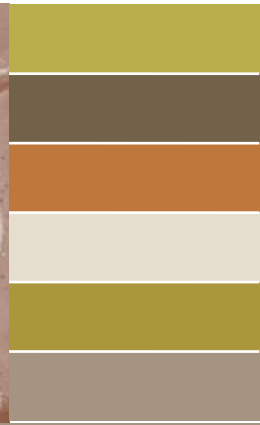


**In this issue**

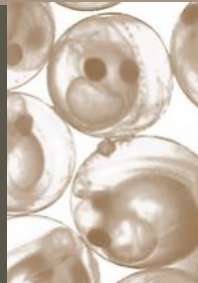
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Iowa Chapter of the American Fisheries Society

# Lateral Lines



**Current Articles**

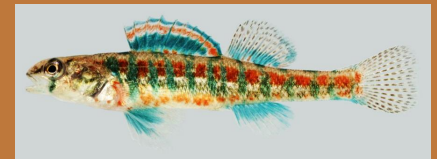
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For the record, the creation of this newsletter spanned the terms of two Chapter Presidents. So, the Chapter Contacts on the following page have been changed to show today's reality, though the President's Corner comes from our recent Past-President.

**CHAPTER LOGO CONTEST!!**

Details on page 5.

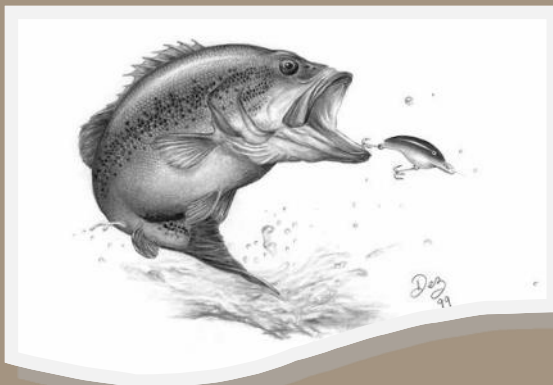


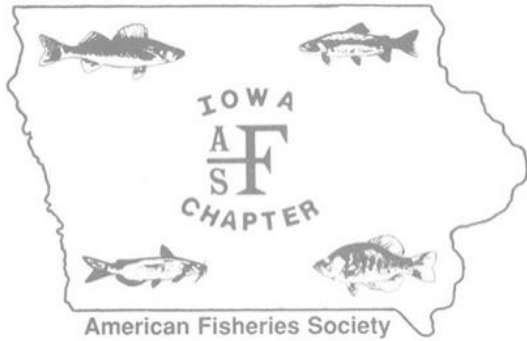
**Chapter Newsletter Editor** Position is opening! No elections required. Volunteer soon so you can learn Publisher nuances by working with the current editor late this winter to put together the March newsletter.

**Cyclone Corner**

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**Visit Iowa AFS on the web:**  
<https://iowa.fisheries.org>

**Visit the North Central Division AFS on the web:**  
<https://ncd.fisheries.org>

**Check out Benefits of Parent Society Membership**  
<https://fisheries.org>

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*Our Mission:*

To improve the conservation and sustainability of fishery resources and aquatic ecosystems by advancing fisheries and aquatic science and promoting the development of fisheries professionals.



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# President's Corner

*Tyler Stubbs*

It is hard to believe that one year ago I became President of the Iowa Chapter, time sure flies when you are having fun! It is mid-September and I thought fall was going to make an early appearance with these cool days and 50 degree nights lately, but the upcoming forecast calls for multiple 90 degree days, so fall will have to wait for now. I hope that you have all had a great summer.

The great Iowa State Fair recently wrapped up here in Des Moines in early August. I heard it described recently as "Des Moines' Disney". I haven't been to Disneyland, but I will take their word for it, but there is plenty to do (and eat) at the fair. Many of our members play key roles in making sure the DNR state fair aquarium is successful. Whether that is collecting and/or transporting fish, conducting presentations, making sure the tanks are working, cleaning out the building, or working the aquarium answering questions for the public. Know that your work does not go unnoticed for this large event and you are providing great representation for the fisheries profession.

As my time as President comes to a close I am reminded of the importance of not only AFS in general, but the opportunities it can provide. As many of you know this is my second stint as a state chapter President as I was previously President of the Mississippi Chapter a few years ago. After serving both places I can assure you that these EXCOM positions provide valuable experiences that can help you both personally and in your career. As a fairly new (5 years) employee it provided the opportunity to directly interact with colleagues that I typically don't work with everyday. It also provides a better understanding of how the chapter and the society function. I want to thank our current EXCOM (Chris Larson, Rebecca Krogman, and Seth Fopma) for their patience in working with me (I ask a lot of questions) and for their dedication to the chapter and the profession. It truly is a team effort. Thank you to Past President Chris Larson for his wisdom and



mentorship as I learned the ropes, it was greatly appreciated.

My advice to anyone thinking about running for a chapter officer position is to simply give it a try. At the NCD business meeting I heard multiple times that the NCD President position will be highly contested soon as the majority of the people they asked said, "ask me again in a few years." I highly encourage you to not use that phrase and to get involved with AFS at the parent and chapter levels as soon as you can, you won't regret it.

I am excited for the future of our chapter as Rebecca Krogman becomes President. Not only will the chapter have back-to-back Mississippi State Bulldogs as President, but Rebecca has been spearheading some pretty exciting things that will benefit the chapter and I look forward to seeing all of them come to fruition. Rebecca and Seth have also been working on the website this last year and have made a number of great updates. Go check it out!

I would also like to welcome a new Iowa State University student Sub-Unit EXCOM this year. I look forward to getting to know them and having their new President Michael Musal join the EXCOM.

A big thank you goes to Darcy Cashatt for her continued dedication in editing our newsletter!

In closing, thank you for the opportunity to serve the chapter in this role. I hope that you each have a safe and productive fall sampling and stocking season and know that your work is appreciated.

*Tyler Stubbs*

# Iowa Chapter AFS

## What's Coming Next?

Rebecca Krogman, President IA AFS



Hello Iowa Chapter members! As of the Executive Committee meeting last Thursday (10/6/22), I am your new President, with Tyler Stubbs stepping into the Past-President position and our new President-elect joining the ExCom. Who is that, you ask? Please welcome George Scholten, Iowa Department of Natural Resources Fisheries Research Supervisor, to the role of President-elect for 2022-2023.



I heartily thank Chris Larson for his prior service on the ExCom and Seth Fopma for his willingness to run for President-elect. I am doubly blessed because we get a new President-elect AND get to keep Seth around as Secretary-Treasurer. Finally, I thank Darcy Cashatt for her long-time service as our newsletter editor. We would be in a silent void without her regularly scheduled messages with President's Corners, student updates, and recipes!

We have a few other important developments to announce:

- The **2023 Annual Business Meeting** will be held in conjunction with The Wildlife Society AND immediately preceding Iowa DNR's Fisheries Bureau statewide staff meeting. Please block the dates March 1-2 for the Iowa Chapter AFS Meeting.
- The **State Fish recommendation** has been selected. The Iowa Darter *Etheostoma exile* was voted on by the membership to represent Iowa as a whole. See call for volunteers below.
- We will be hosting a **Chapter Logo contest!** See details below.
- We have revamped the **Undergraduate Student Scholarship** for the 2022-2023 school year. See the announcement in this newsletter and apply before 12/31/22. See call for volunteers below.



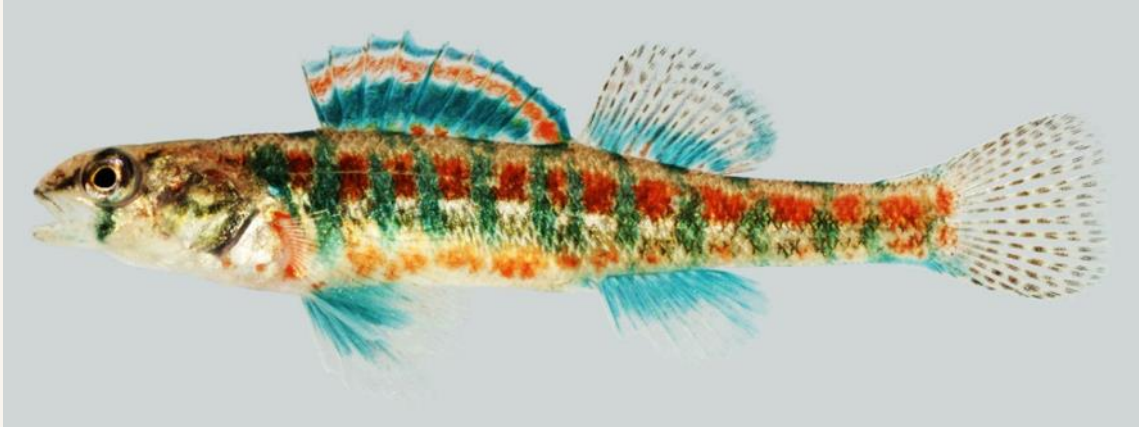
We have several volunteer opportunities available, so please contact Seth at [iowachaptersafs@gmail.com](mailto:iowachaptersafs@gmail.com) if you are interested in helping with any of the following. If you raised your hand at the 2022 Business Meeting, we will also be reaching out soon.

