

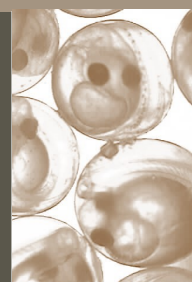
in this issue

- ⇒ **President's Corner** page 3
- ⇒ **News from NCD** page 8
- ⇒ **Upcoming Professional Meetings** page 9
- ⇒ **Iowa AFS Annual Meeting Notes** page 18
- ⇒ **Iowa AFS Grant Application** page 19



Iowa Chapter of the American Fisheries Society

Lateral Lines



current topics

- Page
- 4. **Partnerships Improve Fishing Opportunities-Black Hawk Lake**
 - 6. **Electrofishing Fields, what happens when we step on the mat?**
 - 9. **From Days Gone By. Hawkeye II**
 - 10. **Lessons Learned from Advanced Fingerling Hybrid Striped Bass**
 - 15. **Fishes & Dishes**

Late Spring Causes Iowa Hatcheries to Take Action!

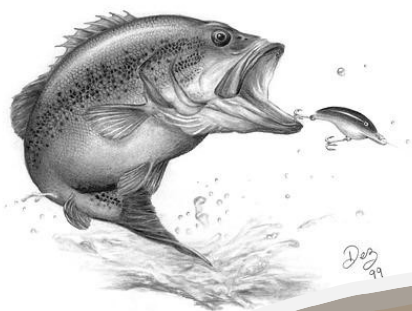


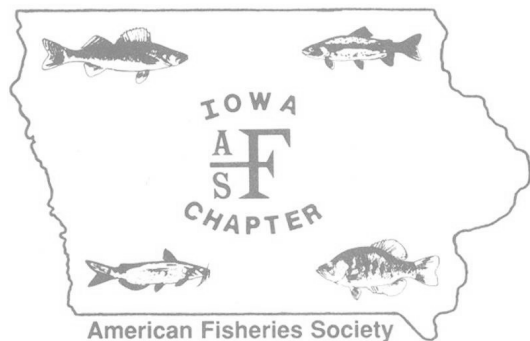
Netting Without Boats?

Page 17

Cyclone Corner

- 12. **ISU voted most active subunit in NCD!** Page 12
- 13. **Common Carp and Bigmouth Buffalo Population Management** Pages 13-14
- 15. **Are Hatchery Reared Walleye Feeding Local Predators?** Page 15





Visit Iowa AFS on the web:
<http://www.fisheriessociety.org/iowa/index.html>

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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

Scott Grummer

As I sit down to write this, that calendar says Spring should be near. The thermometer is struggling to get above zero degrees and a strong northwest wind makes the air feel like an arctic blast. Eventually Spring will arrive and all of us will get busy with outdoor work and pursuits.

I want to thank everyone for attending the state chapter meeting in February. I realize winter weather made travel difficult, but "Iowa perseverance" got most of us to Honey Creek. The joint meeting with the Iowa Chapter of The Wildlife Society went well. Thanks to the speakers, poster presenters, student subunit, Excom, and attendees for making the meeting a huge success.

Thanks to Ben Wallace for auctioneering and the student subunit for operating the raffle. The proceeds are split between our chapter and the sub- unit. This allows both groups to fund great projects and opportunities. If you were not able to attend and want to update your chapter membership dues, contact Kyle Bales (Kyle.Bales@dnr.iowa.gov).

The chapter bylaws have five year term limits for Technical Committee representatives, giving interested individuals the opportunity to apply. The two committees that are open at this time are Esocids and Rivers/Streams. If you are interested, please submit a letter of interest to Scott Grummer, Greg Gelwicks, or Kyle Bales by April 1, 2019.

Soon we will be looking for two individuals to run for President-Elect of our chapter. I was hesitant for years before stepping up to this



level of involvement in AFS. I am very glad I made the effort and got this opportunity to lead the Iowa Chapter of the American Fisheries Society. I encourage any individual with interest to contact myself or a past president of the chapter to get more information on the duties. It is a satisfying experience knowing you helped strengthen the fisheries profession, helped advance fisheries science, and helped conserve fisheries resources.

We will work on getting a continuing education course set up in 2019. There have been a few different ideas put forth. Watch for more information to come on this topic.

Participation in outdoor recreation is the future in all fisheries related fields. I encourage every member to introduce someone to the outdoors and fishing this year. Whether you invite a neighbor, friend, or family member, try and make it a positive experience that they will remember. This introduction to angling may create a life-long hobby for that person to pass on to others.

~Scott Grummer

Partnerships Help Improve Fishing Opportunities at Black Hawk Lake

Ben Wallace, Fisheries Biologist, Iowa DNR

The Iowa DNR and the community of Lake View have had a strong working relationship over the past ten years. The focus has been to improve the water quality in Black Hawk Lake by targeting soil and nutrient loss in the watershed and managing rough fish populations in the lake. Black Hawk Lake is the lifeblood of Lake View and tourism is essential to the local economy. Along with the water quality improvement project, the community is working hard to provide amenities to attract visitors and promote family friendly activities. Through local donations, grants, and other monies the City has recently built a brand new playground and a splash pad in Speaker Park, which is named after Everett Speaker, a Lake View native. If that name sounds familiar it's because Everett Speaker co-wrote Iowa Fish and Fishing and served as the Director of the Iowa Conservation Commission.

We know that water quality is the top factor that Iowans consider when choosing to visit a lake, and that fishing is the number one activity they participate in at our lakes. So, it comes as no surprise that with the improving water quality at Black Hawk Lake angler use is on the rise. We have been conducting creel surveys over the past several years to evaluate the fishery following the chemical renovation in 2012. We found that fishing pressure at Black Hawk Lake was high relative to other natural lakes in the region. In 2017,

Black Hawk Lake experienced 49.6 angler hours per acre of water compared to 30.7 hours of fishing per acre at Clear Lake that same year. The mean angler hours per acre on Storm Lake, which is just 30 miles away, from 2007 through 2013 was 16.9. Shore fishing, as opposed to boat fishing, accounted for just over 70% of the effort at Black Hawk Lake. We also knew from our creel surveys at Black Hawk Lake that anglers wanted more and better shore fishing opportunities. With 59% of the lake's shoreline in public ownership, we wanted to look at ways to improve the experience on the water rather than just getting people to the water's edge. We wanted to draw attention to the area and provide a unique fishing experience for all ages and levels of mobility. This is how we ended up with the Black Hawk "Fish House."

