

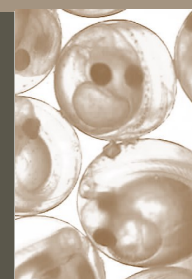
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Iowa Chapter of the American Fisheries Society

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**2018 Joint Meeting of the
Centrarchid, Esocid, and
Walleye Technical Com-
mittees**

July 24-26, 2018

Save the date!

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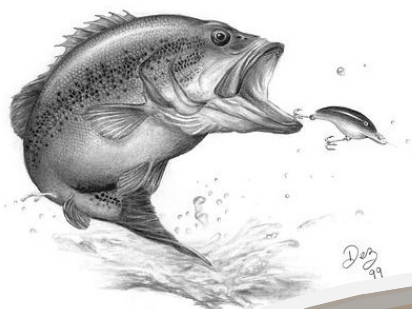
Asian Carp Invasion Ecology in SE Iowa Rivers

Brushy Creek Lake Bass Study

Walleye Stocking in the Okoboji's

A Three-Pronged approach to Topeka Shiner Research

ISU AFS Student Subunit





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

Jonathan Meerbeek

While most of you across the state have been enjoying signs of spring here and there, those of us in the Northwest are still overlooking ice capped lakes (up to 20 inches or more remains as I write this) and are likely either taking advantage of late season ice fishing opportunities or dreaming of open water escapes. As for myself, I am a dreamer and find myself frequently organizing fishing tackle and studying lakes/maps in preparation of open water. Inevitably, all of us are preparing for the upcoming field season. Spring is a special time of year for those of us working at the Spirit Lake Fish Hatchery as coworkers and volunteers from across the state unite to collect broodstock Walleye and Muskellunge that are used for the state's propagation efforts. This effort takes considerable time away from "out-of-towners" that could be spent on other projects or with family and friends and their sacrifice is noted and appreciated. For me, this collaboration of the DNR staff has been a great opportunity to get to know others working across the state. I look forward to the weeks ahead and getting to know the DNR family even better.

I want to thank everyone for attending our state chapter meeting this past February. I felt that the meeting went very well from start to finish and appreciate all the efforts from our speakers, executive committee, and attendees for making the meeting a huge success. We had an exceptional raffle and auction night and combined, grossed \$3,520. Special thanks goes to Ben Wallace for digging deep and powering through a coarse voice to auctioneer the event. Also, the ISU subunit did a superb job in organizing and soliciting raffle tickets. I look forward to our next meeting and hope to see you all there.



During our business meeting, we reiterated our recent 2016 bylaw changes regarding length of appointed term for Technical Committee representatives. The new language states that representatives should hold their position for no longer than 5 years and interested candidates must submit a letter of interest detailing their qualifications to the Excom. This language was included to provide more opportunities to get involved with AFS. I encourage any IA Chapter member that wants to get more involved in AFS to apply for these positions. My involvement as an Esocid Technical Committee representative has expanded my knowledge regarding Esocid management and research in the Midwest and has introduced me to many new professional contacts. Technical Committee representatives for the Walleye, Rivers and Streams, Esocid, Ictalurid, and NCD are all open. If interested please submit a letter of interest to Jonathan Meerbeek, Scott Grummer, or Kyle Bales by April 1st, 2018.

This past week, I had the pleasure of representing the Iowa DNR at the 2018 Conservation Summit hosted by B.A.S.S. at the 2018 Bassmaster Classic in Greenville, South Carolina. The intention of this meeting was to provide a platform where B.A.S.S. Nation state conservation directors and state fisheries personnel can discuss important issues in black bass management and research. Many topics were discussed and digested but the one that stuck with me the most was the exponential growth of B.A.S.S. sanctioned high school fishing teams nationwide. The opportunities for the youth of today to fish competitively have increased substantially, and many high school and college teams are creating excitement for

the sport. I found this especially true while visiting the EXPO and weight-in at the Classic and seeing all the youth with their family and friends visiting vendor booths, meeting professional anglers, and being genuinely excited about the sport and weigh-in. I have not experienced that level of excitement about fishing in quite a while and found it very refreshing. The youth of today will hold the key to the future of natural resources and getting them interested and involved is a very positive thing, even if it entails bass fishing tournaments. One requirement of B.A.S.S. high school teams is to have a component of conservation community service. Although this requirement will likely not make every team member a true conservationist, it hopefully will introduce them to the concept of proper resource management. Lastly, I learned that part of this exponential growth in high school fishing is that non-high school anglers are becoming positively influenced by their high school angler counterparts and joining high school fishing teams to learn more about the sport and to hang out with their friends. So much of our effort historically has been adults "preaching" to the youth, however, this paradigm shift of youth getting youth involved with fishing is perhaps the future of fishing. With that said, I want to end with a reminder of the New Year's challenge that I asked of all members back in December to introduce a student, neighbor, or other acquaintance to your passion for the outdoors. I believe it still starts with one-on-one contact and we need to pass our tradition forward.

2018 Technical Committee Representatives

During the business meeting at the annual meeting, it was specified that letters of interest for the Walleye, Esocid, Rivers and Streams, Ictalurids, and NCD need be submitted to the Excom by April 1, 2018. The Excom reviewed the letters of interest and appointed the following Iowa AFS Members:

New Representatives:

WTC: Andy Jansen (2018)

ITC: Tyler Stubbs (2018)

NCD: Rebecca Krogman (2018)

No letters of interest were provided to the ExCom for the ETC or Rivers and Streams, therefore, it has been deemed appropriate that these positions remain with the current incumbent until next year.