- Develop the formal State Fish recommendation to the Iowa legislature
- Develop formal criteria for the new Chapter Awards as part of the Awards Committee
  - ◇ Outstanding Early Career Professional Award
  - ◇ Award of Professional Merit
  - ◇ Award of Professional Excellence
  - ◇ Aquatic Conservation Achievement Award
  - ◇ Undergraduate Student Scholarship

I look forward to a productive year with you all! Please let us know how AFS can better serve you and provide value to you, and enjoy this beautiful autumn of fish-squeezing.

# Announcing the Iowa Chapter Logo Contest!

Now that our members have identified their preference for Iowa's state fish, we are happy to announce the Iowa Chapter Logo Contest!



Many units of AFS have recently updated their logos, including both the North Central Division (NCD) and the overall Society (see below). The purpose of updating is to stay **relevant** to current and potential members and reflect **priorities** of the membership. For example, the NCD logo encompasses symbolism for both the U.S. and Canada, as well as highlighting major species of management interest. The AFS logo includes symbolism in both shape and color, [as explained here](#).



Please consider incorporating the following concepts into a new logo design for the Iowa Chapter:

- Iowa Darter
- Color scheme or elements of the American Fisheries Society logo
- Elements important to Iowa's fisheries research, management, and education

Submissions will be accepted online very soon, and there is a prize for the winner! Non-members are welcome to submit, and there is no limit to the number of submissions per person. More details will be announced soon.

# From Days Gone By — Iowa 1878, A Crappie??

Vance Polton, Lake Darling Fisheries Management Tech II, IA DNR

## WHAT A CROPPIE IS.

ANAMOSA, IOWA, Jan. 21., 1878.

The "crappie," or "croppie," is a fish I have never seen except in the Mississippi River and its tributaries. They more nearly resemble Klippart's, Lake Erie, or grass bass, than any other fish I have ever seen (see Ohio Report for 1877, plate IX., fig. 2). I have no fish before me, and no formula, but, compared with the plate named, I note the following differences: Under jaw not so long or drooping; gill cover not so pointed; scales finer; depth of fish greater in proportion to its length; the swell of the body continuing more nearly to the caudal.

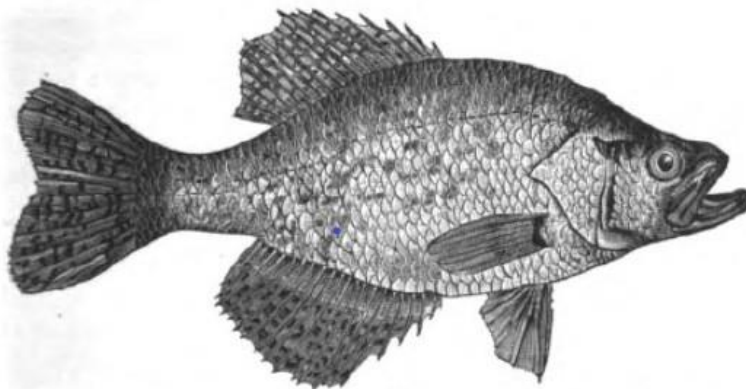
I think them quite valuable for Western waters, particularly so for ponds and sloughs, where the temperature of the water gets very high. I have caught very many in water so warm that I thought no fish could live in it. They are rapidly increasing where they have been planted.

A. H. Franks, a sportsman and fisherman of Waterloo, Iowa, writes me as follows: "Heretofore there has been but very few croppies caught. Last season I have been out several times, when we have caught forty or fifty in two or three hours' fishing, some weighing as much as three pounds."

They are free biters, and will take any bait that a bass will take; and fight well. In my description I should have stated that they are the thinnest in proportion to their size, of any of the *Percidae* family with which I am acquainted. Specimen three inches long, being sometimes nearly transparent in some portions of the body. B. F. SHAW.

PLATE IX.

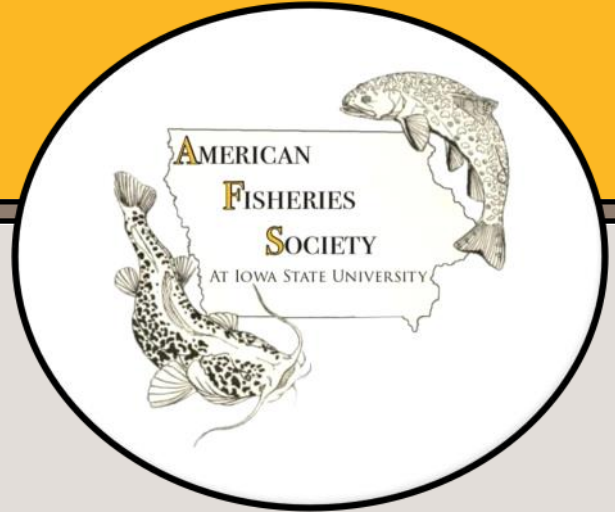
Fig. II.



POMOXYS ANNULARIS. LAKE ERIE, OR GRASS BASS.



# Cyclone Corner



## ISU Student Sub-Unit Updates

*Michael Musal , President*

(Like us on Facebook, search @ISUAFS)

The Iowa State subunit has been busy recently. Over the past year, we have hosted bi-weekly group meetings, fishing outings, fish fry's, and more. In February, we had the opportunity to fundraise at the Midwest Fish and Wildlife Conference in Des Moines. And this past summer, we served dinner at the Walleye, Muskie, and Centrarchid Tech Committee Meeting at Lake Side Laboratory at Lake Okoboji. The subunit plans on cleaning up fishing line disposal baskets throughout Story County and meeting with fisheries professionals this upcoming fall and winter.



**Dr. Joe Morris gives a presentation to the ISU Student Sub-Unit regarding aquaculture.**

- CURRENT OFFICERS:**
- President: Michael Musal
  - Vice President: Devin Miller
  - Treasurer: Adam Wicks
  - Secretary: Evan Brennan



## Cyclone Corner

### More New Faces and Research Projects at Iowa State

***Hello all! We welcomed a number of new people to NREM and would like to provide the opportunity for you to get to know them. Here is a bit about who they are and what they are working on!***

*Michael Weber*

My name is **Christian Slone** and I joined the Weber Lab as a MS student in May 2022. I have always loved being outdoors, but my passion for fisheries grew while I was in high school. This led me to pursue my BS in Fisheries/Aquatic Biology at Murray State University, graduating in May 2022. While at Murray State, I was accepted into a program called Students United in Preserving, Educating, and Researching Biodiversity (SUPERB) where I was able to research the effects of climate change on Bluntnose Minnows in a western Kentucky stream using an agent-based bioenergetics model. I also had a summer research internship at the Thomas More Biological Field Station on the Ohio River where I assisted with a long-term bioassessment of the Ohio River adjacent to two coal-burning power plants near Cincinnati, Ohio. Additionally, I conducted my own independent study comparing the biodiversity of a floodplain lake and a non-floodplain lake in northern Kentucky. At Iowa State, I am assessing harvest dynamics of Smallmouth Bass in Missouri River reservoirs in central South Dakota.



My name is **Connor Fiolek** and I joined the Weber Lab as a Master's student in June 2022. I grew up on a river in Mount Pleasant, Michigan where my love for the outdoors first started. In December 2020, I graduated from Central Michigan University with a Bachelor of Science in Biology and concentrations in Ecology, Evolution, and Conservation. During my undergraduate education, I was involved in research pertaining to the age and growth dynamics of Smallmouth Bass and Yellow Perch. After graduation, I spent a year working at the University of Illinois under the Illinois Natural History Survey as a fisheries technician where I obtained valuable experience aging fish, electrofishing, and analyzing age and growth data. At Iowa State, I am using acoustic telemetry to study movement and population dynamics of Hybrid Striped Bass in Rathbun Lake.





**New Faces and Research at Iowa State University** *(continued)*

**Britney Hall**



My name is **Britney Hall** and I joined the Weber Lab at ISU as a Master’s student in May 2022. I grew up in north Georgia where my love for the outdoors first started. After high school, I attended the College of Coastal Georgia where I received a Bachelor of Science in Environmental Science with a concentration in Natural Science. As an undergraduate, I had the opportunity to intern with the Georgia Department of Natural Resources Coastal Resource Division on a shark and red drum longline survey, as well as with UGA Marine Extension and Georgia Sea Grant on a juvenile estuarine fish monitoring survey. Through my internships and other opportunities during my undergraduate education, I gained valuable experience working with saltwater fisheries professionals. Those experiences led me to want to further my education and gain experience in the behavioral ecology of freshwater fish. During my MS degree at ISU, I will be working on developing habitat suitability models for invasive carp reproduction in tributaries of the Missouri and Mississippi rivers, as well as assessing the effectiveness of the electric barrier on Milford Creek for stopping the upstream movement of invasive carp.

