



U.S. Fish & Wildlife Service

La Crosse Fish Health Center & Whitney Genetics Lab *April & May 2013 Monthly Highlights*

The La Crosse Fish Health Center (LFHC) is located in Onalaska, Wisconsin and is responsible for fish health management within the Great Lakes/Big Rivers region. Primary responsibilities include inspection, certification and diagnostic services for federal, state and tribal hatcheries, surveillance of target pathogens in the National Wild Fish Health Survey, provide training in fish health management, monitor use of drugs and chemicals, research in fish health management, and assist in surveillance and control of invasive aquatic pathogens.

The Whitney Genetics Laboratory (WGL) is the Service's premier environmental DNA (eDNA) facility which will be used primarily for the early detection and surveillance of invasive bighead and silver Asian Carp in the Great Lakes and Upper Mississippi River and its tributaries. Asian carp have established self-sustaining populations in some U.S. water ways either as a result of escape or stocking. In order to help control these populations, it is important to know if Asian carp are expanding their range and their potential for reproduction in the wild. To detect range expansion, this facility will process eDNA samples collected by USFWS Fish and Wildlife Conservation Offices or by other state partners. Another responsibility of the WGL is to determine if grass or black carp are capable of reproduction based on ploidy characteristics. WGL will determine ploidy of wild-caught grass or black carp using flow cytometry. Triploid carp are not able to reproduce whereas diploid carp can reproduce in the wild and have negative impacts on habitat for native species. eDNA and flow cytometry techniques could be used for surveillance of other aquatic invasive species, help assess wild stocks of fish, or aid in the detection of endangered aquatic species in the Great Lakes/Big Rivers Region.

Aquatic Species Conservation and Management

2n or 3n? Whitney Genetics Lab Asian Carp Ploidy Analysis Up and Running by Nicholas Berndt

It has been an exciting past couple weeks at the Whitney Genetics Laboratory (WGL). The Asian carp ploidy analysis program has been analyzing samples from across the US and Canada. Grass carp are used throughout the world as a management tool to control aquatic weed problems, but they can do great harm to a healthy ecosystem. Therefore it is important to know if carp showing up in the wild, outside of known stocking locations, are sterile or not. One method to determine if carp are sterile is by determining if a fish is a diploid (2n) or a triploid (3n). Triploid fish don't have the ability to reproduce. The results obtained from WGL's ploidy analysis performed thus far have been extremely valuable in helping to determine the reproductive status of grass carp in previously known and newly isolated locations.

Grass carp analyzed by flow cytometry at WGL have been in the local and international media spotlights recently from print, TV, and web-based news outlets. This is a great indication that the aquatic invasive species education done by federal and state resource agencies is paying off. The public knows the harm these fish can do, and when they show up people are paying attention. A few recent grass carp captures we have performed ploidy analysis on include fish from the Trinity River Texas, the Grand River Ontario Canada, Maumee River Ohio, Des Plaines River near Chicago, the Mississippi River near Winona and the Mississippi River near Sartell MN, which is the most northerly capture of a grass carp in Minnesota. WGL fish biologist Jennifer Bailey has established protocols for field collection, shipment, and processing the carp eyes used to determine ploidy, and trained other staff on how to collect flow cytometry DNA standards, check in samples, and streamline data collection in support of sample analysis.



Fisheries and Oceans Canada and the Ontario Ministry of Natural Resources confirmed one grass carp was caught in the Grand River near Lake Erie. (Fisheries and Oceans Department)

There has been an outstanding level of coordination between agencies, researchers, and fishermen thus far, and we are expecting many more samples as the summer field season ramps up for many agencies across the nation.

