007, Grossman and Porche 2014). To address potential barriers for underrepresented groups, the FMCS Diversity Equity and Inclusion (DEI) Committee works towards integrating DEI considerations into the activities and culture of FMCS. One initiative of the committee is to distribute a survey every two years, to track changes in the demographics and composition of FMCS. Additionally, the survey is an invaluable tool to gather information regarding FMCS member experiences within the society, identify perceived needs for future DEI efforts, and evaluate reception of DEI committee activities. In this article, we summarize the results of the 2022 FMCS demographic survey, as well as some related topics of discussion from recent DEI meetings and events throughout the first half of 2023.

Methods

The first voluntary FMCS demographic survey was distributed as a pilot study in September 2020, and results were shared in *Ellipsaria* (Andree et al. 2021). After adding additional questions and further standardizing distribution practices, the modified 2022 survey was distributed. The 2022 survey included nine demographic questions, 14 questions addressing experiences with and attitudes towards FMCS, and one open-ended question to collect additional feedback. The survey was distributed to 854 individuals via email on October 27, and responses were collected through December 31, 2022. Surveys were distributed to all FMCS members in good standing (as of October 2022) and any non-members who had attended at least one of the two most recent FMCS events, which were the 2021 virtual symposium and the 2022 workshop in Chapel Hill, TN. All responses were recorded anonymously using the Qualtrics survey platform (Qualtrics, Provo, UT). Incomplete surveys and duplicated responses were not included in analyses. We acknowledge and respect that participants may hold diverse perspectives on DEI-related issues. To ensure inclusivity and capture the full range of responses, we included a 'prefer not to answer' option in each survey question.

Results: Demographics

In total, 163 completed surveys were received during the response period, representing a 19% response rate. The age distribution of participants was fairly even for participants aged 20 or above. No participants were younger than age 22. In contrast, approximately 21% of participants were 60 years old and above (Figure 1A). A small proportion (8%) of participants used multiple gender pronouns, identified as non-binary, or listed additional gender pronouns not offered in the survey. The remaining 92% of participants were divided almost evenly between those identifying as men (49%) and women (43%; Figure 1B). Participants were largely racially and ethnically homogenous. All but 11 participants (93%) identified as white (Figure 2A). A total of five participants (3%) identified as being of Spanish, Mexican or Mexican-American, or other Latinx identities (Figure 2B). About 11% of participants were of LGBTQ+ identity (Figure 3A). A total of 13% of participants identified as having physical or cognitive disabilities (Figure 3B).

There was a positive relationship observed between the number of years participants had worked in their fields and the number of participants who selected each category (Figure 4). According to the survey, the majority of participants (75%) had worked in their fields for more than 10 years. Nearly 44% of

participants had accumulated 20 or more years of professional experience. These results suggest that young scientists may be underrepresented within FMCS. Most participants (~99%) had earned a college, graduate or professional degree. More than half (52%) of participants had earned a 2-year graduate degree, 14% had earned a B.S degree, and 32% had a Ph.D. (Figure 5A). Two participants had not earned a 4-year college degree. Over a third of participants (39%) were the first in their family to attend or complete college (Figure 5B).

Results: Attitudes and Experiences

Table 1 summarizes perceptions of survey participants regarding the current state of diversity and inclusion in FMCS. The majority of participants (95%) were FMCS members. Most participants (86%) had previously attended FMCS symposia or workshops. A small percentage of participants (~2%) agreed that the timing of an FMCS event had conflicted with their religious practices on one or more occasions. According to the survey, most participants agreed that FMCS leadership encourages diversity and promotes a culture of acceptance within the community. The survey also revealed that 79% of participants agreed that education on DEI-related issues would enhance FMCS. However, only 24% of participants agreed that FMCS had been effective at providing DEI trainings or initiating discussions on DEI-related issues. More than 60% of participants felt comfortable discussing their national origin, sexual orientation, cultural, and educational backgrounds at FMCS events or gatherings. In general, participants agreed that FMCS accepts and encourages members from various backgrounds to become leaders in the Society. A notable 83% of participants felt that they had equal opportunities to lead within FMCS. Only a few participants had ever witnessed or been the victim of discrimination within FMCS; however, many participants were unsure of who to contact or what guidelines to follow if such instances arose (Table 1).