ETC: Jonathan Meerbeek (2011)

Rivers and Streams: Greg Gelwicks (pre 2010)

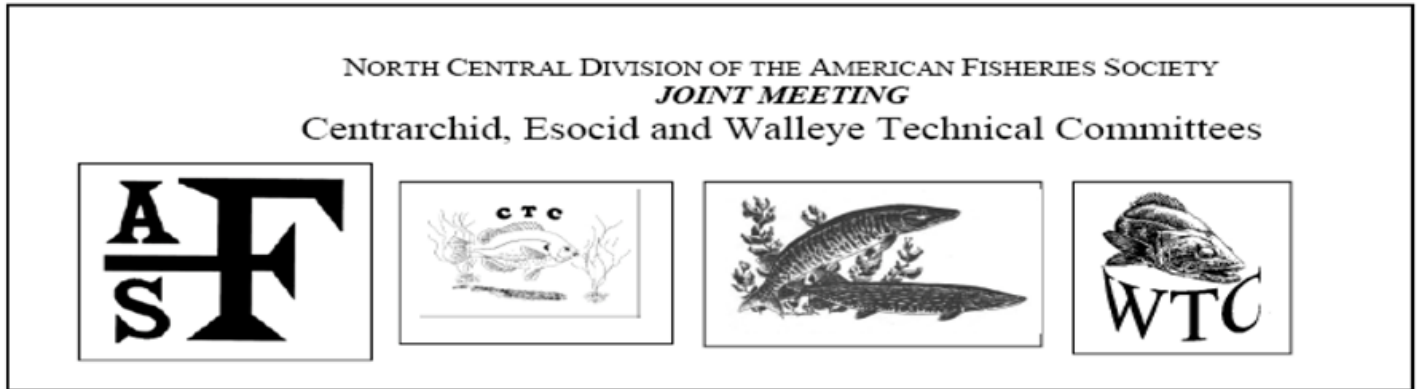
CTC: Michael Weber (2015)

Fish Culture: Alan Johnson (2015)

Reservoir Tech: Rebecca Krogman (2015)

Knowledge Seeker Award

The North Central Division of the American Fisheries Society has developed the Knowledge Seeker Award to provide funding support to undergraduate or graduate students seeking the opportunity to attend fisheries related trainings, workshops, or continuing education courses. Awards are granted three times a year for the purposes of helping students attend fisheries related courses at the Midwest Fish and Wildlife Conference (MFWC), courses held online, or for other relevant trainings or workshops that require the student to travel or pay a registration fee that may preclude them from attendance. Applications for the 3rd award (\$180) of the year are due on the 16th of April. More details can be found at: <https://ncd.fisheries.org/continuing-education/>



2018 Joint Meeting of the Centrarchid, Esocid, and Walleye Technical Committees – North Central Division of the American Fisheries Society

ANNOUNCEMENT AND CALL FOR PAPERS

Dates: July 24-26, 2018

Location: Iowa Lakeside Laboratory, Milford, Iowa

<http://www.continuetolearn.uiowa.edu/lakesidelab/about/index.html>

Meeting

The Joint Meeting will include a welcome dinner social Tuesday evening, a full day of presentations on Wednesday, a dinner social Wednesday evening, and a half day of presentations/business meetings on Thursday. Registration cost is anticipated at \$60 and will include both socials, coffee breaks, breakfast on Wednesday and Thursday, and lunch on Wednesday. Students are half price.

Yellow Perch Symposium

In response to recent amendment of the WTC bylaws to include Yellow Perch, a Yellow Perch symposium will be held on the afternoon preceding the Joint Meeting (July 24th). The symposium will begin with lunch, followed by afternoon of presentations on any subjects regarding Yellow Perch. Cost is anticipated at \$20 per person.

Lodging

Cabins (shared bathhouse and no AC) are available for \$20 per night and Motel-style rooms (private bathrooms and AC) are available for \$65 per night. Contact Lakeside Laboratory at Lakesidelab@uiowa.edu or (712) 337-3669 for reservations and additional information.

Registration and Presentation Submittal

Contact Hilary Meyer at Hilary.Meyer@state.sd.us for registration and submission of paper abstracts. Payment will be accepted as cash or check at the door (sorry, we are unable to process credit cards or other forms of electronic payment). Deadline for registration is **June 24th**.

2018 Iowa AFS Awards Banquet



Past President
~Jeff Kopaska



Secretary/Treasurer
~ Ryan Hupfeld



2017 Best Student Poster
~ Courtney Zambory



2017 Best Student Paper
~Andrea Sylvia

Are Greater Redhorse Present in Iowa?

Greg Gelwicks Rivers and Streams Research ~ Iowa DNR

John Olson, Senior Environmental Specialist, retired ~Iowa DNR

Recently, there has been some question whether the Greater Redhorse (*Moxostoma valenciennesi*) should be included in the list of Iowa fishes. This red-finned sucker looks similar to the Shorthead (*M. macrolepidotum*) and River (*M. carinatum*) redhorses. It is the largest of the Redhorse species, and is known to exceed 13 lbs. in weight. The Greater Redhorse was on a list of fishes that might occur in Iowa in the 1951 and 1956 editions of *Iowa Fish and Fishing*, but there is no documented historical information available for the distribution of this species in Iowa. The most recent (1987) edition of the book indicated records for the species in the Iowa portion of the Mississippi River, primarily in the northern Pools (9, 10, and 11) and also near Lock and Dam 14 near Le Claire. However, it is not believed that any of those Mississippi River records are supported by voucher specimens.