Lake Trout Quality Assessments

by Ryan Katona

In April, Ken Phillips and Ryan Katona performed quality assessments on lake trout yearlings reared at the Iron River, Jordan River, and Pendills Creek national fish hatcheries. During the assessments, a condition profile for the yearling lake trout was determined by examining various organs and tissues. The La Crosse Fish Health Center completes the fish quality assessments annually prior to stocking in support of the Midwest Region's lake trout restoration efforts in Lake Huron and Lake Michigan. More than four million yearling lake trout are stocked annually into Lakes Huron and Michigan as part of the U.S Fish and Wildlife Service's lake trout restoration efforts.



Ryan Katona performing the quality assessments on lake trout at the National Fish Hatcheries in Region 3 USFWS K. Phillips

Neosho National Fish Hatchery Inspection

by Corey Puzach

Lucas Purnell and Corey Puzach traveled to Neosho National Fish Hatchery to complete the biannual hatchery inspection in May. During the inspection 310 rainbow trout were tested for certifiable fish pathogens. A sample of the kidney is taken with a sterile loop and placed on a tube of tryptic soy agar. This sample is used to screen for the certifiable bacteria *Aeromonas salmonicida*, *Yersinia ruckeri*, and *Edwardsiella ictaluri*. Another sample of the kidney is taken, and placed on a special slide. This sample is used to screen for the certifiable bacterium *Renibacterium salmoninarum*. Next a sample of the fish's kidney and spleen are taken to screen for viruses. Then the head is removed from the fish to screen for the certifiable parasite *Myxobolus cerebralis*. These inspections ensure healthy fish are stocked in the wild, helps prevent the spread of fish pathogens, and is required for hatchery classifications.

Leadership in Science and Technology

La Crosse Fish Health Center Provides Mini Fish Health Training

by Ryan Katona

Recently, Shawn Nowicki from Sea Lamprey Control (SLC) contacted the La Crosse Fish Health Center (LFHC) about providing training on how to collect tissue samples from fish in the event of a fish kill during lampricide treatment. On April 23rd Ken Phillips and Ryan Katona from the LFHC conducted a mini training session, at Jordan River National Fish Hatchery, on how to properly collect fish tissues for chemical and pathogen analysis. SLC staff from Marquette Biological Station, Ludington Biological Station, and Fisheries and Oceans Canada participated in the training. The LFHC showed the participants how to collect kidney and spleen tissues from fish for bacterial and viral pathogen screening and how to collect blood and muscle tissue from fish to use for chemical analysis. This training will be beneficial to SLC staff in the event a fish kill occurs and they suspect it is unrelated to chemical treatment.



Ken Phillips (front left) demonstrating how to collect blood samples from fish
USFWS R. Katona

Public Outreach

La Crosse Fish Health Center Dedicates Whitney Genetics Laboratory for eDNA Testing

by Jenny Bailey

It's official! The USFWS celebrated the opening of a new genetics laboratory at the U.S. Fish and Wildlife Service Resource Center (Onalaska, WI) dedicated to the use of genetic testing to help manage and control the spread of bighead and silver carp in the Upper Midwest. The 4800 square foot addition has been in the works since 2010, when the U.S. Fish & Wildlife Service teamed up with several other agencies in an effort to remove bighead and silver carp from a stretch of river (the Cal-Sag channel) near Chicago where environmental DNA (eDNA) had been detected above electric barrier designed to keep these species from entering the Great Lakes electrical barriers.

The development of eDNA technology, a powerful molecular tool for detection of species at very low densities, opened a new door in invasive species management. Use of this technology allows fisheries managers to see the leading edge of an invasion and remove fish early, rather than the traditional method of relying upon capture and reporting of invaders when populations have already become established. Planning began in late 2010 to build a laboratory designed to use this cutting-edge technology to provide partners with information about early invaders to new water bodies. Funding for the laboratory was set aside from President Obama's Great Lakes Restoration Initiative and construction of the new laboratory began in July, 2013. The Whitney Genetics Laboratory addition to the Center was completed over the fall and winter months, and the laboratory's staff spent the early months of spring setting up the laboratories to handle high volume processing beginning in the summer of 2013.