Discussion

While FMCS is an international organization, most of its membership and activities primarily center on the United States. Therefore, the results presented here were compared to demographics of the United States. Survey results indicated that some demographics such as gender and LGBTQ+ status may be well-represented within FMCS compared to the overall U.S. population. In other areas, FMCS demographic composition revealed an apparent underrepresentation of certain groups. For example, survey respondents were 93% white, while the U.S. population is estimated to be 75% white. As in the 2020 pilot survey, not a single participant identified as black or African-American, despite this demographic comprising ~13% of the U.S. population. Similarly, Latinx representation in FMCS was lower than the estimated U.S. population of 19%, as only a few participants identified themselves with Hispanic origin. Additionally, the Centers for Disease Control and Prevention (CDC) estimates that up to one in four Americans identifies as having one or more physical or cognitive disabilities. However, about 13% of FMCS members identified as having a disability. Many demographic groups tend to be underrepresented in academic societies and their related fields, and our survey data indicated that FMCS is no exception. Notably this survey data represents only a subset of membership and may not reveal the exact demographic makeup of the Society. However, the disparity between FMCS membership and the overall U.S. population demographics indicates that continued focus on recruitment and integration of members from underrepresented groups merits further effort to achieve a more representative composition with respect to race, ethnicity, and ability.

Survey results for age composition, years of experience, and education level illustrate a trend in FMCS towards highly-educated, senior professionals with many years of experience. Survey findings unveiled an

inadequate representation of college students and young professionals in FMCS. These data indicate that FMCS may be dominated by members who have been part of the Society since its inception, or shortly after. The apparent lack of college students in FMCS may be attributable to insufficient support (e.g., travel awards, mentors) provided for this particular group. Other Societies such as the American Fisheries Society and The Wildlife Society offer university-level subsections of their societies to encourage participation from college students, for example. As FMCS continues to expand, we should implement programs specifically designed to recruit and support college students and young professionals. Another concern of all DEI efforts is that membership may demographically diversify without new members from underrepresented groups achieving full inclusion (i.e. being equally heard and valued as members). Future DEI efforts should seek to quantify whether this is the case for FMCS and focus on supporting members from underrepresented groups.

Overall, the results of the attitudes and experiences portion of the survey reflected a positive perception of the atmosphere within FMCS. The organization appears to be successful in fostering a culture of acceptance and providing equal opportunities for leadership. It is important to note that participants in this survey were predominantly white and well-established professionals within their fields and FMCS. Since the majority of participants belonged to non-marginalized groups, the survey results may not directly reflect the actual conditions experienced by marginalized individuals. Through continued engagement at meetings, through publications, and during committee activities, the DEI committee hopes to increase awareness of and participation in future survey iterations by members from underrepresented groups.

While negative experiences were generally uncommon in the survey, responses did reveal some areas for improvement regarding inclusive practices. Some participants stated that an FMCS event conflicted with their religious beliefs or commitments. This feedback suggests that FMCS organizers should take religious holidays into consideration when planning future events to accommodate the diverse needs and practices of attendees. In the past, this has been accounted for when planning events around Christian holidays such as Easter. In future planning, it is recommended that holidays of other religions also be considered. Additionally, some members expressed concerns about their safety when FMCS events were held in areas perceived to be unwelcoming to the LGBTQ community. Planning efforts for future in-person events should strive to consider the needs of members from minoritized groups when choosing dates, locations, and venues if a truly inclusive environment is to be achieved.

Discrimination and intolerance are common barriers to social inclusion. Measuring discrimination and intolerance is essential for understanding the challenges faced by underrepresented and marginalized people. About 70% of participants were aware of the FMCS Code of Conduct and felt confident that FMCS leadership would take appropriate action to address discrimination or intolerance. This suggests that FMCS leadership has effectively communicated its stance against discrimination. However, it is concerning that approximately 3% of participants personally witnessed or experienced discrimination or intolerance at FMCS events. Based on feedback collected at the recent FMCS symposium and informal discussions within the DEI committee, young scientists and women sometimes felt that they were undermined in the Society, for example. Addressing and preventing such incidents is crucial for maintaining an inclusive and respectful environment in our community. In addition, nearly half of participants stated that they did not know to whom they should talk should they experience or witness discrimination. This indicates a need for improved communication and awareness regarding reporting procedures within FMCS.

