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IOWA CHAPTER OF THE AMERICAN FISHERIES SOCIETY

LATERAL LINES

SEPTEMBER 10, 2013

Iowa's new AFS President-elect and Treasurer:

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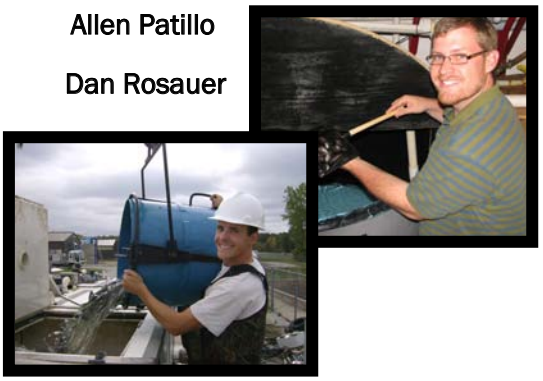
Dan Rosauer



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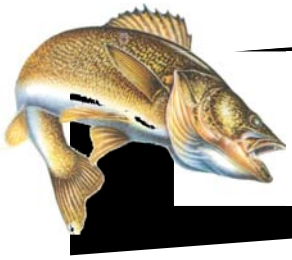

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AMERICAN FISHERIES SOCIETY

IOWA AFS CHAPTER
American Fisheries Society

Our Missions: 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

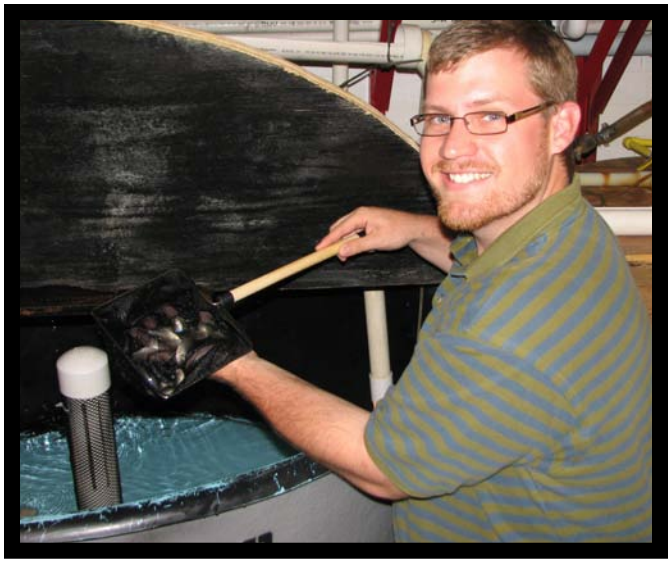
Kim Bogenschutz

The end of summer is near, and so is my term as President of the Iowa Chapter of AFS. I want to use my last "President's Corner" as an opportunity to thank the many members who have taken active roles in the chapter this past year. Chad Dolan is the outgoing Past-President. One of the major tasks Chad had to tackle during his time as President was helping with the 2011 Midwest Fish and Wildlife Conference. Along with the Iowa Chapter of The Wildlife Society, Chad organized paper judging, the raffle, t-shirt sales, and staffing. Chad was a great leader for the chapter during all of his three years on the Executive Committee, and my guess is he will remain a very active member. Andy Otting served three years as the chapter's Secretary/Treasurer. Andy's duties ranged from collecting dues and maintaining the membership roster to taking notes at meetings to paying all incoming bills from meetings and workshops. Andy is one of the most organized people I know, and I was fortunate that he is located in the same office building as I am because it made my job as President much easier. Ben Dodd and Andy Otting organized the recent continuing education course on PIT tag use in Fisheries. I was not able to attend the course, but I heard very good things about it from attendees. Kim Hawkins has been an excellent newsletter editor, and I hope she will continue to be for a long time. Andy Fowler has remained active since his term as President as our webmaster and online voting guru. I definitely appreciate his technological skills. Ben Wallace is now your President and will be busy planning the 2014 annual meeting in the upcoming months and representing our chapter in a variety of ways. I also want to thank the committee chairs and anyone else I may have forgotten who helps fulfill the mission of the American Fisheries Society: 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.

Because the work of the chapter is never done, please join me in welcoming the incoming officers, Allen Pattillo as President-Elect and Dan Rosauer as Secretary/Treasurer. You can find their biographies later in this newsletter. I know that they will be great representatives for the chapter. As you can see from my thanks-you's above, it takes a lot of people to make the chapter run effectively and efficiently. I encourage you to support our new officers and become more involved in the chapter. We have members who have not participated in a committee or who have not been an officer, and I encourage you to do so. The chapter needs you.

Enjoy the last days of summer. The recent hot temperatures remind us that it is not over yet even though the school calendars may say so.

2013 IOWA AFS PRESIDENT ELECT: ALLEN PATILLO



Allen attended the University of Georgia (UGA) in Athens, GA, where he received a B.S. degree in Fisheries and Aquaculture in 2008 with a certificate in Water Resources. Allen was an active member of the UGA student subchapter of the AFS, as well as Xi Sigma Pi – National Forestry Honors Society. While pursuing his undergraduate degree, Allen worked as a fisheries technician in Dr. Gary Grossman's lab on a research project that evaluated the effects of rainbow trout on native stream fishes in North Georgia. Allen also worked for two years as the animal husbandry technician and aquarium keeper for the Marine Science department at UGA. Allen then began his master's degree at Auburn University in Auburn, AL in 2008, where he studied anesthetics applications, sex reversal techniques, and potential invasive impacts of the Australian redclaw crayfish in Alabama. Allen was also an active member of the AFS at Auburn University where he planned and participated in several fund raising and outreach and education events. After Allen graduated from Auburn University in 2010 he immediately began his career as the Fisheries and Aquaculture Extension Specialist at Iowa State University (ISU) and has an equal split appointment between research and extension. Allen has been involved with research projects on bluegill and hybrid striped bass culture, as well as assessing the impacts of grass carp on centrarchid populations in Iowa reservoirs. Allen's extension work has largely consisted of aquatic plant management, watershed management, small pond management, outreach and education programs for youth in fishing and hunting, and educating the public on ways to limit the spread of invasive species (i.e. Asian Carp). Current research efforts include improving value-added agriculture uses for the invasive Asian Carp species, and developing techniques for aquaponics in Iowa.

2013 IOWA AFS TREASURER: DAN ROSAUER

Dan received a B.S. degree in Animal Ecology with a fisheries and aquatic sciences option in 2006. His four years at ISU were spent maintaining a fathead minnow colony for immunity studies and gaining various fisheries experiences in the summers. Dan was a charter member of the ISU student subunit of the Iowa Chapter of AFS and the secretary-treasurer in 2005-6. In 2006, Dan left Iowa to pursue a master's degree at the University of Wisconsin-Milwaukee. His thesis work involved the establishment of genetically defined yellow perch brood stocks. During this time, Dan also worked on the reproductive biology of lean and siscowet strains of lake trout in the field, as well as strain differentiation in a laboratory setting. After graduating in 2008 he continued as a research associate, working with yellow perch, lake trout and black pacu. Dan joined the Iowa DNR in 2010 as a Technician at the Rathbun Hatchery. His primary responsibilities are rearing walleyes from fry to fingerlings in lined ponds (phase I) and feed training walleyes (phase II). He has initiated a zebra mussel monitoring program within the hatchery to test the hatchery HACCP plan as well as monitor zebra mussel veliger densities entering the hatchery. Dan is excited for the opportunity to become more involved in AFS.