Becky Laeee (right) and Emy Monroe (left) cut the cake during the Whitney Genetics Laboratory dedication ceremonies USFWS External Affairs

Continued on next page

Dedication continued

The building was dedicated on April 5 by La Crosse Fish Health Center's Project Leader, Becky Lasee, USFWS Region 3's Regional Director, Tom Melius, and the Region 3 Leadership Team, Congressman Ron Kind, State Representative Jennifer Shilling, Onalaska's Mayor, Joe Chilsen, Jeremy Novak of Three-Sixty Real Estate, Dan Miller of Borton Construction, the staff of the U.S. Fish and Wildlife Resource Center, and Wendy Whitney and family members of John Whitney, who the building was named for. The Friends of the Upper Mississippi donated cake and refreshments, Owen Johnson volunteered photodocumentation of the event, and many partners from U.S. Fish and Wildlife field offices and other partner agencies were in attendance.



Congressman Ron Kind giving a short speech prior to the ribbon cutting ceremony USFWS S. Leis

After the dedication and ribbon cutting, the Center hosted an Open House for the community. Chris Olds and Steve Gambicki of Alpena FWCO demonstrated the filtering process for the eDNA program with their mobile filtering trailer next to the La Crosse FWCO's demonstration of the field sampling process with boats, nets, and water sample collection for eDNA processing. The fish health and genetics laboratories were open for public tours and demonstrations of sample

processing. Hands-on activities for children and adults were available in the visitor's center, and the 720 gallon aquarium donated by the Strye Foundation was ready for display with several species of native river fish happily cruising inside.

The transition of eDNA program sample processing from the U.S. Army Corps of Engineers laboratories to the new lab in La Crosse is nearly complete, and staff could begin processing official eDNA samples as early as this week. All eDNA processing in the laboratory will be supervised by Molecular Geneticist Emy Monroe, and sample processing will be carried out by 3 fish biologists and 2 biological technicians. Six permanent staff positions were created specifically for the Whitney Genetics Lab to ensure the new laboratory will provide the highest quality results to guide fisheries management teams in combatting the spread of Asian carp populations.

Outreach Week at the La Crosse Fish Health Center

by Ryan Katona, Sarah Leis, and Eric Leis

The week of May 13 was a busy week for staff at the La Crosse Fish Health Center. Several education outreach events and programs took place at various locations around the greater La Crosse Area.

Veterans Fishing Derby

On May 15th, staff from the La Crosse Fish Health Center (LFHC) and La Crosse Fish and Wildlife Conservation Office (LFWCO) made the short trip to the Tomah Veterans Affairs Medical Center (TVAMC) to assist with their annual fishing contest. The fishing contest is open to military veterans and is held at the TVAMC pond, which is stocked with fish from the Genoa National Fish Hatchery. Since it is a fishing contest, staff from the LFHC and LFWCO had the important task of measuring all the fish caught in order to decide the winner. There were smiles all around as many fish were caught that day. Following the contest, staff from the Genoa NFH put on a tremendous fish fry. In fact, their fish fry has become so legendary that some people don't even show up to fish, they just come late to eat!

Kickapoo Valley Conservation Days

On a beautiful spring day on the 15th of May 2013, Ryan Katona from the La Crosse Fish Health Center (LFHC) volunteered, with many other environmental representatives, at the Kickapoo School Conservation Day. This event is put together to give elementary and high school students a chance to expand their knowledge on different conservation topics. Some of these topics included forest management, soils, wildlife ecology, trout fishing, birds, snakes, and fish health. The LFHC went over fish anatomy and samples they collect during their fish health inspections. The LFHC also brought fish on a stick (See photo below), which consisted of 6 different species, and discussed physical characteristics and habitat type of the different fish species. The students were very interactive and asked a lot of good questions. They seemed to enjoy the LFHC station, as well as the other stations that were set-up throughout the Kickapoo school area. Overall, this event was a great success, and LFHC will look forward to working this event in the coming years.