The fish house at Swan Lake in Carroll County has been around since the 1980s and this served as the model for what we wanted to build at Black Hawk Lake. However, building materials and fish habitat products had improved over time so we wanted to put the best product out there we could. The fish house at Black Hawk Lake was to be located in a highly used portion of the lake across from Speaker Park and near houses so we wanted to give the structure a residential feel. We worked with DNR engineers and architects to design a structure that would look sharp, require minimal maintenance, and yet remain functional.



Photo above: The Fish House is accessed from the area known as Ice House Point in Black Hawk State Park.

Partnerships Help Improve Fishing Opportunities at Black Hawk Lake (con't)

With designs complete we had most of the funding secured for the estimated cost, but not quite the full amount. In order to take advantage of the funding that was available the project needed to be built in fiscal year 2018, and we were more than halfway through it by the time we were ready to go to bid. We went to the local community for assistance and they stepped up in a big way. In less than 2 months local citizens, community organizations, and the City of Lake View came up with just over \$30,000, about 10% of the estimated cost. In a community of 1,150 people this was no small task, but this fundraising effort allowed us to move forward with the project.

Now that we could get people out on the water we needed to get them on fish. We ended up placing 90 tons of rock, 36 Mossback structures, and over 130 Fishiding structures under and around the Fish House. We applied for and received \$1,000 grant from the Iowa Chapter of the AFS, which provided a 10% match to the State's funds for the habitat portion of the project.

Approximately 20 tons of rock was placed in the opening of the inside of the fish house. Another 70 tons of rock was dropped in off the north side of the structure as far out as the crane could reach. It was close enough that anglers could

cast to the rock reef from the structure, but far enough away that boat anglers could target the rocks from a safe distance. The Mossback structures were placed before the deck was built and were located so that anglers could fish straight down off the inside and outside of the fish house and target the edges of the habitat. The Fishiding structures, which were lower profile, were scattered among the steel pilings and Mossback structures. All of the habitat was placed in a manner to reduce the risk of injury in case someone decided it would be fun to jump off the deck into the lake.

The Fish House is a prime example of how the DNR can partner with local communities and organizations, such as the Iowa Chapter of the AFS, to complete a project that is mutually beneficial to all the parties involved. The Fish House opened in the fall of 2018 so we're excited to see how it gets used this coming spring. With another creel survey slated for the 2019 open water season we'll be able to document daily use and catch statistics from this structure to determine if it's worth building more of these.

The Black Hawk Fish Management Team would like to extend a big thank you to the Iowa Chapter of the American Fisheries Society for their financial assistance with this project!



Photo above: Matt Mork, Fisheries Tech II, and McKenzie Lungren, Creel Clerk, getting ready to lower a Mossback structure into the water.

Photo below: Anglers fishing inside the newly built "Fish House" at Black Hawk Lake.



Electrofishing Fields; What Happens When We Step on the Switch Mat

Lewis Bruce, Fisheries Research Biologist, Iowa DNR

Electrofishing is one of the most utilized fish sampling tools employed by fisheries professionals. During the last two years, Iowa DNR's Fisheries Bureau has made a substantial effort to standardize electrofishing equipment for the safety of operators and to improve efficiency of fish surveys. Many Iowa DNR electrofishing boats have been modified to conform to the American Fisheries Society (AFS) standard anode configuration, boom spacing, and power goal approach to sampling. Electrofishing theory and tools used to maintain newly designed or improved electrofishing systems was also put to use during a three day workshop. Two leading experts in the field of electrofishing and the father-son duo that built and run ETS Electrofishing Systems, LLC were on staff during this workshop to teach, answer questions, and even make a few minor control box repairs.

After the workshop it was time to take what we learned and put it to work. One question raised during the workshop was how clean a boat hull needs to be to shock fish. Another question along those same lines was how to deal with a painted hull. Painted boat hulls act as a barrier to electricity and connectivity between the boat hull and water is necessary in a functioning electrofishing system. To answer this question we designed a floating rectangle with four transects. The grid size and sampling depths were set up to mimic the fish collection area of netters

during a fish survey. Transects were spaced 0.914 m apart, set perpendicular to the front of the boat and sampling points were spaced 0.457 m apart on each transect (Figure 1). Each location was sampled at three depths: 0.457 m, 0.914 m, 1.372 m. Field intensity was measured at each sampling point using a gradient probe and a Fluke 124 Oscilloscope, values were recorded as V/cm (Figure 2). It is important to note this boat was not setup to Iowa DNR standard equipment specifications with regard to anode ring and boom configuration. This boat is used for trend surveys in small impoundments with difficult access. The boat measures 3.86 m long and 1.07 m wide. Each anode ring is 61 cm in diameter and is fitted with 6 droppers measuring .635 cm in diameter and 61 cm long. Anode rings measure 1.52 m center to center and 2.24 m from waterline on bow of boat to anode ring center.

After anchoring the boat and securing the sampling grid to the bow, ambient conductivity and water temperature were measured. Power was then applied to the water using Iowa DNR electrofishing standard operating procedures. Each location was sampled at three predetermined depths. Collecting a sample at each point consisted of slowly turning the probe clockwise and recording the highest value displayed on the oscilloscope in V/cm. A survey was completed before and after adding a cathode skirt to the

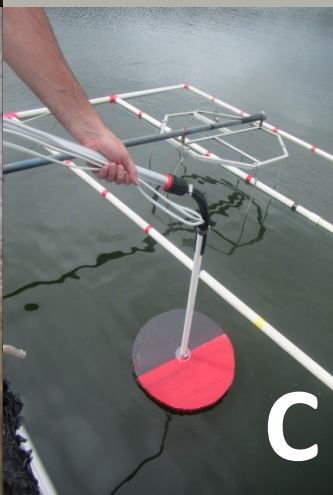
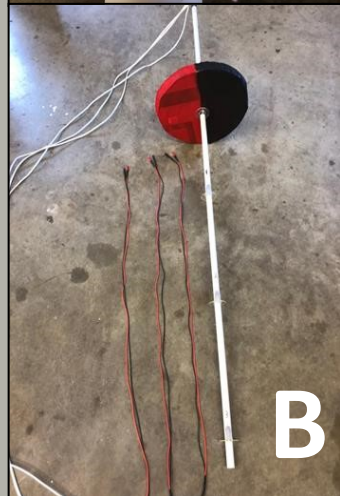
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Figure 1. Sampling grid used to guide collection of 132 electrofishing field intensity points.



