



Making Waves



Volume 12, Issue 2 February 2014

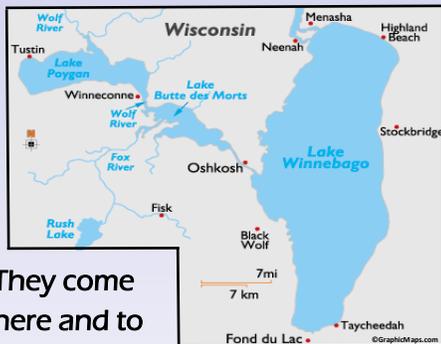


Winnebago Lake Sturgeon Checkup

by Katie Jardine



For more than seventy years, fish enthusiasts in eastern Wisconsin have held a winter gathering of family and friends on the vast sheet of ice that is Lake Winnebago, the largest inland lake in the state.



They come here and to several lakes

nearby to partake in the annual spearing season for lake sturgeon, an economically, ecologically, and culturally significant species here.

Winnebago system lake sturgeon are also of special interest to fish managers around the Midwest who rely on this population as a prime source of fish used to reintroduce and rehabilitate other populations of this native species throughout much of its historic range.

For the past 16 years, staff from the Fish and Wildlife Conservation

Office and the Fish Health Center (FHC) in La Crosse have attended opening day of spearing to collect tissue samples used to assess the health of this vital population.



1998

Lake Winnebago Déjà vu!



2014

This year was no exception with our three person team arriving at the Wisconsin Department of Natural Resources (DNR) Winneconne registration station by 7:30 a.m. on February 8th.



Although bright and sunny skies provided no relief from the bitter cold, several Northland College students were also here.



Covered head to toe and excited, these "Lumberjacks" came to assist the DNR record the sex, length, and weight of each fish, as well as collect a fin ray for age analysis.

The wait wasn't long until our first truck pulled up.

Among the first of our successful speareers was a very excited 14-year old birthday girl, Paige Rochewite, who attended the event with her father



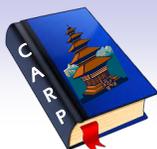
After the lake sturgeon has been registered by the DNR, the spearer has the option to allow the USFWS to collect tissue samples from their fish. Our work began with the 51-pound, 59-inch long male sturgeon that Paige and her father harvested and continued with 59 additional fish registered by successful speareers who also allowed us to collect spleen and kidney samples. These tissues are placed in culture tubes with media that enable the growth of a wide variety of microorganisms. Further analysis at the FHC will determine if viral, bacterial, or parasitic fish pathogens are present.



Cell cultures are used for viral screening

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What's Inside?



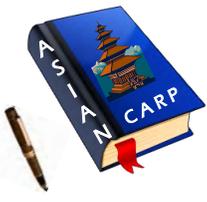
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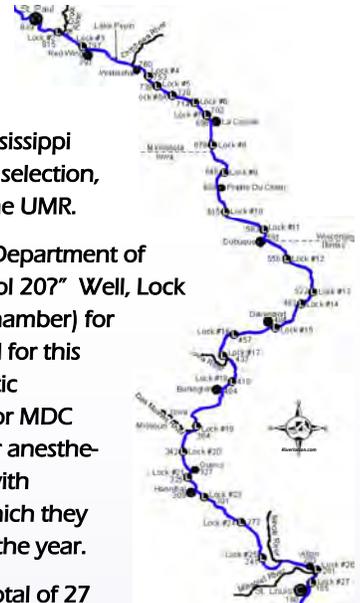


The Asian Carp Chronicle - Upper Mississippi Update

By Kyle Mosel

The past year has been a sensational one for me, professionally speaking, given the opportunity I have had to lead an ongoing project at the La Crosse FWCO to monitor Asian carp in the Upper Mississippi River (UMR). The objectives of this work are to assess the environmental history, movement, habitat selection, reproductive success, and population dynamics (e.g., age structure, growth rates) of Asian carp in the UMR.

