



U.S. Fish & Wildlife Service

Inside Region 3

April 2013



U.S. Fish & Wildlife Service

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**Tom Melius • Regional Director
Midwest Region**

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- Provide cost-control aquatic



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The Sights and Sounds of Our Colorful Season Ahead

The sights and sounds of our returning migration of colorful birds and hibernating creatures have come full circle again -- a sure sign that our high profile and busy field season is near. The time of year that the preparations made in shops and parts less travelled come into full view as public use of our resources sees the same uptick as the number of fascinating creatures spotted.

A new creature sighting this year will be one that was celebrated with our April 5 ribbon cutting to unveil the phenomenal new Whitney Genetics Lab at the La Crosse Fish Health Center. This new lab is state-of-the-art and will do far more than just meet immediate needs, as it will be a benefit in the long term to both the Service and our many partners.

Our celebration marks the completion of this 5,800-square foot facility attached to the La Crosse Fish Health Center and the beginning of its use toward extensive research into detection and prevention of invasive species, through eDNA study, and much more.

As all of our staff draw nearer to what we fondly know as the busy field season, I highly encourage each of you to take the time now to complete the important training we do annually. Training will always be one of the key components to our success and to the safety of our staff who work to meet the daily challenges of the Service's mission. Appropriate training is essential to keep the skills and techniques of our Service family at the highest possible levels, even in times of tighter budgets.

Equally important is safety, not only in the workplace but also during our time spent with friends and family. Although much might seem repetitious and common sense, every year we stand a risk if we let complacency win and our guard down. Examples abound in news stories each year where some do let their guard down. Keep your activities both safe and enjoyable, be it breaking out the barbecue, spending time on the water or even using caution from overdoing it when handling warm weather chores. Beware of the threats that always exist and keep this season's activities memorable for the good things.

As for our budget, by now many have heard that Congress and the President have moved forward the continuing resolution that will fund us through the fiscal year, one that clearly remains a challenge with the decreases we are facing. I remain hopeful in our ability to maintain the solid work we have come to know and expect. I know we will rise to meet these challenges together.



Thomas O. Melius

Tom Melius
Regional Director, Midwest Region

Enjoy this issue of Inside Region 3!



Inside Region 3

April 2013

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On the Cover

The La Crosse Fish Health Center in Onalaska, Wisconsin celebrated the grand opening of its new Whitney Genetics Laboratory, April 5. Pictured (left to right), U.S. Fish and Wildlife Service Midwest Regional Director Tom Melius, Congressman Ron Kind, State Senator Jennifer Schilling, Mayor Joe Chilsen, Project Leader Becky Lassee, Molecular Geneticist Emy Monroe, Three Sixty Real Estate representative Jeremy Novak and Dan Miller from Borton Construction. USFWS

Expanding Science in the Midwest Region: La Crosse Fish Health Center Opens the Whitney Genetics Lab

By Katie Steiger-Meister
External Affairs

In the fight against Asian carp and other aquatic nuisance species, the U.S. Fish and Wildlife Service and its project partners have turned to environmental DNA as a new fisheries tool. Environmental DNA, also known as eDNA, is a technique that analyzes water samples for traces of genetic material left behind in the water. A fish's genetic material can be left behind in the form of scales, cells, feces or mucus.

Invisible to the naked eye, the presence of Asian carp DNA in the water can be revealed through careful lab analysis and help shed light on the potential ways Asian carp may enter a water body in the wild.

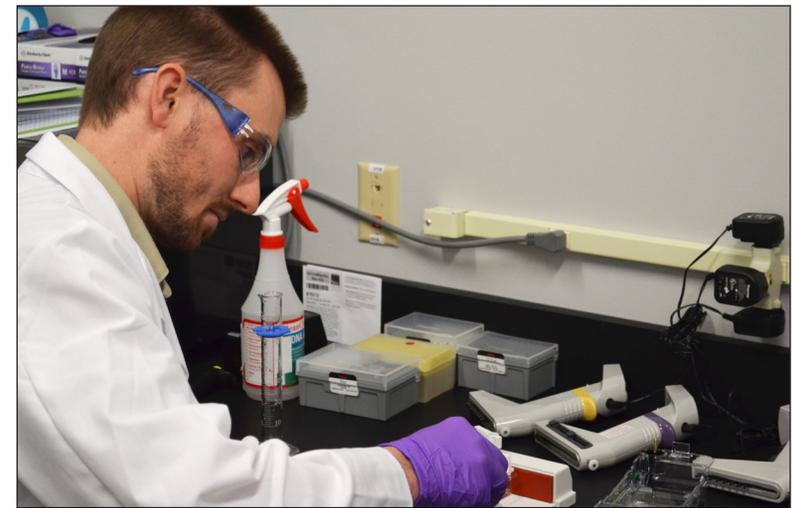
The lab equipment and training needed to properly analyze water samples for eDNA are highly specialized. Previously, water samples had to be sent to labs outside of the Service for eDNA analysis, but all of that is about to change. The Midwest Fisheries Program,



Fisheries biologists Jennifer Bailey and Maren Tuttle-Lau work on DNA extraction. USFWS

seeing an opportunity to dramatically enhance the scientific capacity of the

Midwest Region, has built a state-of-the-art genetics lab to bring eDNA sample



Fishery technician Kyle Von Ruden adds Asian carp DNA to a starch gel with a process called electrophoresis. USFWS

processing capabilities to the Service.

Construction of the new Whitney Genetics Lab was completed in November of 2012. The 5,800-square foot facility is attached to the La Crosse Fish Health Center in Wisconsin, and includes 10 new offices, eight laboratories and six clean rooms for Asian carp eDNA sample processing. The new lab is staffed by a molecular geneticist, three fish biologists and two biological science laboratory technicians.