Figure 2. Gradient probe used to measure field intensity at 0.457 m, 0.914 m, and 1.372 m below the water surface: (A) gradient probe points spaced 1 cm apart to collect field intensity at each depth; (B) floating disc attached to gradient probe and three leads for oscilloscope attachment; (C) floating gradient probe with rubber hose attached to extendable pole used to rotate the probe at each sampling location while standing in the boat.



bow of a painted boat hull (Figure 3). Shaded contour maps were created to represent the electrofishing field at each of the three depths (Figures 4 and 5).

The survey results prior to adding a cathode skirt showed an average intensity of 0.732 and 0.901 V/cm at the anodes and the cathode, respectively. This was higher than the 0.694 and 0.555 V/cm from the same survey



Figure 3. Cathode skirt with 12 droppers measuring 0.635cm in diameter and 111cm long.

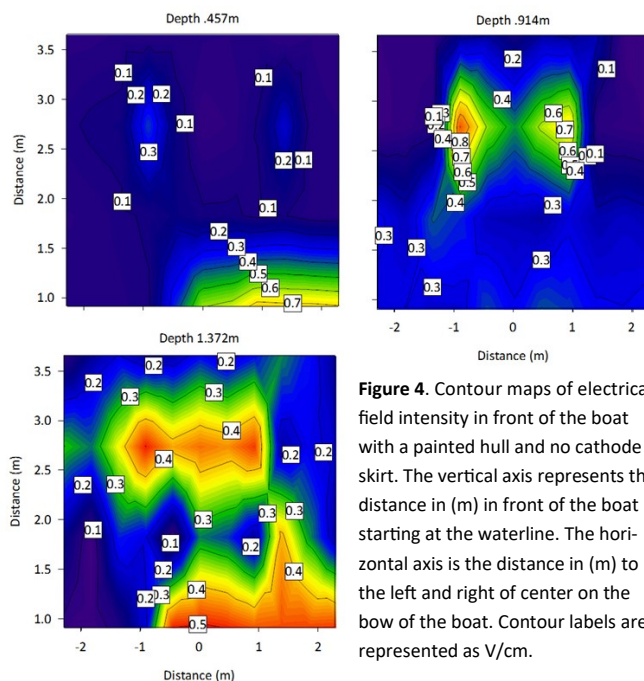


Figure 4. Contour maps of electrical field intensity in front of the boat with a painted hull and no cathode skirt. The vertical axis represents the distance in (m) in front of the boat starting at the waterline. The horizontal axis is the distance in (m) to the left and right of center on the bow of the boat. Contour labels are represented as V/cm.

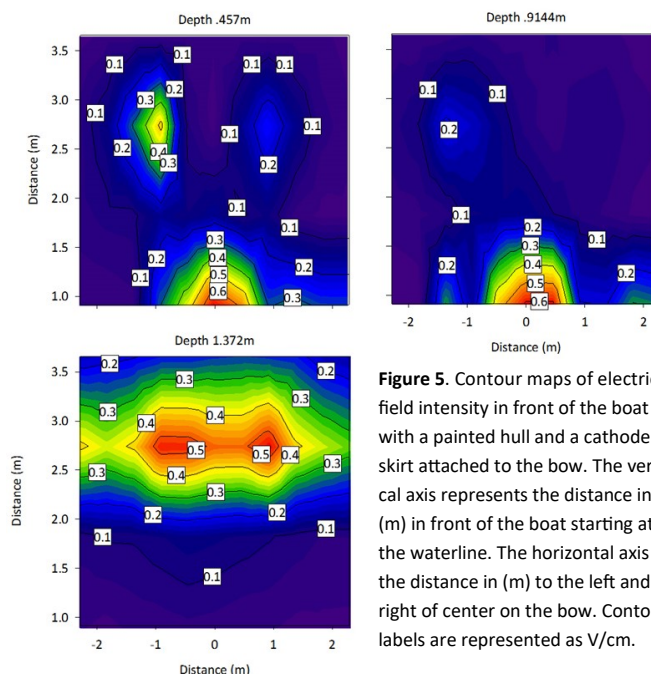


Figure 5. Contour maps of electrical field intensity in front of the boat with a painted hull and a cathode skirt attached to the bow. The vertical axis represents the distance in (m) in front of the boat starting at the waterline. The horizontal axis is the distance in (m) to the left and right of center on the bow. Contour labels are represented as V/cm.

completed after the cathode skirt was fixed to the bow. Warm and cool water fish exhibit taxis at a 0.1 V/cm field intensity, and in both surveys this level was exceeded. It is also important to note the port side anode field intensity was consistently higher in both surveys. This could be caused by added resistance in the electrical wiring system on the starboard side. Joining of both anode fields or coupling was also seen

(Continued on next page)

in both surveys, although more prevalent in the pre-skirt survey at both the 0.914 m and 1.372 m depths. This is counterproductive and requires more power from the generator to reach a power goal which in turn reduces the range of water conductivities this boat can effectively sample fish. Adding more space between the anodes will reduce the coupling effect and improve the performance of an electrofishing system. The electrical field at each depth was tested and 0.914 m was found to be significantly different between the two surveys ($P < 0.001$; Wilcoxon Signed Rank Test). The horse shoe appearance of the cathode skirt electrical field is similar to the Kolz (1993) description of the voltage gradient. It should also be noted the cathode skirt provided much higher field intensity readings at the front of the boat. This could cause more fish to be drawn to the boat vs the anode rings. Increasing the size of the cathode would reduce the field intensity near the boat.

If the resistance issue in the starboard boom is taken out of the equation it appears the cathode skirt was an improvement to electrofishing efficiency in this boat; however, further work should be completed along with follow up testing. Placing more droppers on the cathode skirt and addressing the resistance issue in the starboard boom to reduce field intensity at the boat is necessary. This is a good example of why electrofishing fields should be measured. Wiring in this boat had recently been upgraded to conform to Iowa DNR's standard equipment configuration so it was assumed the boat would operate as intended with both booms applying power to the water in equal proportions. If the electrofishing field had not been mapped netters would have noticed more fish surfacing around the port side boom and possibly the front of the boat.

This is a work in progress, stay-tuned for more details in the future.

References

Kolz, A. L. 1993. In-water electrical measurements for evaluating electrofishing systems. U.S. Fish and Wildlife Service Biological Report 11.