A large, red-finned Redhorse sp. was sampled in 2002 by the Iowa DNR Interior River Research (IRR) team and the State Hygienic Lab (SHL) team during REMAP sampling on Cedar River near Floyd, IA. The specimen was preserved and sent via Mel Bowler to Bob Hrabik in Missouri for positive identification. The specimen was determined to be a River Redhorse. There were several historic records for River Redhorse from the Mississippi River in Iowa. However, finding River Redhorse in the upper Cedar River was surprising given that this species was presumed extirpated from Iowa's interior waters in the 1956 and 1987 editions of *Iowa Fish and Fishing*. Following the 2002 sample, there were several other collections of large, red-finned Redhorse sp. by the IRR team, SHL team, and an Iowa State University student (Tim Parks). These fish (collected from sites on the Cedar, Shell Rock, and Iowa rivers) were also presumed to be River Redhorse, since Greater Redhorse were not believed to exist in Iowa's interior rivers.

Recent finds of River Redhorse in Iowa's interior rivers caught the attention of Robert E. Jenkins, professor emeritus at Roanoke College. Jenkins did his 1970 dissertation at



Greater Redhorse (*Moxostoma valenciennesi*)

Picture: nanfa.org



Shorthead Redhorse (*Moxostoma macrolepidotum*)

Picture: nanfa.org



River Redhorse (*Moxostoma carinatum*)

Picture: nanfa.org

Cornell University on the genus *Moxostoma* and is recognized as the authority on redhorses. John Olson's contact in Minnesota—former state ichthyologist Konrad Schmidt—sent photos to Jenkins of some of the River Redhorse specimens that were collected in Iowa since 2002. Jenkins showed considerable interest in these recent records for River Redhorse in Iowa's interior rivers, and was eager for more information.

The IRR team encountered an abundance of large, red-finned Redhorse sp. during fall 2016 Walleye (*Sander vitreus*) sampling on the Shell Rock River below the dam at Greene, IA. They took pictures of two of these fish and sent photos to John Olson. We all presumed that both were River Redhorse. The photos were sent to Jenkins, who strongly believed that one of the two was a Greater Redhorse.

To help settle the issue of whether Greater Redhorse are present in the Shell Rock River, the IRR team invited Konrad Schmidt and John Olson to accompany them on their September 2017 sampling for Walleye downstream from the dam at Greene. Many large red-finned redhorses were collected, examined, photographed, and identified. Based on several characters (e.g., caudal peduncle scale count, dorsal fin margin, mouth/lip configuration), it appears that, along with River Redhorse, Greater Redhorse may actually be present in the Shell Rock River (see photos below). Konrad Schmidt preserved three large redhorses in order to have our tentative identifications confirmed by ichthyologists at the University of Wisconsin, Madison.

There is additional evidence that the Greater Redhorse may also inhabit the upper Cedar River. The Clear Lake Fisheries Management Team (Scott Grummer and Kurt Meek) recently certified a new state record for the species. The 5.98 lb. fish was caught from the Cedar River near Floyd, IA by Derek Jacobsen on Aug. 30, 2017. Identification was based on caudal peduncle scale counts. In late-September 2017, the IRR team collected a large, red-finned Redhorse from the Cedar River during Walleye sampling near Plainfield, IA. Caudal peduncle scale counts and other external characteristic indicated that this fish was also a Greater Redhorse. Several photographs were taken and sent to Robert Jenkins. Jenkins was certain from the photos that this fish was a Greater Redhorse.

At this time, all evidence is pointing to a new species for Iowa's interior rivers, and official listing of Greater Redhorse as a member of Iowa's fish fauna. Official confirmation of the identity of the three preserved specimens sent to ichthyologists at the University of Wisconsin is expected in mid-2018.



Examples of large red-finned redhorses collected on September 21, 2017, from the Shell Rock River downstream from Greene, IA. Left: River Redhorse (*M. carinatum*). Right: tentatively identified as Greater Redhorse (*M. valenciennesi*).

Of Yellow Perch and Deer Flies....

Scott Gritters, Fish Management ~ Iowa DNR

Outdoor experiences from childhood to my current adult life have been plagued by seemingly every biting insect known to science. I use the word "insect" loosely as technically not all the biters meet the strict head, abdomen and thorax definition. The critters' Gritters menu has been undertaken by blackflies, chiggers, ground bees, mosquitos, no-see-ums and even I grossly survived a bat tick buffet.

On any given night a person can get raided by any of these members of the insect Air Force. For this article however, I want to concentrate on a medium size bomber insect whose squadrons are often seen patrolling on the banks of the Mississippi River; the Deer Fly. To scientists the Deer Fly it is one of the 110 or so species known from the family Tabanidae. Locals simply know it as the black striped &@\$(?!?). Off and DEET offer little air defense.



Bugguide.net

The female Deer Fly is a cowardly biter often plotting their bite by first landing along the sides of the boat and canoe. Later they launch an assault at your ankles. The female often attacks when a person is distracted such as immediately after setting the hook on a monster fish. This causes the angler to do the "Deer Fly dance" which entails the arcing of one's fishing pole skyward while simultaneously swatting at your ankle. This dance is a

great workout exercise but often just leads to a lost trophy fish, a bitten ankle and a blood filled deer fly. Male Deer Flies are now touted positively as "pollinators" and are doing sorties among the flowers and fruits. I still would not trust them as they may be flying recon missions for the females.

During a recent December fishing excursion in the Bellevue tailwater a friend alerted me that the Yellow Perch he was catching were dining on large one inch grubs and wondered what they were. Upon a detailed investigation, (an email to Iowa DNR bug Guru Jackie Gautsch), she identified the big grub as the dreaded Deer Fly larvae.