Though Asian carp will be the immediate focus of lab activities, the science of eDNA holds great potential for other invasive species

detection and prevention. Researchers are currently developing the technology to detect other carp species, as well as northern snakehead, round goby, goldfish, and ruffe. eDNA may also one day be useful in the detection of threatened and endangered species, making it a valuable tool in species recovery.

A new resource for both the Midwest Region and the U.S. Fish and Wildlife Service as a whole, the new Whitney Genetics Lab will continue to push the limits of eDNA science and refine its use.

To learn more about the science of eDNA, [click here to watch the video.](#)

One Acorn at a Time

By Ann Blankenship
Visitor Services Manager
Upper Mississippi River
National Wildlife and Fish
Refuge

We battle to restore native habitats on refuge lands across the Midwest. While it is a daunting task, consistent dedication brings success. In mid-February, staff from the Upper Mississippi River National Wildlife and Fish Refuge continued their fight near Prairie du Chien, Wis., removing willow and cottonwood, which are known to compete for sunlight and nutrients.

Mowing down dense stands of willow and cottonwood during the winter helped 150 planted swamp oak trees reestablish native habitats. This stand was planted in 2002 about four miles north of Prairie du Chien, Wis. to help reestablish a floodplain forest in an old farm field.

As anyone familiar with the refuge will tell you, there is a more to the river than water. Floodplain forests provide habitat for a variety of wildlife. In particular, the tens of thousands of songbirds that migrate through the refuge

each year rely on healthy, diverse forests as they travel to and from their breeding and wintering grounds.

The floodplain forest has been changing over time. The forest once had a variety of tree species of different ages. Now it is dominated by a few species and most stands are growing old, with little regeneration. Older trees are not being replaced because invasive species, such as reed canary grass, form a solid mat of vegetation. This growth makes it nearly impossible for young tree seedlings to become established. A less diverse forest means lower wildlife diversity.

Refuge managers are trying to change this, little by little. For the last 10 years volunteers and refuge staff have been collecting oak acorns from the floodplain forest and sending them to a nursery where they are planted and nurtured into five to six foot tall young trees. These trees come from stock that can tolerate extended periods of flooding and their height gives them a competitive edge over



Upper Mississippi River National Wildlife and Fish Refuge staff cut willow and cottonwood surrounding planted swamp oak trees. USFWS

reed canary grass. Cutting the willow and cottonwoods surrounding them increases their chance of thriving in the river bottomlands.

With hard work, vigilance, and a little luck, the floodplain forest will once again host a diversity of tree species that produce food and nesting for wood ducks, squirrels, deer, eagles, herons, and turkeys. As one staff person said, “It’s satisfying to look at the

work you’ve accomplished over the last 10 years and see that you’ve made a difference in the forest today and hopefully in the future.”

If you would like to volunteer to collect acorns or plant trees for forest restoration, please contact the District office at 563-873-3423 for more information.

The Upper Mississippi River National Wildlife and

Fish Refuge is the most visited refuge in the United States. The refuge extends 261 miles along the Upper Mississippi River from Wabasha, Minnesota to Rock Island, Illinois, protecting and preserving habitat for migratory birds, fish, and a variety of other wildlife. This 240,000 acre refuge was established in 1924. 🦋

Life Cycles of Migratory Birds: Conservation Across the Americas

By Valerie Rose Redmond
External Affairs

Celebrate International Migratory Bird Day 2013 with a focus on bird life cycles. This year's theme details all aspects of a migratory bird's life, from migration to breeding, nesting and raising young.

Habitat conditions in one season can effect the survival and nesting success of birds in another season. Winter habitats are just as important as nesting sites, and their quality influences nesting success.

Stopover sites, the places where birds rest and refuel during migration, are also critical. Sandy beaches, forests, grasslands, and other habitats must be present for birds flying long distances.

While International Migratory Bird day is typically held on the second Saturday in May (May 12 in 2013), any day can be one of celebration. Celebrate whenever migratory bird arrival happens in your own community or whenever you feel like celebrating birds.

IMBD is an invitation to celebrate and support migratory bird conservation. [Join IMBD at Neal Smith](#) or find an International Migratory Bird Day Festival near you! Use the following interactive maps and websites to find festivals, bird observatories, raptor centers, birding trails or bird camps:

- [IMBD event](#)
- [IMBD events map](#)
- [Birding Help on the Web](#)

Links to Bird Conservation Plans

- [North American Waterbird Conservation Plan](#)
- [Partners in Flight](#)
- [North American Bird Conservation Initiative](#)

More Bird Festival Programs!

- [World Migratory Bird Day](#)
- [Birdlife's World Bird Festival](#)
- [Carribean Endemic Bird Festival](#) 🐦



A Black Throated Green Warbler: James O. Durbin, USFWS

White-Nose Syndrome Confirmed in Illinois Bats

Illinois Becomes 20th State in U.S. to Confirm Deadly Disease in Bats

By Georgia Parham
External Affairs

In late February, the Illinois Department of Natural Resources announced that White-nose Syndrome has been confirmed in four Illinois counties.

Illinois is the 20th state to confirm the disease, which has killed an estimated 5.7 million bats. The disease was detected in LaSalle County, in north-central Illinois, Monroe County, in southwestern Illinois, and Hardin and Pope Counties, in extreme southern Illinois.

According to the Illinois DNR, little brown bats and northern long-eared bats from these counties

were tested in early-to-mid February 2013.

WNS is known to be transmitted primarily from bat-to-bat, but spores of *Geomyces destructans*, the non-native, cold-loving fungus that causes white-nose syndrome, may be inadvertently carried between caves and abandoned mines by humans on clothing, footwear, and caving gear.

White-nose syndrome was first detected in New York State in 2006 and has killed more than 5.7 million cave-dwelling bats in the eastern third of North America as it has spread south and west across the landscape. 🐉



A little brown bat with white-nose syndrome.