We began our work in May by assisting the Missouri Department of Conservation (MDC) and Iowa Department of Natural Resources (DNR) collect Asian carp in Pool 20 near Keokuk (IA). Some have asked, "Why Pool 20?" Well, Lock and Dam 19 currently serves as a major bottleneck (i.e., presumed passable only through the lock chamber) for fish passage on the UMR which has slowed the invasion of Asian carp upstream. I was really excited for this trip because Pool 20 contains a high density of Asian carp and we were surgically implanting acoustic transmitters into bighead carp and silver carp to monitor their movements. Sara Tripp, who works for MDC and has completed hundreds of these surgeries, was an outstanding mentor who taught me proper anesthesia and surgical techniques. The MDC now has fifteen bighead carp and ten silver carp implanted with acoustic transmitters in Pool 20 which will be monitored to determine the proportion and rate at which they emigrate upstream. This trip provided us with new techniques and skills that were used the rest of the year.



A sonic receiver (inset) is deployed on a navigation buoy in the UMR

During the 2013 sampling season, my crew implanted acoustic transmitters in a total of 27 Asian carp that ranged from 28 to 46 inches in total length and included twelve silver carp in Pool 17, five silver carp and five bighead carp in Pool 19, and five bighead carp in Pool 20. The movements of these fish were subsequently monitored using an array of acoustic receivers that were deployed at fixed sites over a 580 river-mile reach that extended from near Davenport (IA) downstream to Caruthersville (MO). Nearly 3,000 fish detections were logged in Pools 17 and 18. Meanwhile, acoustic data analysis is continuing for sites located further downstream. Roving telemetry was also conducted by mounting acoustic receivers on commodity barges to detect fish as towboats pushed cargoes up and down the Mississippi River, allowing us to track fish without deploying a crew. Fish were also located manually to determine habitat use and physiochemical conditions.

By year's end, no fish were observed moving upstream, but a few of the fish tagged and released in Pool 17 were observed moving downstream to Pool 18. This year we plan to implant 123 more fish with transmitters to increase our sample size. We will also work further upstream with the Minnesota DNR to deploy additional receivers. This will help expand the receiver array to a total of 150 fixed sites, spanning 970 river miles, and include locations on several tributaries of the UMR that extend as far as upstream as St. Croix Falls (WI) on the St. Croix River. The telemetry study will conclude by 2017 when transmitter battery-life is due to expire.

Otoliths (ear bones) were collected from 14 bighead carp and 67 silver carp captured in Pools 7, 17, and 19 during 2013 to address age, growth, and environmental history concerns. We also assisted the MDC collect otoliths from several hundred Asian carp in Pool 20. Otoliths will be sectioned and mounted, then examined independently to estimate the age of each fish. With this information we will be able to estimate age structure, growth, and mortality rates and will use this information for future population models. Otolith samples will also be sent to Southern Illinois University (Carbondale, IL) and the University of Massachusetts (Boston, MA) for trace element and isotope analysis to assess environmental history. Data from these chemical analyses will be used to identify the river basin of origin (e.g., UMR, middle Mississippi River, Illinois River, Missouri River) as well as all the rivers (and perhaps the pools) inhabited by each fish throughout its life. This information should indicate where adults have successfully spawned and where larval/juvenile fish disperse after hatching. Additional otoliths will be collected in 2014 to increase the sample size in pools above Lock and Dam 19.

Successful spawning events were previously documented in Pools 18 and 19. We are therefore trying to determine whether successful spawning may be occurring further upstream. Monitoring for juvenile Asian carp was conducted at several possible nursery sites in Pools 16 and 17 during 2013. A total of 1,194 fish representing 34 species were collected during 24 mini-fyke net-sets that cumulatively totaled 447 hours of fishing effort. Asian carp were not observed in any of the catches. However, gravid (mature) adults were collected at two sites in Pool 17 with gill nets. Reproduction monitoring will continue in 2014 and 2015 to determine if successful spawning events are occurring upstream of Pool 18.