MDC Discover Nature

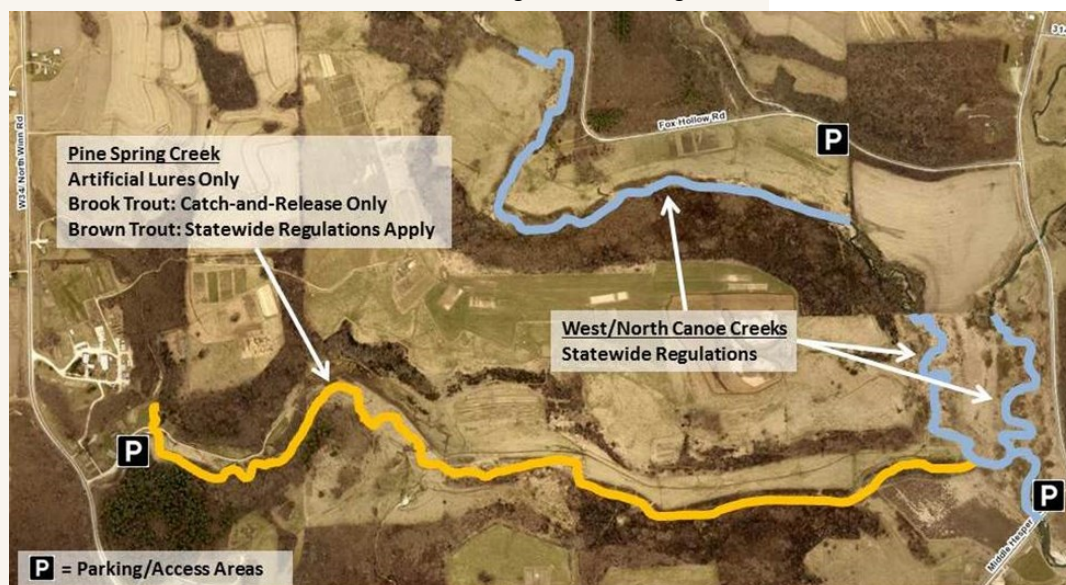
Apparently the tailwater sediment can be loaded with Deer Fly larvae. Who knew? Yellow Perch you are my new hero fish and are now elevated in my top five favorite fish species. During the winter you terrorize the children.

Seed Savers Exchange and Iowa Department of Natural Resources partner to protect three trout streams in Northeast Iowa

Mike Siepker, Decorah District Biologist ~ Iowa DNR

Seed Savers Exchange, or SSE, is a non-profit organization based near Decorah, Iowa, (Winnebago Co) that preserves heirloom plant varieties through regeneration, distribution, and seed exchange. The organization has a long working relationship with the Iowa DNR and angling organizations resulting from their dedication to restoring aquatic habitats in three coldwater streams on their 890-acre property. The property contains Pine Spring Creek, as well as segments of West Canoe Creek and North Canoe Creek (Figure 1).

Figure 1: Trout streams within Seed Savers Exchange property boundaries. Trout streams enrolled in the Angler Access Program



Pine Spring Creek flows about two miles on SSE property before joining West Canoe Creek. West Canoe Creek then travels another 400 feet before it's confluence with North Canoe Creek. Downstream of the confluence of West and North Canoe, the stream is typically referred to as Canoe Creek but for this summary the entire section will be referred to as North Canoe Creek. These streams are typical of "Driftless" coldwater streams of Northeast Iowa. All three streams have high quality habitat and fish communities. A section of West Canoe Creek 4 miles up-

stream of the SSE property is managed as a public fishery through a handshake agreement with the landowners and stocked with catchable-sized Rainbow and Brook Trout.

Recently, SSE staff expressed an interest in enrolling these stream segments in the Iowa DNR's Water Quality and Angler Access Easement Program (AAP). By enrolling the 4.4 miles of streams in the AAP program, SSE staff could continue their mission of conservation and education while ensuring public fishing access for generations to come. In June 2016, Iowa DNR trout program staff began working on the easement documents. The final signing of

the easement occurred on December 22, 2016, opening up over 4 miles of stream to public fishing in perpetuity. To further promote the trout program and new easement, a dedication ceremony was held at SSE on April 28, 2017.

Press coverage of the event can be found here:

<http://www.decorahnews.com/archived-stories/2017/04/16450.html>

and <http://www.thegazette.com/subject/sports/outdoors/trout-water-public-access-gets-boost-with-44-miles-open-at-pine-springs-20170504>

Trout Stocking

Records of trout stocking in these streams exist as far back as 1976 (Table 1). As early as 2003, South Pine Creek strain (SP) Brook Trout were stocked in Pine Spring Creek by the Iowa DNR. A self-sustaining population of SP Brook Trout was established after just two consecutive

years of stocking. The creek is one of only a handful of Northeast Iowa streams with consistent natural reproduction of the SP Brook Trout, making it a potentially important source stream for this unique, relict strain of Driftless area Brook Trout. North Canoe Creek has been stocked almost annually with Brown Trout since the mid-1980s. It has inconsistent natural reproduction of Brown Trout. West Canoe Creek has not been stocked in this area and has no documented natural reproduction of trout; however, catchable-sized Rainbow and Brook Trout are stocked in the stream just over a mile upstream from the SSE property boundary.

Table 1: History of fingerling trout stocking in streams flowing through SSE property.