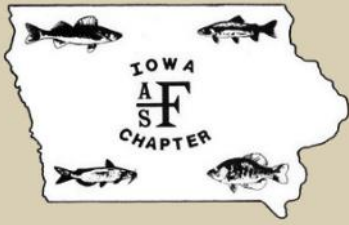
###

**Iowa Chapter Gift of Thanks**



Mr. James Harle, owner of Iowa Audio and Video, was very excited to receive this framed Maynard Reese print this past May at his office from IA AFS member Darcy Cashatt. Mr. Harle, an avid outdoorsman, noticed the Maynard Reese prints while at the Rathbun hatchery assessing the visitor Center theater project. It was at this time that Darcy explained that the project funds were from a Memorial fund in honor of Mike Mason collected and administered by the Iowa AFS, and had a very limited budget. He submitted a very competitive bid that resulted in his company programming and installing a large commercial touchscreen into the Rathbun Fish Hatchery visitor center theater. The print was given in appreciation for a much reduced cost for the touch screen display.





# Iowa Chapter

of the American Fisheries Society

## Undergraduate Student Scholarship

### PURPOSE OF THE AWARD

To recognize an up-and-coming fisheries undergraduate student based on academic and work merit.

### AWARD DETAILS

Amount: \$500

- Check provided to student for the purpose of supporting tuition
- Free meeting registration for the next Iowa Chapter Annual Meeting

### ELIGIBILITY REQUIREMENTS

- Current membership in the Iowa Chapter of the American Fisheries Society
- Junior or Senior studying fisheries, aquatic science, or a related field at an educational institution
- At least one summer of field experience in fisheries, aquaculture, or related field

### PREFERRED QUALIFICATIONS

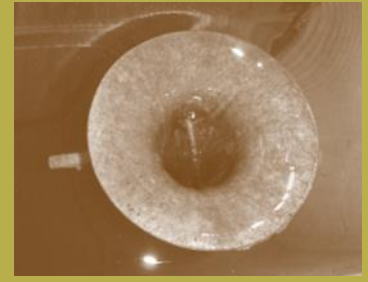
- Current membership in other units of the society (e.g., in a student subunit or the overarching American Fisheries Society [join at [www.fisheries.org](http://www.fisheries.org)])
- Active participation in the Iowa Chapter or other units of AFS
- High academic performance
- Attendance at the subsequent Iowa Chapter AFS meeting, where the award will be presented

### HOW TO APPLY

- Complete the online form at: <https://iowa.fisheries.org/grants-and-awards/undergraduate-scholarship/>

# Raising the Standpipe— Blue Catfish Culture at Mount Ayr

*Andy Jansen, Fisheries Management, Iowa DNR*



There's a fish hatchery in Mt. Ayr? If I've heard that once, I've heard it 100 times, even from some folks in our local community! Actually "yes" the Mt. Ayr Fish Hatchery has been in operation since 1941. We are a small satellite facility with five earthen fish rearing ponds and we raise several fish species including hybrid striped bass, Largemouth Bass, Bluegill, Redear Sunfish, and Fathead Minnows. More recently we have ventured into new territory raising Blue Catfish. After the 2016 fish renovation at Three Mile Lake, it was decided to stock Blue Catfish instead of the traditional Channel Catfish to create a unique trophy fishery. Since 2016 we have been traveling to Arkansas, Texas, and Missouri to pick up feed trained Blue Catfish fingerlings and bring them back to Mt. Ayr for grow-out production. We continue to refine our production techniques, but we have definitely learned a few things so far. First, these fish are magicians and pull off a disappearing act after being stocked into our hatchery ponds. At first, we thought we lost all the fish we brought back, but after about two weeks they would finally show up to our daily feedings. We've also discovered that they don't like the cold. When the temperature cools off in the fall or when we get one of those mid-summer cold fronts that drops the air temperature, the Blue Catfish will shut down on feeding. Therefore, we have moved to twice a day feeding (once in morning and again in afternoon). That way we can get them to feed at least once in the afternoon when the air temperature has increased a bit.

We also started using a sinking trout food in September (typically cooler weather) as the fish don't seem to want to come to the surface to feed on floating feed when it's cold outside. Finally, we took a page from Rathbun Fish Hatchery's Channel Catfish production playbook and started using feed rings to concentrate the feed into a small area. The fish can feed more effectively and it's more efficient on fish feed. Overall, we've been successful with our Blue Catfish production averaging 82% survival in our hatchery ponds from 2016-2021. Some additional stocking locations also have been added recently. Lake Icaria was added to the stocking list in 2019 after discovering small Blue Catfish in



**21 inch, 4.3 pound Blue Catfish**

that lake  
in 2018

(likely angler introduced). We stocked 83,808 Blue Catfish in Three Mile Lake from 2016-2020 and 14,731 Blue Catfish in Lake Icaria from 2019-2020. Both lakes were stocked with an additional 9,000 fingerlings in 2021. We also added a couple additional stocking locations in 2021. Lake Manawa, which has an abundant Gizzard Shad population, was stocked with 9,495 Blue Catfish fingerlings in 2021. Windmill Lake, a small lake in rural Taylor County, was stocked with 621 Blue Catfish in 2021 after the lake was renovated in 2020. Time will tell on how these populations develop, but we'll continue to refine our production techniques for this species to create unique fisheries for Iowa anglers!

# Iowa Chapter Members Honored

*George Scholten IA DNR Fisheries Research Supervisor*



This year two members of the Iowa Chapter of the American Fisheries Society were honored with prestigious AFS awards recognizing their service to our society.

At the business meeting of the North Central Division of AFS at the Midwest Fish and Wildlife Conference in Des Moines this past February, Jeff Kopaska was presented with the NCD Meritorious Service Award. This award recognizes a NCD member for their extraordinary service to AFS at the Chapter, Division, and Parent Society levels. Excerpts below from the nomination letter highlight Jeff's tireless contributions at all three levels.



Jeff served as the President of the Iowa Chapter of the American Fisheries Society during 2016–2017. Jeff also served on a committee to revise chapter bylaws during 2015. He has remained closely involved as a resource for recent Executive Committees as well, often representing the Chapter at Iowa State University student subunit events and focusing on engaging his neighbors in Ames. Jeff highlights a publication from an AFS journal in his weekly “Fishy Friday” email communications to

Chapter membership.

During Jeff's term as President of the North Central Division of the American Fisheries Society (2019–2020), Jeff created the Ambassador Program to encourage chapters to invite neighboring chapter members to annual meetings. He also developed and implemented the “Hero of Fisheries” award to recognize long-standing AFS members, both in the Division and in the chapters.

Jeff Kopaska has served the Society through Standing and Special committees, through Section leadership, and by publishing in Society publications. Jeff served four times, including 2021, on the Nominating Committee. On this committee, Jeff clearly served as a nexus for generating potential Second Vice President nominees and he pushed the committee to consider trends in AFS Officer backgrounds to better represent all members. He has been a voice for agency professionals, as well as students. Jeff chaired the Special Committee on Affiliate AFS members, a topic that grew from his previous work on the AFS Membership Committee. Jeff also served on the Electronic Services Advisory Board and as President of the Fisheries Information and Technology Section during 2008–2011. He was an integral part of past Section efforts on data management and fisheries data standards, and is now one of several Section member co-authors involved in a data management-oriented chapter in the new edition of Standard Methods for Sampling North American Freshwater Fishes. Jeff has authored more than 10 articles in Fisheries in Perspective, Guest Column, Essay, and AFS in Action categories. Many of these articles were in a series of articles under the “Digital Revolution” title focused on informing AFS members of ways to integrate technology into their science and management activities.

*(Continued on next page)*

## Iowa Chapter Members Honored con't

In August at the Society Meeting that was held in Spokane, Washington, Rebecca Krogman was presented with the AFS Distinguished Service Award. This award was established in 1980 and recognizes outstanding service to our society. Since first joining AFS as a student at Iowa State University in 2008, Rebecca has dedicated substantial time and energy to AFS in a wide variety of roles.



As a student, Rebecca served as President of the Iowa State University Student Subsection (undergraduate) and as President of the Mississippi State University Student Subsection (Masters).

She is currently a member of the Education, Fisheries Information and Technology, Science Communication, Socioeconomic, and Fisheries Management sections. She served the society for a decade as a member of the Electronic Services Advisory Board (ESAB, 2011-2020), and as its Chair for an extended period of time (2014-2018); President of the Fisheries Information and Technology Section (2017-2019); Steering Committee member and Plenary Chair for the 2022 Midwest Fish & Wildlife Conference (NCD Annual Meeting); President of the Iowa Chapter of AFS (2022-2023), and AFS Governing Board member and Membership Committee member (2017-2019). As FITS President,

Rebecca did an exceptional job of expanding positive communication regarding data management, leading to inclusion and co-authorship of a book chapter on data management in the new Standard Methods book. Rebecca has served on multiple working groups for special projects such as the Gray Literature Database and Research Forum Web Tool and as newsletter editor for Fisheries Information and Technology Section.