This is by far the most thrilling research project I have led and I look forward to how much we can learn from this work. Asian carp can move great distances and are detrimental to native species. If we can understand movement patterns of these species, then we may have a chance to impede or slow the spread of these nuisance fish upstream. We will conduct a full year of sampling in 2014 and should be able to hit the water running this year ... once the ice melts!



Kyle and crew are ready to hit the water running this spring!



Chilly Fishing & Warm Memories

By Jenna Merry



Several staff members and volunteers from the La Crosse FWCO headed south to the Genoa National Fish Hatchery in mid-February to help at the annual Kid's Ice Fishing Clinic.



An ice-hole party!

The event was postponed earlier in the month due to frigid temperatures, so kids and parents alike were extra eager to land several dinner-quality rainbow trout.

Sponsored by the Friends of the Upper Mississippi, a non-profit group that provides broad support for the work of several local Service offices, it was the sixth consecutive year this family-focused event was hosted by the Genoa NFH.



Bundled up and ready to face old man winter, young anglers hit the ice shortly after 9 a.m. Reports of a few large trout came in not long after, but those lucky anglers proved to be few and far between as the morning progressed. Perhaps the fish could sense the arctic air above, or were just being stubborn.



What's for dinner?

Temperatures were in the single digits as we arrived and made our way to the ice-covered trout pond where the event was held. Luckily, at least the sun was shining brightly to compensate for the icy air.



Here fishy, fishy!

In all, 450 people attended the event, and although there were more cups of hot cocoa in the hands of anglers than trout, several happy youngsters went home with whoppers. Thanks to the Genoa staff for a fun day of fishing for all!



Cabin Fever Reliever

By Mark Steingraeber

Three Service offices (La Crosse Fish and Wildlife Conservation Office, Genoa National Fish Hatchery, and La Crosse Fish Health Center-Whitney Genetics Laboratory) hosted more than 1,000 *cabin-fever victims* who visited the Service display booth during the 37th annual La Crosse Boat, Sports, Travel, & RV Show held February 6-9 at the La Crosse Center.



Many sport show visitors were unaware that most freshwater mussels depend upon native fish for their early life survival

An inviting arrangement of posters, maps, photos, brochures, watch cards, and aquaria containing fish and mussels were prominently displayed near a main entrance to the exhibition hall.

Key topics of conversation included lake sturgeon, invasive species, native mussels, fish passage, habitat restoration, and personal actions to improve water quality.

Representatives from these offices were here throughout the four-day event to greet visitors who sought relief from the *Polar Vortex* and information on a variety of local/regional Service fishery programs and activities.

The opportunity to personally exchange natural resource information with the large, diverse audience that attends this annual mid-winter event makes Service participation here a valuable outreach tool for all area offices.

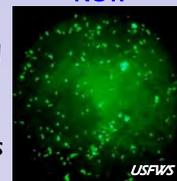


Annual Checkup

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Results for this year's health screening are currently pending. Once available, this information is recorded in the National Wild Fish Health Database (NWFHD) that provides critical information for fishery managers.

Telescopic view of a new galaxy? **NOT!**



Microscopic view of a bacterial fluorescence antibody test? **YES!**

Overall, the spearing event was a complete success. Although it was a little chilly, slightly negative temperatures weren't the worst that Wisconsinites like us have endured this winter! I'm happy to have had the chance to participate in this year's event and see these prehistoric fish, some weighing >100 pounds, for the first time.



A mature female full of eggs

Ovaries of an adult female lake sturgeon contain thousands of black eggs that account for a large portion of its body weight and can be processed into caviar

We are very appreciative of the cooperation received from the successful spearmen and are excited to continue our partnership with the DNR which supports the sturgeon spearing season and monitors the health of the Lake Winnebago lake sturgeon population.



A 120-pound female lake sturgeon

More information about the 2014 spearing season is available at the DNR website: dnr.wi.gov/topic/Fishing/sturgeon/SturgeonLakeWinnebago.html



Meanwhile, information on past health assessments for lake sturgeon from Lake Winnebago (and wild fish from other sites around the country) is available at the NWFHD website: www.wildfishsurvey.fws.gov