News From the North Central Division of AFS

Jeff Kopaska, Fisheries Biometrician, IA DNR

I am currently serving as President-Elect of the North Central Division of the American Fisheries Society. This involves attending numerous meetings, which is wonderful and dismal all at the same time. I unfortunately had to miss the Midwest F&W Conference in Cleveland after my shoulder surgery, but I have been able to attend the Chapter meetings of the Nebraska, Missouri, Iowa, Minnesota and Dakota Chapters.

One common theme in regard to AFS Chapters is that there is a feeling of great connections between members and their local Chapters, and much less of a connection to the AFS Parent Society. I am working to make Parent Society Membership more worthwhile and valuable, and thus hopefully more attractive! Changes that have already been made are that full access to journals is included with Society membership. Also, we are working to create a multiple year membership category, which would allow student members and young professionals to maintain a less expensive membership option for more years.

The highlights I have taken home from the other Chapter meetings are as follows:

Nebraska - their continued creel work now allows them to look at angler pressure across various systems in comparison to agency investment (stocking, habitat installations, renovations, fishery surveys) in those same system types.

Missouri - we had a great conversation about their catchable trout stocking programs in comparison to ours.

Minnesota - former Iowa Stater Tony Sindt is doing some cool telemetry work on paddlefish in the Minnesota River.

Dakota - a research project on Bigmouth Buffalo shows that these fish can live to over 110, and there are substantial gaps in their year classes over the last century.

The biggest take home I have from attending these meetings is that more interaction with our peers in other states is necessary. At a minimum, we in Iowa AFS should be sending someone to attend other chapter meetings in our neighboring states, and providing presentations about the work we are doing. This would allow us to learn about what is happening around us, and invite speakers to attend our meeting and tell us about their work. Of course, it would be even better to run joint meetings with our neighbors. I know our Iowa AFS ExComm is trying to make those types of meetings happen. When we cannot get those meetings to happen, we certainly can follow "path B" and exchange individuals among meetings.

Lastly, we are doing great work here in Iowa. Keep it up!

From Days Gone By

Vance Poulton, Brighton Fisheries Management Tech II, IA DNR



From the early 1920's, a photo of Iowa's Fish Car "Hawkeye 2" on the siding next to the Lansing Hatchery and Fish Rescue Station, Lansing, Iowa. "Hawkeye 2" was the third and final fish car owned by the State Conservation Commission and saw active duty between 1913 and 1931. She made between 24 and 30 trips annually from the rescue stations at Sabula and Lansing delivering fish to be stocked into the interior waters of the State. The Lansing Station was built in 1917 and hatched northern pike, bass, and bluegills, and served as the State's trout hatchery until 1928 when the hatchery

at Backbone became fully operational, although it continued to assist Backbone in the hatching of trout eggs for a couple more years after that. Lansing also served as a fish rescue station for the upper section of the Mississippi River along Iowa's eastern border until 1955. "Hawkeye 2"'s final destination was the scrap metal drive for the war effort of World War II in 1944. The Lansing Station was closed in the mid 1970's and was finally given to the City of Lansing in 1984 to be used as a VFW community center.



Upcoming Professional Meetings

- **Rivers and Streams Technical Committee.** Rock Island, IL, April 2-3, 2019 Megan.Thul@dnr.iowa.gov
- **Planning & Executing Successful Rotenone & Antimycin Projects training course,** May 13-17, 2019 Logan, UT. NCD AFS. *Registration is now open.*
- **American Fisheries Society and The Wildlife Society Joint Annual Conference.** Sept 29—Oct 3, 2019, Reno, Nevada.
- **North American Lake Management Society 39th International Symposium.** Nov 11-15, Burlington, VT
- **Joint Meeting of Centrarchid, Esocid and Walleye Technical Committees -** July 16-18, Webster, SD
- **Midwest Fish & Wildlife Conference,** January 26-29, 2020; Springfield, IL
- **Mid-Continent Warmwater Fish Culture Conference,** February 3-5, 2020, Missouri

Lessons Learned from Experiments with Advanced Fingerling Hybrid Striped Bass

Rebecca Krogman, Fisheries Research Biologist, IA DNR

In 2017 and 2018, Rathbun Fish Hatchery grew out Hybrid Striped Bass to advanced fingerling size for stocking into Big Creek Lake. In order to track fish escapement downstream, each fish was given an internal transponder tag measuring about 1.25". Experiments over two years showed that fish required delicate handling and proactive stress management, but could be successfully tagged and stocked. Unfortunately, they can and will emigrate out of the lake in which they are stocked.

Best Harvest and Handling Practices

#1 Treat heavily with salt

Water in all tanks should be treated with 1.5 to 3.0 ppt salt solution. Immediate and daily follow-up salt treatments likely curbed fungal infections and reduced stress of homeostasis. The final tagging event showed no effect of tagging, harvest method, or extra handling in the form of weighing (all p-values > 0.05).

#2 Avoid as much physical handling and crowding as possible

During the last tagging effort, fish were moved from a water-filled bucket in the pond into a water-filled truck tank, then piped into the indoor tanks (rather than hand netted) for workup. A handful of fish were netted at one time for tagging and held in a deeper-than-average keep to avoid spine injuries.

Only one person should handle and measure the fish. This person should wear dipped handling gloves to reduce damage to the fish's slime coat. Weighing in water may also help reduce stress.



#3 Prepare for temperature-related challenges

Fish harvest by seining occurred in early October 2017 when pond temperature was 68 °F. Combined with the stress of crowding and handling, this warm temperature was likely the cause of mass mortality during that year's experiment. At the same temperature, mortality was just under 15% when fish were removed one-by-one through angling.

Harvest in 2018 was delayed until pond temperature reached 55 °F in early November. However, other challenges come with cooler water temperatures, including Saprolegnia fungus which emerges below 68 °F. The impact of spine injuries leading to Columnaris and Saprolegnia infection could be seen in "finger marks" which appeared on fish during 2018, ultimately leading to delayed mortality despite remedial salt and hydrogen peroxide treatments (>60% delayed mortality). When proactive salt treatment was used, neither seining nor backpack electrofishing harvest methods led to notable mortality. Holding overnight also did not matter when salt treatment was used.

