

# NCD Report to the Iowa Chapter

Submitted by Rebecca M. Krogman

2/1/23

The NCD leadership and chapter leaders met on October 24, 2022, to discuss nominations, officer updates, and upcoming meetings.

- President's Vision (AFS) – to connect chapter members to the Society, and to demonstrate relevancy of AFS to potential members
- Chapter contacts
  - Dakota: Paul Bailey
  - Illinois: No update, was Joe Parkos
  - Indiana: Andy Buelmann
  - Iowa: Rebecca Krogman
  - Kansas: Brett Miller
  - Michigan: Jen Johnson (President-elect)
  - Mid-Canada: No update
  - Minnesota: No update, was Andy Hafs
  - Missouri: Jake Westoff
  - Nebraska: No update, was Zac Brashears
  - Ontario: No update
  - Ohio: No update, was Jeremy Pritt
  - Wisconsin: Sharon Rayford
- Society updates
  - Membership dues \$115 increased to match inflation, with a smaller increase for students and early career professionals
  - Publications retreat will occur in 2023 to ensure each journal is fulfilling its purpose

The NCD leadership and chapter leaders met again on January 8, 2023, to review Chapter meeting dates, Division-level awards, and Mark Fincel's service on the AFS Nominating Committee.

- All Chapters planned to host their own business meetings between late January and late March. NCD leadership plans to have an Executive Committee member attend all possible Chapter meetings. Iowa Chapter is hosting Brian Nerbonne, current NCD President.
- Joan Duffy Travel Awards are matched up to \$200 for any chapter with a winner.
  - Chapters must facilitate the award listing and select their own winner.
  - We awarded the Joan Duffy Travel Award for the first time in a while in 2023!
- Requested that Chapters sponsor the 2023 AFS Society meeting in Grand Rapids, Michigan August 20-24 (minimum \$500)

The NCD just held an election for its next President, between Nick Kramer (Kansas DWFP) and Dan Isermann (UW Stevens Point). Results have not yet been announced (election closed February 3).

The 2023 NCD Business Meeting is scheduled for February 13, 2023, 10:30am – 12pm at the Midwest Fish and Wildlife Conference in Overland Park, Kansas.

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## **2022/23 TREASURER'S REPORT**

Submitted by Seth Fopma, Iowa DNR

Audited by Ben Dodd, Iowa DNR

The chapter started report period (2/4/2022) with a balance of \$12,877.33 (\$3,100.38 in the warm water account \$9,776.95 available for AFS). Disbursements since the last financial report equaled \$5,133.21 and receipts equaled \$3,561.88.

The 2022 Midwest AFS meeting included a split auction, raffle and t-shirt sales with the Iowa Chapter of the Wildlife Society in addition to the traditional raffle split with the Iowa State Student Subunit. The 2022 meeting generated \$2,888.85 for the fisheries side. The raffle proceeds equaled \$1,240.62 and the split with ISU has not occurred to date. The annual business meeting had \$1,1082.04 in expenses.

As for the other accounts that funnel through our account. The warm water account had no changes this year and ended with a balance of \$3,100.38.

Other noteworthy expenditures included \$1,150 in scholarships including Midwest awards (WTC, Duffy, Fenske Awards) and the annual student scholarship. The Chapter also paid out two Fish Grants (Bob Harris and Walker-Siepkner) at a value of \$1,000 each. The Chapter maintains its membership to the Iowa Conservation alliance with membership fees of \$250 annually.

All account activity resulted in a balance of \$12,106.00 on 2/6/2023. The Warm Water Account has \$3,100.38; Mike Mason Memorial Fund has \$0.00, resulting in an AFS available balance of \$9,005.62.

2022/2023 Iowa AFS Financial Report

Balance as of

February 4, 2022

\$12,877.33

Balance in Warm Water Account	\$3,100.38
Balance in Cool Water Account	\$0.00
AFS Available Balance	\$9,776.95

<b>Receipts:</b>		
-Meeting Income (Raffle, Auction, & T-Shirts)	2,888.85	
-2022 Dues from Members	660	
-Monthly interest	13.03	
<b>Total Receipts:</b>	<b>\$3,561.88</b>	

**Disbursements:**

-2022 IA AFS meeting expenses (raffle, & materials)	443.60
- Scholarships	1,150.00
-Chapter Fisheries Grants (2)	2,000
-2023 Business Meeting Expenses	1,082.04
-2023 State Sales Tax	185.57
-2023 Gambling License	15.00
-Iowa Conservation Alliance Dues	250.00
-Retirement Certificate Dr. Morris	\$7.00

**Total**

**Disbursements: \$5,133.21**

Balance as of

February 6, 2023

\$12,106.00

Balance in Warm Water Account	\$3,100.38
Balance in Cool Water Account	\$0.00
Mike Mason Memorial Fund	\$0.00
AFS Available Balance	\$9,005.62

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## 2022 Iowa State University Student Affairs Update

by Dr. Michael Weber



It's been another busy and exciting year at Iowa State University and the Natural Resource Ecology and Management Department. We just implemented a new Department website, so check it out here <http://www.nrem.iastate.edu/>! As of Fall 2022, 473 undergraduate students were enrolled in NREM, comprised of 382 Animal Ecology and 91 Forestry majors. The Animal Ecology major has four options: Fisheries and Aquatic Science, Interpretation of Natural Resources, Pre-Veterinary and Wildlife Care, and Wildlife (<http://www.nrem.iastate.edu/optionsanimalecology>). Generally, freshman enter our program enrolled in Animal Ecology but do not declare an option until the end of their sophomore year.

NREM and my lab welcomed eight new fisheries related people during 2021! Britney Hall is from College of Coastal Georgia, Seth Renner is from Bemidji State, Annika Preheim is from North Carolina State, and Eli Lagacy is from University of Massachusetts; these three MS students will be working on complimentary projects assessing invasive carp movement, reproduction, and recruitment in the Missouri River basin tributaries in western Iowa. Annika Richards is a new MS student from York College of Pennsylvania investigating mussel populations in the Des Moines River in relation to water levels, Christian Slone is a new MS student from Murray State assessing Smallmouth Bass population dynamics in South Dakota, and Connor Fiolek is a MS student from Central Michigan assessing Hybrid Striped Bass stocking success in reservoirs. Finally, Dr. Jimena Golcher-Benavides started in fall 2021 evaluating recruitment history of invasive carp above Lock & Dam 19. As always, a small army of undergraduate students served a critical role helping us in the field and laboratory this past year. In addition to those that joined us during 2021, we welcomed Dalton Clayton as a new MS student in January 2022 assessing Rusty Crayfish. Please make an effort to introduce yourselves and welcome these new fisheries folks to Iowa!