Brook trout and lake trout "fish on a stick" used for outreach purposes USFWS R. Katona

Continued on next page

River Education Days

Fish Biologists Jenny Bailey (WGL) and Sarah Leis (LFHC) participated in the River Education Days (RED) at Trempealeau National Wildlife Refuge (NWR). The refuge has organized and hosted the event every year for at least the past 7 years. Over 1000 fifth graders from area schools attended the annual two day event. Programs for each fifth grade group were put on by several Fish and Wildlife Service Offices, Army Corp. of Engineers Offices, Wisconsin Department of Natural Resource Offices and several local citizens. Staff from the La Crosse Fish Health Center put on an educational “hands-on” program about fish anatomy and fish diseases.

Genoa Spring Fishing Derby

On Saturday, May 18th, Genoa National Fish Hatchery hosted the annual spring fishing derby provided by the Friends of the Upper Mississippi (FUM). The derby is held annually at the hatchery and provides many area families with a Saturday afternoon full of activities. The fishing derby is preceded by four informative stations for the children and their families. Staff from the La Crosse Fish Health Center attend annually and provide an informative station on fish anatomy. The days activities are concluded with a free lunch provided by the FUM and an announcement of derby winners and door prizes. This year, many children caught the first fish of their lifetime and were ecstatic about the experience.



The winner of the fishing derby (left) proudly shows off his catch that many anglers wait a lifetime for USFWS S. Leis

Staff Update

Project Leader Becky Lasee Retires From the Service

by Jenny Bailey and Corey Puzach

After 23 years Becky Lasee has decided to retire from the La Crosse Fish Health Center. Becky started her career with the U.S. Fish and Wildlife Service as one of the Service's first Co-op students (now called Career Pathways) while attending Iowa State University as a Ph.D. student. Upon completion of her degree she began work as a fish biologist at the Fish Disease Control Center, now known as the La Crosse Fish Health Center. She later became assistant project leader and in 2008, became the Center's project leader.

In her two decades with the Service, Becky participated in countless hatchery inspections and wild fish health surveys. She was considered a leading expert in fish parasitology and identified countless numbers of specimens for state, federal, and tribal agencies, as well as universities, private hatcheries and aquariums. Becky's expertise in fish health was essential in creating management plans to control or eradicate parasites, viruses, and bacteria identified from wild and cultured fish species. She assisted many state, federal, and tribal hatcheries with fish health recommendations for captive and wild broodstock development. Becky also worked with many partners on research dealing with parasites, aquatic drug research, new fish health techniques, fish pathogens, and endangered mussel propagation. As an adjunct professor at University of Wisconsin-La Crosse, Becky advised undergraduate and graduate students, co-taught courses with other faculty, and authored or co-authored a number of peer-reviewed publications in the aquatic health field.



After 22 years of service, Becky Lasee retires from the USFWS. Congratulations Becky on achieving such a great milestone! USFWS external affairs

Continued on next page

Becky Continued

Becky recognized the urgency to help control expanding Asian carp populations in the United States. In 2010, she took the lead on expanding La Crosse Fish Health Center's capabilities to include Asian carp eDNA monitoring in the Chicago Area Waterway, Great Lakes, and Mississippi River System. These efforts resulted in the dedication of a new laboratory in April, with a dedicated staff of six to help prevent Asian carp from becoming established in the Great Lakes and other new water bodies. Beginning in 2013, eDNA testing at the Whitney Genetics Lab will help inform management agencies on where to target response and control efforts.

Becky was effortless in her leadership of 16 permanent staff and many students, volunteers, and interns. She provided a great vision, along with support, training, and materials necessary to develop staff into a group of creative, competent, knowledgeable professionals who will succeed in leading the fish health and genetics laboratories for many years to come. Becky plans to spend her retirement enjoying good health and traveling adventures, helping people and animals, and in wealth of family, friends, and good pets.



Becky Lasee always had the patience and passion for sharing her knowledge of fish health USFWS