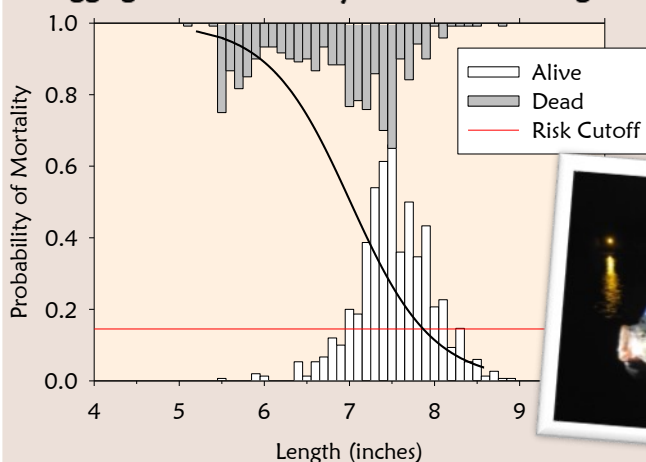




#2 Do not tag fish less than 8 inches total length

In 2017, a large-scale tagging effort was made to tag 1,600 fish. Although most of these fish ultimately died due to harvest and handling stress, initial mortality revealed the importance of fish size. 24-hour mortality exceeded 36% and depended on fish length ($p\text{-value} < 0.0001$) and to a lesser degree on tagging station ($p\text{-value} < 0.0001$). As fish length increases, the probability of mortality decreases, with risk becoming acceptable at a length of 8 inches. This means fish must be grown out through September and possibly October to achieve minimum size.

Tagging-related Mortality based on Fish Length



Many Thanks To ...

Rathbun Fish Hatchery, Boone Management and the Chariton team!

This study was funded by the Sport Fish Restoration Program.

Best Tagging Practices

#1 Insert PIT tags into the body cavity behind the pelvic fin.

In 2017, a small-scale tagging experiment was conducted to determine whether tagging affected mortality and whether tagging location mattered (control, body cavity, or dorsal muscle). No anesthesia was used. 14-day mortality was similar across tagging treatments ($p\text{-value} > 0.05$), averaging 12.1%. However, fish tagged in the dorsal muscle were bruised and torpid for two days before recovering. Tag retention was similar across treatments as well ($p\text{-value} > 0.05$). Thus, the body cavity was chosen as a superior tagging location because it reduced stress while retaining the tag effectively.

#3 Anesthesia is not necessary.

Clove oil was used during 2018 experiments to determine whether anesthesia helped reduce handling-related stress. Treatments included control, tagged only, and anaesthetized and tagged using 100 ppm clove oil. Adjusting for tagging and station, anesthetized fish were over 2x more likely to die than un-anesthetized fish ($p\text{-value} < 0.0001$). This may be due to the extra handling associated with moving fish into and out of treated water, rather than an effect of the anesthesia itself.

Potential for Escapement

A total of 1,618 tagged fish were stocked into Big Creek Lake in November 2018. As of March 2019, over 250 tagged fish were detected passing through the spillway despite the physical barrier in place. This equates to a 15.7% escapement rate during winter by advanced fingerling-size fish.





Cyclone Corner

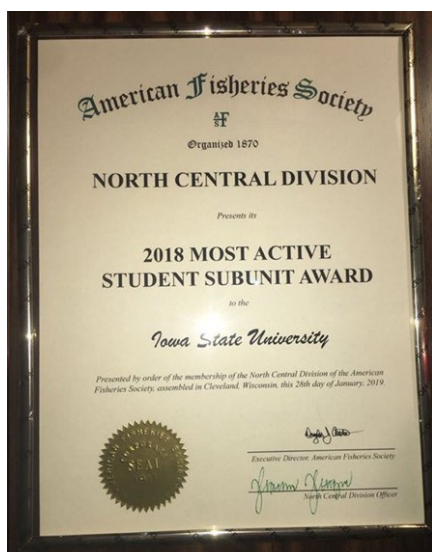
Iowa State University Student Subunit Updates

Matthew Dollenbacher, President

(Like us on Facebook, search @ISUAFS)

2018 Most Active Student Subunit of the North Central Division

Our student subunit was recently named the 2018 Most Active Student Subunit of the North Central Division. To receive the award the subunits officers (Matthew Dollenbacher, President; Riley Nylin, Treasurer; and Zachary Ludwig, Secretary) traveled to the 78th Annual Midwest Fish & Wildlife Conference in Cleveland, Ohio. This award recognizes the student subunit that has outstanding professionalism, active resource protection, and enhancement programs, as well as a strong



commitment to the mission of the Society. In order to receive the award, our stu-

dent sub-unit has been very involved in the professional development of students interested in the fisheries field at Iowa State University. Our club officers believe that our AFS subunit should reach further than just fisheries majors and therefore we have focused heavily on community outreach so that there is a wider range of students in our organization. We are excited for the further growth of our subunit and facilitating more professional development activities for our members. We have brought in many speakers over the past year, including professors from ISU, DNR professionals, and even Nick Kramer who hosts The Fisheries Podcast. We are looking forward to host a fishing tournament this spring and recruiting new members.



Cyclone Corner

Common Carp and Bigmouth Buffalo Population Management through Commercial Harvest

Martin Simonson, ISU PhD Student

Common carp (*Cyprinus carpio*) and bigmouth buffalo (*Ictiobus cyprinellus*) are two species that often reach high densities in shallow, natural lakes of the Midwest. Water quality is often degraded in systems with abundant carp and buffalo, leading to negative impacts on recreational activities from nuisance algae blooms and lower angler catch rates. Commercial harvest is a biomanipulation tool that is much more species-selective than other options such as lake drawdowns and rotenone application. However, harvest may release a population from density dependence, and fish populations may compensate for harvest through decreased natural mortality and increased individual growth and survival. As part of an ongoing lake restoration study, the Iowa State University Fisheries Ecology and Management Lab is partnering with Iowa DNR to complete an assessment of how commercial harvest affects common carp and bigmouth buffalo populations at seven shallow, natural lakes in northwestern Iowa (Figure 1).



Historically, harvest contracts were obtained through a competitive bidding process and the contractors were able to seine for both species as much or as little as they wanted, as long as it was during cold-water parts of the year. Consequently, removal rates of these fishes have been highly variable between years and among systems, making traditional commercial harvest an unreliable population management tool. However, incentivized harvest contracts are an alternative that may be an effective way to mandate harvest quotas and reach target reductions in carp and buffalo biomass densities. Beginning in 2019, two of the study lakes (North Twin Lake and Center Lake) have incentivized harvest that will impose penalties on contract holders if minimum harvest quotes determined by in lake population estimates are not met.



