



Fish & Wildlife *News*



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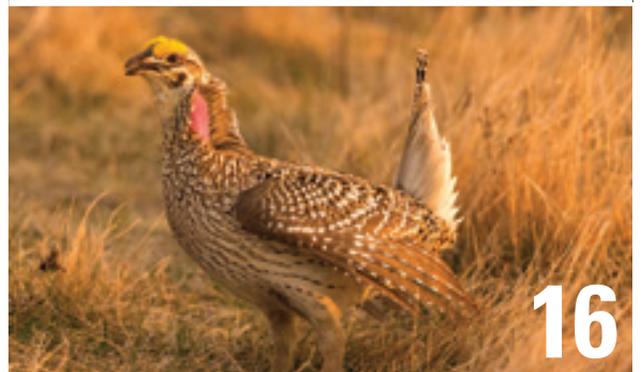
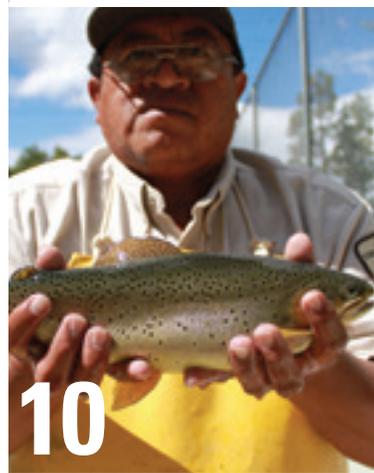
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On the cover: Two children fish with their father at Kenai National Wildlife Refuge in Alaska. STEVE HILLEBRAND/USFWS





Greg Sheehan, Principal Deputy Director of the U.S. Fish and Wildlife Service

Nature Continues to Bring Us Together

From the earliest days of our nation, the love of nature and a connection with the outdoors, have always been an integral part of our identity as Americans. Which is why it's not surprising that even as our society continues to change and diversify in the 21st Century, those values endure.

Our passion for wildlife and wild places, and the lengths to which we go to pursue that passion, are reflected in the preliminary findings of the 2016 National Survey of Fishing, Hunting and Wildlife-Associated Recreation.

As it has since it was first conducted in 1955—and every five years since—this detailed and rigorous survey is based on interviews with thousands of Americans from all walks of life.

The preliminary 2016 findings should hearten everyone who cares about the health of our wildlife, natural landscapes and people.

In 2016, more than 101 million Americans—a staggering 40 percent of the U.S. population—participated in some form of fishing, hunting or other wildlife-associated recreation such as birdwatching or outdoor photography. And in doing so, we spent an estimated \$156.3 billion on equipment, travel, licenses and fees. These expenditures represent 1 percent of the nation's Gross Domestic Product—creating and supporting thousands of jobs and communities across the nation.

More than 35.8 million Americans went fishing in 2016, while 11.5 million hunted and 86 million watched wildlife. This means that 14 percent of Americans 16 years of age or older fished, 5 percent hunted and 35 percent participated in wildlife watching.

By the Numbers



These findings are good news for the nation's economy. Revenues from the sale of licenses and tags, as well as excise taxes paid by hunters, anglers and shooters continue to support vital wildlife and habitat conservation efforts in every state and U.S. territory. And on a personal level, a growing body of scientific research suggests that we're all healthier, happier and better off in myriad ways when we spend time in nature.

As a lifelong hunter and angler, and budding wildlife photographer, I can attest to that. One of my focuses is to keep hunters and anglers active, which increases support for conservation.

You can do your part, too—drop a line in the water or take friends and family on their first hunt. You'll find a deeper connection with both nature and people, and at the same time help support vital conservation work across the nation.

That's something we can all get behind. □

Bald Eagle Trio Garner International Attention

A live-streaming webcam has chronicled the history of a rare family of bald eagles on Upper Mississippi River National Wildlife and Fish Refuge to audiences all over the world.