As always, several students also left ISU this past year. Andrew Annear and Kyle Olivencia graduated with their MS degree in Fisheries Biology in 2022. Andrew moved to Washington and is a biologist with the Department of Fish and Wildlife and Kyle moved to Florida and is a biologist with the Fish and Wildlife Conservation Commission! David Yff was a Research Scientist in the lab that left in summer 2021 for a position with the Illinois Natural History Survey. Finally, we are in the process of hiring a new faculty member in NREM with expertise in Aquaculture/Fisheries and would welcome your participation during the interview process! More emails forthcoming on that! ☺

As I mentioned in the beginning, it has been another busy year at Iowa State University! Thanks to all of the students and all of the DNR staff that assisted with various activities for making it a great one - I'm looking forward to even better things in 2022! Feel free to contact me at

[mjw@iastate.edu](mailto:mjw@iastate.edu) if you have any questions about our great students or opportunities or suggestions for our program at Iowa State!

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## **2023 Continuing Education Committee Report**

Submitted by Seth Fopma and Ryan Hupfeld

A variety of continuing education courses were hosted as part of the 2022 Midwest Fish and Wildlife Conference: Team Wellness in Times of Uncertainty, Data Management and Visualization Using Tidyverse in R, Beginner/Intermediate GIS for Fish and Wildlife Biologists, and Designing and Conducting Acoustic Telemetry Studies. We are currently in the process of planning a few continuing education opportunities for 2023. We are planning an additional acoustic telemetry course for late July to be hosted in Ames. This course is being designed to help address questions associated with ongoing research. We are also considering a seasonal “tune-up” to be hosted at multiple (regional) locations, where seasonal staff will be trained in some of the basics associated with fisheries (trailer backing, maintenance, boat troubleshooting, common knots, net deployment, etc.), and interact with the regional staff they may encounter throughout their employment.

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## **2022 Communications Coordinator Report**

The Iowa Chapter is a member of the Iowa Conservation Alliance (ICA, can be found on Facebook), and seats a representative (Communications Coordinator) on the Board of this organization. ICA is the primary conservation voice which advocates for conservation issues with the Iowa Legislature, and the Iowa Chapter has joined with this organization to better leverage our resources for the common conservation good. The Iowa Chapter serves as the primary source of information for fisheries, aquatics, and water-related issues for ICA. In 2022, the Iowa Chapter and Communications Coordinator were actively engaged in creating Iowa-centric letters of support for RAWA, which were sent to chapter members to distribute to their US Senators and Representatives. Very little legislation pertaining to fisheries or water quality were addressed by the Iowa Legislature in 2022. Iowa AFS stood alongside other conservation organizations regarding other bills of interest, mostly pertaining to hunting. Thus far in 2023, there is also very little pertaining to fisheries or water quality, except for a bill addressing reduced fee lifetime trout licenses for disabled veterans. Some ICA representatives (who are veterans) have been speaking against these types of bills, because a) the vast majority of veterans have some level of disability (many less than 5%), so nearly every veteran qualifies for these give-away licenses; and b) they view these free/reduced licenses as ongoing efforts to de-fund the Fish & Wildlife Trust Fund. Thus far, Iowa AFS has not taken a position on this issue.

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## **2022 Resolutions Committee Report**

No Activity

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## **Rivers and Streams Technical Committee**

Submitted by Greg Gelwicks, Iowa DNR

Report to Iowa Chapter AFS

The RSTC held their annual spring meeting virtually March 29-30, 2022. The meeting was well attended by people from state and federal agencies, organizations, universities, and private consulting firms. In addition to state chapter reports, there were 11 oral presentations on a variety of river and stream projects in the Midwest, including a presentation by Kurt Fausch of Colorado State University entitled “What is essential about rivers for fish and humans? Lessons on connectivity and connections from four decades.” The 34th Annual Spring Meeting of the Rivers and Streams Technical Committee will be held in person at Rock Island Conservation Club in Milan, Illinois on March 28-29, 2023. Brett Roberg, NGFP, is putting together the program covering topics related to the rivers and streams in North Central Division. If you are interested in presenting at the meeting, please contact Brett ([brett.roberg@nebraska.gov](mailto:brett.roberg@nebraska.gov); 308-865-5329). Greg Gelwicks is compiling information on river and stream research and management projects in Iowa for the Iowa Chapter Report. State chapter reports and meeting minutes from past meetings are available at <https://ncd.fisheries.org/rivers-and-streams/>.

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## **Annual Report for the Iowa Chapter of the American Fisheries Society Regarding Activities of the NCD Urban & Community Fisheries Technical Committee (February 2023)**

Submitted by Tyler Stubbs

Iowa Representative to the NCD Urban & Community Fisheries Technical Committee

Members of the Urban and Community Fisheries Technical Committee met virtually on September 21, 2022.

Iowa AFS members in attendance were Tyler Stubbs, Rebecca Krogman, and Lewis Bruce.

Other members represented agencies from Minnesota, South Dakota, Kansas, Nebraska, Missouri, Michigan, and Wisconsin.

Members focused on ideas to for future projects which could include future symposiums, as well as organizing annual meetings/ mid-year meetings with other technical committees.

Members also discussed information to have on the NCD website. The UCFTC page is now up and running!

We discussed the possibility of a logo. Rebecca Krogman submitted a logo for the group. She is currently working with Jessie Koehle (City of Eagan, MN) to fine tune to the logo design.

Laura Schmidt (WI-DNR) is the chair elect.

Members discussed official chapter representation within their chapters. The NCD has requested as the group has become official, that each NCD chapter needs to have an official representative to represent their chapter.

The group also discussed some common urban fisheries issues such as Put-And-Take stockings of trout and catfish, fishery renovations, and fish management. We also discussed active research projects such as the trail camera study in Iowa.

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## **Annual Report for the Iowa Chapter of the American Fisheries Society Regarding Activities of the NCD Ictalurid Technical Committee (2023)**

Submitted by Tyler Stubbs  
Iowa Representative to the NCD Ictalurid Technical Committee

The annual business meeting of the North Central Division (NCD) Ictalurid Technical Committee was held in-person and virtually on February 15, 2022 during the Midwest Fish and Wildlife Conference held in Des Moines, Iowa.

Tyler Stubbs represented the Iowa Chapter.

Chris Brooke, Missouri Chapter AFS was the chair for the NCD-ITC. Micah Waters from Kansas Chapter AFS was nominated and approved for the Secretary-Treasurer position.

Over the course of the year, Chris stepped down as chair and Chris Cheek an Assistant Professor from South Dakota State University has become the new chair.

State Chapter Reports highlighting catfish research, stockings, and management were submitted to the ITC Chair for the annual business meeting.