Finally, respondents were asked to select three top priorities they would like to see FMCS pursue in promoting diversity and inclusion. More than half of participants selected the following as their top DEI priorities: 1) recruiting members of underrepresented groups, 2) providing scholarships and travel funding to underrepresented groups, and 3) creating a welcoming environment for people from diverse backgrounds. Survey findings indicated that FMCS members recognized the importance of diverse perspectives and experiences in advancing the organization's goals. By providing financial support and fostering an inclusive and supportive atmosphere, FMCS can overcome potential financial constraints and encourage underrepresented groups to participate in FMCS events.

The DEI committee is actively working on a number of initiatives to expand perspectives and improve FMCS. For example, at the 2023 FMCS symposium, the DEI committee and Naming committee collaborated to begin a discussion on changing mollusk common names that may be considered inappropriate or offensive to some racial/ethnic groups. Those who wish to get involved in this ongoing conversation are welcome to contact the Naming committee or John Pfeiffer (PfeifferJ@si.edu). Additionally, the DEI committee is planning to revise the FMCS code of conduct and initiate an anonymous reporting mechanism for members to report incidents of discrimination or harassment without fear of retaliation. Members are strongly encouraged to bring DEI-related concerns to the President of FMCS (Megan Bradley, megan_bradley@fws.gov) or the DEI committee Chair (Tamara Smith, tamara_smith@fws.gov).

It is crucial for FMCS to maintain and build upon established positive aspects while addressing areas for improvement identified through the survey. FMCS leadership and the DEI committee should enhance communication to ensure that members are well-informed about FMCS's DEI initiatives and resources. Training programs focused on creating a welcoming workspace, developing cultural competence, promoting inclusive language, and addressing unconscious bias and discrimination can aid in equipping FMCS members with the necessary knowledge and skills to cultivate an inclusive environment. By proactively sharing DEI information and resources, FMCS can empower its members to effectively address discrimination and intolerance. While these efforts focus primarily on educating non-marginalized individuals and raising awareness of DEI issues, they may have limited impact on improving the conditions of underrepresented groups. The DEI committee should continue to reduce and remove barriers that impede the success of marginalized groups within FMCS.

The DEI committee will conduct this survey every other year and track changes in the demographics and attitudes of FMCS members over time. The feedback and suggestions provided by survey respondents are immensely important as they help FMCS leadership prioritize DEI efforts.

The DEI committee is always seeking active members and encourages all who are interested in the topics discussed here to get involved. The DEI committee and the Society continue to work towards creating an inclusive and supportive atmosphere where all FMCS members, regardless of age, gender, sexuality, race, ethnicity, nationality, religion, and disability status feel welcome, valued, and respected.

Tables and Figures

Table 1. Summary of responses (n=163) to attitudes and experiences questions from the 2022 FMCS demographic survey. Highlighted fields represent the most popular answer for each question.

Survey Questions	Agree	Disagree	Neither agree nor disagree	Unsure	Prefer not to answer
The leadership at FMCS encourages diversity (with respect to race, ethnicity, gender, sexual orientation, age, religion, and disability status) and promotes a culture of acceptance.	79%	2%	18%		1%
Education about diversity, equity, and inclusion will enhance FMCS.	79%	6%	14%		1%
FMCS has been effective at providing trainings and discussions highlighting multicultural understanding and acceptance of diversity.	24%	12%	61%		3%
I feel comfortable discussing my national origin, sexual orientation, cultural and educational backgrounds at FMCS events or gatherings.	64%	11%	24%		1%
FMCS encourages members from various backgrounds to become leaders in the Society.	63%	5%	31%		1%
I feel that I personally have an equal opportunity to become a leader in FMCS.	83%	5%	11%		1%
Are you a member of FMCS?	95%	2%		3%	
Have you ever attended an FMCS symposium or workshop?	86%	14%			
I have personally witnessed or been the victim of discrimination or intolerance at an FMCS event or gathering.	3%	87%		3%	7%
To my knowledge, FMCS has explicit guidelines discouraging intolerance and discrimination.	70%	0%		29%	1%
I believe FMCS will take appropriate action in instances of discrimination.	71%	2%		1%	26%
I know whom I should talk to if I am being discriminated against at an FMCS event or gathering.	38%	19%		42%	1%
The structure, timing, or content of an FMCS event has conflicted with my religious beliefs or practices on one or more occasions.	2%	91%			7%