Terry Derting, Kentucky Department of Fish and Wildlife Resources

Landscape Conservation Cooperatives Work Beside Migratory Bird Joint Ventures to Advance Bird Conservation Science

By Ashley Spratt
External Affairs

North American bird conservation has progressed by leaps and bounds through the work of migratory bird Joint Ventures (JVs), charged with achieving the goals of the North American Waterfowl Management Plan as well as both national and international conservation plans for shorebirds, waterbirds and landbirds. Landscape Conservation Cooperatives (LCCs) can maximize the success of these efforts through strengthening the science foundation of bird conservation at the landscape scale.

Regional JVs, such as the Upper Mississippi River and Great Lakes Region JV, the Prairie Pothole JV, the Lower Mississippi Valley JV and the Central Hardwoods JV, are long-standing partnerships dedicated to bird conservation through cooperative planning, evaluation, monitoring and habitat delivery. Their success

can be measured by the establishment of regional bird population objectives, landscape decision tools, targeted research and monitoring efforts, and substantial gains in habitats

target conservation efforts for birds. Research and monitoring efforts help answer questions regarding what, where, and how much habitat is needed to achieve bird population goals

Landscape Conservation Cooperatives, including the Eastern Tallgrass Prairie and Big Rivers LCC, the Plains and Prairie Potholes LCC, and the Upper Midwest and Great Lakes

the Mississippi and Central migratory bird flyways. This broad geographic region also hosts the largest breeding ground for waterfowl in North America.

Landscape-scale research supported by the LCCs will help answer some of the critical questions about the impacts of natural and human-induced environmental changes on birds over time. For example, climate modeling efforts currently made possible through LCC resources will help predict changes in temperature and precipitation across the nation's migratory bird flyways. LCCs will provide support to JVs working to focus bird habitat protection and restoration in areas that also serve to abate flooding, improve water quality, and enhance carbon sequestration. This cooperative effort will enhance the values of habitat projects for birds, ecological communities and society.

(Continued next page)



Birding at a national wildlife refuge. USFWS

that support high priority species.

Joint Ventures have worked to build science capacity by conducting and supporting planning and evaluation projects that help partners

generated at continental and regional scales. The partnership approach used by JVs has been repeatedly referenced as a model for achieving conservation success.

LCC, are working alongside JV communities to fuel new science at broader scales. These LCCs are vested in natural resources issues across the Midwestern U.S., Canada, and the Great Lakes region, including portions of



Pintails in flight. USFWS

Ongoing coordination with multiple agencies and organizations is a primary function of both LCCs and JVs. LCCs aim to build pragmatic science to communicate the needs of wildlife conservation to agricultural producers, urban developers, land-use planners, state, federal, tribal and private landowners and managers, and others who affect public and private resource management. Landscape Conservation Cooperatives also provide a forum for identifying and prioritizing broad-scale conservation issues and applying science to resolve differences in objectives among multiple users of public land and water resources, many of which impact bird conservation.

Working together, JVs and LCCs will relate ongoing and future bird habitat restoration and conservation to the impacts of boundary-less environmental issues like climate change. The

placement and amount of resources available for bird conservation can be positively influenced through the LCC partnership and a better understanding of broad-reaching landscape challenges.

Joint Ventures and LCCs have distinct but complementary roles that increase the efficiency and effectiveness of conservation. As the JVs continue to focus their efforts on bird conservation planning and habitat delivery within defined geographic areas, the LCC network can help expand conservation opportunities with new, larger scale science leadership, potentially benefiting a much broader suite of species. The opportunities to create connectivity between existing and desired habitats across a larger geographic area will assist natural resources managers in dealing with the daily challenges of habitat fragmentation and climate variability. 🐾

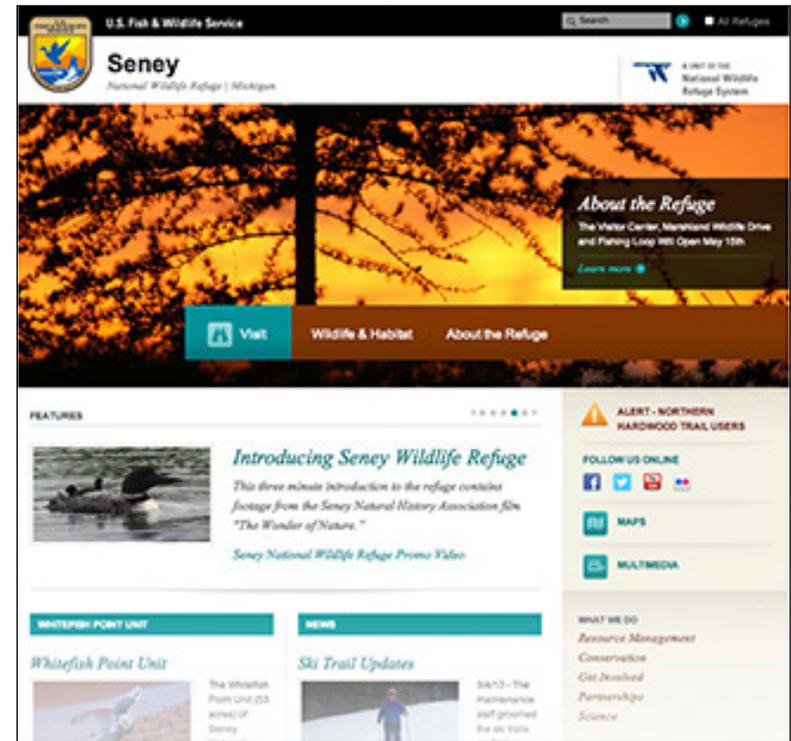
Connecting with America's Great Outdoors: Midwest Region First in National Wildlife Refuge System To Complete Website Redesign

By Tina Shaw
External Affairs

More than 6 million people visit refuge lands around the Midwest Region each year. Refuges provide many great opportunities to connect with the outdoors. Whether you're into hunting, fishing, or just getting outside - refuges have something for everyone. Today, more and more people consider refuge lands among their favorite places to visit - both in person and virtually.