<u>Stream</u>	<u>Year(s)</u>	<u>Species (size in inches)</u>	<u>Number</u>
Pine Spring Creek			
	2003	Brook Trout (4)	300
	2004	Brook Trout (4)	200
North Canoe Creek			
	1976 – 1999 ¹	Brown Trout (2 - 4)	350 - 1,000
	2000 – present ²	Brown Trout (2 - 4)	2,000 – 8,000
West Canoe Creek	Never stocked at this location		
¹ = no stocking in 1980, 1982, 1983, 1984			
² = no stocking in 2013			

Trout Population Status on SSE property

Pine Spring Creek

2005- 123 Brook Trout sampled/mi

2006- 186 Brook Trout sampled/mi

2009- sampled three sites

Upper section- 28 Brook Trout sampled/mi, 56 Brown Trout sampled/mi

Middle section- 120 Brook Trout sampled/mi, 116 Brown Trout sampled/mi

Lower section- 48 Brown Trout sampled/mi

2012- sampled three sites

Upper section- 180 Brook Trout sampled/mi, 216 Brown Trout sampled/mi

Middle section- 252 Brook Trout sampled/mi, 204 Brown Trout sampled/mi

Lower section- 16 Brook Trout sampled/mi, 76 Brown Trout sampled/mi

North Canoe Creek

No sampling has been conducted on SSE property, but sampling has been completed upstream of the proposed AAP easement site.

2014- 229 Brown Trout sampled/mi

West Canoe Creek

2013- 10 Rainbow Trout sampled/mi, 30 Brown Trout sampled/mi

2016- 8 Rainbow Trout sampled/mi, 56 Brown Trout sampled/mi

Habitat Management

Habitat improvement work was initiated in 2010-2011 when an existing constructed pond was removed to allow Pine Spring Creek to flow naturally, improving thermal conditions for Brook Trout. Additional streambank stabilization projects were also completed in 2010, 2013, and 2015. In 2010, for example, over 1800 feet of stream bank was stabilized, 11 rock weirs were installed, and 5 bank hide structures were installed to improve stream habitat conditions in Pine Spring Creek. In 2013, 3 j-hook weirs, 1 vortex weir, and 330 ft of bank was sloped and stabilized. In 2015, several hundred feet of eroding bank on a dry run feeding Pine Spring Creek was sloped and stabilized by SSE staff. DNR Fisheries staff provided technical assistance with all the habitat improvements including pond removal, in-stream habitat design, bank stabilization and installation/construction.

Current Management Practices in use on SSE property

Most of the stream corridor was already in conservation easements with Iowa Natural Heritage Foundation or USDA conservation programs prior to enrollment in the Angler Access Program. No alcohol or tobacco is allowed anywhere on the property. West and North Canoe Creeks are managed under statewide trout regulations, but the following restrictions were also implemented to protect the Brook Trout in Pine Spring Creek:

Artificial lures only

Catch and release only – Brook Trout

Catch and keep Brown Trout if wanted

No stocking unless deemed critical for Brook Trout survival

Future Management Opportunities for SSE property

Many opportunities exist for improving the fisheries within these three streams. Iowa DNR staff hope to evaluate Brown Trout populations in North Canoe Creek to determine if natural reproduction is occurring. Now that the streams are enrolled in the AAP, SSE staff can

continue to work with angling groups to stabilize streambanks and improve stream habitat on SSE property. It may also be beneficial to evaluate the genetic diversity of the Brook Trout population to ensure sustainability.

Summary

Overall, the addition of these streams to the Angler Access Program protected an additional 4.4 miles of unique Iowa coldwater stream habitat. It also ensured that these streams remain accessible to anglers in perpetuity. The strong conservation ethic of Seed Savers Exchange makes them a valuable conservation partner in the Iowa DNR's efforts to protect native species while also providing important outdoor recreational and educational opportunities.

The Iowa Water Quality and Angler Access Program continues to partner with willing landowners to protect stream corridors and preserve angling access on unique coldwater fisheries of Northeast Iowa. Iowa Trout Program staff are continually reaching out to landowners that may be interested in participating in our programs. If you know of a landowner that may be interested in the Angler Access Program, please share that information with Trout Program staff. We'd be happy to discuss the program with them and answer any questions they may have. Working together, we can continue to make Iowa a great place to fish!

Cyclone Corner



Common Carp & Bigmouth Buffalo Management in Shallow Natural Lakes

Marty Simonson, PhD Student

In 2018, I will be continuing a large-scale population assessment of Common Carp (*Cyprinus carpio*) and Bigmouth Buffalo (*Ictiobus cyprinellus*) in seven shallow, natural lakes in NW Iowa. Using a capture-mark-recapture approach I will assess the utility of electrofishing as a method to determine Common Carp and Bigmouth Buffalo abundance through CPUE. In addition, I will monitor changes in Common Carp and Bigmouth Buffalo populations including recruitment, growth, abundance, and biomass density in response to commercial harvest. Finally, I will assess whether or not water quality and sportfish populations improve in response to drastic removal of Carp and Buffalo.

I, along with three ISU undergraduates, will be working on Center, Five Island, Storm, and Silver (in Dickinson County) lakes. We will also be working closely with the Black Hawk and Missouri River Iowa DNR Fisheries Management offices, who will be sampling North & South Twin and Blue lakes. Commercial fishers will also assist by capturing Carp and Buffalo in our study lakes during spring 2018, 2019, and 2020, and tags returned by commercial fishers will inform how harvest influences total mortality, recruitment, growth, and biomass density when compared to the three lakes that do not receive harvest.

We are also collaborating with Dr. Grace Wilkinson and the ISU Limnology Lab that will collect water quality samples to measure water column nutrients, zooplankton and phytoplankton communities, and suspended solids in each of the seven lakes being studied. The water quality differences in lakes where Carp and Buffalo are extensively harvested will guide the use of commercial harvest as a lake restoration tool for shallow, natural lakes of Iowa.