Rebecca has contributed numerous publications in AFS journals and authored multiple book chapters. She also frequently serves as a peer reviewer for AFS publications. Website design, management and maintenance is an underappreciated, but vital, role in any unit of AFS – and one at which Rebecca is exceptional. As an undergraduate student, Rebecca designed and updated the websites for the Iowa State University Student Subunit and the Iowa Chapter. In graduate school, she served as the webmaster for the Mississippi State University Student Subunit. In 2011-2012, she served on AFS ESAB, at a time when the AFS website was redesigned. She now assists with websites, mostly in a consulting role, for the Iowa Chapter, Student Subsection of the Education Section, and Fisheries Information and Technology Section, as well as running the online Center for Fisheries Technology.

These are just a few of Jeff and Rebecca's contributions to our society, but it is easy to see why their peers felt they exemplify excellence in professionalism and unquestionable dedication to the mission of the American Fisheries Society. Thank you Rebecca and Jeff for your outstanding and ongoing contributions to AFS!



# Aquatic Invasive Species, Hatcheries, Recirculating Aquaculture Systems, and Walleye

Lewis Bruce, IA DNR Man-made Lakes Fisheries Research



**Introduction** Aquatic Invasive Species (AIS) outcompete native aquatic flora and fauna, negatively impacting natural resources in Iowa. Outdoor activities and infrastructure have also been adversely affected by AIS. Zebra Mussels (*Dreissena polymorpha*) are an AIS that leap frogged across Iowa and established populations in waterbodies supplying water to Iowa DNR hatcheries. These small bivalves colonize the inside of supply pipes reducing water flow to raceways and tanks. To prevent the spread of Zebra Mussels, the Iowa DNR Fisheries Bureau transformed the way it conducts business. New egg collection and fish hauling techniques were developed and implemented i.e., dry egg stripping methods and the Edwards treatment. Modifying fish rearing techniques was the next step in prohibiting the transportation of AIS in Iowa and Recirculating Aquaculture Systems (RAS) was a viable method the Iowa DNR Fisheries Bureau wanted to evaluate. RAS have been used in the commercial food fish industry for several years. State Fisheries agencies saw the benefits of these systems, i.e. no AIS, reduced fish infection rates, more efficient use of water, and started installing RAS in their facilities. The Rathbun Fish Culture Research Facility installed a RAS to evaluate Walleye (*Sander vitreus*) rearing efficiency. Walleye eggs were fertilized by hatchery staff and placed in the RAS for incubation and grow out. Although Walleye have been reared to large fingerling sizes, research doesn't exist about post stocking survival in lakes or rivers. This study was designed to evaluate advanced fingerling Walleye post stocking survival in Iowa lakes.

**Methods** Three advanced fingerling Walleye products produced by the Rathbun Fish Culture Research Facility and Rathbun Fish Hatchery were fin clipped and stocked into study lakes in fall 2020 and 2021 (Table 1 and Table 2). The control fish i.e., Walleye reared using traditional methods (Traditional; Rudacille and Steuck, 2018), were stocked concurrently with Walleye reared in the Fish Culture Research Facility using a RAS (RAS) and fish reared in RAS from egg up to 2" size and then finished using traditional methods (Combination). In 2020 the Combination product required a disease treatment delaying stocking of these fish until November 18 resulting in a double stocking of

**Table 1.** Mean length and body condition (Wr) of Walleye the day of stocking October 21-22, 2019; October 21, 2020; November 18, 2020; October 26-27, 2021.

	2019		2020		2021	
	Length (mm)	Wr	Length (mm)	Wr	Length (mm)	Wr
RAS	219	98	246	105	236	113
Combination	239	94	229	93	238	99
Traditional	238	91	221	101	246	89

**Table 2.** Fin clip, stocking date, and product type of advanced fingerling Walleye stocked in 2019, 2020, and 2021.

Fin Clip	Oct. 21-22, 2019	Oct. 21, 2020	Nov. 18, 2020	Oct. 26-27, 2021
Left Pelvic	Traditional			RAS
Right Pelvic		Traditional		Combination
Left Pectoral	RAS	RAS		Traditional
Right Pectoral	Combination			
Upper Caudal			Combination	
Anal			Traditional	

the Traditional fish. The Traditional product was marked using two different fin clips, (i.e., a different fin clip was used for each of the two stocking dates). Subsamples of each product were collected after hatchery ponds were crowded and prior to loading fish for stocking in the two lakes; length and body condition (Wr) were recorded for 100 fish from each product type (Table 1). The stocking schedule was designed to eliminate the potential of one

truck stocking a single product at only one lake, (i.e., the same trucks were used to stock each of the three products into all three lakes). Poor fin clips are difficult to quantify during post-stocking sampling efforts, therefore fin clip quality was evaluated for 20 subsamples completed by 14 staff members prior to stocking Walleye in 2021. A subsample of 20 fish were evaluated for each person processing fish and for each product, (i.e., if one person clipped fins on two products they were evaluated twice). Deformity rate was also evaluated after staff clipped fish from floating keeps

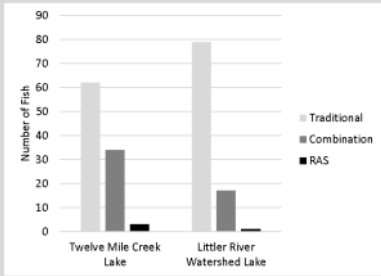
into hatchery truck tanks. Prior to clipping fins staff members were trained to clip the correct fin and how to make a good quality fin clip. All three products were evaluated using fall electrofishing surveys conducted one and two years post stocking when water temperatures were equal to or less than 10 °C.

To further understand how RAS fish were surviving 15 RAS fish were implanted with radio transmitters (ATS Model F1580) May 10, 2021 and stocked into Cold Springs Lake. This lake was selected as a pilot project because it had a low density predator population of Large-mouth Bass. Radio transmitters were also implanted in 20 advanced fingerling Walleye October 25, 2021, 10 Traditional product and 10 RAS product, and stocked into Cold Springs Lake. Radio transmitter size is limited to 2%-3% of a fish's body weight and the weight of the transmitter determines its functional life, (i.e. a larger transmitter houses a larger battery and extends the life of the transmitter). We were

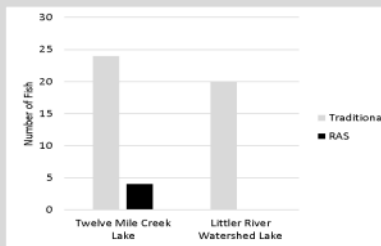
# A. I. S., Hatcheries, RAS, and Walleye *con't*

limited to 3.6g radio transmitters with a warranty life of 129 days and a battery life of 258 days. These fish were tracked weekly for the life of the transmitter or until the fish was deceased. A handheld Global Positioning System (GPS) unit was used to monitor locations and determine if fish were alive. If a fish was presumed deceased a reasonable effort was made to retrieve the radio transmitter.

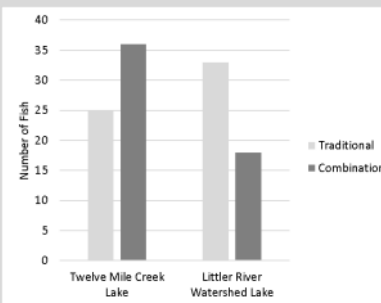
**Results** Traditional fish were caught in greater numbers than RAS fish across both lakes in 2020 (Figure 1). The RAS product was sampled in lower numbers than the Traditional product in both lakes in 2021 (Figure 2). The Combination product stocked November 18<sup>th</sup> in Twelve Mile Creek Lake was sampled in greater numbers than the Traditional product (Figure 3). The traditional product was larger than the other two products in both Twelve Mile Creek Lake (304 mm) and Little River Watershed Lake (296 mm) at age-1. Age-2 RAS fish were not present in the fall 2021 electrofishing surveys (Figure 3). Age-2 Traditional fish were sampled in greater numbers than Combination fish in Twelve Mile Creek Lake and age-2 Combination fish were not sampled in Little River Watershed Lake. (Figure 4). The combined average of all clippers found good fin clips were achieved 92% of the time with single subsamples ranging from 55 to 100 percent good quality fin clips (Figure 5). Poor fin clips accounted for 30 of the 400 fish processed and 3 fish had no fins clipped. (Figure 6). Walleye implanted with radio transmitters and stocked into Cold Springs Lake May 10, 2021 had a low survival rate, 14 of the 15 fish were deceased by December 15, 2021. Walleye implanted with radio transmitters October 25, 2021 were all alive April 21, 2022 at the end of the radio tags warranty period.



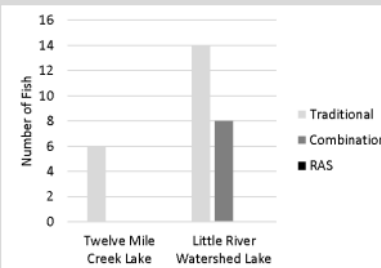
**Figure 1.** Fall 2020 electrofishing survey sample size of age-1 Walleye for three product types stocked in two Iowa lakes Oct 21-22, 2019.



**Figure 2.** Fall 2021 electrofishing survey sample size of age-1 Walleye for two product types stocked in two Iowa lakes Oct 21, 2020.