The group discussed the successful Catfish 2020 conference that was held in conjunction with the Southern Division AFS meeting in Little Rock, Arkansas in February of 2020. Tyler Stubbs and Savannah Muhlbauer from Iowa were able to attend this meeting.

The student chosen to receive the research grant attend the meeting from Illinois.

On December 14, 2022 the ITC announced the availability of a research grant for catfish related projects. *The email stated "Our hope is to help fund a project that contributes to the science, research, management or dissemination of information related to catfish. We also believe that goal can be accomplished in many different ways. This grant could be the primary funding for an undergraduate project, a small contribution to a large project, or anything in between".*

A short discussion about the possibility of having a mid-year meeting or workshop was also discussed, but it was tabled for a later date.

The ITC Committee will be meeting on February 8, 2023 at the Midwest Fish and Wildlife Conference in Kansas at 5:00 pm both virtually and in person. Items for the Iowa Chapter Report were submitted to President Chris Cheek included:

Blue Catfish in Southwest Iowa Impoundments; Contact – Andy Jansen  
Standard Method Book Chapter Updates – Mark Flamming  
Statewide Catfish Management Plan; Contact – Tyler Stubbs  
Mississippi River Pool 16 Catfish Sampling – Adam Thiese

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# Annual Esocid Technical Committee Report to Iowa Chapter AFS 2023

Prepared by Jonathan Meerbeek

The summer Joint Technical Committee meeting was held in Wahpeton, IA at the Iowa Lakeside Laboratory July 18-20 2022. Approximately 50 professionals and students attended: 19 papers were presented and a side scan workshop was offered to attendees. The Joint Winter Business Meeting of the Centrarchid, Esocid, and Walleye Technical Committees will be held in association with the Midwest Fish and Wildlife Conference in Overland Park, KS on February 12<sup>th</sup> 2023 from 3:00-5:00pm. Discussion on where the summer Joint Technical Committee meeting location will occur at that meeting. Also at this meeting, the ETC Committee chair will change from Jordan Weeks (WI DNR) to Jonah Dagele (MN DNR).

**Muskellunge Stocking, Tagging, and Population Dynamics** (Contact: Jonathan Meerbeek [jonathan.meerbeek@dnr.iowa.gov](mailto:jonathan.meerbeek@dnr.iowa.gov)) – Fourteen lakes and impoundments are managed as Muskellunge fisheries in Iowa and populations are maintained via stocking spring-stocked, pellet-started minnow finished yearlings. In 2022, 3,704 yearling Muskellunge (mean TL ranged from 12.5-14.0 in among systems) were stocked in 3 natural lakes and 9 impoundments. In lakes where Muskellunge are used as broodstock, populations are monitored via annual spring gillnetting and population metrics are estimated using the Jolly-Seber model. Sampling in 2022 was conducted at Clear Lake and the Iowa Great Lakes. Estimated adult Muskellunge ( $\geq 30$  inches) abundance via Jolly-Seber method was 621 fish in the Iowa Great Lakes. Alternative techniques to estimate abundance, such as using angler recapture data, was explored in for the Iowa Great Lakes and using Lincoln-Peterson models, population estimates of  $\geq$  age-4 fish were 1,223 (139 fish reported by anglers via PIT tag readers). No estimate was available at Clear Lake due to a lapse in sampling in 2020 and 2021. All yearling Muskellunge stocked into Iowa’s natural lakes are tagged via PIT tags prior to stocking (since 2011). To date, over 1,400 yearling Muskellunge have been recaptured and initial analyses indicate that size (TL) at stocking is an important variable influencing survival to age-2+. However, we have observed that survival rates vary considerably among lakes. More specifically, survival is much higher in general in lakes where large populations of top-level predators are absent (i.e., Clear Lake; Figure 1).

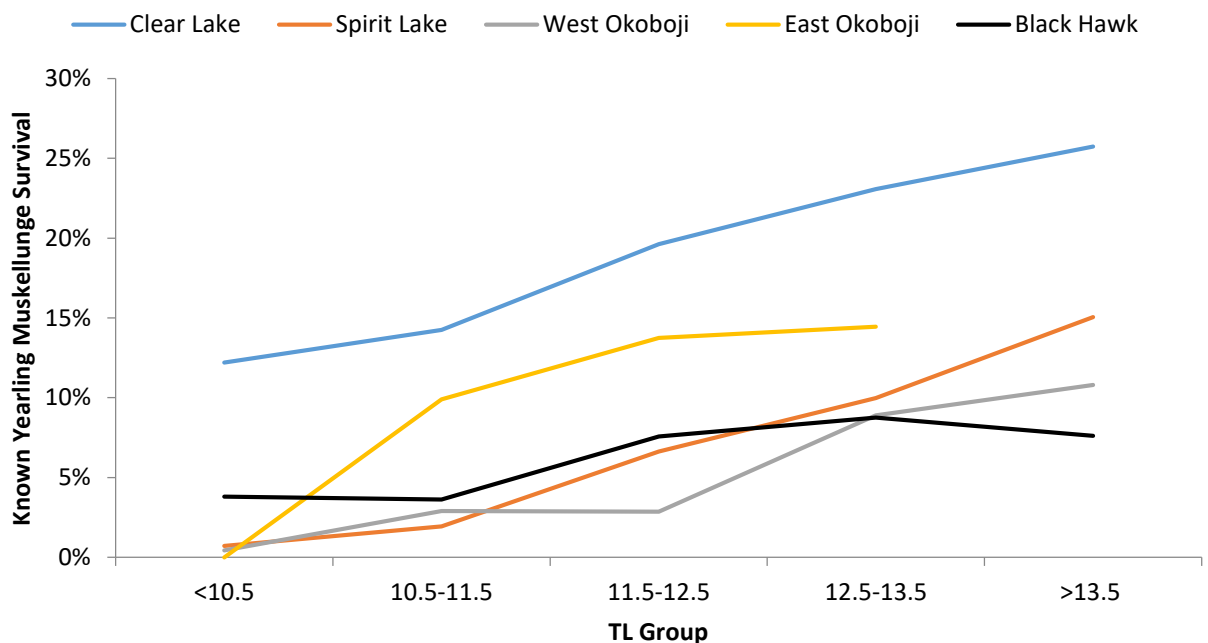




Figure 1. Known yearling Muskellunge survival to age-2+ by length group (0.5 in) in Clear, Spirit, East Okoboji, West Okoboji, and Black Hawk lakes.