Mid-March marked an important date for the Refuge System as they celebrated the 110th birthday of the National Wildlife Refuge System. Here in the Midwest, the refuge program marked another milestone as they finished the launch of a region-wide website redesign with the assistance of External Affairs.

To make it even easier for people to connect to refuge lands, the Midwest Region has launched redesigned websites for all 57 National



Wildlife Refuges and 12 Wetland Management Districts. These websites are designed to provide up to date information and help you find what you're looking for quickly and easily.

"I am so pleased with our team here in the Midwest," said Regional Director Tom Melius. "It's great to see Refuges and External Affairs staff collaborating. It is not a small task and I

thank everyone involved for getting these new websites up and running."

Other Midwest Region programs have begun organizing their websites to make eventual conversion to a Service-wide content management system easier in the future.

Check out your favorite Midwest Region refuge's website today. 🐾

MYSTERY^{ON}THE OSAGE RIVER

By Patricia Herman
La Crosse Fish Health Center

Missouri residents utilize their water resources for recreation— whether it is boating, jet skiing or fishing— all year long. With that in mind, it is not uncommon to find remains of fish that were cleaned at the boat ramp and left to compost. It is unusual, however, to find dead fish littering the banks, sandbars and boat ramp parking lots, which prompted a phone call from a University of Missouri graduate student researcher to the U.S. Fish and Wildlife Service.

The seasoned field researcher reported seeing dead and dying Asian carp in and along the banks of the Osage River. She also noticed that the silver and bighead carp were lethargic, even complacent when electrofished, which is extremely unusual behavior for Asian carp. While it was acknowledged that the water temperatures were cold, around 4 degrees Celsius, she was adamant that the Asian carp were displaying notably different behaviors even for those temperatures.

After a quick call to the La Crosse Fish Health Center (FHC) to describe the situation, it was decided that an exploratory trip to the Osage River was warranted. A Columbia Fish and Wildlife Conservation Office crew spent a frigid day electrofishing and taking pictures of dead Asian carp near the Mari-Osa Access, approximately 10 miles upstream from the confluence with the Missouri River.

Upon arrival, the crew discovered piles of bighead and silver carp in the parking lot and along the ramps. These fish had obvious puncture wounds, injuries likely sustained at the hands of anglers gigging for suckers on the Osage River. It seemed curious that flighty fish like silver carp were able to be gigged, especially in the numbers that seen at the access. We did not see many live fish at all in the cold, clear water and after electrofishing for nearly an hour, we stopped at a gravel bar where the Mariés River enters the Osage River.

With the low water levels, a large gravel bar was exposed and littered with bighead and silver carp in various states of decay. Given the stages of decomposition, it appeared as though these fish had been experiencing a die-off for several months. Most notably, only Asian carp were observed on the shores or drifting in the current. No other species were found dead. In all, 10 live silver carp were seized while drifting or captured by electrofishing from the Osage River. The fish were packed in ice and shipped overnight to the La Crosse FHC.

Terry Ott from La Crosse FHC was quick to process the fish and report his preliminary findings. Upon visual inspection, the silver carp appeared to have gas bubbles at the base of the fins and, microscopically, aneurisms were observed in the filaments, conditions often associated with gas saturation.

During the necropsy, however, the internal organs

Dead asian carp were observed on exposed gravel bar near the Mariés River confluence with the Osage River. USFWS

indicated a different problem. He noticed that the bile in the gall bladders was black, an indication that these fish had not eaten in over a week. The stomachs and intestines were also empty and nearly all fish appeared emaciated. Bacteria was present in several kidney cultures and cell lines are currently being cultured to determine if viral pathogens are present.

From all outward appearances, Asian carp on the Osage River are starving to death. It is unknown if these fish are starving due to complications from a disease, are experiencing side effects from dissolved gas in the water or if they have simply eaten all available food in the Osage River. Notably, we did not observe other species of fish being impacted in the same way as the Asian carps, though species diversity was low during our electrofishing runs. Additional reports of dead silver carp on the mainstem Missouri River have since been shared with our office. This is truly a mystery, one that we are eagerly hoping to solve. 🐟



Vanishing Pools Lose Their Allure

By Valerie Rose Redmond
External Affairs and

Rex Johnson
Migratory Birds

Vanishing pools earn bragging rights for exotic vacation hotels and resorts. While they are sought-after amenities, coveted in exclusive estates and other luxurious places, vanishing pools take on a different connotation in the conservation arena.

Shallow, temporary and seasonal wetlands that hold water for short periods in the spring and summer in the Midwest literally are vanishing pools, but sadly their disappearance may all too soon become permanent.

How does it affect you and why should you care? The answer is in the silence.

Fifty years after the publication of her iconic book that captivated the nation, Rachel Carson's voice echoes in the foreshadow of what could someday become the silent spring that she so eloquently fictionalized in its first chapter.



Wilson's phalarope on a cropped wetland. Rex Johnson, USFWS

Carson's immortal words trickle down through the cattails, amid the glistening snow melt, and run off into the seasonal wetlands that are now under a constant and pervasive threat: the conversion of native prairie for agricultural, industrial and commercial uses. Drainage, residual soil depletion, and the temporal nature of these wetlands also put them at high risk.

Temporary wetlands include both seasonal wetlands, which result from winter

snow melt and spring rains and shallow wetlands, such as swamps and marshes. These wetlands, while fleeting, are critical to both the resident waterfowl and the transient water birds that utilize them as stopovers during the spring migration.