2013 IOWA AFS CONTINUING EDUCATION:

PIT TAG USE IN FISHERIES

BOONE WILDLIFE RESEARCH STATION, BOONE, IOWA

~ ANDY OTTING, IOWA AFS TREASURER

Game fish out-migration over spillways is a common problem for fisheries managers, especially when managing muskie and walleye populations. Assigning a value to the number of fish lost is difficult to impossible. To explore a way to enumerate this loss, the Iowa Chapter AFS invited Warren Leach from Oregon RFID to present a course on using PIT tag readers stationed at spillways to monitor fish out-migration. The course was attended by 18 participants from the Iowa DNR and Iowa State University. During the course participants gained a good background on how PIT tags and their readers operate, along with their advantages and limitations. The main message taken from the course was that proper antenna design is the key to obtaining reliable readings. Site visits were done to Big Creek Lake, Saylorville Reservoir, and Brushy Creek Lake to discuss the feasibility of putting readers at these types of spillways. Each type of spillway presented some challenges in antenna design, but none were labeled as impossible. From what was learned in the course participants are optimistic that we are closer to having a reliable means of monitoring fish loss, as well as the potential for evaluating the effectiveness of fish barriers on our spillways.

WHAT'S HAPPENING AT LAKE RATHBUN

~ANDY FOWLER, FISHEREIS RESEARCH, IOWA DNR

Recently, the Chariton Fisheries Research Station has been involved in a project on Lake Rathbun investigating benthic macroinvertebrate abundance, shoreline stabilization quality, general water quality parameters, and zooplankton abundance, at various points throughout the lake, in relation to crappie *Pomoxis spp.* recruitment. Surprisingly, we have found almost no benthic macroinvertebrate life in the reservoir. Yes, I said "No benthic life!" Pick up submerged rocks. Pick up submerged woody debris. Pick up submerged leaf packs. It is a lucky day when you find anything making use of this niche environment. As aquatic ecology professionals, this is completely contrary to our training and observations of most of the world around us. Where are the grazers, the filterers, the shredders? Is Lake Rathbun a toxic cesspool devoid of life? These are the questions that peaked my curiosity, warranted an answer that I couldn't provide, and which subsequently constitute the substance of this article.

First of all, Lake Rathbun is not a toxic cesspool devoid of all life. Far from it, the lake contains one of Iowa's most premier fisheries with abundant walleye *Sander vitreus*, channel catfish *Ictalurus punctatus*, and crappie. However, it is not alone on Iowa's list of lakes with low benthos abundance either (Table 1). Twenty-four lakes currently make up this list. More lakes will likely be added this fall when new data becomes available from Iowa State University's limnology laboratory. The lakes vary from the hydrology of large reservoirs with short retention times like Red Rock Reservoir to longer retention times like Rathbun Reservoir. However, it is not just large impoundments that this problem is common to. Similar observations of low benthic organisms have also been documented on small reservoirs like Red Haw Lake and natural lakes like Black Hawk Lake.

Variable crappie recruitment is also present in Lake Rathbun. This is commonly seen in this genus and is quite common in the variable hydrology of water control reservoirs, such as Lake Rathbun (Mitzner 1981).

Table 1. Preliminary list of Iowa lakes with low abundance of benthic organisms, in order by ascending number of most abundant taxon (unpublished data 2007, Dr. John Downing, Iowa State University). *Lake Rathbun data was added to this list from a separate study with separate methodology.

Lake Name	County	Organisms (Number + Name)	Number of taxa	Number of most abundant taxon
Red Rock Reservoir	Marion	No Organisms	0	0
Panorama	Guthrie	No Organisms	0	0
Newell Pit	Buena Vista	(1) ceratopogonidae	1	1
Silver Lake	Worth	(2) chaoborus, (1) procladius	2	2
Little Sioux Park	Woodbury	(2) chaoborus, (1) gammarus	2	2
Yenruogis	Keokuk	(1) chaoborus, (3) gordioides	2	3
Upper Pine	Hardin	(4) ceratopogonodae, (4) chironomus, (1) tubifex	3	4
Lake Anita	Cass	(5) piscicolidae	1	5
*Lake Rathbun	Appanoose	(4) ephemeroptera, (6) tubifex	2	6
Blue Heron	Polk	(20) chaoborus	1	20
Nodaway	Adair	(19) ceratopogonidae, (35) chaoborus, (1) clinotanypus	3	35
Don Williams	Boone	(52) chaoborus, (16) tubifex	2	52
Lacey Keosauqua	Van Buren	(48) chaoborus, (57) chironomus, (1) sphaeridae	3	57
Fulsom	Mills	(59) chaoborus, (1) ophidonais, (4) tubifex	3	59
Black Hawk	Sac	(82) coleotanyous, (16) chaoborus	2	82
Beeds	Franklin	(91) chaoborus, (8) tubifex	2	91
Lake Ahquabi	Warren	(97) chaoborus, (17) chironomus	2	97
Red Haw	Lucas	(2) ceratopogonidae, (102) chaoborus, (1) chironomus	3	102
Easter	Polk	(108) chaoborus	1	108
East Lake (Osceola)	Clarke	(108) chaoborus	1	108
Hannen	Benton	(1) ceratopogonidae, (111) chaoborus, (6) chironomus	3	111
West Swan	Emmet	(21) chaoborus, (125) coleotanypus	2	125
Viking	Montgomery	(1) ceratopogonidae, (129) chaoborus, (2) tubifex	3	129
Black Hawk Pits	Sac	(129) chaoborus, (1) tubifex	2	129

Recruitment and growth depend highly on the availability of suitable prey, and benthic macroinvertebrates can make up a large proportion of that in many fishes. The lack of this valuable prey item could affect the recruitment potential of many fishes such as crappie in many of these listed waterbodies and therefore, a better understanding of the dynamics of these reduced populations of benthic organisms is warranted and was the focus of our project: Study 7037 - Rathbun Lake Habitat Assessment.

There are various potential reasons for the lesser abundance of benthic macroinvertebrates in Lake Rathbun. Consequently, I don't see the following as an answer to any particular question, rather an invitation to discuss these possible causes. I invite anyone to 'chime' in on this conversation with me, in person or in future newsletter articles. It is hoped that this discussion leads to a more thorough understanding of this potential problem.

1) **Is the water hypoxic? No.** There are low oxygen areas in the lake due to summer stratification, however, they occurred at an average depth of 21 feet throughout the summer (Downing 2004). Our sampling methodology uses a Ponar dredge many feet above this hypoxic area at the 4 foot contour at 12 different points around the lake. Further, Lake Rathbun, with its long fetch, mixes routinely throughout the average year, making hypoxic conditions a rarity (Downing 2004).

2) **Is the water toxic? Probably not.** Pesticide concentrations did exceed United States Environmental Protection Agency (USEPA) guidelines (for atrazine, metolachlor, and cyanizine) in the surface water of some sub-watersheds above Lake Rathbun (Downing 2004). However, I can find no references describing pesticide concentrations in the lake exceeding USEPA guidelines. Further, the levels present in the watershed or immediate waterbody would not likely affect the growth or reproduction of benthic macroinvertebrates to the current extent.

3) **Is the substrate toxic? Probably not.** It is highly unlikely that there are elevated concentrations of toxic substances in the benthic sediment which would affect the growth of benthic macroinvertebrates to the extent that we are observing. High levels of copper due to former pesticide treatments have been known to limit invertebrate abundance and diversity in some waters (Montz et al. 2010), however, that is very unlikely the case here, as no whole lake treatments of copper pesticides have been used on the lake (to my knowledge).

4) **Is our sampling technique effective? Probably.** Our sampling technique, using a 42 $inch^2$ Ponar dredge, does not effectively sample some of the more prevalent harder substrates such as clay. However, this substrate is not an ideal environment for benthic macroinvertebrate colonization anyway. Consequently, we are likely not underestimating the abundance in the most prevalent substrate type areas in Lake Rathbun.