Commercial harvest of common carp and bigmouth buffalo in Five Island Lake, Iowa. About 100,000 lbs. of fish biomass removed in January 2019.

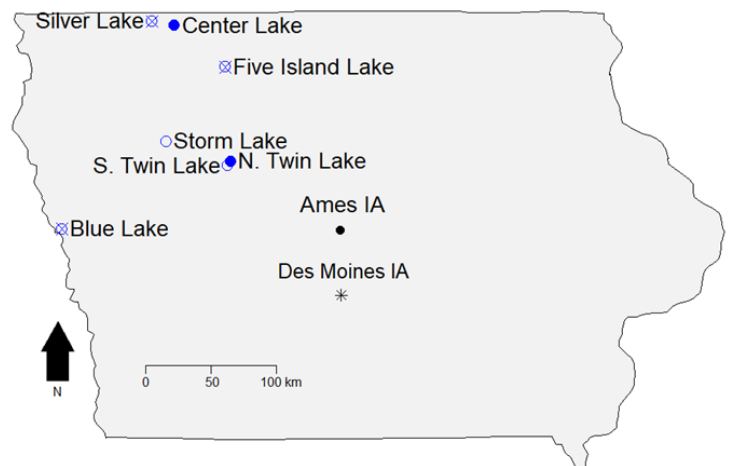


Figure 1. Seven study lakes included in common carp and bigmouth buffalo population study in Northwest Iowa. Lakes will either experience incentivized commercial harvest (filled circles), traditional commercial harvest (crossed circles), or reference systems with no harvest (open circles).

Over the next two years we will continue to monitor demographic parameters in carp and buffalo populations, and evaluate whether these species exhibit compensatory responses to harvest. Preliminary results from Center Lake between 2017 and 2018 show that changes in biomass estimates for bigmouth buffalo tracked closely with biomass removal, indicating harvest mortality was additive to natural mortality. Between 2017 and 2018, 43,500 lbs. of bigmouth buffalo were removed and our estimated biomass removal was between 33,658 lbs. and 64,827 lbs. (Figure 2). At the same time, common carp experienced less harvest, with only 4,500 lbs. of carp removed, and our 95%

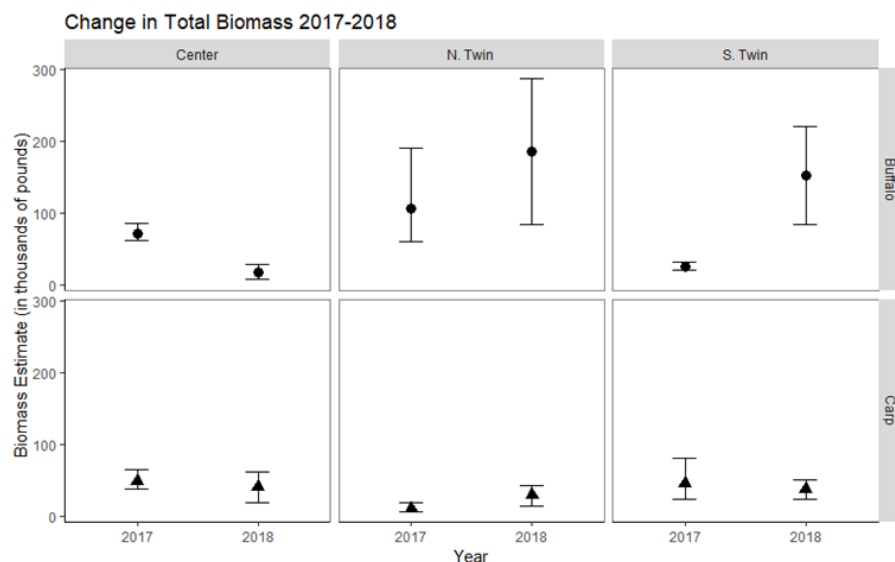


Figure 2: Changes in biomass estimates (thousands of pounds) for bigmouth buffalo (top row) and common carp (bottom row) between 2017 and 2018. Center Lake experienced removal of 43,500 lbs. of buffalo and 4,500 lbs. of carp whereas North and South Twin Lakes were not harvested and serve as reference systems.

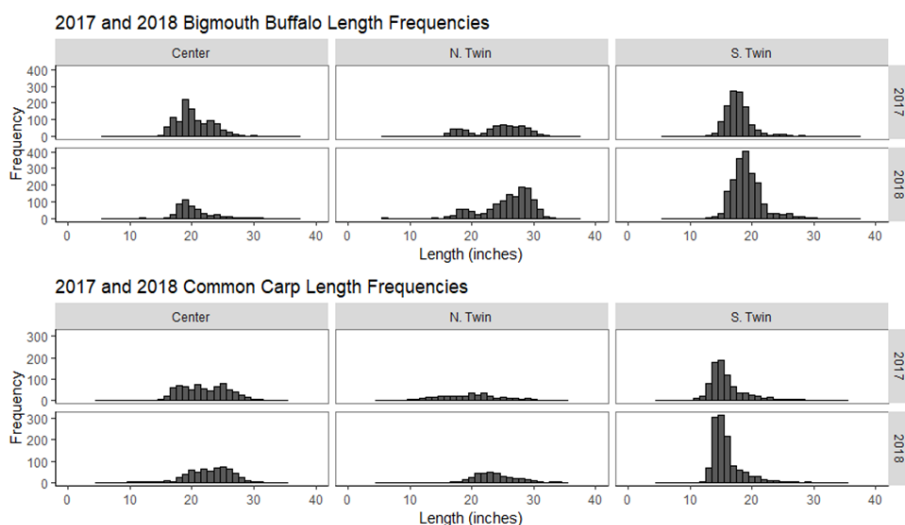


Figure 3: Length frequencies for bigmouth buffalo and common carp in Center, N. Twin, and S. Twin Lakes in 2017 and 2018. Lengths are divided into 1-inch bins. Note different y-axis values between species.

confidence intervals for biomass estimates of carp overlapped between 2017 and 2018. In our two reference systems where harvest did not occur (North and South Twin Lakes) we either observed no significant change or an increase in biomass estimates (Figure 2). The size structure for bigmouth buffalo shifted toward smaller lengths in the harvested system between 2017 and 2018, while bigmouth buffalo in the reference systems shifted slightly toward larger sizes (Figure 3). We observed an increase in common carp size structure in North Twin Lake between 2017 and 2018 (Figure 3), but not in the other two lakes.