This unique story began in 2004 when a bald eagle pair built a nest near Mississippi River Lock and Dam 13 in northwest Illinois. Hundreds of bald eagles congregate nearby in winter to dine on the sushi buffet that floats in the dam's tailwaters. Tragedy and triumph have been recorded in the 14 years of nest history. The eagles have been resilient with new mates recruited and many eaglets fledged.

The 2012 nesting effort exposed a family discourse that changed the nest history. Two eggs were laid, but the male would neither incubate them nor bring food to the nest for the female. She had to leave the nest to feed, so both eggs were exposed to frigid temperatures for hours. Surprisingly, both hatched. Tragically, both chicks tumbled off the nest edge at 4 days old.

The female consequently discarded the dysfunctional male for a new mate in 2013, but the old mate decided to hang around. The proud new parents fledged two eaglets while the outcast mate perched nearby. The trio continued their strained relationship in 2014 and 2015.

In 2016, the outcast mate now helped with nest building activities and copulated with the female. The rare trio reached stardom status via the webcam. The female was subsequently

named Hope, and the two males Valor 1 and Valor 2. Three nestlings were present when the webcam became damaged and success of the nest remains unknown.

Hope laid three eggs in 2017 and two hatched. The trio quickly became internationally famous with audiences from 72 countries and more than 1,000 views each from Canada, Poland, Germany, United Kingdom, France, Malaysia and Australia.

The webcam recorded a predatory attack by two marauding bald eagles on March 24 that began an hour-long battle. After battling in the nest, two entangled eagles tumbled to the ground, and the last seconds of the fight showed one eagle on top with talons embedded in the other's back. The top eagle hopped away, while the bottom one staggered out of sight. Hope did not return to the nest and searches were unsuccessful.

Random predatory attacks continued for several weeks. It was suspected that the attackers wanted to take over the nest. A bald eagle pair had nested one-half mile north of the trio, but high winds had toppled the tree in February.

The two dads lived up to their names by showing gallantry and fearlessness in raising the two nestlings. They provided round-the-clock meals of wildfowl (especially coots) and fish, and remained on high alert with one perched at the nest while the other vigilantly stood guard duty atop an adjacent tree.



USFWS

By mid-April, the random attacks had waned. Another adult bald eagle visited the nest on a couple of occasions. This eagle showed no aggression, was allowed to land on the nest edge, and seemed mostly interested in the buffet of food items scattered within. Perhaps this was an available female that had heard about the good parenting skills of the bachelors and was scoping out the décor and accommodations?

The nestlings were feeding on their own by May 1 and doing daily calisthenics of leg lifts, wing flaps and laps around the nest. One sibling was much more active than the other, which seemed content to be a couch potato.

The eaglets began venturing out onto tree limbs by mid-May. They had insatiable appetites characterized by a feeding frenzy when food arrived. Flooding on the Mississippi River provided a new

Bald eagle trio: Hope, Valor 1 and Valor 2

delicacy—plump tender baby pelicans that were being washed from island nesting colonies. The eaglets made test flights from limb to limb; final liftoff was May 30.

Upper Mississippi River Refuge has bestowed on Valor 1 and Valor 2 the 2017 “Best Eagle Dads of the Year Award” for their heroic efforts in overcoming tragedy and raising a new generation of eaglets under adverse circumstances. An international audience is looking forward to the next chapter in these two bachelors’ lives. □



WATCH ONLINE

The webcam is available in-season at <stewardsumrr.org>.

Mama Polar Bear and Cub Doing Well Thanks to Oil Company's Efforts

Hilcorp Alaska, an oil and gas exploration and production company, worked with the Service to develop plans to minimize disturbances to denning polar bears. Starting in December, the company got a chance to see how well the plans worked, and thanks to its efforts, a polar bear family was born.

"Good planning and collaboration helped turn this into a great success story," says Service wildlife biologist Christopher Putnam.

In December, Hilcorp employees noticed what they thought might be an entrance to a polar bear den under an industrial bridge to a production facility in Prudhoe Bay, Alaska. Using thermal camera technology, Hilcorp field staff confirmed the presence of a female polar bear under the snow.