***Effectiveness of an electric barrier to reduce emigration of Walleye and Muskellunge in Iowa's natural lakes***

(Principle Investigator: Jonathan Meerbeek [jonathan.meerbeek@dnr.iowa.gov](mailto:jonathan.meerbeek@dnr.iowa.gov)) - Downstream movement of adult Muskellunge in an interconnected chain of lakes has been extensively documented in Iowa via the states broodstock collection program and extensive PIT tagging database. In some years, approximately 50% of the adult Muskellunge population has moved from Spirit Lake downstream to the Okoboji chain via a spillway that connects the two waterbodies. Since the spillway acts as a fish barrier to fish migration upstream during most of the year, Muskellunge populations in Spirit Lake have suffered and drastic population imbalances have been observed. A similar problem exists at the outlet structure of the interconnected system and Muskellunge loss to the river has commonly occurred. However, an electric fish barrier was installed in 2013 to prevent Asian Carp from entering the lake system and as a side-benefit, hopefully reduce Muskellunge loss. Since July 2017, the area directly below the outlet dam has been sampled via electrofishing to collect Muskellunge and determine if escapement has occurred post-barrier installation via PIT tag information. In 2019, 97 Muskellunge have been collected below the barrier during 19 electrofishing events. Collectively, 254 Muskellunge (25.0-47.0 in) have been collected below the electric fish barrier and returned to the lake. Many of these fish had moved into the river post-electric barrier installation. In summer 2019, a low-pulse (0.5 volts/in) electric fish electrode was installed directly above the electric fish barrier in attempt to prevent downstream movement of Muskellunge and Walleye. The effectiveness of the barrier was planned to be evaluated in 2020-2022; however, water levels were not conducive to perform the evaluation. The evaluation will be conducted in 2023 if water levels remain high throughout the open water period.

As part of the barrier evaluation, a project evaluating adult Muskellunge movement among the Okoboji lakes and escapement to the river was began in 2022 by implanting acoustic transmitters into a subsample of 25 adult Muskellunge captured during broodstock gillnetting (stocked back into lake in late April). Movements were documented via strategically placed Vemco acoustic receivers (n = 20) throughout the lake chain and within the river system. Data from acoustic arrays were downloaded in late September. Cumulatively, 697,405 detections were recorded between 4/30/2022 and 9/21/2022 and ranged from 2,419 to 63,046 detections per fish. Of the 25 fish stocked into the lake chain, one was reported dead on 7/22/2022, four have not been detected for  $\geq$  one month, and two not been detected for 29-30 days (believed to be in location of damaged receivers). The remaining 18 tagged Muskellunge were detected within < 2 days of downloading the receiver data and many of those fish were detected almost daily throughout the study period. Overall, Muskellunge movement varied considerably among fish. Seventeen tagged fish were detected at two or more lakes within the lake chain and eight fish visited at least four of the five interconnected lakes. Connectivity size or type appeared to not influence fish movement among lakes. For example, one fish moved from East/West Okoboji on eleven different occasions between 5/21/2022 and 6/19/2022. Four of the 25 lake tagged fish were detected at the Lower Gar Outlet receiver, but none of those fish left the lake system nor did they stay near the outlet for more than two days. By the end of September, all fish that had been detected consistently throughout the study were located within either East Okoboji or West Okoboji lakes.

**Northern Pike Propagation and Stocking** (Fairport Hatchery Manager and Mississippi River Management Station: Andy Fowler [andy.fowler@dnr.iowa.gov](mailto:andy.fowler@dnr.iowa.gov)) - Northern pike adults were captured from the Mississippi River using fyke nets in March and either stripped or stocked in hatchery ponds where they were allowed to spawn naturally. The fry production was 353,462 which were bagged and stocked into Middle Sabula and Green Island on April 14. The pond yielded 8,517 fingerlings that were stocked in the Mississippi River.

Spirit Lake Hatchery Manager: Kim Hawkins [kim.hawkins@dnr.iowa.gov](mailto:kim.hawkins@dnr.iowa.gov)) The 3rd addition of the fish hatchery management book is being written. Aaron VonEschen from North Dakota and Kim Hawkins are in charge of writing the Esocid section. If anyone would like to edit it for additions from their state, they can send Kim Hawkins an

email. Production of Northern Pike at the Spirit Lake Hatchery in 2022 was limited to fry only and 1.6 million were stocked. Small fingerlings (3.inch) were provided from North Dakota and over 200,000 were stocked in northeast Iowa rivers and shallow lakes.

**Iowa State University Esocid Projects** (Principle Investigator: Michael Weber [mjw@iastate.edu](mailto:mjw@iastate.edu)) – Students from ISU have been involved in the evaluation of Walleye and Muskellunge escapement in Brushy Creek and Big Creek reservoirs. Below are abstracts that were prepared for the Iowa AFS meeting in March. For more information, contact Dr. Weber.

### (1) Muskellunge movement and residency indices in Iowa reservoirs

Understanding fish movement and habitat use is vital to informing management of populations and can provide information regarding habitat selection, vulnerability to sources of mortality or loss, and responses to changing abiotic conditions. Passive acoustic telemetry enables continuous monitoring of individuals, providing valuable insights into fine-scale temporal variation in movements and habitat use. In fall 2021, we deployed passive acoustic telemetry receivers in Big Creek Lake (n=9 receivers) and Brushy Creek Lake (n=10), Iowa. We subsequently tagged 15 Muskellunge *Esox masquinongy* per lake and evaluated residency indices at each receiver and near spillways. We found differences between species regarding temporal variation in residency indices and in the number of receivers fish were detected on per day in both reservoirs. Fish habitat use near spillways varied by reservoir, with more consistent presence of fish near the Brushy Creek spillway and seasonal increases in fish presence adjacent to the Big Creek spillway. Understanding spatial and temporal distributions of Walleye and Muskellunge will enable a better understanding of when fish are most vulnerable to loss from systems, informing management actions to minimize the unintentional loss of sportfish from populations.

### (2) Economic evaluation of physical barriers to minimize escapement of reservoirs sportfishes

Escapement of fish over reservoir spillways or other water release structures can have a substantial role in regulating reservoir sportfish populations. Losing stocked fish due to escapement can be detrimental to the fishery, reducing the number of catchable fish present for anglers, and can have financial ramifications, as the resources put into raising the fish are wasted when fish are lost. Barriers can be an effective method for reducing escapement of reservoir sportfish; however, it is necessary to evaluate whether the benefits of a barrier will outweigh the initial cost of barrier construction and ongoing costs associated with barrier maintenance and repairs. To facilitate the comparison between costs and benefits of physical barriers for reducing sportfish escapement, we used data from two barrier construction projects in Iowa to quantify the value of fish lost due to escapement over time while accounting for temporal variability in escapement rates. We then compared the value of escaped fish to the cost of barrier construction and maintenance over time. Finally, we developed an interactive Shiny application to enable comparison and visualization of the costs and benefits of physical barriers under varying levels of escapement, fish production costs, fish survival, and barrier costs. Results from this study will enable managers to make informed decisions regarding options to minimize fish escapement. Additionally, quantifying the value of escaped fish and barrier construction on an economic scale will enable the use of formal decision-making tools to address complicated and multi-faceted issues associated with reservoir management.