Because they are shallow, seasonal wetlands are the first to warm up and provide open water and food for wildlife. These wetlands, teemed with snails, aquatic insect larva and adults and even smaller crustaceans

called zooplankton, are an abundant and valuable food source for wildlife. Migrating birds are most often associated with cropped wetlands.

Ducks feed heavily on waste grain, full of energy-rich carbohydrates and fats. Shorebirds and ducks that are preparing to breed feed on snails, insects, worms and other invertebrates, rich in the protein and calcium that is essential for egg production. Migrating shorebirds that fly short distances between

migration stops may actually double their body weight in a few days feeding on these invertebrates, and if they fail to put on the required weight they may not survive migration, literally falling dead out of the sky.

There were once about 1.9 million of these temporary and seasonal wetlands in the prairies of Minnesota and Iowa. Today there are only about 230,000 left. Many of these cropped wetlands were once completely or incompletely drained and the drainage system has become decrepit. They are at high risk of drainage because they eventually dry up and landowners want to utilize the acreage. The problem is that these partially drained wetlands in cropland provide much of the wetland wildlife value that Minnesota and Iowa still have.

"Shallow wetlands may be the most essential elements of the prairie pothole region landscapes," said wildlife biologist Rex Johnson. "Their loss has imperiled many species that are unable to move long distances between wetlands. They are primary sites of ground water recharge that feed our wells and irrigation systems.

(Continued next page)



Installing plastic drainage tile is now a farm-based enterprise that any farmer can do. Rex Johnson, USFWS

In aggregate they hold back millions of acre-feet of flood water in the spring and after heavy rains.”

The loss of these wetlands, exacerbated by high crop prices that make drainage system repair more appealing, increases fragmentation of the landscape for species that have limited mobility.

While there are many determining factors, including residential and commercial development, cropped wetlands are at the highest possible risk of being drained despite state and federal legislation that were passed to constrain drainage. The primary protection for cropped wetlands is “Swampbuster”, a Farm Bill provision that delivers sanctions to landowners who drain or fill prohibited

wetlands. Since participation in the Farm Bill program is voluntary, high commodity prices have recently made the program less attractive and more and more landowners are opting out and draining or enhancing drainage of cropped wetlands.

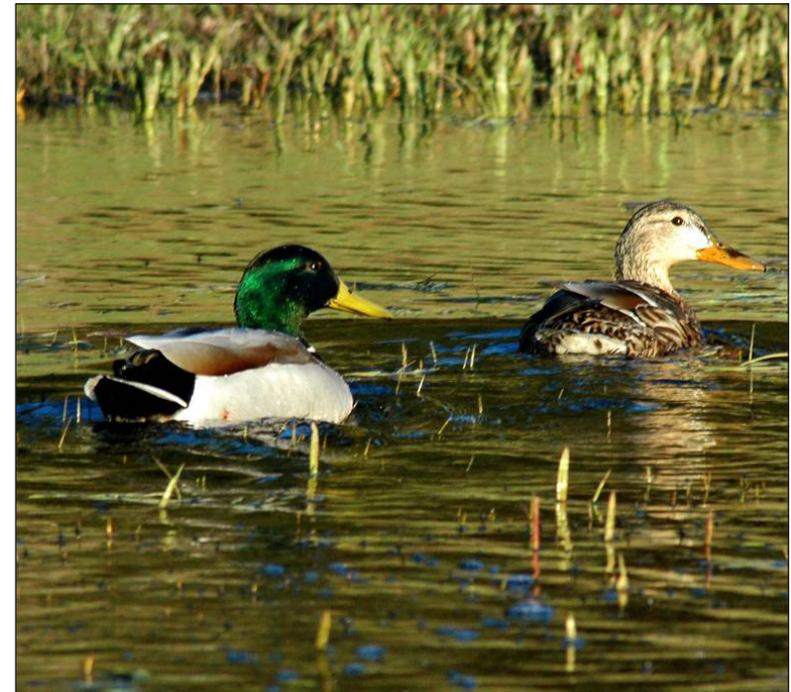
These wetlands are relatively easily restored by breaking tilelines, plugging ditches and scrapping out accumulated sediments. Costs vary from a few hundred to a few thousand per wetland.

But esoterics aside, the drainage of these critically important ecosystems have broader human implications, as well. Climate related extreme weather has increased dramatically over the past few decades. Colossal storms, rising temperatures, unrelenting drought, and devastating floods proliferate in the news. Sustaining and restoring seasonal wetlands are effective strategies for flood risk reduction and climate change adaptation. Wetlands reduce peak flooding by acting like natural sponges on the landscape. They are a clean water supply. They produce fertile soils, improve water quality, and ultimately increase food production.

These pools of life are valuable assets, yet they are in danger of vanishing from the landscape forever. The loss of seasonal wetlands affects wildlife and people. Breathtaking in its sheer perfection and resonating with the melodious harmonies of life, the natural world is one we have chosen to preserve both for us and our children. To leave them a world like the one that we were born into or one that is better is more than a desired

legacy, it’s a responsibility. Climate change and changing landscapes are jeopardizing that future. Carson warns us of the dire prospects of a silent spring. Vanishing pools lose their allure when juxtaposed with future generations surrounded by resonating silence, deprived of the peace and enjoyment of the natural world. 🐾

[Click here for an article on wetlands by Rex Johnson.](#)



Mallard pair on a cropped wetland. Rex Johnson, USFWS

A Winged Jewel Gets a Leg Up

By Jenifer Linforth
Division of Program and
Partnership Support
USFWS Headquarters

To make a big impact on a small species, you need thousands of cups. At least this may be true for the Hine's emerald dragonfly (*Somatochlora hineana*).