5) **Is there too much predation on benthic invertebrate population? Maybe**. Mitchell and Grubaugh (2005) did find a significant impact on invertebrate populations by predation of shore birds on inland sites in the Mississippi valley. While there certainly are shore birds around Lake Rathbun, I do not believe that their current impact would bring the invertebrate population to the current level. Lake Rathbun does have a large presence of benthic feeding fishes such as suckers, Catostomidae species, and common

carp *Cyprinus carpio*. Benthic fishes significantly depress macroinvertebrate abundances in some situations, as they can make up a large portion of their diet. Hayes et al. (1992) found that chironomid larvae and mayfly *Caenis spp*. increased 13 to 18-fold after white sucker *Catostomus commersoni* removal on a lake in Michigan. Therefore, the removal of non-desired benthic feeding fishes such as common carp would obviously be beneficial in situations with high predation rates; however, it would be cost-prohibitive in a lake as large as Lake Rathbun. Desired sport fish species such as bluegill *Lepomis macrochirus*, channel catfish *Ictalurs punctatus*, and many others also utilize benthic macroinvertebrates as a food source. The extent of predation on benthic invertebrates in the lake by these species is unknown. Further research on the level of predation and stomach analysis of desired sport fish species would be warranted before making a financial commitment towards removal of benthic fishes as a solution.

6) Are fluctuating water levels reducing the abundance of benthic macroinvertebrates? Yes. The overall trend at Lake Rathbun, as well as much of the state, is towards a higher frequency of large rain events. This can cause large water level fluctuations in our reservoirs. Multiple studies have observed lower macroinvertebrate densities in situations similar to Lake Rathbun, where large water fluctuations are common (McEwen and Butler 2010). Further, there is a trend at Lake Rathbun, although insignificant, towards increased total annual precipitation and fluctuating water level elevations of up to 27 feet (Figure 1). This trend could nullify any easily available solution of increasing benthic macroinvertebrate abundance in Lake Rathbun and is most likely outside any realm of control when dealing with a flood control reservoir such as Lake Rathbun.

7) Is the habitat beneficial for macroinvertebrates? No.

a. The benthic substrate consisted of a single sediment type of hard 'clay-pan' or silt at many of our sites, with clay being much more prevalent. Belyaeva (2013) found that substrate consisting of mixed sediment types contained higher number of organisms than single sediment substrates. Also, clay-hard-pan substrates do not allow much colonization due to their density, further reducing the potential for abundant macroinvertebrate populations in the lake. Yet, little can be done to change the prevalent substrate type of the lake and other solutions must first be prioritized.

b. Sediment deposition from internal and external sources can also limit macroinvertebrate abundance in a number of ways including: changing the suitability of the sediment composition for some taxa, increasing emigration rates, decreasing the ability for respiration, and reducing the

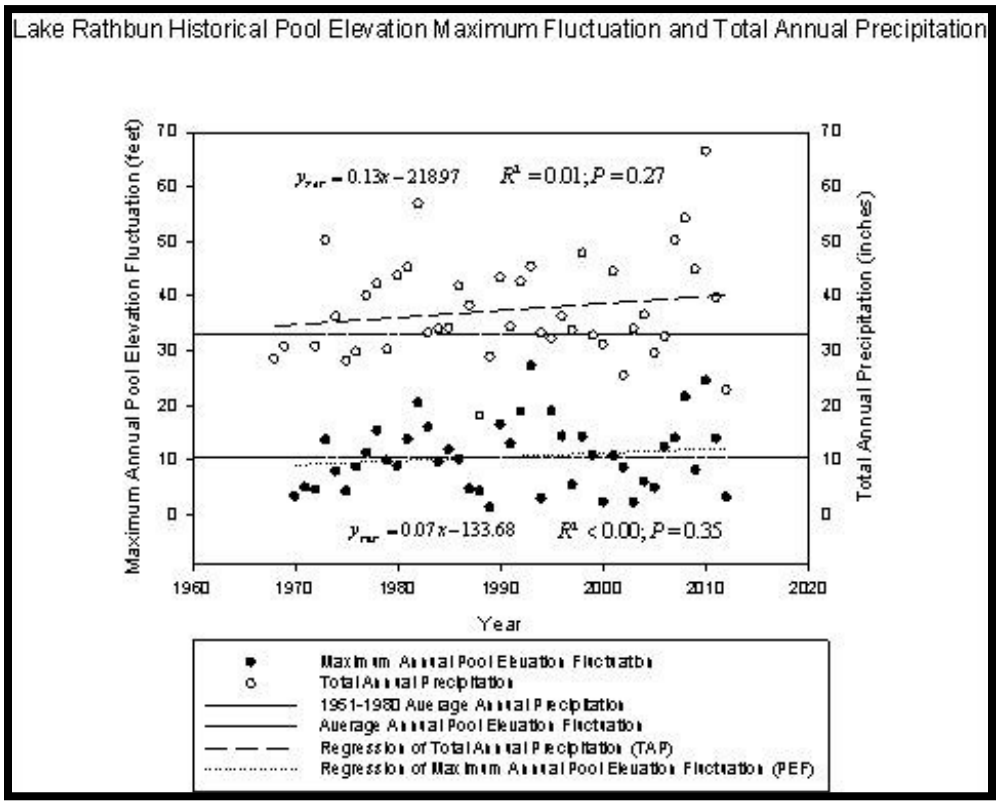


Figure 1. Historical Pool Elevation Maximum Fluctuation and Total Annual Precipitation at Lake Rathbun, IA.

quantity and quality of macroinvertebrate food sources (Harrison et al. 2007). The Rathbun Land and Water Alliance has dramatically reduced sediment delivery to the lake by 25,600 tons annually by applying best management practices (BMP) in the watershed at a cost of more than $12 million. Yet, there are still many more areas to target with BMP's in the watershed in order to limit future external sediment delivery. More financial assistance in this area is needed to further reduce sediment inputs to the lake. Additionally, in-lake erosion due to wave action and resuspension of sediments also contributes to the sediment deposition rates. Over $2 million is currently being spent on protecting shorelines from wave action in Lake Rathbun. However, that only protects 17% of the total shoreline on the lake, much of which is highly susceptible to erosion. Future investment in shoreline protection should be targeted on these highly erodible shorelines.

The low abundance of benthic macroinvertebrates in Iowa lakes is a common but undiscussed problem which has the potential to affect recruitment and growth of fish populations. An acknowledgement of this potential problem when it exists is a good first step towards finding a solution. The solution will likely incorporate aspects from the most probable causes: predation by benthic fishes, fluctuating water levels, and sediment deposition. However, this may involve other solutions as well, especially in lakes that don't possess the same characteristics as Lake Rathbun. Fish populations of lakes on the list of low abundance of benthic macroinvertebrates exhibit good growth and recruitment, for the most part, suggesting that the lack of abundance is not a limiting factor. Consequently, any solutions would have to be justified financially before moving forward. Future investments in decreasing external and internal sources of sediment deposition would be the logical first step. Investments such as this would have positive benefits for not only benthic macroinvertebrates but many other aspects of the lake and its fishery. Yet, in the end we may have to accept lower abundances of macroinvertebrates in some lakes due to forces outside of our control such as large water level fluctuations.

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AN EASTERN IOWA SNAPPING TURTLE SNAPSHOT

~ROYCE BOWMAN, FISHEREIES RESEARCH, IOWA DNR

In 2009, the Iowa Department of Natural Resources formed The Joint Committee on Turtle Harvest. The Committee's primary goal is to ensure self-sustaining native wild turtle populations in Iowa. Biologists are concerned about recent trends in commercial turtle harvest and increases in demand. DNR teams have increased sampling efforts to collect more data on Iowa's turtle populations. A well attended 2012, AFS turtle workshop held in Ames familiarized staff with Standard Operating Procedures (SOP) for data collection, turtle identification, workup of specimens, and hands-on field training netting turtles in a variety of habitats. Following the workshop, Fisheries Bureau crews returned to their respective corners of the state equipped with standard turtle nets and a useful collection of gear for turtle data collection.

The Mississippi River Fisheries Research team out of Bellevue is one of six Fisheries teams that were tasked with turtle sampling. Our plan was to net turtles for two weeks in July - targeting common snapping turtles one week, and softshell species the following week. We planned on sampling in July for three reasons: 1) July will typically bring an extended period of hot weather driving water temperatures up increasing turtle activity; 2) Iowa's reported commercial turtle harvest peaks in July for snapping turtles and softshell species (Osterkamp 2012); and 3) this period coincides with a post-nesting season for harvesting turtles that DNR Biologists feel is necessary to protect our native

wild stock.