### (3) Laboratory Assessment of Parallel-Bar Barrier Spacing Effects on Reservoir Fish Escapement

Escapement of sportfishes over reservoir spillways can have negative effects on in-lake populations. To prevent escapement, managers have implemented physical parallel-bar barriers with 51-mm gaps on spillways in multiple states. Parallel-bar barrier gap spacing is modifiable, although there are no evaluations of how spacing influences the number or sizes of fish that escape. We evaluated the effectiveness of multiple bar-spacings [no-barrier, 25-mm, 51-mm, 76-mm (fingerlings only), 102-mm, and 152-mm (adults only)] on escapement of adult and fingerling Walleye *Sander vitreus* and fingerling Muskellunge *Esox masquinongy* using a controlled experiment. We placed ten adult Walleye (267-726 mm) or ten fingerling Walleye (156-267 mm) and ten fingerling Muskellunge (217-338 mm) into the upstream end of flow-through raceways for two-hours to test the barrier. Adult Walleye escapement

averaged 82% without a barrier (control) and was reduced to 2% with a 51-mm bar-spacing and 0% with a 25-mm bar-spacing whereas 76- and 102-mm bar spacing did not reduce escapement. Fingerling Walleye escapement averaged 74% without a barrier and was reduced to 20% with a 25-mm barrier while fingerling Muskellunge escapement averaged 76% without a barrier and was reduced to 42% with a 25-mm barrier. Fingerling escapement was not reduced with any other bar spacing. Adult Walleye escaping the 51 mm bar spacing tended to be smaller in total length and body depth than those that escaped other spacings but bar spacing did not significantly affect length or body depth of escapees. Our results indicate 25-mm and 51-mm gap spacings are effective at preventing adult Walleye escapement whereas only the 25-mm barrier reduced fingerling escapement. Parallel-bar barriers with spacings <51-mm could provide a valuable tool for reducing reservoir escapement, but our results in the lab should be validated in the field.

#### (4) Understanding and Mitigating Walleye and Muskellunge Reservoir Spillway Escapement

Reservoir fish escapement has been an overlooked source of population loss. Understanding when and under what conditions reservoir sportfish escapement occurs would help develop strategies to mitigate this important source of fish loss. Further, few field evaluations of physical spillway barriers designed to prevent fish escapement exist. Our objectives were to compare seasonal, diurnal, and spatial variation in Walleye and Muskellunge escapement in relation to water levels in a reservoir with and without a physical barrier. In 2016, we installed passive integrated transponder (PIT) antennas at Big Creek Lake (physical bar barrier) and Brushy Creek Lake (no barrier). We captured Walleye and Muskellunge from each lake semi-annually using boat electrofishing and gill netting and injected them with a 32 mm PIT tag. We also tagged juveniles of both species at the hatchery prior to stocking. From 2016-2020, we tagged 14,745 Walleye and 2,983 Muskellunge and we have detected 272 Walleye and 190 Muskellunge escaping Brushy Creek while we detected 88 Walleye and 8 Muskellunge escaping Big Creek. Adult fish were more likely to escape than their juvenile counterparts who rarely escaped before age-3. We documented escapement with little water flowing over the spillway, but increased water levels led to increased escapement, especially during spring. Fish tended to escape through the deeper parts of the spillway and primarily escaped during nighttime hours. Fish escapement past the physical barrier was rare but did occur under limited conditions, especially when it partially failed during high water events. Due to the apparent success of the Big Creek barrier, we installed a barrier on Brushy Creek during summer 2020 and have not documented escapement since its completion. Our results suggest the addition of physical spillway bar barriers can be an effective method to reduce reservoir fish escapement.

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## Reservoir Technical Committee Report

Submitted by Rebecca M. Krogman, Iowa Department of Natural Resources

### Iowa Updates

#### Research

**Walleye Genetic Strains Stocked:** Determined that the GT-Seq genetic panel developed in Wisconsin can be used to differentiate Iowa's river- and reservoir-origin fish, thereby allowing fin clips alone to be used to identify strain in recaptured fish. We are following up to verify whether individual parents truly can be identified, allowing study fish to be differentiated from naturally-recruited or non-study fish. The goal of this study is to determine whether strain affects recruitment to the fishery in reservoirs ranging from very lacustrine to very river-influenced. –

Contact Rebecca Krogman

**Walleye Culture Method Comparison:** Iowa has a long history of producing large, healthy advanced fingerling Walleye for fall stocking using concrete ponds and raceways, but recent expansions of the hatchery in recirculating aquaculture required a re-assessment of Walleye products. This study compares the traditional raceway fish with 1) Walleye raised in a larval RAS and grown out in ponds, and 2) Walleye raised entirely in a RAS. Thus far, fish

raised entirely in a RAS had higher deformity rates and apparently lower survival after stocking. – Contact Lewis Bruce

**Large-Scale Movement and Passage of Walleye in the Des Moines River:** Walleye and River Carpsuckers were acoustically tagged in Saylorville Reservoir, and we have been monitoring their presence upstream and downstream. Downstream detections would indicate passage through Saylorville Dam, and further down through Red Rock Dam or its hydropower facility. We are working to expand and improve the receiver placements throughout the river, but especially upstream of Red Rock Dam and the hydropower inlets, allowing triangulation of the fish's location as they approach. We have seen both upstream and downstream movement from Saylorville, but no detections yet at Red Rock Reservoir. The goal of this study is to assess downstream connectivity and potential for passage through the hydropower turbines or dams of sportfish and other species of interest. – Contact Rebecca Krogman

**Fish Health in the Red Rock Tailwater:** Water chemistry, flow conditions, and fish condition is being monitored between Red Rock Dam and Ottumwa on the lower Des Moines River in order to better understand the conditions conducive to fish health issues and kill events. Two major potential sources of mortality and stress include gas bubble trauma and turbine strikes/barotrauma. Fish sampling occurred May-September 2022 in the tailwater and at a "control" site at Eddyville, along with water chemistry monitoring at multiple sites. Weekly water chemistry sampling was also initiated in winter (January 2023) as a result of observed winter fish kills in 2021/22 and 2022/23; fish are also examined when possible from the shoreline, but sampling and cause of death determination is limited. The goal of this study is to establish environmental conditions that increase risk of a fish kill to provide better timely guidance to operators. – Contact Rebecca Krogman