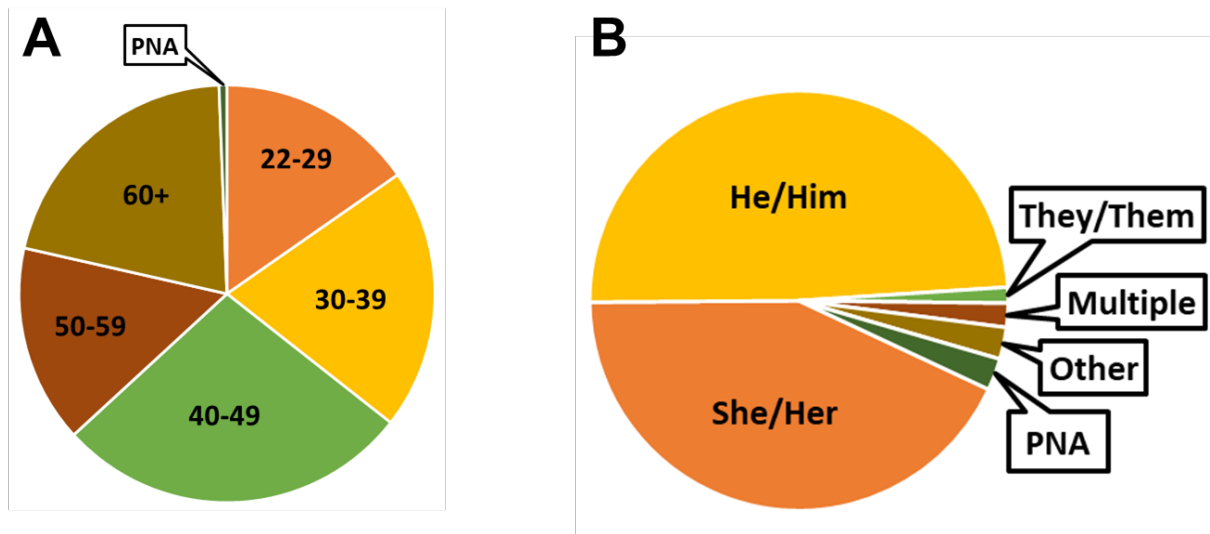


Figure 1. Age (A) and gender (B) of survey participants (n=163). “PNA” indicates proportion of participants who chose “prefer not to answer” option.