Nets used were standard turtle nets with three 762 mm (2.5 ft.) round hoops, 25.4 mm (1 in) bar mesh, and a single flat throat. Turtle nets had a mesh bait bag suspended and fixed in the cod end filled with cut common carp. In addition to cut carp, a can of sardines (lightly smoked, packed in oil) was placed inside the bait bag with lid slightly cracked open. Nets were fished for approximately 24 hours. Captured turtles were enumerated, sexed, weighed, measured and individually marked as described in Iowa turtle sampling SOP. Data analysis was performed on common snapping turtles *Chelydra serpentina* as the target species during the sampling period.

A wide variety of turtle habitats were sampled including rivers, streams, oxbows, farm ponds and wetlands encompassing both public and privately owned waters in eastern Iowa. Mean daily air temperature was 30.8° C (87.5° F, range 80-95) and mean water temperature across sites was 25.6° C (78° F, range 73-88). A total of 49 common snapping turtles were caught in 45 net nights (CPUE 1.08/net night) using the standard turtle nets. An additional 14 common snapping turtles were collected using non-standard turtle nets, fyke nets and hand capture for a total of 63. Mean straight-line carapace length was 288 mm (11.3 in, range 4.6-15). Mean weight was 6,615 g (14.6 lbs, range 1.3-28.7). Male to female sex ratio was 1:0.45 (Figures 1 and 2). One net was lost due to theft during the study period. Spiny softshells (n = 16), western painted turtles (n = 81), and Blanding's turtles (n = 6) were also collected.

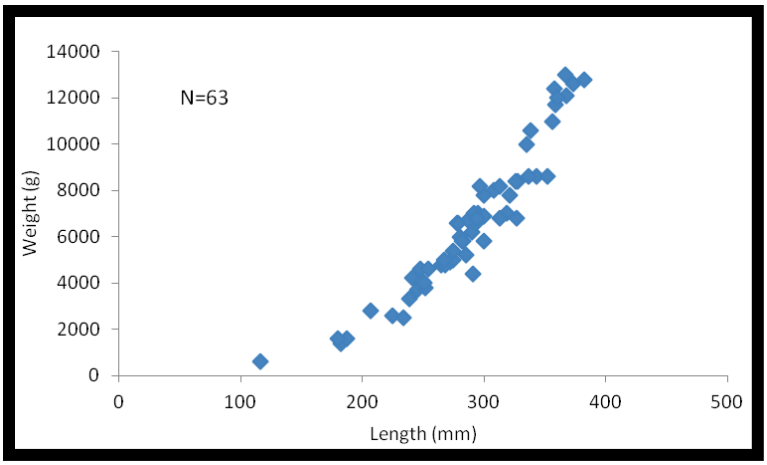

Figure 1. Common snapping turtle length weight relationship (N=63) collected during the 2013 sampling period.

Although a small data set, the length frequency histogram shows a decrease in female snapping turtle abundance at straight-line carapace length of 275 mm. Petokas (1980), collected 28 nesting common snapping turtles and reported mean carapace length of 258.9 mm. The histogram may indicate mortality on sexually mature females perhaps from highway mortality and harvest during nesting season. Female turtles are thought to be more vulnerable to road mortality than males because they travel overland to lay eggs. Plus, demand for hatchlings has likely increased commercial fishing pressure on females for their eggs. These preliminary findings suggest more research and data collection for common snapping turtle abundance, and size structure by sex is needed to ensure Iowa's snapping turtle populations remain healthy and self-sustaining.

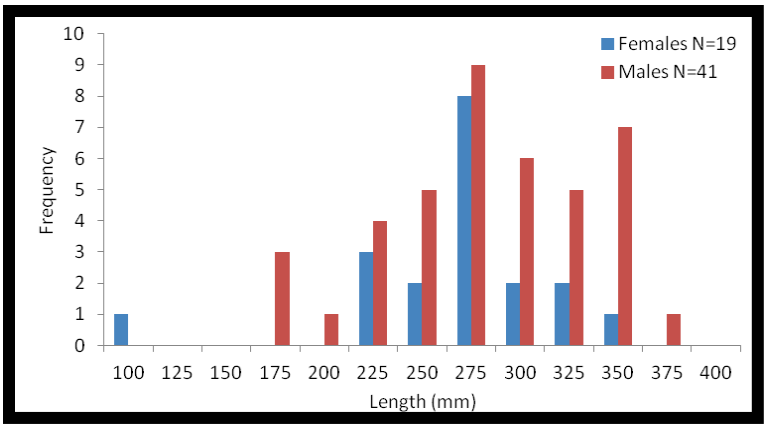

Figure 2. Common snapping turtle length frequency histogram by sex (N=60) collected during the 2013 sampling period.

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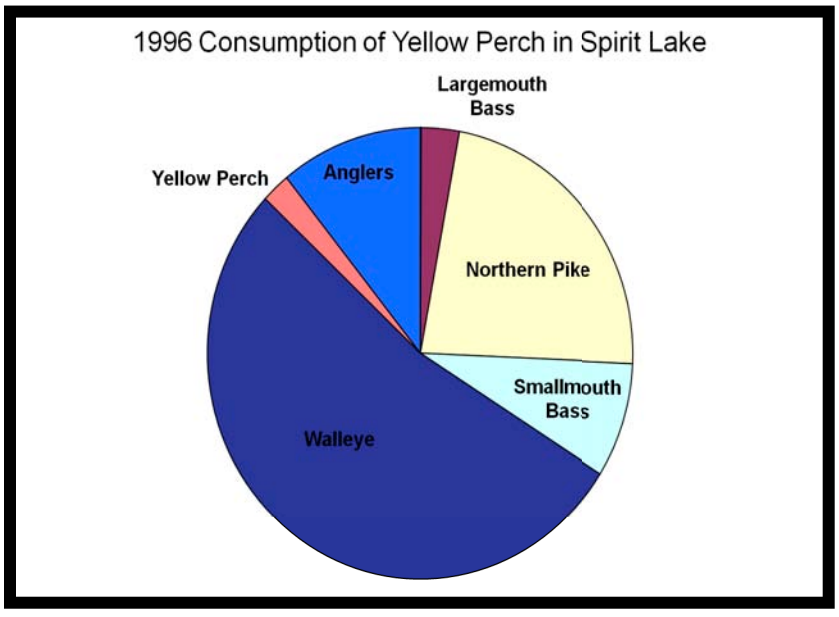
EVALUATION OF A 17-22 INCH PROTECTED SLOT LIMIT ON WALLEYE IN SPIRIT LAKE, IOWA

~JONATHAN MEERBEEK, FISHEREIES RESEARCH, IOWA DNR

Spirit Lake has been used by the Iowa Department of Natural Resources (DNR) as a primary walleye broodstock lake since the 1930s and has produced millions of fry and fingerling walleye that have been used for walleye propagation and stocking across the state. Therefore, understanding walleye population dynamics and factors affecting walleye survival and recruitment in Spirit Lake is extremely important to the success of Iowa's walleye stocking program. Protecting walleye broodstock populations from overharvest via angler harvest restrictions has been the most successful technique to maintain sufficient walleye populations and is generally well accepted by anglers. In response to declining walleye populations and poor growth of sub-legal walleye, a 17-22 inch protected slot limit was imposed in January 2007. The protected slot limit allowed harvest of slow-growing walleye, but also protected a large percentage of the broodstock population that could later be used for the walleye propagation program. Shortly after implementation of the special regulation, the walleye broodstock population as well as angler catch and harvest rates in Spirit Lake increased significantly. In addition, walleye fry production at the Spirit Lake Fish Hatchery increased substantially and ultimately resulted in more walleye stocked and better walleye populations throughout the state. During the spring walleye broodstock collection efforts in 2013, Iowa DNR fisheries staff noted poor broodstock walleye growth in 2012 and were concerned of density-dependent growth and/or forage abundance restrictions. Subsequently, anglers began voicing their concerns over the number of "slot-sized" fish caught-and-released and the lack of "harvestable-sized" walleye in their catch. These concerns prompted additional analysis and recommendations based off historic and recent survey data.