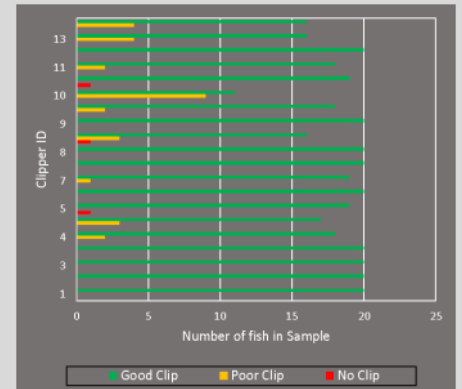
**Figure 3.** Fall 2021 electrofishing survey sample size of age-1 Walleye for two product types stocked in



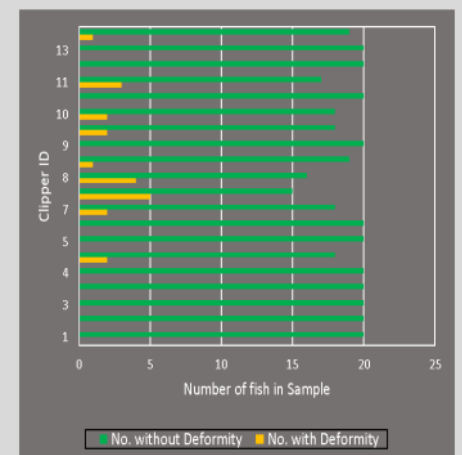
**Figure 4.** Fall 2021 electrofishing survey sample size of age-2 Walleye for three product types stocked in two Iowa lakes Oct 21-22, 2019.

**Discussion** Walleye reared in a RAS and grown out were able to achieve large sizes with high body condition using methods designed by the Rathbun Fish Culture Research Facility. Water use and disease treatment costs were lower in the RAS than the Rathbun Hatchery flow through. Fall 2021 surveys collected the 2020 year-class of Combination fish at a higher rate than the Traditional product and sampled Combination fish from the 2019 year class. The Combination product catch rates at age-2 were lower than the Traditional product. Deformity rates of the Combination product were higher than the Traditional product and lower than the RAS product. Deformity rates in the RAS product exceeded 40% in the 2021 year-class. The Rathbun Hatchery flow through system consistently produced Traditional fish with less than a 5% deformity rate. Deformed fish were not collected during post stocking fall electrofishing surveys suggesting these fish perished before age 1. The RAS fish were collected in low numbers as age-1 in 2020 and 2021; no RAS fish were collected at age-2. Based on these results the Combination product may have an adaptation that increased their chance of survival over the RAS product.

The two radio tagged fish groups, May and October produced different results. Of the 15 radio tagged fish from the May 10, 2021 was surviving after 8 months. The other fish were pronounced dead and transmitters were recovered. Water temperature was 59°F on May 14, 2021 when radio



**Figure 5.** Advanced fingerling Walleye fin clip quality evaluation for 14 people.



**Figure 6.** Stocked deformity evaluation for advanced fingerling Walleye.

## A. I. S., Hatcheries, RAS, and Walleye *con't*

transmitters were surgically implanted. This water temperature may have been at the upper threshold for implanting radio tags in Walleye and could have accounted for a majority of the dead fish in the first week or two after stocking. One of the fish recovered three days after stocking had an infection around the sutures and inside the body cavity. The water temperature was 49°F when Walleye were implanted with radio tags in October. All of

the radio tagged RAS and Traditional Walleye from the October 25, 2021 stocking were alive April 21, 2021 at the end of the radio tag warranty period. After 174 days post stocking these fish were still alive, and demonstrated advanced fingerling Walleye reared in a RAS have similar survival rates as advanced fingerling Walleye reared using traditional methods. Low predator density, no visual deformities, and high body condition may have contributed to the survival of the RAS product in Cold Springs Lake. Twelve Mile Creek Lake and Little River Watershed Lake have higher predator densities than Cold Springs Lake, therefore lack of predator avoidance in these two systems could have a negative effect on stocked RAS fish. Even though this project is in its infancy, important observations have been made. These findings provide the knowledge necessary to take the next step in moving towards a RAS Walleye rearing method with reduced deformity and better post stocking survival. Our traditional Walleye rearing methods were refined over a several year period so we should expect the new technique to develop with time. Future work will include implanting acoustic tags in both the RAS and traditional products prior to stocking in 2022 and sorting out the deformed fish prior to stocking. The acoustic tags will be equipped with a digestion sensor (i.e., when the fish we tag is consumed a different signal is sent to the receiver). Both products will be stocked into lakes with low and high predator densities. To be continued.....

### References

- Rudacille, J, and M Steuck. 2018. Fish Culture Section Completion Report. Iowa Department of Natural Resources Job Completion Report, Des Moines, 120 pages.
- Schultz, RD, editor. 2009. Standard gear and techniques for fisheries surveys in Iowa. Iowa Department of Natural Resources Job Completion Report, Des Moines, 186 pages.



## Upcoming Professional Meetings and Training Opportunities

- [76th Annual Conference of the Southeastern Association of Fish and Wildlife Agencies](#). October 23—26, 2022. Charleston, West Virginia.
- [N. American Invasive Species Management Association 30th Annual Conference](#). November 7-10, Ft. Myers, FL. (currently considering alternative options due to hurricane Ian).
- [NALMS 42nd International Symposium: Leveraging Experience to Manage Diverse Lakes, Landscapes and People](#). November 14-17, Minneapolis, MN.
- [83rd Midwest Fish & Wildlife Conference, Changing Conservation](#), February 12-15, 2023. Overland Park, KS.
- [North Central Division AFS Annual Meeting](#). February 12-15, Overland Park, KS.
- [Aquaculture America 2023](#). February 23-26, 2023, New Orleans, LA.
- [ICES International Symposium on Fisheries & Zooplankton Acoustics](#). March 27-30, Portland, ME.
- [153rd Annual Meeting of the American Fisheries Society](#). August 20-24, 2023, Grand Rapids, MI.





# THE IOWA WALLEYE CHALLENGE — Using a statewide walleye fishing tournament to address gaps in fisheries surveys.

*Jeff Kopaska, Technology and Data Management, Iowa DNR*

**ABSTRACT** Each year, the Iowa Department of Natural Resources (DNR) invests significant resources to support its Walleye fishery, by stocking over 160 million Walleyes in around 80 different water bodies statewide. Collection of broodstock for hatchery production dominates one appropriate timeframe for sampling and population monitoring, thus limiting surveying of stocked waterbodies. Creel surveys are conducted at a limited number of fisheries, not of all which are Walleye fisheries. In 2022, Iowa DNR partnered with MyCatch, an app-based tournament platform, to conduct a state-wide catch-photo-release fishing tournament to determine if angler reported data could provide a reasonable overview of Walleye catch rates and length distributions for waterbodies across the state. Ongoing fisheries survey efforts and creel surveys were used as a benchmark to evaluate how well the reporting from anglers matched fisheries data. The underlying question behind this effort was to assess if angler reported catches were consistent with the other fisheries data, and if so, could they provide a new, cost-effective way to develop a broader assessment of Walleye populations.

Information from anglers has long been an important component of fisheries management. Traditional creel surveys provide catch rate and harvest information, but generally only for a single water body, and come at a significant cost. Angler diaries have been utilized, but these are generally completed by avid participants. Past assessments of these undertakings have indicated that results can provide useful information regarding density and size structure of fish populations. Results from fishing tournaments have also been compared to traditional fisheries surveys. Tournament anglers are more avid than casual anglers, and thus catch rates may be skewed higher from tournament results. Challenges using tournament results include zero-catch days not consistently being reported (depending on tournament type), and tournament anglers targeting and reporting fish from the high end of a population's size distribution. The advent of virtual

tournaments allows some ability to account for these difficulties. The Iowa Walleye Challenge provided angler incentives such as weekly prizes for the largest fish caught, but also for the most fish caught, and for "hard luck" days when no fish were caught. This improved reporting of zero catch days, as well as reporting of fish of all sizes caught by anglers.

Seventy anglers participated in the Iowa Walleye Challenge during May and June, 2022, fishing at forty-one different lake and river locations across Iowa. Five hundred fifty-one total trips were logged, and 2,074 fish were caught during 1,795 hours reported spent fishing. There were 96 trips reported when no fish were caught, and the average catch rate statewide was 1.43 fish/hour ([Figure 1](#)). Catch rates at individual water bodies ranged from 0-2.4 fish/hour, with an additional outlier of 5 fish/hr reported by one angler who fished at Lake Delhi for 12 minutes on one occasion, and caught one walleye (Dan Kirby?). The mean and median catch rates for individual water bodies were 0.9 fish/hour, and the mode was 0 fish/hour. Water bodies where more than one trip was taken, and angler catch rate exceeded 1.5 fish/hour include the Middle Raccoon River, Nodaway Lake, Tuttle Lake, Silver Lake (Dickinson), Center Lake, Clear Lake and Little River Watershed Lake. Six water bodies were reported with no walleyes caught from a single angler trip, but the following water bodies had zero walleyes caught from multiple angler trips: East Fork Des Moines River, East Okoboji Lake, North Raccoon River, and Storm Lake. Historical data from Rathbun Reservoir creel surveys indicate an average catch rate of 0.3 fish/hr for anglers seeking walleyes (Mark Flammang, pers comm.), and current creels on Big Creek Black Hawk, Spirit Lake, and Twelve Mile indicate anglers are very satisfied with a walleye catch rate exceeding 0.15 fish/hr (Rebecca Krogman, pers. comm.). Tournament anglers likely have higher catch rates and higher expectations than casual anglers, but the data from the Iowa Walleye Challenge indicates that catch rates and angler satisfaction should be acceptable at most water bodies that were fished.