**Development of R programming version of FAMS:** This coding project is part of a larger national effort to update Ogle's fishR and FSA R packages, and to build new tools from them. The goal of this particular project is to develop R coding that can be applied to standard data tables and used to model length regulation outcomes. – Contact Rebecca Krogman

**Evaluation of lake and reservoir outdoor recreation:** Outdoor recreation, including fishing, has been surveyed every ~5 years to help guide Iowa DNR's Lake Restoration Program. The most recent mailed survey of Iowans revealed several shortcomings to the methodology, primarily due to the reduced responsiveness of people to mailed surveys. The goal of this study is to determine what can be learned from past surveys and to develop an improved method of measuring outdoor recreation at public lakes and reservoirs. This committee may be interested in the methodology selected for 2024: a combination of intercept survey with mobile-device-based anonymous location data. The location data will be used to estimate visitation patterns, usersheds, and trip characteristics, allowing the intercept survey to focus on opinions, perceptions, actual behaviors, and demographics. – Contact Rebecca Krogman

**Walleye, Muskellunge, and Hybrid Striped Bass stocking success and escapement** projects in Big Creek, Brushy Creek, and Rathbun Lake, Iowa and Big Sandy Lake, Minnesota. Broadly, these projects are using a combination of passive tagging, PIT tag antennas, acoustic telemetry, and angler returns to 1) understand how fish behavior and biotic and abiotic conditions influence escapement, 2) assess the effects of escapement compared to other sources of population loss, 3) evaluate techniques for reducing or offsetting escapement, and 4) estimating the stocking success and survival of various hatchery projects in these reservoirs. – Contact Michael Weber [mjw@iastate.edu](mailto:mjw@iastate.edu)

## Major Renovations and Management

Iowa DNR has expanded its Aquatic Nuisance Species program recently by establishing a vegetation specialist (Jason Euchner) and hiring a supporting technician. Nuisance species detections, especially plants, have increased, particularly in our smaller ponds. The species with which we struggle the most include Eurasian Watermilfoil, Curlyleaf Pondweed, and Brittle Naiad, although Zebra Mussels are still slowly spreading.

Habitat additions included a large number of brush piles, rock mounds, rock reefs added to Lake Ahquabi; crappie condos in Lake Hendricks; pallet structures in Green Belt Lake; and pallet structures in Volga Lake. However, the largest project may be Three Mile Lake, managed by Andy Jansen, which received a large fish habitat grant from Bass Pro Shops' U.S. Open tournament program to supplement ongoing work. Jansen's team also received the 2023 Large Grant from Friends of Reservoirs to continue this renovation project.

## 2021 Reservoir Symposium

The Special Section may be published as early as February 2023!

The symposium proceedings include ten papers which will be published together as a Special Section in North American Journal of Fisheries Management. Major themes included reservoir aging and fish habitat degradation, loss of connectivity, water-level and outflow management, and economic importance and valuation of fisheries. Thus, the proceedings are tentatively introduced by co-editors Steve Sammons and Rebecca Krogman as "Old Reservoirs, Old and New Challenges" in their brief overview which was submitted 18 January 2023.

The 5th National Reservoir Symposium occurred in-person on November 9, 2021, during the Annual Meeting of the American Fisheries Society (AFS) in Baltimore, Maryland. Hosted jointly by the AFS Southern Division's Reservoir Management Technical Committee and the North Central Division's Reservoir Technical Committee, the symposium provided an outlet for both overviews of salient challenges and recent findings for reservoir-oriented research conducted across the U.S. Thanks to the planning of both reservoir committees of the SD and NCD, the symposium featured over twenty presentations and a full room of avid listeners. We were very proud to hear it was one of the best organized events at the meeting and are very proud to purvey some of the featured papers in the Special Section.

Look forward to the Special Section soon, and thank you to all who participated both at the symposium and in the publication!

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## 2023 Annual Walleye Technical Committee Report to Iowa Chapter

Submitted By: Andy Jansen

The Walleye Technical Committee (WTC) held their annual winter business meeting on Sunday, February 12, 2023 in conjunction with the 2023 Midwest Fish and Wildlife Conference in Overland Park, KS. There was some discussion about possibly hosting the WTC summer meeting at the Kemp Natural Resources Station in Woodruff, WI. Organizers are still putting together ideas for a continuing education course to be held in conjunction with the summer meeting. Logan Zebro (Nebraska) is the new Chair for the WTC.

I submitted the report below for the annual Iowa Chapter WTC state report:

### 1) Large Reservoir Fisheries Research Update

Contact: Rebecca Krogman, Fisheries Research Biologist, [Rebecca.krogman@dnr.iowa.gov](mailto:Rebecca.krogman@dnr.iowa.gov)

- **Walleye Genetic Strains Stocked:** Determined that the GT-Seq genetic panel developed in Wisconsin can be used to differentiate Iowa's river- and reservoir-origin fish, thereby allowing fin clips alone to be used to identify strain in recaptured fish. We are following up to verify whether individual parents truly can be identified, allowing study fish to be differentiated from naturally-recruited or non-study fish. The goal of this study is to determine whether strain affects recruitment to the fishery in reservoirs ranging from very lacustrine to very river-influenced.

- **Walleye Culture Method Comparison:** Iowa has a long history of producing large, healthy advanced fingerling Walleye for fall stocking using concrete ponds and raceways, but recent expansions of the hatchery in recirculating aquaculture required a re-assessment of Walleye products. This study compares the traditional raceway fish with 1) Walleye raised in a larval RAS and grown out in ponds, and 2) Walleye raised entirely in a RAS. Thus far, fish raised entirely in a RAS had higher deformity rates and apparently lower survival after stocking. – Contact Lewis Bruce
- **Large-Scale Movement and Passage of Walleye in the Des Moines River:** Walleye and River Carpsuckers were acoustically tagged in Saylorville Reservoir, and we have been monitoring their presence upstream and downstream. Downstream detections would indicate passage through Saylorville Dam, and further down through Red Rock Dam or its hydropower facility. We are working to expand and improve the receiver placements throughout the river, but especially upstream of Red Rock Dam and the hydropower inlets, allowing triangulation of the fish's location as they approach. We have seen both upstream and downstream movement from Saylorville, but no detections yet at Red Rock Reservoir. The goal of this study is to assess downstream connectivity and potential for passage through the hydropower turbines or dams of sportfish and other species of interest.
- **Development of R programming version of FAMS:** This coding project is part of a larger national effort to update Ogle's fishR and FSA R packages, and to built new tools from them. The goal of this particular project is to develop R coding that can be applied to standard data tables and used to model length regulation outcomes.