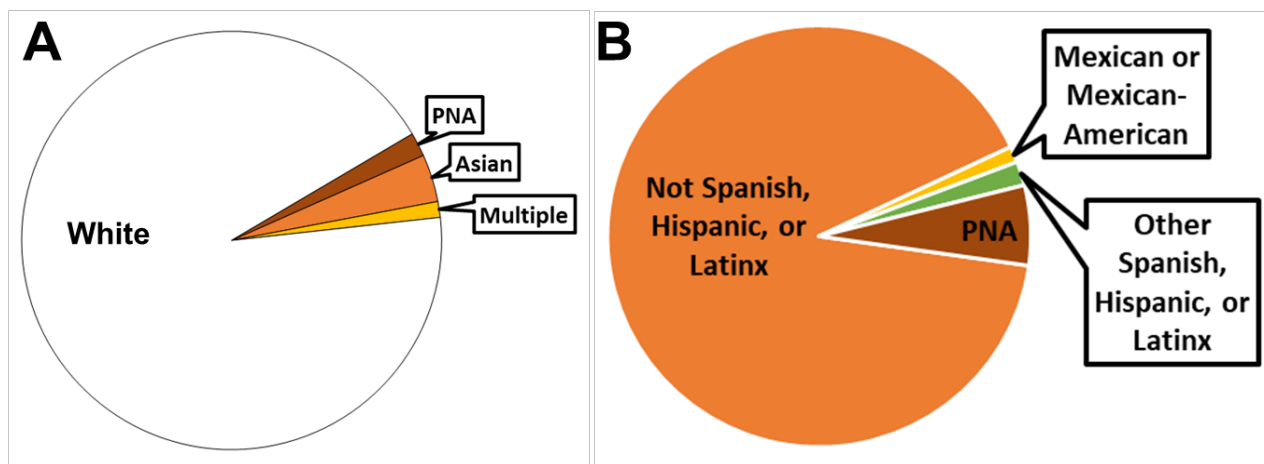


Figure 2. Race (A) and ethnicity (B) of survey participants (n=163). “PNA” indicates proportion of participants who chose “prefer not to answer” option.

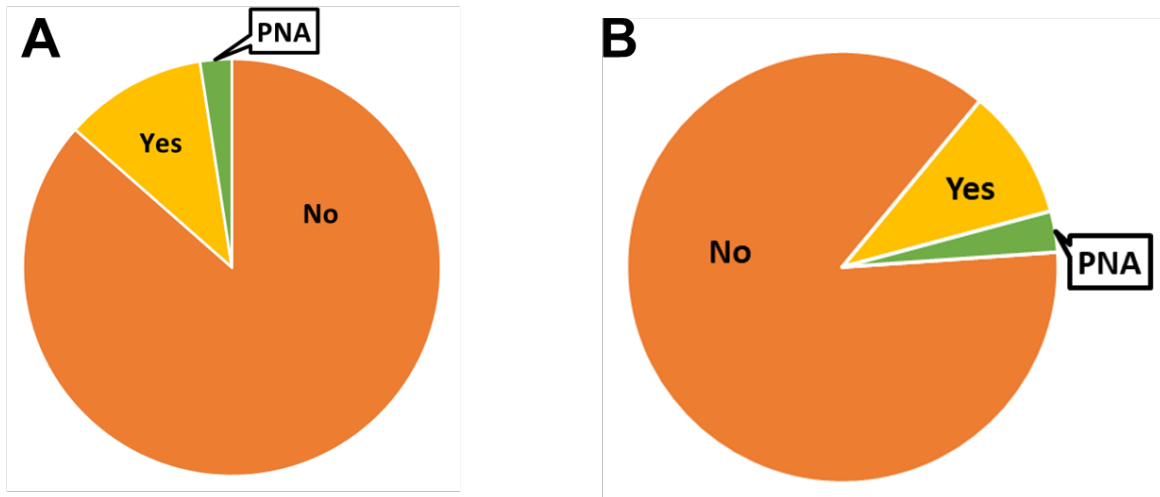


Figure 3. LGBTQ+ identity (A) and disability status (B) of survey participants (n=163). “PNA” indicates proportion of participants who chose “prefer not to answer” option.

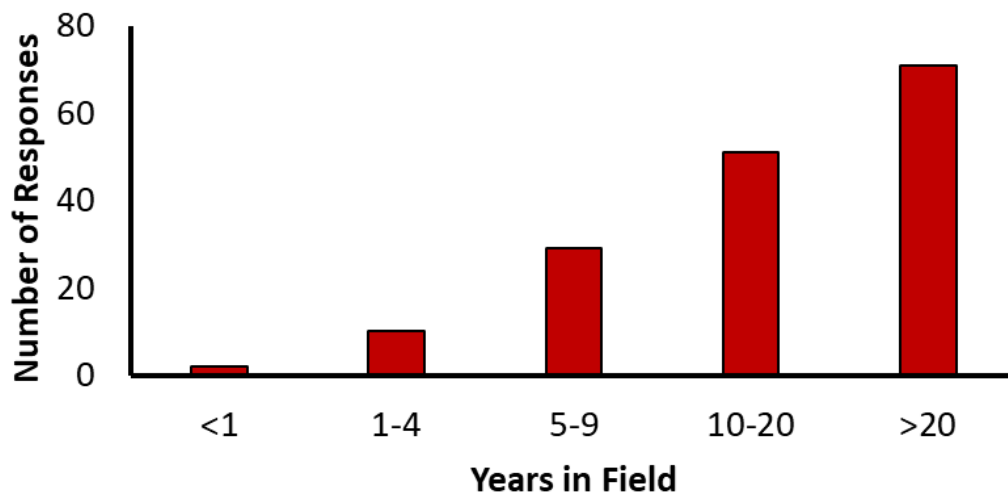


Figure 4. Count of respondents’ years in their current field of study (n=163).