Bioenergetic modeling in the mid-late 1990s found that the primary forage for multiple top-level predator fish species in Spirit Lake was yellow perch. This was especially true for northern pike and large walleye (≥ 17 inch; yellow perch was ≥ 85% of total consumption), and growth rates for walleye have been significantly correlated with the abundance of young-of-the-year



yellow perch. Yellow perch are a fish species that widely fluctuate in abundance from year to year, and adult yellow perch numbers have considerably decreased since 2010. In fact, the 2012 yellow perch harvest was the lowest recorded since 1957, but, based off summer seining surveys, yellow perch reproduction has been steady. Since the implementation of the protected slot limit, broodstock walleye abundance has increased substantially, yet growth rates remained within or above historic averages (except 2012), thus indicating that walleye abundance was not the primary cause of decreased growth rates (i.e., forage problem). Many top-level predator species (largemouth and smallmouth bass, northern pike, and muskellunge) have also increased in abundance during this same time frame and have placed additional pressure on the primary forage base (i.e., yellow perch). Therefore, the growth rate reductions and lack of good walleye recruitment to age-2 were mainly a result of too many top-level predator species within Spirit Lake. Although walleye abundance is partially responsible for these imbalances, one cannot ignore the impact of other top-level predator species and actions aimed to reduce their abundance as well. Reductions in walleye abundance alone in Spirit Lake could have severe implications to the Iowa DNR's ability to collect enough broodstock walleye for our propagation efforts. For example, based off angler catch and harvest statistics, modifications to the existing protected slot limit that would allow anglers to harvest one slot-sized fish per trip could potentially reduce the broodstock abundance by 50%. To maintain sufficient walleye broodstock populations in Spirit Lake it is recommended that no change in regulation be explored at this time, however, anglers can help reduce top-level predator abundances by keeping more legal sized fish of all species. The Iowa DNR is keeping close tabs on the status of the Spirit Lake fish community and will make regulation changes as deemed necessary. In fact, recent rule changes to the Iowa DNR code will allow for more responsive changes in regulations if found biologically and socially acceptable.

IN THE NEWS
~IOWA OUTDOORS

PROJECT TO TURN AROUND LAKE PAHOJA UNDERWAY

The fishery at Lake Pahoja was renovated on April 4, to remove common carp and grass carp that caused poor water quality and frequent algae blooms. For the first time since 1979, the lake will get a fresh start.

Lake Pahoja experienced a significant fish kill last fall after oxygen dropped to dangerously low levels throughout the lake. A combination of a very large algae bloom and the annual fall lake turnover likely caused the die off. The kill impacted many fish species and was a sign of an out of balance fishery and unhealthy lake.

It is very unusual for a lake fish kill to occur in the fall and confirmed what was known for some time, said Mike Hawkins, fisheries management biologist for the Iowa Department of Natural Resources.

"Lake Pahoja has not been as healthy as it should be. The frequency and intensity of the algae blooms the lake had been experiencing indicate an excess in nutrients and lack of rooted aquatic plants," he said.

Excessive nutrients in lakes come from the land that drains into them. Once those nutrients are in the lake, an out of balance fishery can cause productivity to go haywire.

Common carp feed by rooting up the bottom of a lake causing water clarity problems and releasing nutrients tied to those bottom sediments. Grass carp feed on rooted aquatic plants. With more than 100, 40-to 60-pound grass carp in the lake, aquatic plants have never been seen.

Aquatic plants are important because they create critical habitat for fish and invertebrates and improve water quality by taking up nutrients that keep algae blooms to a minimum.

"With these two species gone, the water should clear up and we should begin to see aquatic plants grow along the shoreline creating a 'weed line,'" Hawkins said. "This should help create a much more balanced fishery."

Panfishing had been poor for a number of years, said Craig Van Otterloo, executive director for the Lyon County Conservation Board. "With a brand new fishery, we know that is about to change. Lake Pahoja is a very important part of this county and we want it to be the best it can be," Van Otterloo said.

The Lyon County Conservation Board secured a County Fish Habitat Grant to pay for the renovation.

"Drought conditions allowed us to draw the lake down about 5 feet dramatically reducing the amount and cost of the chemical to be applied," said Van Otterloo.

Crews worked for two days with the DNR's electrofishing boat before the renovation to salvage nearly 800 largemouth bass that were placed in county ponds. Some are being held in one of the park's ponds and go back to Pahoja when the lake is ready to be restocked in a 2-3 weeks.

The chemical, called Rotenone, was used to renovate the fishery because it kills fish quickly without harming other organisms. County Conservation Board staff began picking up larger dead fish from

the shoreline shortly after application. A significant number of the larger fish were common carp. Dead fish were applied to a local crop field and incorporated as fertilizer.

Hawkins says the lake will receive 48,000 one-year-old bluegills towards the end of April, followed by about 70 adult largemouth bass. Channel catfish will be stocked next June. Other species will be considered after bluegills and largemouth bass are well established.

"The growth rate of the fish stocked this spring will be extreme. We can expect good fishing for bluegill by the end of next summer, with bigger fish by the following summer," says Hawkins.

Van Otterloo says it is extremely important that anglers do not release live fish or minnows into Lake Pahoja. Not only is it unlawful to do so, an illegal stocking will jeopardize the fishery.

The Lyon County Conservation Board and the Fisheries Bureau of the Iowa Department of Natural Resources cooperated on this project.

August 2013. Vegetation found in coves. Clear water throughout lake.

IN THE NEWS
~IOWA OUTDOORS

PROJECT CREATES NEW MAPS OF IOWA LAKES

For the next six summers, fisheries staff from the Iowa Department of Natural Resources will be mapping Iowa lakes using some sophisticated equipment that will provide more accurate maps for anglers and information for the lake restoration program.

Visitors to Iowa lakes may see the operation in progress. A DNR fisheries boat loaded with two lap top computers, a flat screen, a suitcase that contains the brains of the program, and equipment hanging off the side running about five miles per hour crisscrossing the lake.

The software will record lake depth plus information on what type of material is on the lake bed (sand, gravel, muck) and, if aquatic vegetation is present, the height and density of that vegetation. It will also collect information for lake restoration projects.

Lewis Bruce, fisheries technician working on the project, said they plan to map 115 of the significantly publicly owned lakes in Iowa.

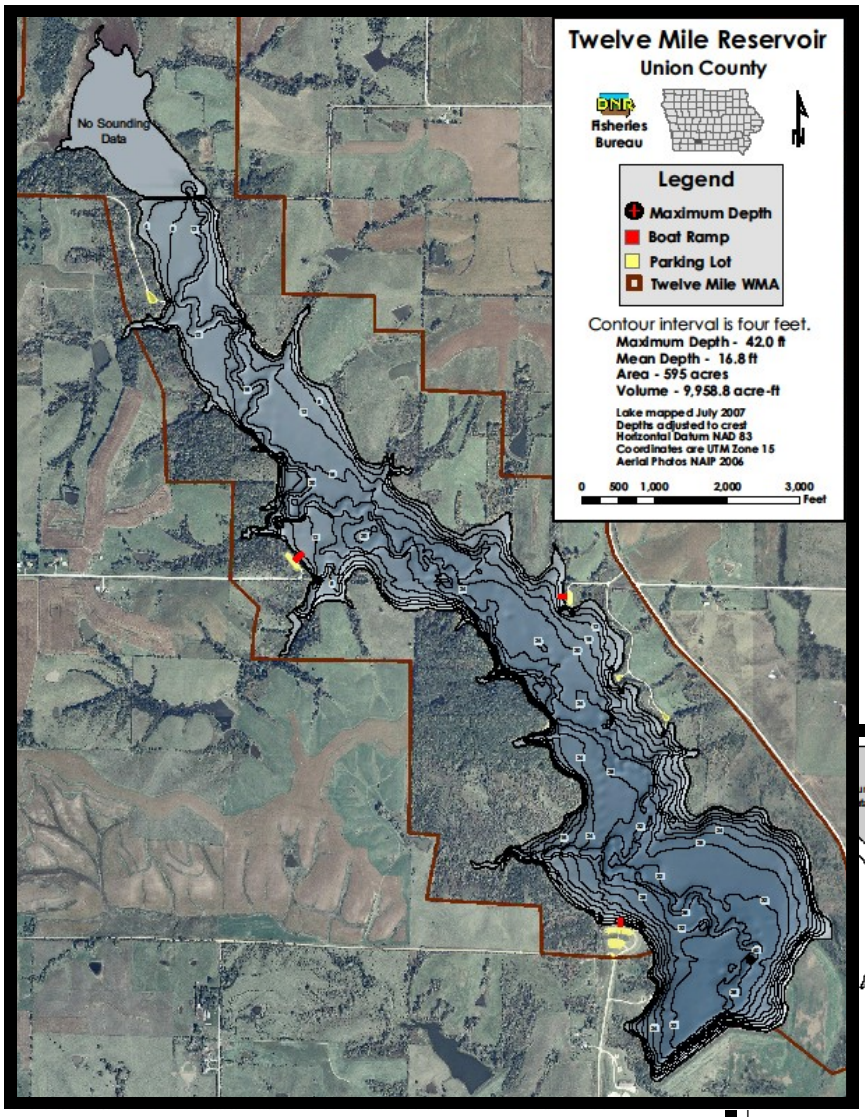
He said they can set up the software so when the information is collected it will generate a file where they can add existing habitat and background information to create new lake contour maps.