*(Continued on next page)*

## The Iowa Walleye Challenge can't

Fish survey data from spring electrofishing, fall electrofishing, and gill nets exists for Big Creek Lake, Brushy Creek Lake, Clear Lake, Rathbun Reservoir and Spirit Lake. Additionally, creel data from Spirit Lake is also available to compare to tournament data. Gill nets used for brood fish collection are biased toward large fish (no Walleye smaller than 16" were recorded in any of the catches), and thus are not useful for Walleye population size distribution comparisons. Similarly, gills nets set at Big Creek caught no fish smaller than 13", while gill nets from Brushy Creek caught no fish smaller than 19" in 2022. Thus, these gears were also deemed not useful for Walleye population size distribution comparisons. Spring electrofishing data from Big Creek and Brushy Creek was dominated by 13"-17" fish, likely males staging in spawning habitat. Fall electrofishing data showed a broader range of size classes of fish. The results of the fall electrofishing surveys are shown compared to tournament catches in [Figure 2](#), for fish stock size and larger. Results shown are percent of overall catch, to ease data comparisons.

A Kolmogorov-Smirnov (K-S) test is used to assess if two samples show results that indicate each is from the same population. While it is known that fall electrofishing results and tournament catches are from the same population, this statistical test is useful to determine whether each set of results is similar. The results of K-S tests ([Figure 3](#)) indicate that tournament results and fall electrofishing data are similar for Big Creek and Brushy Creek. Clear Lake's results look visually similar, however, the large sample size for Clear Lake likely results in that lack of statistically significant for similarity between those samples. The results are much less similar for Rathbun and Spirit Lake, which also failed the K-S test. Spirit Lake creel and tournament data were more similar to each other than to fall electrofishing data.

Clear Lake and Big Creek both had over 500 fish reported during the course of the Iowa Walleye Challenge, while Brushy Creek, Rathbun Reservoir, Spirit Lake and Pool 16 of the Mississippi River all had over 100 fish reported. Iowa's fisheries standard sampling protocols, citing Miranda (2007), indicate that 200 individual lengths should be collected to

adequately characterize the length frequency of the population. That total is likely a useful benchmark for tournament data, as well, if a goal is to estimate the size structure of a population that is not currently being sampled by standard means. The results from our 2022 tournament revealed that not enough participation was garnered to be able to estimate size structure for water bodies that often go unsampled by traditional means.

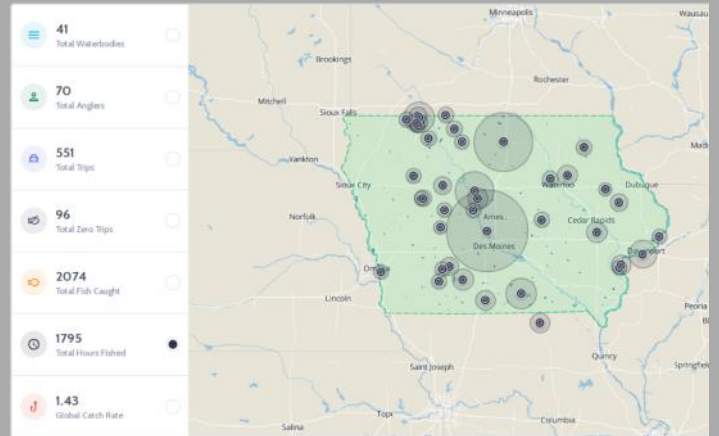
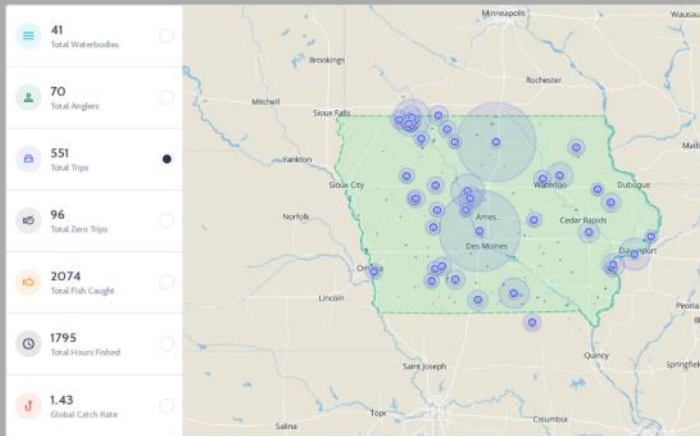
An important outcome of an experiment such as the Iowa Walleye Challenge is to determine if there is future utility in continuing this effort and to assess what management decisions could be made with information gathered. Sampling of Walleye in Iowa's water bodies is often done to assess recruitment and year class strength, and the tournament format is not very useful in that regard. The tournament did show potential to reveal insights regarding population size structure, but participation in the event will need to be increased if those types of estimates are to be determined for more Walleye systems in Iowa. This would likely require greater monetary investment in the tournament by the Iowa DNR, or the garnering of more sponsorships by other entities in Iowa. However, a broad assessment such as this is likely more cost effective than individual creel surveys at numerous systems. Even at the level of participation that was seen in 2022, catch rate data from a tournament like the Iowa Walleye Challenge could be of great utility to a fishery manager. Envision a future scenario when a manager would have 10,000 advanced fingerling Walleye at their disposal to allocate within a district. If fall sampling indicated that fry stocking had produced an adequate year class in a brood stock system, then the manager could review tournament data to determine systems with lower catch rates. The manager could then allocate fish to a system where a "bump" in the Walleye population would benefit anglers, and shorten the time between bites.

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# The Iowa Walleye Challenge con't

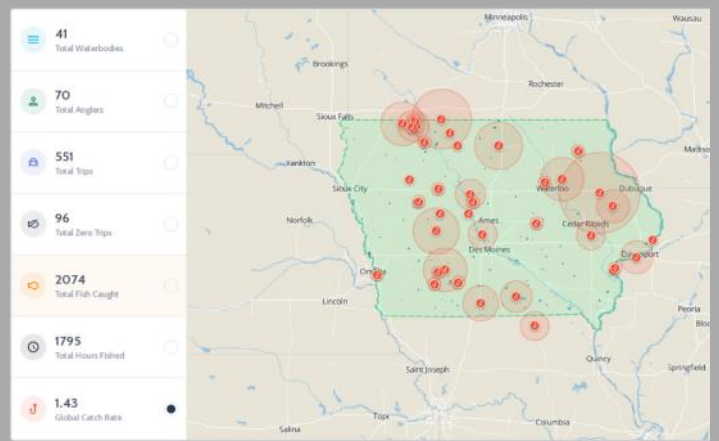
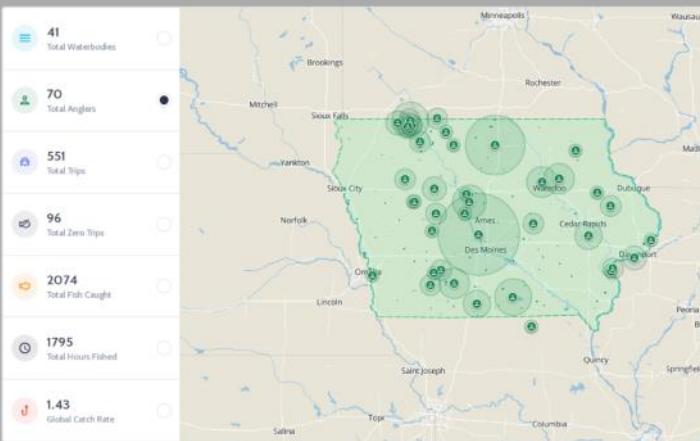
### Total Trips