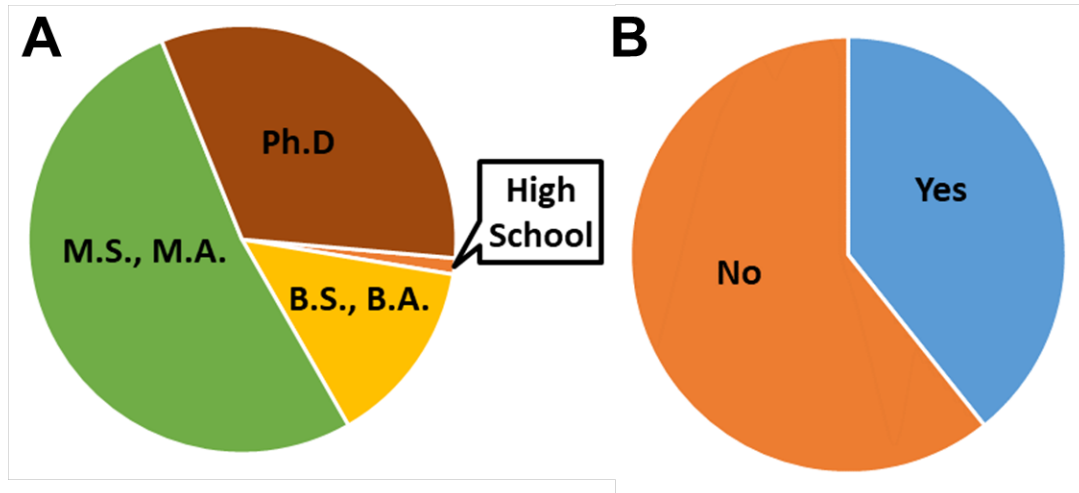


Figure 5. Highest level of education completed (A) and identification of whether participants were/are first-generation college students (B) of survey participants (n=163).

References

- Abernethy E. F., I. Arismendi, A. G. Boegehold, C. Colón-Gaud, M. R. Cover, E. I. Larson, E. K. Moody, B. E. Penaluna, A. J. Shogren, A. J. Webster, and M. M. Woller-Skar. 2020. Diverse, Equitable, and Inclusive Scientific Societies: Progress and Opportunities in the Society for Freshwater Science. *Freshwater Science* 39:363-376.
- Andree, S.R., M. Bradley, K. Inoue, J. Pfeiffer, T. Smith, & J. Tiemann. 2021. Establishing baselines for society demographics and attitudes towards diversity, equity, and inclusion. *Ellipsaria* 23: 4-8.
- Bronstein, J.L. & Bolnick D.I. 2018. "Her joyous enthusiasm for her life-work..." Early women authors in *The American Naturalist*. *The American Naturalist* 192:665-663.
- Carlone, H.B. and A. Johnson. 2007. Understanding the science experiences of women of color: Science identity as an analytic lens. *Journal of Research in Science Teaching* 44(8):1187-1218.
- Grossman, J. M. and M. V. Porche. 2014. Perceived gender and racial/ethnic barriers to STEM success. *Urban Education* 49(6):698-727.
- Madzima, T. F. and G. C. MacIntosh. 2021. Equity, diversity, and inclusion efforts in professional societies: Intention versus reaction. *Plant Cell* 33:3189-3193.
- Qualtrics. First release: 2005. Copyright 2023, Provo, UT, USA. Version 10/2022. Available at <https://www.qualtrics.com>.

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Ellipsaria is changing to a seasonal schedule: with issues published March, August, and December 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

How time flies! Sampling on the Duck River in 1991 clockwise from left Brenda McGregor and Don Hubbs, Jeff Garner (notice Jeff had long blond hair!) and Monte McGregor, and bottom Monte again.



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.