Rearing Hine's larvae is no small undertaking, but it has been done successfully at the University of South Dakota, with support from the U.S. Fish and Wildlife Service's (Service) Chicago Field Office.

Endangered since 1995, the Hine's emerald dragonfly is

the only species of dragonfly to have federal protection. This species is the proverbial "canary in a coal mine" when it comes to detecting ground water stability in the region. The dragonfly's recent decline correlates with drought events and decreased ground water recharge, which could impact people too.

The species breeds in calcareous, spring-fed marshes and sedge meadows over bedrock. Eggs are laid in shallow water and the aquatic larvae hatch the following spring, living three to five years before shedding their skin one

final time and emerging as adults. The loss of the species unique habitat from mining and other development activities has the Hine's fighting an uphill battle for survival. With an estimated population of 200 adults left in the Chicago area, preserving this emerald-eyed beauty has reached a serious turning point. The Service is depending on research to preserve, protect, and improve the status of the species and its habitat.

And then came the cups...

Headed by Dr. Daniel Soluk, Associate Professor of Biology at the University of South Dakota, the goal of the Hine's captive rearing program is clear: to release dragonflies that are ready to emerge as adults into existing and restored habitat to augment

Eggs are collected from gravid, or fertile, females in the field and are then incubated in a lab. Once the new hatchlings emerge, they are transferred to individual cups, where they are fed and kept at various temperatures and photoperiods to mimic their natural habitat conditions. The larvae remain in the cups for approximately five years until they are big enough to be released into the wild and ultimately emerge as adult dragonflies. The program successfully reared 1,643 larvae in 2011 and 2,500 in 2012. After many dedicated but tedious hours in the lab, biologists are pleased with the progress that has been made to develop methods with high success rates to rear the species in captivity.

require a couple hundred adults per year to be introduced into the population, so a more efficient method is needed to rear the larvae.

"We can really have a positive impact on the species, but we need to establish meaningful partnerships to share our individual expertise and pool our resources. Besides, we don't want to put all our eggs, or larvae, in one basket" said Kris.

The answer may include cross program cooperation between the Chicago Ecological Services Field Office and the Genoa National Fish Hatchery in Wisconsin, The Forest Preserve District of DuPage County, in Illinois, may expand its ongoing partnership with the Service and University of South Dakota, by adapting existing facilities for Hine's captive rearing.

The Chicago Office and University of South Dakota are developing plans and working on identifying potential funding sources.

Once more progress is made on rearing the Hine's emerald dragonfly in captivity; partnerships may restore the species in the wild and move it closer toward recovery. 🐉



A Hine's emerald dragonfly. Paul Burton, USFWS

"We can really have a positive impact on the species, but we need to establish meaningful partnerships to share our individual expertise and pool our resource needs."

Kris Lah, endangered species biologist, FWS Chicago Field Office

the Illinois population of the dragonfly so that it can recover to a healthy and sustainable size.

According to Kris Lah, endangered species biologist in the Service's Chicago Field Office, a program that would restore the Illinois population may

Seven Indicted for Alleged Trafficking of Paddlefish 'Caviar'

By Gavin Shire
U.S. Fish and Wildlife
Service

Seven men have been arrested as part of a joint U.S. Fish and Wildlife Service and Missouri Department of Conservation investigation into the interstate and international trafficking in paddlefish "caviar." The Department of Justice Environment and Natural Resources Division and the U.S. Attorney for the Western District of Missouri announced today that the men had been charged in four separate indictments for acts that occurred in 2011 and 2012.

The seven men were charged with violations of the Lacey Act, a federal statute which prohibits trade in wildlife, fish and plants that have been taken, possessed, transported or sold in violation of state law. In this case, Missouri state law prohibits the transportation of paddlefish eggs that have been removed or extracted from a paddlefish carcass; prohibits the sale or purchase, or offer of sale or purchase, of paddlefish eggs;



Paddlefish caviar has gained popularity and value as beluga and other sturgeon sources for this delicacy have been depleted. Missouri and other States closely regulate paddlefish harvest to prevent overfishing. Missouri Department of Conservation

and restricts the purchase of whole paddlefish. "Illegal wildlife trafficking doesn't just involve rhinos, elephants and other foreign species under siege; it's a threat to U.S. resources as well," said FWS Director Dan Ashe. "We are working with our state and federal partners to ensure that the American paddlefish doesn't end up on the federal Endangered Species List because of the black market caviar trade."

The American paddlefish (*Polydon spathula*), also called the Mississippi paddlefish or the "spoonbill," is a large, ancient, long-lived species of freshwater fish found primarily in the Mississippi River drainage

system. It gets its name from its characteristic long, flattened snout, which can be up to one third its total length and is covered in electroreceptors that scientists believe may be used to find its plankton food.

Paddlefish were once common in waters throughout the Midwest, but overfishing around the turn of the 20th century led to severe population declines. The construction of river dams further affected the species, which has now disappeared from significant portions of its range. Today, 11 out of 22 states within the species remaining range now list the paddlefish as endangered, threatened or a species of special concern.

Cooperative conservation efforts by FWS and other federal agencies, states, and universities are helping protect the paddlefish. However, with the depletion of European and Asian sturgeon populations due to overharvesting, American paddlefish have experienced increased pressure to meet the demand for caviar. In 1992, due to an increased demand for paddlefish caviar and continued decreases in the population, the American paddlefish was afforded international protection by being listed as a species under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). All other species of sturgeon and paddlefish were added to the CITES list in 1998. CITES is an international treaty between 178 nations, which seeks to protect rare and declining species by restricting international trade.

One of the men charged in this case had attempted to export, without a permit, paddlefish eggs in his checked luggage on an international flight

from Washington, DC, in violation of CITES.