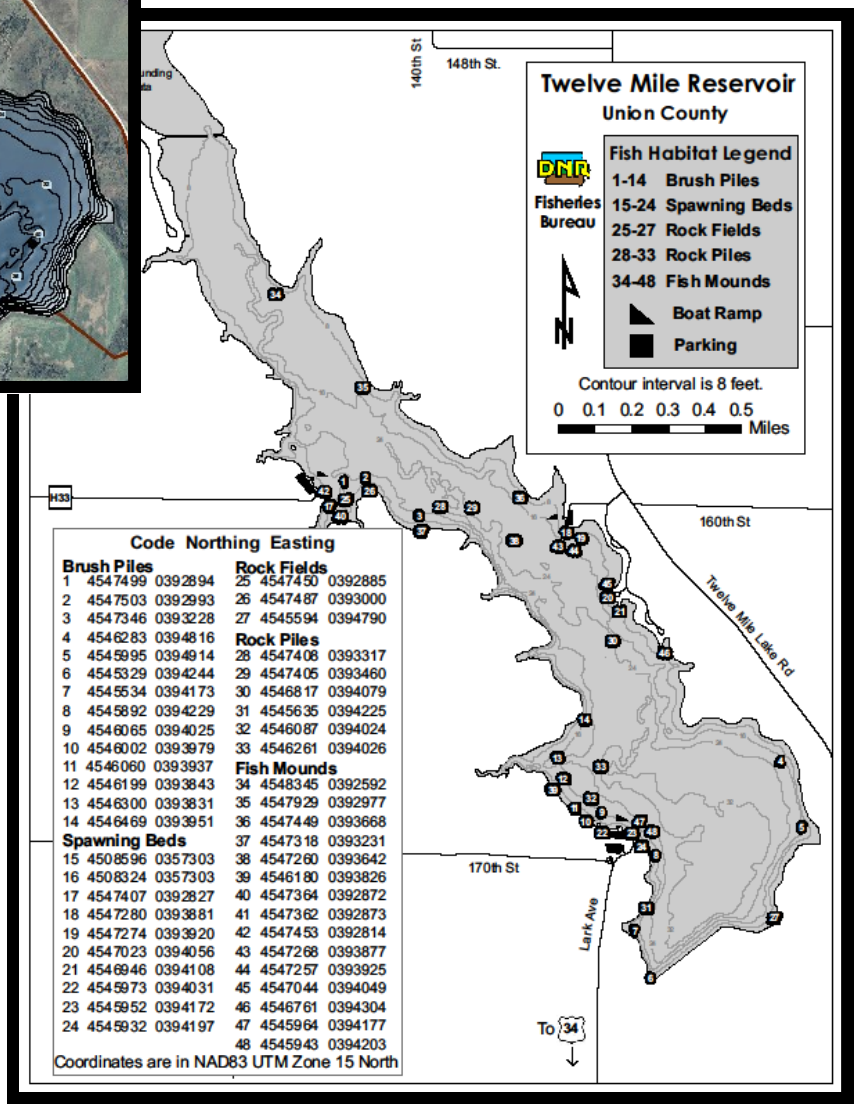
The DNR recently placed new maps for Arrowhead Lake, Badger Lake, Avenue of the Saints Pond, Binder Lake, and Center Lake online at www.iowadnr.gov/Fishing/WheretoFish/LakesPondsReservoirs.aspx. In 2013, they will begin collecting information on Clear Lake, Carter Lake, Brushy Creek Lake, Mariposa Lake, Blue Lake, Springbrook Lake and Volga Lake, if conditions allow.

Bruce said they will avoid mapping on windy days because the waves could cause accuracy issues. He said water level in many lakes is also a concern.

"Low water levels could play a role in what we can and can't map," he said. "Mapping Clear Lake is important but in its current condition with extremely low water level and much of the lakebed now dry land, we may need to wait until the water level improves to have an accurate product."

MEDIA CONTACT: Lewis Bruce, Fisheries Research, Iowa Department of Natural Resources, 712-769-2587.


Twelve Mile Reservoir
Union County
DNR
Fisheries Bureau
No Sounding Data
Legend
Maximum Depth
Boat Ramp
Parking Lot
Twelve Mile WMA
Contour interval is four feet.
Maximum Depth - 42.0 ft
Mean Depth - 16.8 ft
Area - 595 acres
Volume - 9,958.8 acre-ft
Lake mapped July 2007
Depths adjusted to crest
Horizontal Datum NAD 83
Coordinates are UTM Zone 15
Aerial Photos NAIP 2006
0 500 1,000 2,000 3,000
Feet


140th St
148th St.
Twelve Mile Reservoir
Union County
DNR
Fisheries Bureau
Fish Habitat Legend
1-14 Brush Piles
15-24 Spawning Beds
25-27 Rock Fields
28-33 Rock Piles
34-48 Fish Mounds
Boat Ramp
Parking
Contour interval is 8 feet.
0 0.1 0.2 0.3 0.4 0.5
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Twelve Mile Lake Rd
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Brush Piles
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2 4547503 0392993
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7 4545534 0394173
8 4545892 0394229
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22 4545973 0394031
23 4545952 0394172
24 4545932 0394197
Rock Fields
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26 4547487 0393000
27 4545594 0394790
Rock Piles
28 4547408 0393317
29 4547405 0393460
30 4546817 0394079
31 4545635 0394225
32 4546087 0394024
33 4546261 0394026
Fish Mounds
34 4548345 0392592
35 4547929 0392977
36 4547449 0393668
37 4547318 0393231
38 4547260 0393642
39 4546180 0393826
40 4547364 0392872
41 4547362 0392873
42 4547453 0392814
43 4547268 0393877
44 4547257 0393925
45 4547044 0394049
46 4546761 0394304
47 4545964 0394177
48 4545943 0394203
Coordinates are in NAD83 UTM Zone 15 North

IN THE NEWS

BLACK HAWK LAKE RENOVATION

KTIV NEWS

Iowans love spending time at the lake. According to officials at the Iowa Department of Natural Resources, about two thirds of people in the state visit lakes. That's why the DNR is pouring millions of dollars into restoring Black Hawk Lake in Lake View, Iowa.

"We know that this lake, just like all the other lakes in Iowa are important to people. And, we want to make sure that this lake is in a state that is safe to recreate in," Iowa DNR Fisheries Biologist Ben Wallace said.

The first phase of the restoration project is set to take five years, but Wallace said more than 50-percent of the goals were reached in just one year.