### Hours Fished



### Angler Density

### Catch Rate



### Total Fish Caught

### Zero Catch Trips

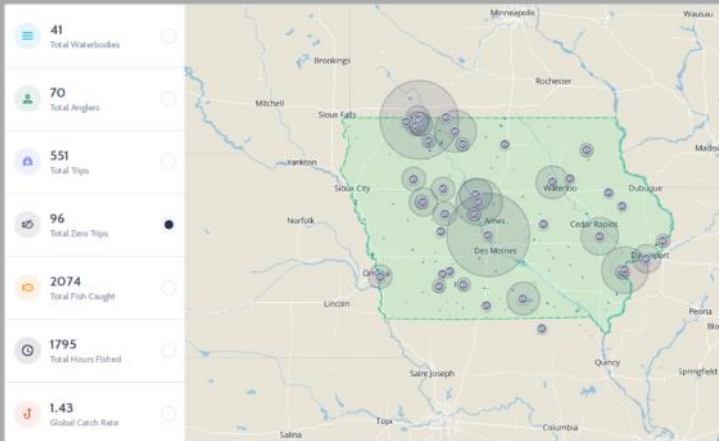
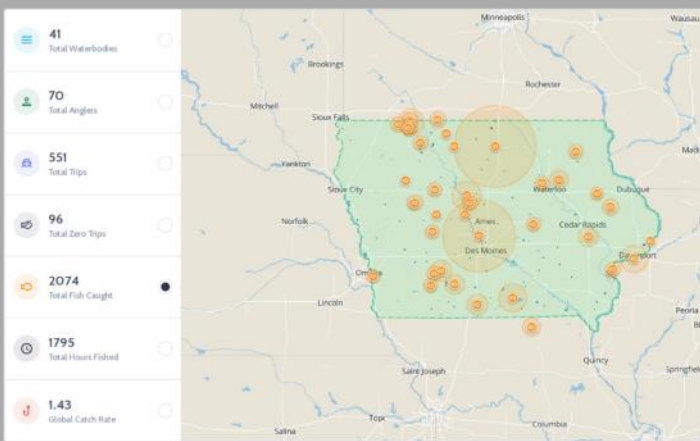


Figure 1. Tournament results

# The Iowa Walleye Challenge con't

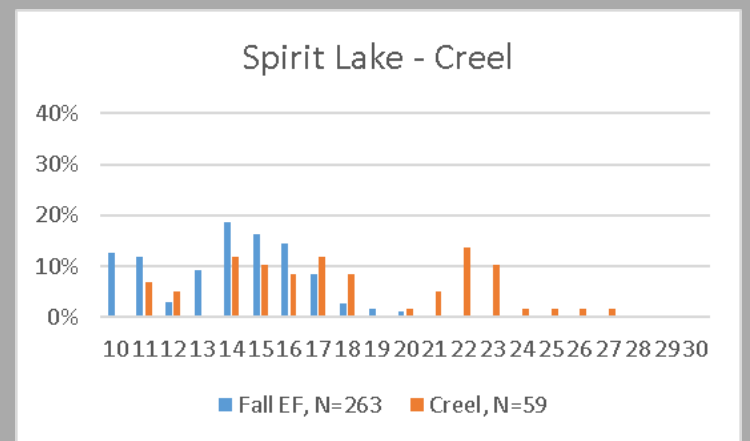
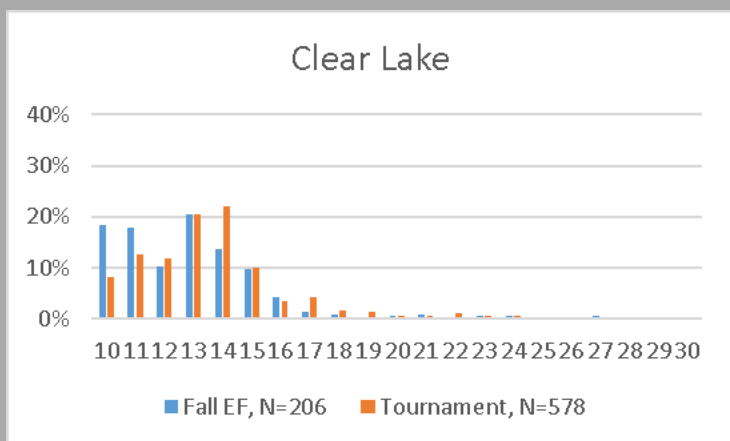
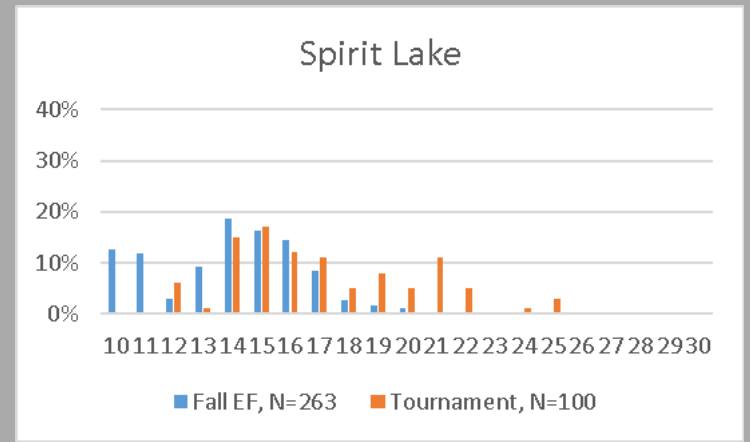
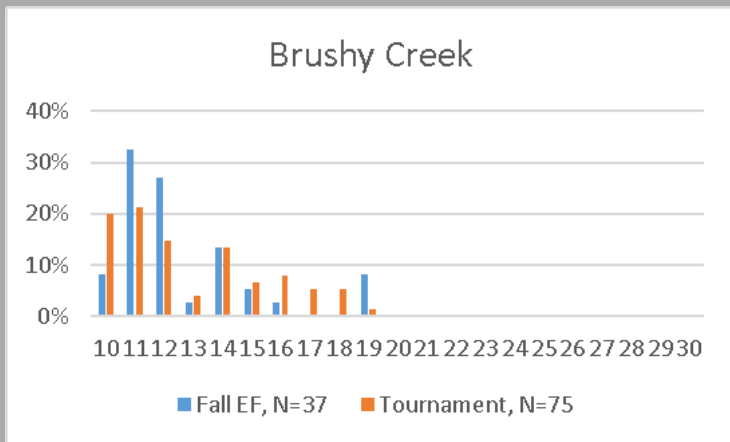
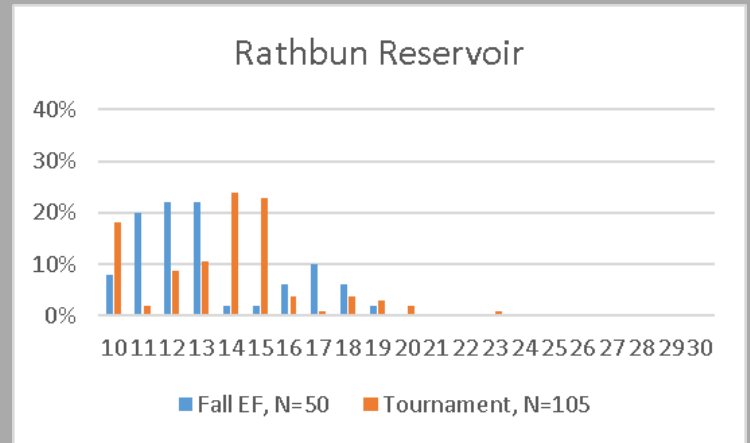
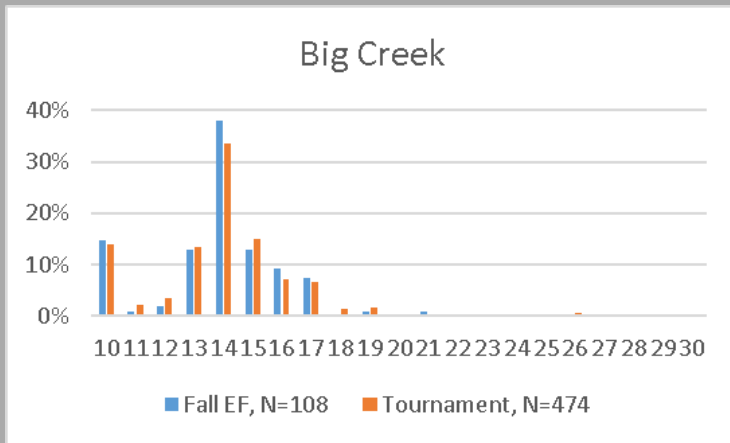
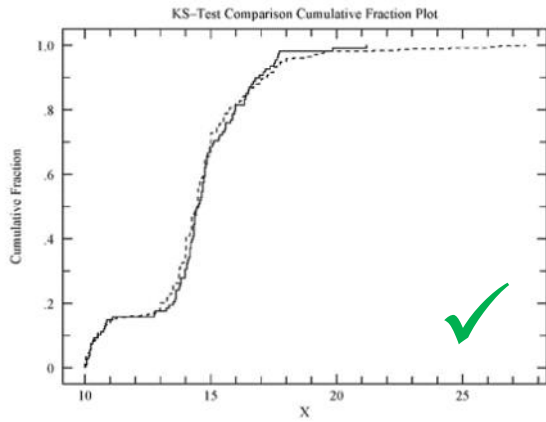
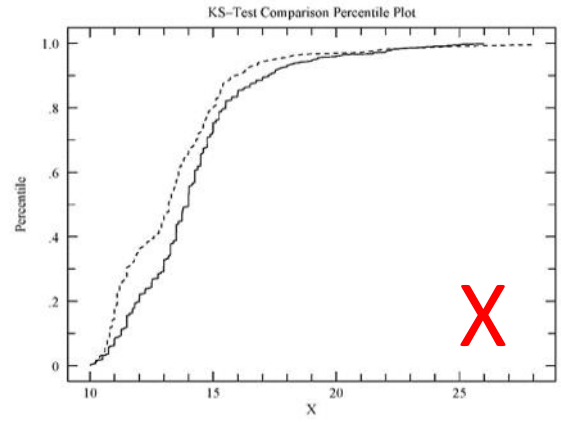