## 2) Natural Lakes Fisheries Research Update

Contact: Jonathan Meerbeek, Fisheries Research Biologist, [jonathan.meerbeek@dnr.iowa.gov](mailto:jonathan.meerbeek@dnr.iowa.gov)

- Protected slot limit and minimum length limit changes in Iowa's Walleye broodstock natural lakes: changed from a 17-22 in protected slot (daily bag of 3; 1 fish over 22) in Storm Lake, Spirit Lake, East Okoboji Lake, and West Okoboji Lake to a 19-25 in protected slot (daily bag of 3; 1 fish over 25). At Clear Lake, changed from a minimum length limit of 14 in to a protected slot limit of 17-22 in (daily bag of 3; 1 fish over 22). Staff continue to collect Walleye data from the natural lakes to monitor the effects of the regulation
- Understanding recruitment dynamics for stocked Walleye fisheries is important for evaluating stocking contribution and identifying lapses in recruitment, which may be partially remedied by stocking fall fingerlings. However, hatchery produced Walleye fingerlings ( $\geq 6$  inches) are expensive and production quotas are unpredictable, thus, often leading to uncertainty in where to prioritize fall fingerling stockings. Prioritizing attempts have been made via conducting night electrofishing surveys prior to stocking (see Iowa DNR 2013 Fish Stocking Policy), however, since stockings may occur as early as mid-September, surveys have been ineffective at catching adequate numbers of age-0 Walleye to make informed decisions on fry stocking survival. Thus, stocking fall fingerlings on top of an existing strong year-class cannot fully be avoided due to the timing of effective sampling for age-0 Walleye. Identification of past recruitment patterns, however, may be used to guide fisheries management Walleye stocking decisions in lakes where limited Walleye data is available. The objective of this project is to conduct eight-fall electrofishing investigation to index Walleye recruitment by June 30, 2023. Walleye populations in twelve natural lakes were sampled via night electrofishing during the fall (late September-early November; East Okoboji Lake and Clear Lake sampled during spring, see project narrative) at water temperatures between 43-63°F. A minimum of at least three fixed 30-minute sites were sampled at each lake. Fall electrofishing surveys were conducted at ten natural lakes between 10/3/2022 and 10/20/2022 and Walleye catch-per-hour

ranged from 13.3 fish/hr at Storm Lake to 528.0 fish per hour at Ingham Lake. Consistent patterns of Walleye recruitment based on age-class indices were more prevalent at Silver (Dickinson County), Tuttle, and Lost Island lakes compared to other natural lakes. Based on these data, managers were able to prioritize stocking assignments for fall 2022 stocked Walleye since Walleye hatchery production in 2022 was limited. Since this was the first survey of this type, inferences on year-class indices values were rather vague in meaning. Future surveys are needed to allow managers to understand the variability in these estimates and help determine the recruitment indices thresholds.

### **3) Rivers and Streams Fisheries Research Update**

Contact: Greg Gelwicks, Fisheries Research Biologist, [gregory.gelwicks@dnr.iowa.gov](mailto:gregory.gelwicks@dnr.iowa.gov)

#### **Evaluation of Interior River Fingerling Walleye Stocking Strategies:**

##### ***Executive Summary***

Walleye fingerling stocking is the primary tool that the Iowa Department of Natural Resources (DNR) uses to improve interior river Walleye populations. Available pond culture space has been a limiting factor for producing the two-inch-long Walleye fingerlings needed to stock interior rivers. Recent research at the Rathbun Fish Culture Research Facility has shown promising results raising Walleye fingerlings using an alternative method, intensive larviculture. Intensively reared Walleye fry are stocked into flow-through tanks and reared with pelleted feed from first feeding, instead of stocking them into ponds where they feed on zooplankton (extensively reared). This method could potentially increase production of Walleye fingerlings, but the performance of this hatchery product in Iowa's interior rivers was unknown. The goal of this study was to evaluate the relative contribution of intensively reared fingerlings to interior river Walleye populations.

Study sites were selected on four rivers and extensively reared fingerlings were marked, hauled, and stocked at these sites alongside marked intensively reared fingerlings to serve as a control. Extensively reared Walleye fingerlings are known to survive and contribute to river Walleye fisheries if river conditions are favorable. During June 2015-2017 and 2020, between 44,000 and 57,600 intensively and extensively reared fingerlings were marked with freeze brands and stocked at sites on 3-4 rivers each year. These sites were sampled by electrofishing during late September and October.

When intensively reared and extensively reared fish were stocked together during 2015-2017, fewer age-0 intensively reared fish than expected were observed at all sites and these results were significant for five site/river combinations. There did not appear to be an advantage to delaying stocking of intensively reared fingerling during 2020, vs. stocking extensively reared fish into high, turbid rivers. Mean and maximum catch-per-unit-effort (CPUE) of age 0 intensively reared fingerlings were only about one third of the catch rates of extensively reared fingerlings across all sites and years. There was little evidence of differences in growth between intensively and extensively reared Walleye fingerlings.

Our results indicate that Walleye fingerlings intensively reared in a flow through system do not survive as well as extensively reared fingerlings in Iowa's interior rivers.

Recommended best management practices from this research were as follows:

➤ Our study showed that culture method had a significant impact on survival of stocked Walleye fingerlings. The potential of small Walleye fingerlings intensively reared in a flow through system for improving Iowa's river Walleye populations appears to be low, unless they are stocked at much higher rates than extensively reared fish are currently stocked.

- Intensively reared Walleye fingerlings evaluated in this study were raised in a flow-through system, a production method which has been discontinued and replaced by a recirculating aquaculture system (RAS). Survival and growth of small Walleye fingerlings raised in a RAS and stocked in Iowa's interior rivers should be evaluated before final recommendations are made on the use of intensively reared Walleye fingerlings in Iowa's interior rivers.
  - Modifications of the intensive culture process that have the potential to facilitate the transition of fingerlings from an artificial diet to live prey should be investigated.
  - If freeze branding with liquid nitrogen is used as a marking technique in future investigations, the target size for branded fish should be  $\leq 800$  fish/lb. and branded fish should be held overnight to recover before stocking.
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**Iowa Chapter of the American Fisheries Society's 53<sup>rd</sup> Annual Business Meeting**  
**Minutes**  
**Midwest Fish and Wildlife Conference**  
**Tuesday, February 15, 2022**  
**5:00 PM**  
**Hilton Des Moines Downtown, Des Moines, IA**

- I. Call to Order
  - a. The meeting was called to order by president Tyler Stubbs. The EXCOM was introduced: Past-President: Chris Larson, President-Elect: Rebecca Krogman, Secretary/Treasurer: Seth Fopma. The quorum was determined and was present.
- II. 2021 Business Meeting Minutes were approved.
- III. Treasurer's Report Seth Fopma

The chapter started report period (2/16/2021) with a balance of \$13809.74 (\$3,100.38 in the warm water account and \$0 in Mike Mason Memorial Fund, resulting in \$10,709.36 available for AFS). Disbursements since the last financial report equaled \$2,735.67 and receipts equaled \$2,616.76.