Tagged common carp from North Twin Lake, IA. (September 2017)

Walleye and Muskellunge Escapement from Iowa Reservoirs

Robert Weber, MS Student

I started as a graduate research assistant in the Weber Fisheries Ecology and Management Lab during summer 2016. My research focuses on studying seasonal movement and habitat use of Muskellunge and Walleye in two central Iowa impoundments using radio telemetry, as well as relating their behavior and environmental factors to survival and escapement probabilities. Muskellunge and Walleye escapement from Big Creek Lake during high flow events was thought to be problematic; therefore, the Iowa DNR and U.S. Army Corps of Engineers partnered to install a physical barrier in the outlet in 2012. In 2016, passive integrated transponder (PIT) antennas were installed at Big Creek as well as Brushy Creek Lake, which has no barrier, to evaluate fish escapement and barrier effectiveness. We have been working closely with Iowa DNR Boone Office staff closely since spring 2016 to install PIT tag readers at the two lakes, PIT tag of Muskellunge and Walleye during spring and fall sampling, as well as tagging of age-1 Muskellunge and age-0 Walleye at Rathbun Fish Hatchery prior to stocking. Adult Muskellunge and Walleye were implanted with radio tags in each lake during fall 2016 and spring 2017, after which they were tracked by boat regularly, with various habitat metrics being recorded for each fish location. Using this telemetry data, seasonal home ranges were calculated for each species in each system. Combined, these various project components have provided fisheries managers with a better understanding of reservoir fish behavior, movement, and escapement.



A 50" Muskellunge captured from Brushy Creek Lake in 2016, implanted with a radio transmitter, and re-captured and released by an angler in spring 2017.

Antenna data suggests that the barrier at Big Creek has been effective in reducing escapement of adult Muskellunge and Walleye. To date, 66 PIT tagged Walleye and 14 PIT tagged Muskellunge have escaped from Brushy Creek, whereas



PIT tag antenna installed on the outlet of Big Creek Lake.

only 12 tagged Walleye (all <17") and two tagged juvenile Muskellunge (<13") have escaped from Big Creek. Similarly, no radio tagged fishes have escaped from Big Creek, while 8% of radio tagged Muskellunge and 15% of radio tagged Walleye in Brushy Creek escaped. The majority of escapement has occurred during the night and early morning hours for both species and appears to be related to precipitation events, primarily during spring when they are exhibiting spawning behavior. In addition, 25% of deployed Walleye radio tags at each lake have been returned by anglers, which suggests relatively high exploitation in both systems. Big Creek Muskellunge and Walleye have the smallest home ranges during summer, largest home ranges during fall and intermediate home ranges during spring. Brushy Creek Muskellunge and Walleye have smaller home ranges than their Big Creek counterparts, with home range sizes remaining consistent across seasons.

This variation in home range sizes may be due to differences in habitat complexity between systems; Brushy Creek contains large amounts of coarse woody habitat and aquatic vegetation, which radio tagged fish are often associated with. However, coarse woody habitat and aquatic vegetation are less abundant in Big Creek, and fish may move greater distances seeking these preferred habitats for feeding and shelter.

This project is ongoing, and will be continued through the fall 2020. Additional radio tags will be deployed during spring 2018 sampling to provide a larger sample size and reduce variation in future analyses.

Identifying Remnant Brook Trout Populations in NW Iowa

Brett Kelly, MS student

As a newer graduate student at Iowa State University, I would like to introduce myself and the work that we will be doing over the next few years. I recently graduated Clemson University where I received a BS degree in Wildlife and Fisheries Biology. During my time there I participated in research projects ranging in topics from stream restoration to non-game stream fish ecology using mark-recapture techniques. My love of lotic environments and stream fish attracted me to the Brook Trout research project here at Iowa State.

The goal of this project is to assess the status and distribution of Iowa's native Brook Trout. As part of a collaborative effort with Iowa DNR and US Fish and Wildlife Service, we will be conducting coldwater stream assessments starting May 2018 across Winneshiek, Allamakee, and Clayton counties. Sites will be predominately in the Upper Iowa and Yellow River watersheds. Sampling will be set up to assess fish community assemblage and habitat quality. Measured habitat variables and fish community structure will then be used to try and investigate any associations with Brook Trout presence or absence using occupancy modeling.

In the meantime, the current focus of the project is to prepare for a full field season. The main objective will be to partner with NRCS and Iowa DNR to contact private landowners in order to gain access to sampling sites. Incorporating multiple partners will not only ease sampling logistics, but will also facilitate healthy interactions across agencies, academia, private landowners, and anglers in hopes to ensure a bright future for native Brook Trout in the state of Iowa.



Brook Trout captured in the Driftless Region of NE Iowa.

Asian Carp Invasion Ecology in SE Iowa Rivers

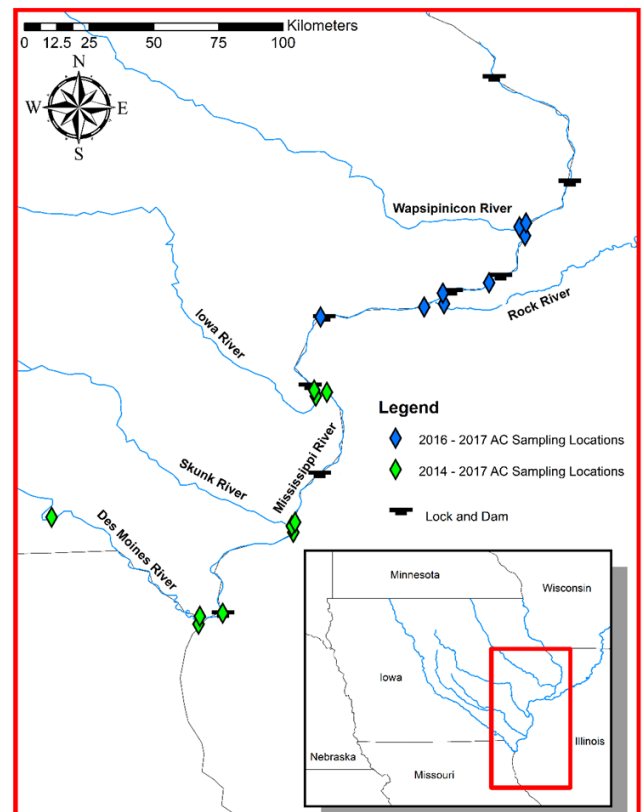
Nathan Tillotson and Aaron Matthews, MS students