If convicted, the individual defendants face a maximum penalty of five years each in prison, and a \$250,000 fine per count, as well as forfeiture of any vehicles that were used during the commission of the crimes.

The case was investigated by the U.S. Fish and Wildlife Service and the Missouri Department of Conservation, with assistance by the Oklahoma Department of Wildlife Conservation. The case is being prosecuted by Trial Attorneys James B. Nelson and Adam C. Cullman of the Department of Justice's Environmental Crimes Section and Supervisory Assistant U.S. Attorney Lawrence E. Miller of the U.S. Attorney's Office for the Western District of Missouri.

An indictment is a formal accusation and is not proof of guilt. Defendants are presumed innocent until and unless they are found guilty.



Other Duties As Assigned: Fisheries Engineers

*By Jeff Finley
Columbia Fish and Wildlife
Conservation Office*

Quite often we find ourselves working in areas outside of our position description. Whether by necessity or by talent, our employees frequently perform “other duties as assigned.” Fortunately, my additional duty is one I dearly enjoy. I call it “Fisheries Engineering.”

Some folks have specific abilities for analyzing data,

writing scientific reports, working with volunteers, or an affinity for using software programs which make everybody’s job easier. Recognizing these unique skills and abilities, supervisors frequently task these specialists to work their craft for the good of the agency. Not all additional duties are fun and exciting. Some are just necessary, but when they do align with an individual’s particular passion, it results in an awesome day at work.

What is a Fisheries Engineer; you may ask? Coined from the true definition of engineering, a Fisheries Engineer can repair, replace, improve, design, fabricate and construct equipment used in sampling and collecting fish and aquatic organisms from the wild. Fisheries Engineering entails physics, mechanics, fabrication, welding and a lot of head scratching, and trial and error. Whether using steel, wood, plastics, aluminum, wire, line, chain, or

netting, Fisheries Engineers construct equipment using an understanding of the habitats we sample, the behavior of the organisms we are trying to collect and the environmental and human extremes the equipment must endure.

Fish biologists are frequently confronted with the challenges of, “how can we catch species X, more of species Y, exclude species Z, while sampling in a specific habitat and keeping

this gadget from breaking, again.” Riverine habitats are often difficult to sample in because of their currents, flow, debris, grit, mud, rock and weather extremes. These considerations are all blended with field experience, a desire to dream and a preoccupation with tools, to ultimately spawn a Fisheries Engineer.

Fisheries Engineers save their station time and money by circumventing



costly trips to the repair shop, getting their crews back on the water as quickly and safely as possible, and creating innovative devices. Not everyone has an engineering mind. There are few folks who can diagnose and repair a mechanical problem, imagine a better contraption, or that have the experience and skill to bring an idea to reality while knowing their limitations. They might help figure out why an outboard engine is overheating and correct the issue so crews can finish their work or get off the water before dark. They can wire multiple components for an electrofishing boat rather than buying an “off the shelf” boat at twice the cost. They’ll weld what breaks, patch what leaks, replace what was lost and advance the science of fisheries by developing new gear and techniques, or modifying old ones.

Applying Fisheries Engineering at the Columbia Fish and Wildlife Conservation Office has resulted in the development of several techniques and tools for the advancement of fishery science.

Examples include:

The push trawl uses forward facing, mechanically lifted booms to deploy an envelope style, zipper cod, small board, benthic trawl off of the front of a jet boat. This technique has proved itself as a valuable tool in sampling riverine habitats too deep, too swift or with substrate too soft to seine or too shallow for traditional stern trawls.

The paupier net is a modification of techniques used in gulf shrimp fisheries. The paupier uses two frames mechanically deployed perpendicular to the gunnels of a boat to scoop up pelagic fishes. The intent was to come up with a method to collect Asian carp. While we have developed a solid framing system, a net design to retain these wary, fast swimming fish is still in development. We incidentally discovered the paupier technique is an excellent tool to collect young paddlefish.

Drifting trammel nets in the river can be an arduous task with the vast amounts of small woody debris and sand waves which can repeatedly halt the lead

line of a drifting net. A net mule is a chevron shaped device made of dimensional lumber tied with a lead to the far end of the net. It helps plow the net through these lesser snags using the power of moving water in the river’s current.

Keeping a thousand baited ganions for trot lines organized and separated is not easy. Several attempts were made to prevent them from getting tangled up on a rough river ride. Additionally, pre-baiting the hooks in a heated shop in the morning is preferred to baiting on the water or shore exposed to the elements, and safer than bait-as-you-go with a line in the swift water. To do this we finally settled on a ganion box. Each box holds up to 500 baited hooks, hung sequentially from a steel rod. The large clips hang below and are clamped to the side of the box with a flap. The lid is closed for a neat, tidy and space saving method to safely deploy and retrieve the ganions.

Opportunities arise to cooperate with other branches of the U.S. Fish and Wildlife Service.



Jeff Finley records fish data as Wyatt Doyle sorts the catch from a push trawl run on the Missouri River. Andy Starostka, USFWS

Currently I am working with a “Malacology Engineer” from Ecological Services to solve some mussel sampling conundrums. We are in the process of developing a boat mounted washing and sorting stand for mussel quantification surveys. This stand will incorporate a space saving reel for the surface air supply line for the SCUBA diver and a freshwater pump to wash and sort the substrate sample collected by the diver.

We have tinkered around with other small projects like durable transducer brackets to replace the plastic ones, which inevitably break, various types of anchors to hold boats and gear in the swift

waters of the Missouri River, racks to dry wet gear and drags to find lost nets and trawls. Those before me paved the way for stern trawling safely on the river and have built net wheels for cleaning nets and many other space and time saving devices.