This research would not be as successful without cooperation between commercial fishers, Iowa DNR, and Iowa State University. Large-scale tagging events in 2018 facilitated by commercial fishers resulted in more accurate population estimates and tags returned from harvested fish will inform harvest-related mortality rates. Time will tell if commercial harvest is a sustainable, long-term management tool to induce shifts in aquatic ecosystems and drive improvements in water quality.



Cyclone Corner

Are Hatchery Reared Walleye Feeding Local Predators? Assessing post-stocking predation on stocked advanced fingerling Walleye *Sander vitreus*

Emily E. Ball, PhD Candidate

Stocking fingerlings is a common practice to sustain Walleye *Sander vitreus* populations throughout North America. However, predation of recently stocked fishes can have a negative effect on the success of a stocking program. Additionally, fish undergo ontogenetic shifts in predator vulnerability. The argument of “bigger-is-better” has led hatcheries to raise progressively larger individuals with the goal of increasing survival, year-class strength, and abundance of adult sport fishes. Predators that may negatively

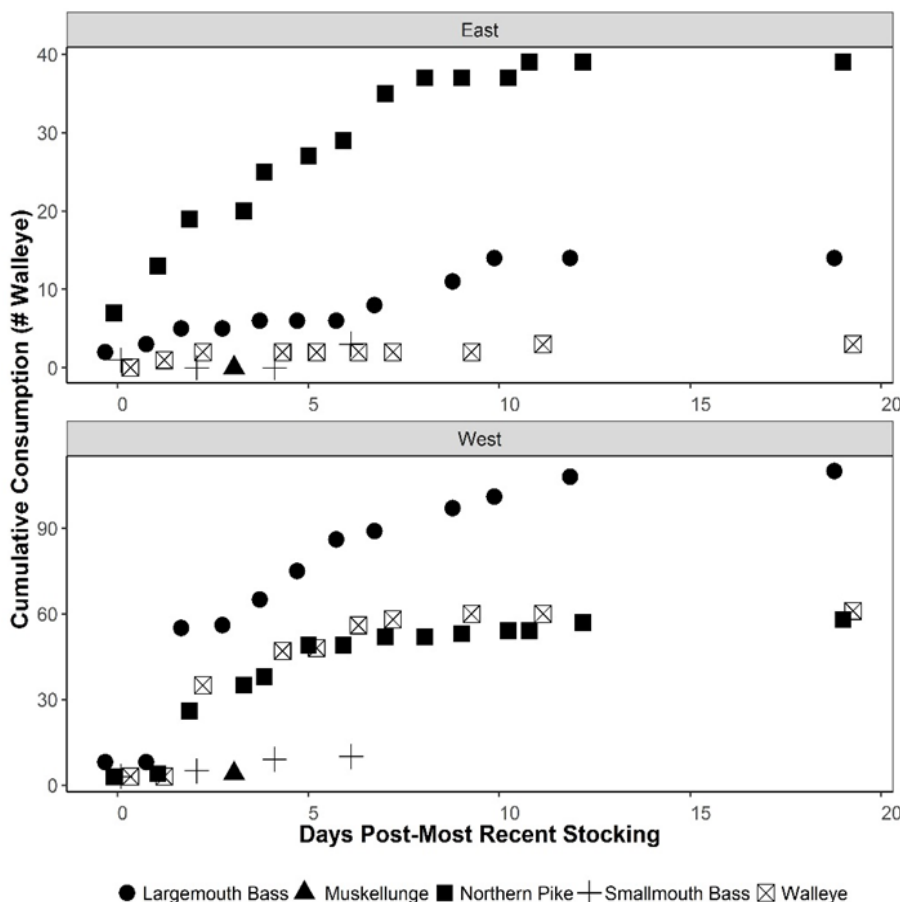


Figure 1. Cumulative number of Walleye observed in Largemouth Bass (circle), Muskellunge (triangle), Northern Pike (square), Smallmouth Bass (+), and adult Walleye (box with an “x”) diets following 2015, 2016, and 2017 fall stocking events in East and West Okoboji.

between consumed Walleye total length across the different predator groups as well as estimating the total number of consumed individuals. The information from this portion of my research will provide valuable information regarding the effects of predation on advanced fingerling Walleye recruitment in Iowa.

influence stocked Walleye include, Largemouth Bass *Micropterus salmoides*, Smallmouth Bass *Micropterus dolomieu*, Northern Pike *Esox lucius*, and Muskellunge *Esox masquinongy*, and adult Walleye. One of my dissertation goals is to evaluate post-stocking predation on advanced fingerling stocked in East and West Okoboji in northwestern Iowa. One of the research questions I am interested in evaluating is assessing the duration of time in which predation a concern after stocking.

Preliminary results indicate that consumption of advanced fingerling Walleye appears to be a concern for an extended amount of time after stocking (Figure 1). Additionally, Walleye consumption varied across piscivores and systems. Generally, Northern Pike, Largemouth Bass, and adult Walleye consumed the greatest number of stocked Walleye.

Currently, I am in the process of working on a manuscript pertaining to my post-stocking predation research. Additional research questions I am interested in evaluating include assessing the relationship

Fishes & Dishes

Sharing the fun stuff!!

Featuring: NC Iowa Ice fishing

Pickled and Smoked
Fish Recipes



Blue Pit Trout stocking 2019



Alana Evelsizer 2019



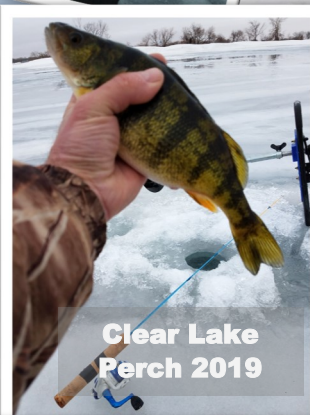
Blue Pit Trout stocking 2019



Clear Lake Walleye 2019



Clear Lake
Perch 2019



Smoked bowfin patties. – Take 2 cups ground smoked bowfin, 2 cups cracker crumbs, 1 egg, and one-half cup milk or cream. Beat egg, add remainder of ingredients, and form into patties. Heat equal parts of butter and lard in a large skillet, and fry patties to a golden brown. Serve on a hot platter garnished with parsley.

This recipe was published by the US Department of Commerce in 1918 as part of the war effort to conserve meat for the troops engaged in WW I. The method of smoking bowfin was developed by J.B. Southall at the Fisheries Biological Station, Fairport, Iowa; currently our Fairport Fish Hatchery.