Figure 2. Tournament and sampling data comparison

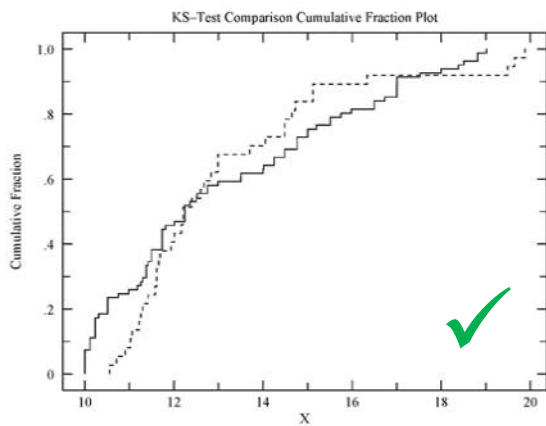
# The Iowa Walleye Challenge con't



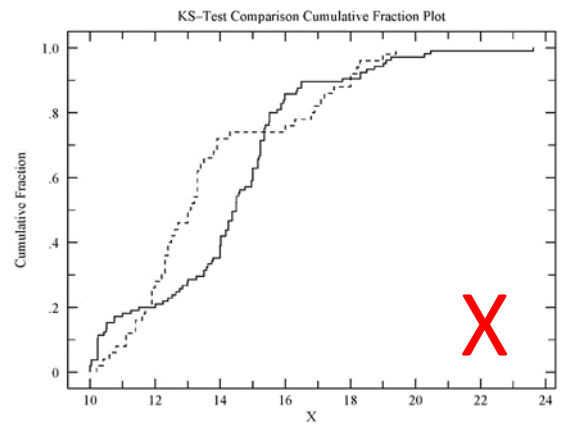
Big Creek Fall EF v Tournament



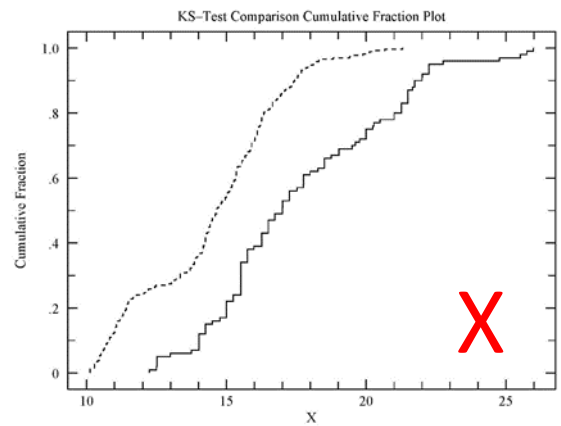
Clear Lake Fall EF v Tournament



Brushy Creek Fall EF v Tournament



Rathbun Fall EF v Tournament



Spirit Lake Fall EF v. Tournament

Figure 3. Tournament and sampling K-S tests

# Fishes & Dishes

Sharing the fun stuff!!



## Simple Hot Smoked Salmon

### Ingredients -

- Salmon filet
- 2 T brown sugar
- 1 T kosher salt
- mild fruitwood or alder for smoker

In a small bowl, mix together brown sugar and salt to make a dry brine. Place salmon skin side down on a wire rack in a baking sheet, pat salmon file dry, and sprinkle with dry brine over the entire filet. Place in refrigerator for 1-2 hours prior to smoking.

Set up smoker to cook at 225, pre-heat. Place salmon skin side down on foil and place in smoker. Cook to internal temp of 140 degrees, usually about 1 hour. Remove from smoker and rest for 5 min before serving.

The timing of the smoked salmon recipe also works great to make **Smoked Mac-n-Cheese**. As soon as you have the salmon brining in the fridge, start this!

### Ingredients

- 1 pound elbow macaroni
- 1/2 cup butter
- 4 T flour
- 1 T mustard powder
- 2 cups half and half
- 4 oz cream cheese
- 3 cups shredded cheddar
- 1.5 cups gouda
- medium size disposable aluminum pan/tray

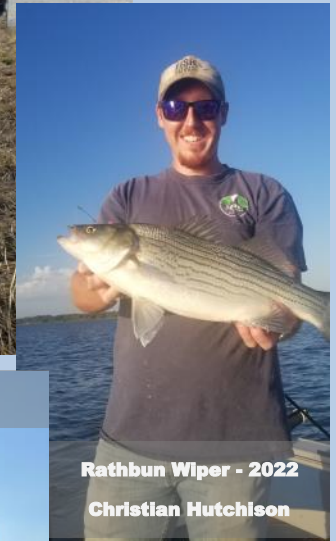
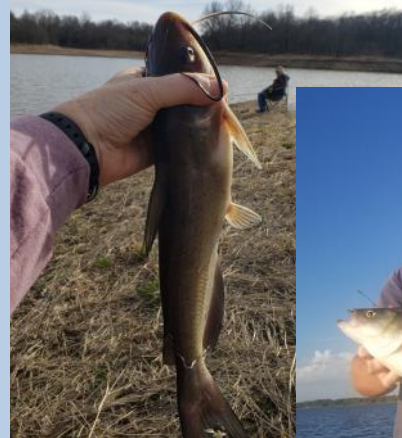
**Topping** - 1 cup panko bread crumbs, 2 T your favorite sweet/sassy rub seasoning

Cook the macaroni noodles to al dente. Start smoker, preheat to 225, use the same mild wood for smoking as the salmon. Heat large cast iron skillet, melt butter, whisk in flour until a smooth, thin paste forms. Whisk in mustard powder. Carefully pour in half-and-half, bring up to a boil while whisking. Reduce heat and whisk in cream cheese until smooth. Whisk in cheddar and gouda and stir until melted (this gets to be quite gooey). Coat aluminum pan with cooking spray, then combine noodles and cheese mixture in pan. Stir gently until all noodles are coated with cheese sauce. Sprinkle bread crumbs and sweet rub over the top. Place in smoker, cook 1-2 hours. Serve while warm!

*Submitted by Jeff Kopaska*

Early Spring Rathbun Catfish, 2022

Cashatt Family



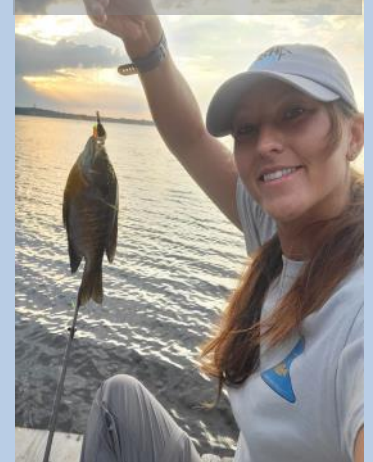
Rathbun Wiper 2022

Rathbun Wiper - 2022  
Christian Hutchison



Mark & Jennie Melhuse,  
friends of Chris Clouse

Bluegill, Spirit Lake 2022  
Rebecca Krogman



Minnesota Bass - 2022  
Jeff Kopaska



Tailwater Crappie—Feb 2022  
Darcy Cashatt



Application form  
**Fisheries Project Grant**  
Iowa Chapter – American Fisheries Society

Project Name: \_\_\_\_\_

Project Description: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Attach map or supplementary information

Project Location:

Water Body: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_ County: \_\_\_\_\_

Start Date: \_\_\_\_\_ End Date: \_\_\_\_\_

Project Personnel: \_\_\_\_\_  
\_\_\_\_\_

Fisheries Benefits: \_\_\_\_\_  
\_\_\_\_\_

Iowa Chapter Representative: \_\_\_\_\_

Amount needed: \$ \_\_\_\_\_ Total project cost: \$ \_\_\_\_\_

Money will be used for: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Up to \$1,000.00 per project.**

Approved by Excom Committee Date: \_\_\_\_\_

*(Continued on next page)*

**Fisheries Project Grant Application Form Instructions**

The Iowa Chapter of the American Fisheries Society is offering to help finance worthwhile fisheries related projects. The completed application form needs to be transferred to the Iowa Chapter President by an Iowa Chapter Member.

**Project Name** – Give the project name.

**Project Description** – Give a brief review of the intended project. Include the work to be done, the methods and material that will be used in the project.

Attach a map and any supplementary information that you think will help the Excom Committee evaluate the project.

**Project Location** – Where will the work be done.

**Start and End dates for the project**. Month and calendar year will do.

**Project Personnel** – Include organizations and or individuals who will be directly involved in the work.

**Fisheries Benefits** – A very important part of the project should be direct benefits to Iowa's fishery. How does the project help and who is the beneficiary?

**Iowa Chapter Representative** – All projects need to have an Iowa Chapter member as a sponsor.

**Amount needed** – Tell us how much you need and the total project cost. There is a \$1,000.00 limit for each project.

**Money will be used for** – Be as specific as you can. Will the money be used to hire people, buy equipment, be seed money for a grant, etc.

The Excom Committee of the Iowa Chapter will review the application and approve or reject the request.