The ingenuity and application has, and will continue, to help advance fisheries science from those whose minds think a little differently and understand how to speak the language of an engineer. I hope to identify the next person and one day pass the engineer torch to the next up and coming, “other duties as assigned: Fisheries Engineer.” 🦉

Helping a Recovery Program Take Flight

Working with the Karner blue butterfly in Wisconsin

By Cathy Carnes
Green Bay Ecological
Services Field Office



Karner Blue Butterfly. USFWS

Just over 20 years ago, the Karner blue butterfly (*Lycæidid melissa samuelis*) and I became fast and inseparable friends. Our relationship began in 1992, after the U.S. Fish and Wildlife Service proposed listing the butterfly as endangered under the Endangered Species Act.

Luckily, I was in the right place at the right time—of the seven states where the Karner blue was known to occur, Wisconsin boasted the largest population. So when I became the

Service's first Endangered Species Coordinator in Wisconsin, in 1993, I also became the Karner blue butterfly Recovery Coordinator. Things haven't been the same since.

A whirlwind of questions and concerns followed the Karner blue's listing, as with any newly listed species: Where do we begin? What research is needed? What management is needed? What permits are needed? How do we recover the Karner blue so that ESA protection is no longer necessary for its survival?

I dug in and set up the 12-member Karner Blue Butterfly Recovery Team -- a team of professors, biologists of state and federal agencies and The Nature Conservancy, and representatives from two private timber companies -- to help answer these questions.

The Karner Blue Butterfly Recovery Plan, a product

of the team, established recovery goals for the species and provided guidance on monitoring, habitat management, and research. This was only the beginning.

Because Wisconsin is in the heart of the species' range, the Karner blue is found throughout the state on private and commercial lands, utility rights-of-way, public forests, and parks. Mowing and burning, although beneficial and sometimes used to manage Karner blue habitat, may kill adult butterflies and destroys eggs.

Landowners doing vegetation control in areas with Karner blue butterflies would then need a permit from the Service, and permit applicants must complete a Habitat Conservation Plan before the Service can issue such a permit that allows some incidental take.

The Wisconsin Department of Natural Resources met

the permit challenge in 1999 by developing a statewide HCP granting private landowners and companies some assurances under the ensuing permit. From concept to finalization, I worked with the DNR by providing guidance and ensuring the HCP met the Service's requirements.

Our work was challenging because this was the first ever statewide HCP—a new model involving a large area and many partners. Today, the success of

the HCP is reflected not only in its growth from 26 to 42 partners, but in the 826,475 acres of land enrolled in the HCP that provides additional conservation for the Karner blue butterfly—an amazing accomplishment.

I am still at the center of all things Karner blue, watching the efforts of our partners move the Karner blue slowly but surely closer toward recovery. Friendship with a butterfly has never felt so good. 🦋



Cathy Carnes. USFWS

2013 Federal Duck Stamp Art Competition Slated For Ohio's Maumee Bay State Park

By Valerie Rose Redmond
External Affairs

The U.S. Fish and Wildlife Service has selected Maumee Bay State Park Conference Center in Ohio, as the site for its much anticipated Federal Duck Stamp Art Competition, Sept. 27-28. The selection, in part, pays homage to long-time Fish and Wildlife Service employee and acclaimed wildlife artist Bob Hines, who was born in Columbus, Ohio. Designer for the 1947 Duck Stamp, Hines also worked for the Ohio Division of Wildlife as a staff artist for many years.

"I am thrilled that the Midwest Region has again been selected to host the Federal Duck Stamp Contest," said Midwest Regional Director Tom Melius. "The Midwest has large conservation and art communities. The Federal Duck Stamp Contest is an opportunity to celebrate and honor both traditions."

"The quality marshes and wetlands along the

shores of Lake Erie make the committee's choice of Northwest Ohio a great venue for the Federal Duck Stamp Contest," said Scott Zody, Chief, Ohio DNR Division of Wildlife. "In addition to great natural resources, the region boasts some of the most dedicated and passionate waterfowl conservationists in the Midwest."

The Maumee Bay State Park Conference Center is an Ohio DNR facility that features a boardwalk, nature center and other amenities. Its selection is fitting because of its close

proximity to the Ottawa National Wildlife Refuge, 15 miles away on the shore of Lake Erie. The refuge was established in 1961 to provide habitat for waterfowl and other migratory birds, resident wildlife, and endangered and threatened species.

Also noteworthy is the gallery that bears Hines' name in the refuge's visitor center. It features an interpretive panel on Hines and a permanent exhibit of one of his paintings.

The Service has a rich history of waterfowl



The 2013 Federal Duck Stamp, featuring a single wood duck painted by artist Joseph Hautman of Plymouth, MN. USFWS

conservation. The Federal Duck Stamp, heralded as one of the world's most successful conservation programs, is a testament to that success. Hunters, bird watchers, outdoor recreationists, art and stamp collectors, and many others who want to invest in wetland conservation buy Federal Duck Stamps. Ninety-eight cents of every dollar invested in the stamp permanently conserves wildlife habitat for future generations.

Proceeds from the sale of Duck Stamps are used to buy or lease wetlands and associated upland habitats for inclusion in the National Wildlife Refuge System. The stamp is a required purchase for hunters 16 years of age or older, and a current Federal Duck Stamp provides free admission into any national wildlife refuge.

"It's a small investment that brings American families long-term recreational and

conservation returns," said Melius.

The Federal Duck Stamp Art Contest is the only legislatively mandated federal art competition in the nation. Thousands of wildlife artists have entered since the first open competition in 1949. A panel of art, waterfowl and philatelic authorities judges the art and selects the work for the next stamp. Judging will take place over a two-day period and is free and open to the public. The contest will also be streamed live on the Web.

This year's winning design will be featured as the 2014-2015 Duck Stamp, which is formally known as the Federal Migratory Bird Hunting and Conservation Stamp. [Click here for more information about the Duck Stamp Program, or to view images of previous winners](#)



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