The southeast border of Iowa is currently at the invasion front for Asian carp in the Upper Mississippi River (UMR). Studying these species as they become established is important for both understanding their invasion ecology and monitoring these nuisance species in Iowa's waters. Since 2014, we have been conducting spring/summer larval fish and egg sampling and fall electrofishing surveys throughout the UMR along the Asian carp invasion front to monitor adult Asian carp abundance and document evidence of successful reproduction.

Since 2014, we have collected more than 50,000 fish eggs and 191,000 age-0 fish of a variety of species. Genetic analysis of eggs from 2014 through 2016 revealed a wide range of Asian carp reproduction efforts from mid-May to late-August, indicating temporal reproductive plasticity for these species. Nearly 400 Grass Carp and more than 2,000 Silver and Bighead Carp have been positively identified in 2014 and 2015 samples. In 2014, the majority of larval Asian carp were collected from the Mississippi River, whereas in 2015 the majority of larval Asian carp were collected within tributary mouths. These results suggest that Asian carp are capable of successful reproduction within the pooled sections of the UMR but that reproduction can vary both temporally and spatially in their invaded range. Eggs and larvae collected during 2016 and 2017 are still being identified in the lab.

Asian Carp Invasion Ecology in SE Iowa Rivers continued...

Fall electrofishing for adult Asian carp from 2014-2017 has captured a total of 741 Silver Carp, 55 Bighead Carp, 38 Grass Carp, and 0 Black Carp. Interestingly, 96% of Asian carp collected came from sites below Lock and Dam 19 (LD19) and were primarily (88%) Silver Carp. Catch rates of Asian carp below Lock and Dam 19 were consistently higher than above, indicating that LD19 is likely inhibiting fish passage upstream. Additionally, mean condition (W_r) and growth of Silver Carp in the UMR tends to be higher at sites above LD19 than at sites below, that may be indicative of density dependent interactions at sites with higher relative abundances of Silver Carp. No juvenile Asian carp have been captured during fall electrofishing, indicating that these fish are extremely difficult to capture during juvenile phases or that reproduction may not result in successful recruitment.



Egg/larval fish and adult Asian carp sampling locations in the Upper Mississippi River and its major tributaries.

Brushy Creek Lake Bass Study

Andrea Sylvia, PhD Candidate

Affinity towards Largemouth Bass fishing both recreationally and in tournament events is common throughout the state of Iowa. In 2011, black bass anglers in Iowa comprised 44% of the total anglers in the state, spending 2,440 days targeting bass species in Iowa waters. Tournament related events in Iowa are also very popular, with approximately 700 fishing tournaments held in the state since 2010 and of those up to 70% targeted black bass species. Even with the popularity of bass fishing in the state, few studies have evaluated the effects of tournament angling in Iowa. In response to this, the fisheries lab at Iowa State has conducted a three year study, evaluating the effects of Largemouth Bass fishing tournaments at Brushy Creek Lake in Webster County, IA.

From 2015-2017, we have tagged 3,477 tournament captured Bass and 2,476 electrofished Bass with individually numbered metal jaw tags for a large scale mark-recapture analysis. We have recaptured ~1,500 fish via electrofishing, tournament attendance and recreational angler reporting, with some fish being recaptured up to five times. Overall, we have attended 126 Bass tournaments across the three year study resulting in a total of 22,000 angler hours. Additionally, 50 Largemouth Bass were implanted with radio telemetry



Brushy Creek Lake Bass Study continued....

tags and have been tracked throughout the study period to assess habitat, home range and natural mortality in the system.

Preliminary analyses have found that Brushy Creek Lake contains ~4,200 bass greater than 15" and around 25 pounds of Bass per acre. Approximately 35% of the Bass population is captured at Bass tournaments each year and survival of tournament captured Bass appears to be

lower than those captured through electrofishing. Models have found support for delayed mortality in tournament captured Bass, while initial mortality (dead Bass observed during tournament weigh-in) is less than 1%. Continued analyses will assess specific sources of mortality including tournament, recreational harvest and catch and release fishing, and assess habitat use and home range of largemouth bass in Brushy Creek Lake.

Walleye Stocking in the Okoboji's

Emily Ball, PhD Candidate

For the past three years, I along with numerous technicians have been evaluating post-stocking survival of advanced fingerling Walleye in East and West Okoboji from September to the end of November then again in April. During the fall field season we sample the littoral zone in the evening with an electrofishing boat to collect a wide variety of samples to learn about how well hatchery Walleye adapt to Iowa lakes. The main objective has been to assess potential factors that could influence the success of a Walleye stocking program. To address this question, we assessed how hauling distance, post-stocking predation, walleye diets, and overwinter survival influence how many stocked Walleye survive each year. For this article, I will be discussing my research pertaining to post-stocking predation.