One of many such projects carried out at the Fairport Biological Station. In the economic flyer issued by the Department of Commerce, Mr. Southall gives detailed steps on how to process and smoke a bowfin. Anybody interested in trying Mr. Southall's technique send me an e-mail and I will be happy to e-mail you a copy of the flyer: THE BOWFIN: An Old-Fashioned Fish With a New-Found Use.

Submitted by Vance Polton
vance.poulton@dnr.iowa.gov

Bob Middendorf's Pickled Fish

Cut 3 lbs of fish into bite sized pieces. Add enough white vinegar to cover along with $\frac{3}{4}$ cup canning salt mixed into vinegar. Mix and let stand 5-7 days. Refrigerate, stirring mixture each day.

Drain liquid off and rinse well. Cover with cold water, let stand 8 hours in refrigerator, then drain.

Mix and bring to a boil:
 $\frac{3}{4}$ cup sugar

1 Tablespoon pickling spice

$\frac{3}{4}$ cup dry white wine

$\frac{3}{4}$ cup water

Add hot pepper flakes if desired

Cool this mixture down and add 1 $\frac{1}{3}$ cup white vinegar. Layer fish and raw onion pieces in glass jars. Pour cooled mixture over fish and onions until covered. Refrigerate 48 hours before eating.

.....Submitted by Scott Grummer

Fishes & Dishes

Sharing the fun stuff!!

**Featuring: NC Iowa Ice fishing
Pickled and Smoked
Fish Recipes**



Clear Lake Walley 2019



This recipe has become a staple at the Storm Lake satellite station during broodstock collection. My bird hunting friends enjoy it after the hunt. Put the dogs up at 4:30, drop the tail-gate, snack on pickled fish and watch the sun go down (BS about the hunt).

Jim Wallace's Pickled Fish

5-6 lbs fish fillets or chunks
2 quarts white vinegar
3/4 C salt
3 C sugar
2 Tablespoons pickling spices
Lemon and onion slices

Mix 1 quart vinegar and 3/4 cup salt. Pour over fish. Let stand in refrigerator for 5 days. Rinse and drain well. Bring to a boil: 1 quart vinegar, sugar and pickling spices. Boil for 5 minutes. Cool. Pack fish in desired containers; add lemon and onion slices. Pour cooled syrup to cover all. Let stand 1 week in refrigerator.



Makes 3-4 quarts.

Bryan adds: I use bluegill fillets, we have an abundance of them in SW Iowa. Successful Lake Restoration Projects at Lakes Anita and Prairie Rose have added to the many quarts of pickled bluegills in the past few years. I also add some jalapeno slices. The heat from the jalapeno doesn't transfer to the fish but adds another layer when stacked on a cracker.

.....Submitted by Bryan Hayes

Blue Pit Trout stocking 2019



Sturgeon Candy Brine

Found on the Smoked Meats Forum

Ingredients

7 cups of water
1 cup Kikkoman soy sauce
4 cups brown sugar
1 T onion powder
1 T garlic powder
2 tsp all spice
20 whole cloves
2 teaspoons cinnamon
1/3 cup canning salt

Instructions:

Combine all ingredients and brine overnight. Allow to air dry for about 1 hr. Preheat smoker to 190°F, then add a pan of water. Add alder chips. Apple worked as a substitute. Add new chips after about 1.5 hr, and rotate the racks. Smoke until largest fillet reaches 150°F internal temperature (about 3.5 hr).

Submitted by Rebecca Krogman

Iowa Hatcheries in Action!

All in fun! This was the cover of the NALMS winter LakeLine magazine and drew many comments from my co-workers. I could not resist the late spring spooof.

.....Darcy Cashatt, editor

**Iowa Chapter of the American Fisheries Society
Annual Business Meeting
Honey Creek Resort Moravia, IA
4:30 PM, Tuesday, February 12th, 2019**

CALL TO ORDER

The meeting was called to order by President Scott Grummer. Grummer introduced EXCOM: Secretary/Treasurer: Kyle Bales, Past President: Jonathan Meerbeek, President Elect: Gregory Gelwicks, Student Subunit President: Matthew Dollenbacher. In attendance at the beginning of the meeting were 50 chapter members. Jeff Kopaska moved to approve the agenda, Alan Johnson 2nd. All were in favor.

COMMUNICATIONS REPORT

Communications Coordinator gave an update about what he has endorsed on behalf of IA AFS. He asked if there was anything else that membership felt we should comment on. There was none.

TREASURER'S REPORT

Treasure's report was given by Kyle Bales. The chapter started report period (2/7/2018) with a balance of \$16,043.78 (\$3,229.22 in the warm water Account and \$3,572.80 in Mike Mason Memorial Fund, resulting in \$9,241.76 available for AFS). Disbursements since the last financial report equaled \$11,036.66 and receipts equaled \$8,907.15.

The annual meeting, dues, raffle along with parent society returns brought in \$6,357.95. The annual meeting had \$2,634.36 in expenses and raffle and auction proceeds from the 2018 IA AFS meeting were split with the ISU Student Subunit for an amount ISU split resulted in a total profit of \$2,040 of \$1,760.00. Money brought in minus total expenses and 1.59.

The warm water/cool water conference planning was in full swing. Arkansas Game and Fish sent the balance from the last conference in the amount of \$2,549.20. This amount brought the warm water account to \$5,778.42. As of January 31, 2019 there has been \$2,934.85 in expenses leaving \$2,843.57 in the account. Additional disbursements and receipts will follow as the conference gets closer

Other noteworthy expenditures included a student scholarship (\$500.00), membership in Iowa Environmental Council for 2019 (\$100.00), 2018 membership for Iowa Conservation Alliance (\$250.00), first payment for Catfish 2020 donation (\$750.00), an IA AFS grant for fish habitat (\$942.45), and an IA AFS grant for yellow perch research (\$1,000.00).

All account activity resulted in a balance of \$13,914.27 on 1/31/2019. The Warm Water Account has \$2,843.57; Mike Mason Memorial Fund has \$3,572.80, resulting in an AFS available balance of \$7,497.90.

Proposed budget continues payments to the Iowa Environmental Council, the REAP Alliance, the Iowa Conservation Alliance, the student scholarship, and the second payment for Catfish 2020.

Committee Reports

Committee reports were sent to membership prior to business meeting for review.

There were no questions or discussion.

Awards:

Past President: Jonathan Meerbeek



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: _____

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.