"The two major changes we've seen since the fish renovation last fall has been the increase in water clarity and the change in the aquatic vegetative community," Wallace said.

But, one of these changes, the increase in algae, is not ideal for boaters.

Louie Smith spends every weekend in Lake View in the summertime and said, "[the algae] just slows you down a little bit. It's hard to motor through that algae out there."

"I stopped my boat three different times and had to clean my prop off, but after I got through that, it was fine," Chris Brotherton, of Lake View, said.

"This filamentous algae that people are seeing, it's not uncommon, so it doesn't surprise us, although it's hard to predict what you're going to see" Wallace said.

Even though Wallace said they were expecting some kind of response from

the restoration project, which involved them clearing the whole lake out, including all of the fish, they weren't sure exactly what it was going to be. He said he hopes the algae is replaced by some kind of plant that's more beneficial for the lake in the near future.

For now, Wallace suggests boaters beware of the algae being sucked up into the engine cooling systems and getting wrapped around the propellers. He said the best option would be to try to boat around it.

Wallace added, "this algae isn't toxic, so it's not a health risk." He said it's an indication that the water is actually improving.

Wallace said some of the other vegetation is thriving and there are several kinds of fish that were put into the lake.

Although, the algae may cause him to stop his boat every now and then, Brotherton is delighted with the progress of the project.

'I've been able to walk out on my dock daily, see the bottom of the lake, see fish swimming around the dock, I've lived there for four years and I've never seen it," Brotherton said.

Over the next 10 years, the DNR estimates they will spend about 14 million dollars restoring Black Hawk Lake.

IN THE NEWS
~IOWA OUTDOORS

IOWA FISHERIES BIOLOGIST RECOGNIZED BY PEERS FOR EXCELLENCE IN THE FIELD

Iowa fisheries biologist Mike Hawkins has been awarded the Fisheries Biologist of the Year by the Midwest Association of Fish and Wildlife Agencies for his work in lake restoration, watershed management and his leadership in getting the electric fish barrier placed at the outlet from Lower Gar Lake.

Member states of the Midwest Association of Fish and Wildlife Agencies include Iowa, Minnesota, Wisconsin, Michigan, North Dakota, South Dakota, Nebraska, Kansas, Missouri, Illinois, Kentucky, Indiana, Ohio and Canadian provinces Saskatchewan, Manitoba and Ontario.

Hawkins is the Iowa Department of Natural Resources fisheries management biologist working out of Spirit Lake Hatchery for the nine-county region in northwest Iowa.

Hawkins was recognized for his successes that include a significant renovation of the 1,100-acre Lost Island Lake.

The Lost Island Lake renovation project included adding water control structures to connected marshes and installing fish barriers to prevent carp migration to the marshes to spawn; working with a commercial fishing company to remove hundreds of thousands of pounds of adult carp and aggressively stock predators to help control recently hatched carp. He also worked with landowners in the watershed to create a management plan to reduce harmful runoff from entering the lake.

Water quality improved substantially and anglers have returned, spending nearly 15,000 hours fishing during the summer of 2012.

Hawkins received the Ace Cory Conservation Award from the Okoboji Protective Association for his efforts to construct the electric fish barrier at the outlet of the Spirit Lake-Okoboji chain to prevent unwanted invasive carp species from entering the lakes during flood events.

He also led a multi agency project with South Dakota to replace the severely damaged low head Klondike Dam on the Big Sioux River in Lyon County.

The dam was replaced with arched rapids that provide necessary upstream water elevation while allowing fish migration and eliminated safety concerns about the low head dam.

Hawkins also installed the Iowa DNR's first-ever low power AM travelers radio station broadcasting aquatic invasive species messages and other boating and fishing information from the Spirit Lake Hatchery.

MEDIA CONTACT: Jim Wahl, Northwest Iowa Fisheries Supervisor, Iowa Department of Natural Resources, 712-336-1840.

IN THE NEWS
~IOWA OUTDOORS

FISHING REGULATIONS RELAXED AT RICE LAKE

LAKE MILLS, Iowa – The Iowa Department of Natural Resources will relax the fishing regulations at Rice Lake (Worth/Winnebago counties) beginning Sept. 3, 2013 to allow anglers to more freely harvest game fish before the lake is renovated.

The fishery in the 1,000-acre lake will be renovated this fall. This is part of a larger shallow lakes management project to improve the water quality and habitat in the lake.

The water level has been lowered approximately four feet this summer to prepare for the renovation. The lake will be restocked in 2014. Quality fishing should return in 2016.

Anglers with a valid fishing license will be allowed to harvest any size or number of all species from Rice Lake. Any number of fishing poles, jugs or nets will be allowed. Anglers must remain in sight of these lines at all times, and follow all other fishing regulations and area rules. Trot lines will be allowed (name and address must be attached), however lines may not be set across the entire water body.

Dynamite, poison, electric shocking devices or any stupefying substances will not be allowed. It is illegal to sell fish or stock captured fish into public waters. Liberalized fishing regulations for Rice Lake will remain in effect until November 1, 2013.

Anglers should use caution on the lake because the bottom is very soft around some shoreline areas.

MEDIA CONTACT: Scott Grummer, Fisheries Biologist, Iowa Department of Natural Resources, 641 -357-3517.

IN THE NEWS

What's Swimming In The River? Just Look For DNA

by Richard Harris

If you want to protect rare species, first you have to find them. In the past few years, biologists have developed a powerful new tool to do that. They've discovered that they can often find traces of animal DNA in streams, ponds — even oceans.

The idea took root just five years ago, when biologists in France found they could detect invasive American bullfrogs simply by sampling pond water and looking for an exact genetic match to the frogs' DNA.

Now, all sorts of biologists are eagerly putting this test to use. The technology has been a hot topic at the Society for Conservation Biology's global meeting in Baltimore this week.

The Elusive 'Snot Otter'

Conservation scientist Stephen Spear, for example, has been sampling water to study one of the oddest creatures in American streams: the hellbender salamander.

"It's a really neat critter. It's actually the largest salamander in North America," he says. It can grow up to 2 feet long and live for more than 30 years.

"But a lot of people who live where it is — which is mostly in the Appalachian region from New York to Georgia — don't know about it because it's totally aquatic in rivers and streams," Spear says. "It spends time under large rocks."

Biologists usually look for the hellbender (nicknamed the "snot otter") by prying up enormous stream boulders and snorkeling under them. Spear, who works for a nonprofit amphibian group called The Orianne Society, has found a gentler way: He's been taking water samples from the streams where he's looking for these salamanders.

"We can actually extract the DNA from this water sample and be able to tell that it's hellbender DNA. And we know that a hellbender is there without ever having to lift a rock, or maybe even see one," he says.

And it turns out that when hellbenders are breeding, they shed a lot more DNA into the water. "So we might be able to tell where they're successfully breeding," Spear says, "which would be huge for understanding where the healthy populations are and also where we need to put our conservation efforts."

Hellbenders are apparently in decline — and may end up pro-

tected by the Endangered Species Act at some point — so it's important for biologists to know where they are and where they're breeding.

Tracking Changes Across Species

Spear's report at the Society for Conservation Biology meeting was just one of more than a dozen looking at DNA in the environment.

Philip Francis Thomsen from the University of Copenhagen says he has successfully used it to study fish in the ocean.

He sampled water near Elsinore, the setting for *Hamlet*. He found DNA from 15 fish species, including one big surprise: the sardine, which usually inhabits much warmer waters to the south.

"This sardine has never been sighted in the area, and it's a very rare species in Denmark," Thomsen says.

Fisheries biologists think the sardine may be moving north as a consequence of climate change, so sampling DNA in the environment may help them track changes like this.

In fact, Thomsen says it should be possible to look for DNA from hundreds of species simultaneously. If he could do that, he can monitor the diversity of life on a biological hot spot — like a coral reef — simply by taking water samples.

Thomsen even had a bit of success tracking the endangered harbor porpoise by sampling ocean water off the coast of Denmark. And at one point, he detected the DNA of a related species, the long-finned pilot whale.