Post-stocking predation has the potential to negatively influence survival of stocked Walleye. In the hatchery, fingerling Walleye are raised in an environment void of predatory fishes. Thus, their lack of experience with predators could make them an easy meal. To assess the prevalence of post-stocking predation, our team has collected potential predators in the Okoboji's, including Muskellunge, Northern Pike, Largemouth Bass, Smallmouth Bass, and adult Walleye for the past three falls (2015-2017). To non-lethally recover stomach contents we use pulsed gastric lavage, which a recent undergraduate research project (Trevor Blankman) in review at North American Journal of Fisheries Management shows is very successful at recovering stomach contents. The goal of this portion of the research is to assess



Advanced fingerling Walleye recovered from a Largemouth Bass shortly after stocking.



Hard working technicians helping to collect advanced fingerling Walleye predators (left: Stephen Grausgruber, Alexis Whiles, Greyson Doolittle, and

which potential predatory species, if any, consume fingerling Walleye. Based on preliminary analysis, diets of predatory species consist of different percentages of recently stocked advanced fingerling Walleye. Additionally, consumption rates of advanced fingerling Walleye are higher immediately after stocking. Currently, I am in the process of identifying stomach contents collected during the Fall 2017 field season and hope to have this task completed by the end of May and immediately start working on writing up my results for publication.

A Three-Pronged approach to Topeka Shiner Research

Alex Bybel, Courtney Zambory, and Nick Simpson, MS Students



Two male Topeka Shiners collected from an oxbow in the Boone River Watershed.

Iowa, once full of meandering streams, wild prairies, and marshes, underwent dramatic changes with the arrival of European settlers. Nutrient rich wetlands were drained and converted into rich and productive farmland. Although these alterations to the landscape propelled Iowa to become a top producer of corn and soybeans in the United States, these changes present challenges for a native Iowa fish. Once widespread in Iowa, Topeka Shiner populations are now restricted and are only known to occur in three watersheds in the state. This dramatic reduction in their range contributed to their addition to the federally endangered

species list in 1998. Topeka Shiners have displayed preference for cool, clear, slow-moving stream pools, but these habitats have largely been eliminated from Iowa's landscape due to widespread stream channelization. However, these fish were recently discovered to commonly occupy oxbows. Therefore, oxbows are thought to provide these minnows with additional refuge and spawning areas apart from the stream. Oxbows form naturally when stream meanders become separated from the main stream channel over time. When stream meandering is prevented from occurring through channelization, oxbows are no longer created naturally, while existing oxbows eventually fill in with sediment and become "scars". During much of the year, these habitats remain disconnected from the stream. Wet periods and floods facilitate movement of fish between oxbows and the stream. The US Fish and Wildlife Service began working with private landowners in 2002 to restore oxbows by excavating oxbow scars to increase potential habitat for Topeka Shiners, and today, over 140 restorations have been completed in Iowa and Minnesota.

Three graduate students at Iowa State University are working to improve our understanding of Topeka Shiners to help facilitate their recovery. Alex Bybel and Nick Simpson sampled for Topeka Shiners in the Boone, North Raccoon and Rock River watersheds in 2016 and 2017. In total, 98 oxbows were sampled (34 un-restored, 64 restored) and Topeka Shiners were present in 40 (11 un-restored, 29 restored). One-hundred and eleven stream sites were also sampled, and Topeka Shiners were detected in 40 of these sampled sites. Nick is analyzing habitat and fish assemblage associations of Topeka shiners in oxbows and streams. Alex is using fin clips taken from Topeka Shiners to determine distinct genetic populations and analyze their population structure to understand movement and connectivity of Topeka Shiners.

Courtney Zambory created a model using high resolution satellite imagery to identify former stream meanders and oxbow scars as potential



Identified land features that are potential restoration sites. Their likelihood of being a former stream meander or off-channel habitat are ranked 0-7. Values of 7 (blue) represent the features that are most likely to be target features.

A Three-Pronged approach to Topeka Shiner Research continued....

restoration sites. Once candidate restoration site locations were identified in her models, a species distribution model (SDM) was applied to these oxbow sites to identify oxbows that had the greatest potential to support Topeka Shiners if restorations were to be constructed there based only on landscape variables. Together, these two methodologies are intended to provide guidance to select future restoration sites. Through this collaborative effort, Iowa State University's Topeka Shiner research will further the understanding of Topeka Shiner habitat, genetics, and distribution, and further improve conservation efforts for this endangered fish.

ISU AFS Student Subunit**Greg Hand, President**

The ISU Student subunit has a very busy couple months full of professional development and community projects planned. We are currently working with Story County Conservation on two projects to further our involvement in the community. We are in the process of attending planning meetings for the "Pet Outreach Campaign". For those of you that are unfamiliar, this is a campaign geared towards stopping the release of aquatic and terrestrial invasive species into the local ecosystem. We plan to participate in the distribution of educational materials and also be part of a collection day in which individuals can drop off unwanted pets and we will help get those to designated outlets. The Club is also gearing up to do our part in another project in conjunction with Story County Conservation and The Ames Anglers. The Ames Anglers have constructed numerous PVC fishing line waste baskets to be placed throughout Story County. Story County Conservation has designated 13 water bodies in which the waste baskets will be placed. Once the ground thaws, the Student Subunit will be installing the waste baskets at the locations and are looking into maintaining the baskets into the future. Engaging the community is a critical aspect of fisheries and we as group are looking forward to the opportunities we have been given to be involved in the local community.



IA AFS Student Subunit members participating at a club organized fishing tournament, visit to Henry Doorly Zoo and Aquarium, assisting with trout stocking at Ada Hayden, and the Saylorville Lake clean-up this past year.

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: _____

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.

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.

There is a \$1,000.00 limit for each project.

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