The annual meeting, donation, 2021 dues, raffle along with parent society returns brought in \$2601.35. The annual meeting had \$273.35 in expenses. Raffle proceeds from the 2021 IA AFS meeting were split with the ISU Student Subunit for an amount of \$658.01. Money brought in minus total expenses and ISU split resulted in a total profit of \$658.01.

As for the other accounts that funnel through our account. The warm water account had no changes this year and ended with a balance of \$3,100.38. The Mike Mason fund has been depleted and the balance remains at \$0.

Other noteworthy expenditures included charges related to the 2022 Midwest Fish and Wildlife Conference, conference raffle prizes (\$544.19), conference t-shirts (\$904.74). Membership in Iowa Environmental Council for 2022 (\$100.00).

All account activity resulted in a balance of \$13,690.83 on 2/3/2022. The Warm Water Account has \$3,100.38; Mike Mason Memorial Fund has \$0.00, resulting in an AFS available balance of \$10,590.45.

This was noted as the last time that the Mike Mason Memorial Fund will be included in the treasurer's report unless there is activity that causes a change in the balance of the account from \$0.00.

- IV. Committee Reports

Committee reports were requested by the EXCOM prior to the 2022 business meeting. All reports received by the EXCOM prior to the requested date were compiled and distributed to the membership prior to the meeting. Comments revolving around reports at the 2022 business meeting referenced that document and did not expand upon the reports already received by the EXCOM and distributed to the membership.

V. Presentation of Awards

- a. Chris Larson was presented with the Past-President Award.
- b. Kyle Bales was recognized for his service to the Iowa Chapter and an award was discussed in recognition of that service. The EXCOM conferred and an award will be procured and awarded at a future meeting.
- c. Additional Awards
  - a. The EXCOM opened the floor to the discussion of establishing more professional awards to recognize chapter members for their service.
    - i. Jeff Kopaska suggested that the awards should focus on the service of membership and that the recognition of our peers should be a priority of the chapter.

VI. New Business

- a. Rathbun theatre thank you to James Harle
  - i. An award has been procured to thank James Harle for the work he did on the Rathbun Hatchery. This work was done at a discounted rate and we should thank him. The award will be given to Darcy C. and she will ensure that it is presented to him.
- b. Future Iowa Chapter Event ideas
  - i. Discussion reflected that the chapter could do better to interact with membership outside of the annual meeting. Also that the chapter should work to engage with local stakeholders to facilitate local recognition and support.
- c. New Logo
  - i. AFS and NCD have both updated logos recently. It would be appropriate to update the Iowa Chapter logo to reflect the changes and stay current.
  - ii. Jeff Kopaska suggested that the students and membership could work to develop a new logo rather than out-sourcing.
  - iii. A completion could be held to help select the new logo, there was general support for this and logo development will move forward as led by the EXCOM.
- d. AFS Fisheries Grant timeline
  - i. Seth Fopma opened discussion suggesting an edit to the Iowa Chapter current grant structure. Grants should expire 1 year from date of award. This would simplify accounting and make grant administration more efficient.
    1. A motion in support was proposed by Ryan Hupfeld. Seconded by Chris Larson and Ben Wallace. Motion was passed without dissent.
- e. Iowa AFS Chapter Webmaster

- i. Kyle Bales stepped away from his role as Webmaster in 2021. A need for a new webmaster resulted in Rebecca Krogman and Seth Fopma serving as temporary Webmasters. Discussion was held suggesting that there should always be two webmasters for the chapter website and that those duties would be tied to the secretary/treasurer role moving forward.
  - ii. Two Iowa State students volunteered to help facilitate the website moving forward
    - 1. Madeline Lewis
    - 2. Annika Preheim
- f. State fish of Iowa
  - i. Jeff Kopaska opened discussion on the current status of the Fish of Iowa completion held by the Iowa Chapter. Little progress has occurred since the 2021 meeting and we should be very intentional moving forward. It is too late to include our recommendations in this legislative session but we should be able to before the next session.
  - ii. 4 videos are posted on the chapter website and a vote from membership should be used to prioritize the top 2 for submission.
  - iii. Chris Larson Suggested that we should wait to develop the new Iowa Chapter Logo until we select a State fish for possible inclusion.
  - iv. Rebecca Krogman asked if we should consider have a game and non-game state fish.
    - 1. State fish are generally predictable but some states have multiple fish and that may be worth considering.
    - 2. This was generally supported by membership.
  - v. Scott Gummer inquired about the processes other states use to select state fish.
    - 1. The answer is it varies across states but ultimately it goes through the state legislature for approval.
- g. Iowa State Scholarship Status
  - i. The EXCOM has been in contact with representatives from ISU inquiring about the selection criteria of the annual scholarship funded by the chapter.
    - 1. While recent conversations have indicated that the chapter can provide more restrictions on the scholarship to ensure that it goes to a member of the subunit the burden of proof of membership would fall on the chapter.
    - 2. The topic was opened to discussion:
      - a) Seth Fopma suggested that the scholarship should not inherently be limited to the subunit or ISU and that the scholarship could be administered through the chapter.
      - b) Chris Larson was hesitant to directly remove the subunit requirement from the scholarship criteria.
      - c) Ben Wallace asked if non ISU students could join the ISU subunit? Dr. Weber weighed in that since the ISU subunit is an affiliated student organization with the university it is unlikely that non-ISU students would be able to join.

- d) A new awards Committee Was suggested to redefine scholarship guidelines and make recommendations about the future of student awards.
  - ii. A new awards committee was suggested
    - 1. Volunteers:
      - a) Ryan Hupfeld
      - b) Dr. Weber
      - c) Kyle Bales
      - d) Current EXCOM Members (Stubbs, Fopma, Krogman, Larson)
    - 2. This committee would work developing new chapter awards, revising the ISU scholarship and potentially selecting award winners in the future.

VII. Other new business

- b. Jonathan Meerbeek- the 2022 WTC meeting would be held at Iowa Lakeside Lab during the summer of 2022 and that this would be a good opportunity for the ISU subunit to make some money.
- c. Rebecca Krogman – There is a large fund available for continuing education at the parent society level. It would be good to use that money in some way to benefit the continuing education efforts of the Iowa Chapter.
  - i. Ryan Hupfeld and Seth Fopma are the chairs of the Continuing Education committee and will work together to explore opportunities to use this money.

- IIX. Meeting was moved to adjournment by President Tyler Stubbs. The motion was carried with unanimous support.