"That is a species that's very rarely sighted in Danish waters. And funnily enough, when I checked up on this afterwards ... there have been two sightings in Denmark that same year," Thomsen says.

In other settings, DNA sampling is being used to monitor the Great Lakes for signs of the dreaded Asian carp, which is threatening to invade. It's being explored as a way to look for signs of land-dwelling animals that visit watering holes. Yes, drool contains DNA.

Ultimately, biologists would like to be able to use these tests to estimate the size of animal populations — but that, so far, is just a dream.

And Thomsen notes that finding animals though their DNA doesn't by itself help vulnerable species.

"We still need to convince managers and authorities and governments to do the proper actions," he says.

OOPS! STATE HATCHERY FORGETS TO TELL ANGLERS 'NO FISHING'

By brett prettyman

The Salt Lake Tribune

Utah anglers have learned to love tiger muskies, but that passion by at least one angler has likely led to a severe blow to the state's efforts to produce its own hybrid sport fish.

Sometime during the past six weeks as many as 100 true muskie, averaging 30 inches long, disappeared from the Utah Division of Wildlife Resources' (DWR) warm-water ponds at the Lee Kay Center for Hunter Education in west Salt Lake City.

Fisheries officials had no idea who had been taking the fish until a phone call last week from an angler wondering if there were any fishing regulations at the ponds.

"He said the fishing is fantastic and then I told him it was illegal," said Drew Cushing, warm-water fish coordinator for the DWR. "I explained to him the impact. He was pretty open about it and said he felt bad. He was probably one of the honest folks. There were most likely others out there. I assume he ate them."

As it turns out the fishing was probably not illegal because there were no signs around the ponds explaining that it was a state fish hatchery and because there are no state regulations on true muskie because they only exist at Lee Kay.

A recent seine netting of the ponds turned up one male and one female muskie, a far cry from the number needed to help the state reach its goal of providing 50,000 tiger muskies each year. Cushing said there were 100 brood stock true muskie in the pond last year.

The northern pike pond seemed not to be impacted. Officials tallied 30 mature fish before stopping the count.

"This is an important program and we want to be able to continue to stock our waters with tiger muskie," said Terry Howick, who oversees Utah fish hatcheries for the DWR.

The muskie pulled out of the Lee Kay ponds were brought to Utah four years ago as fingerling to help start a tiger muskie hatchery. Tiger muskie are a mix between a true muskie and northern pike, neither native to Utah.

Tiger muskie, a voracious predator, were initially brought in from the Midwest to serve as a management

tool in reservoirs with too many panfish (namely perch) or other abundant nongame fish like Utah chub.

As a hybrid, they are sterile, which biologists like because the population can be controlled.

They are also sought after by anglers as trophies. The state record, 49 inches long and 33 pounds, 9 ounces, was caught at Pineview Reservoir in 2006. The catch and release record tiger muskie was 53¼ inches long and was also landed at Pineview.

"This is hard to swallow. It is just insane that they have put so much time, money and effort into this program and then they don't have signs up," said Nick Granato, an avid tiger muskie angler. "It's unbelievable that somebody was fishing the brood stock ponds, and now he isn't even in trouble? That is a real drop of the ball."

Howick says the signs now have gone up at the Lee Kay ponds. Fencing around the ponds and netting over the water will be installed soon.

In the meantime, DWR fisheries officials are canvassing the country looking for ways to create a new brood stock of true muskie and stock Utah waters with tiger muskies — a goal complicated by disease issues, which is one of the reasons the DWR wanted to start producing its own tiger muskie.

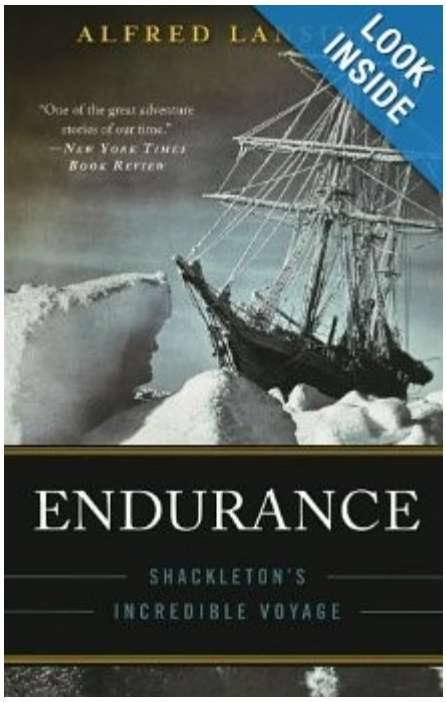
Utah's efforts to produce tiger muskie fingerling have improved over the years, but this year's total was only 750 and it was the best production so far. Fisheries biologists in Utah are the only ones in the West working to make it happen.

"We have our feelers out. We will leave no stone unturned," Howick said. "Some people have said we should be able to get fingerlings, but adults capable of spawning appear to be just about priceless."

http://www.sltrib.com/sltrib/news/56538749-78/muskie-tiger-fish-hatchery.html.csp

READING MATERIAL

Endurance: Shackleton's Incredible Voyage



Author: Alfred Lansing

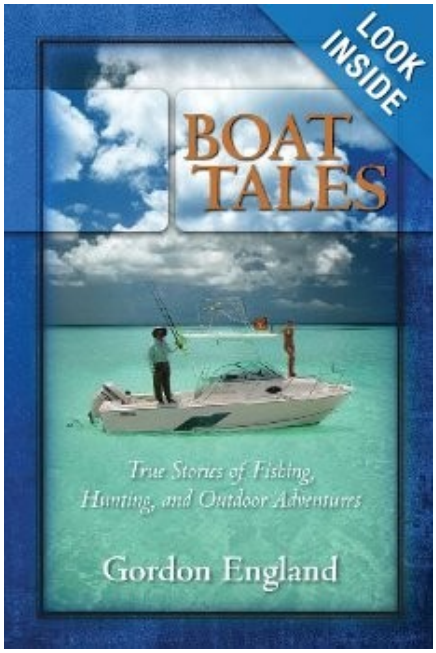
In the summer of 1914, Sir Ernest Shackleton set off aboard the *Endurance* bound for the South Atlantic. The goal of his expedition was to cross the Antarctic overland, but more than a year later, and still half a continent away from the intended base, the *Endurance* was trapped in ice and eventually was crushed. For five months Shackleton and his crew survived on drifting ice packs in one of the most savage regions of the world before they were finally able to set sail again in one of the ship's lifeboats. Alfred Lansing's *Endurance: Shackleton's Incredible Voyage* is a white-knuckle account of this astounding odyssey.

Through the diaries of team members and interviews with survivors, Lansing reconstructs the months of terror and hardship the *Endurance* crew suffered. In October of 1915, there "were no helicopters, no Weasels, no Sno-Cats, no suitable planes. Thus their plight was naked and terrifying in its simplicity. If they were to get out--they had to get themselves out." How Shackleton did indeed get them out without the loss of a single life is at the heart of Lansing's magnificent true-life adventure tale

Boat Tales: True Stories of Fishing, Hunting, and Outdoor Adventures

Author: Gordon England

Whether he's chasing sailfish in Panama or hunting dove and quail deep in Mexico, Gordon England pursues outdoor sports with a passion for the biggest and best. In this collection he catches huge dolphin in the Exumas, races motocross through woods both on and off the trails, hunts ducks in brutal Texas snow and ice, hooks hopelessly large blue marlin in Nassau, and gets lost at sea in a monstrous Gulf of Mexico storm. Gordon's adventures often take place on Boat Tales, a 21-foot Aquasport, based in Nassau, Bahamas. His love of the ocean is captured in his travels across Florida's Gulf Stream, to Abaco's fabled Hole in the Wall, to remote islands of the Exumas, and from Abaco to Eluthera to Nassau in the dead of the night across miles of coral reefs at low tide. These tales will capture your imagination, vicariously take you to exotic lands, and entertain you with Gordon's true-life escapades.



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 and 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.