Workers immediately closed the road and worked with the Service to develop a plan that allowed only essential traffic to pass.

A disturbance right after a female polar bear enters her den may cause her to prematurely abandon the site. Even more risky is the den-emergence period in the spring when a female polar bear brings her new cubs out into the world. Disturbance then can cause a female polar bear to abandon the den site before the cubs are ready to survive in the harsh Arctic climate.

Through the entire process, Hilcorp carefully managed its activity and maintained close communications with the Service. It also agreed to close the nearby Endicott causeway to all traffic for a time once the family emerged from the den.

"I've worked in the area for several years, and while you prepare and plan for polar bears in the area, this was the first time we had encountered a situation like this," says Beth Sharp, Hilcorp's wildlife specialist. "It's great that we were able to have a positive result in this situation. Seeing a healthy mom and cub emerge is what we were all working toward."

The unusual location of the den prompted the company to enlist the help of Polar Bears International and Brigham Young University. They are currently conducting a long-term polar bear behavior study at denning sites. The study is supported by both BP Alaska and Hilcorp. Most dens that have been studied are far from human activity and don't require real-time observation. This den required something new—livestreaming from a remote camera hosted by a Hilcorp facility approximately a mile from the den for round-the-clock monitoring.

"We set up the cameras to give Hilcorp personnel the ability to see when the female emerged and when the family had left the den site," says Geoff York of Polar Bears International.

"The industrial location—adjacent to a bridge and within clear site of an active well pad and a full production facility—is quite different from the other sites we've studied," he adds. "It will help us better understand polar bear denning behavior and sensitivity to disturbance, and that, in turn, will help managers within industry and the Service better protect denning bears."

On March 18, after months of no activity at the den site, the polar bear and a new cub popped out of their winter home into the bright spring sunshine. The new family spent two weeks around the den site before heading off to the sea ice to take advantage of peak spring seal hunting.

"We were so fortunate to have the ability to monitor the den from our facility 24-7," says Sharp. "Knowing what was going on at the den site and coordinating with the Service helped us ensure we didn't disturb the bears." Hilcorp resumed activity only after the family had left the area, and the company received the green light from the Service.

"Our goal was to ensure that the bears were able to stay at the den site as long they needed and depart when they were ready," says Putnam. "Working together we successfully accomplished that goal."

Adds Hilcorp's Sharp, "It was so amazing to see the new mother and her cub pop into the world for the first time from their snowy cave." □

The female polar bear at Hilcorp.



The Road to a Future Filled with Monarchs

Managing rights-of-ways for monarchs and other pollinators is part of the “all hands on deck” conservation strategy to ensure a future filled with monarchs. In May, the Illinois Department of Transportation (IDOT) joined a growing list of government allies of the monarch butterfly by adjusting its mowing routine along state highways.

IDOT crews are now mowing only 15 feet on either side of state roadways. By reducing the amount of land being mowed, IDOT hopes to encourage the growth of critical plant species, such as milkweed, the only food source for monarch caterpillars. Exceptions will be made when necessary for motorist sightlines and to control invasive species.

“As one of the largest landowners in the state, IDOT appreciates its tremendous responsibility to act as stewards of the environment,” says Illinois Transportation Secretary Randy Blankenhorn. “This simple change in our maintenance obligations will have little impact on the traveling public but will give a big assist to Mother Nature at no cost to the state.”

IDOT has taken other measures to restore native habitat along state highways, including a prairie restoration project.

IDOT’s efforts are emblematic of the sorts of on-the-ground actions being taken by local, state and federal agencies and transportation and energy



RYAN HAGERTY/USFWS

Managing rights-of-ways for monarchs and other pollinators can encourage the growth of native plant species such as milkweed (above), reduce maintenance costs, control safety hazards and improve water quality.

organizations across the country. Through the Rights of Way as Habitat Working Group, the Service is sharing ideas, best practices and other information to help these groups create new pockets of pollinator habitat that will give the monarch a fighting chance to survive. □



ASHLEY DANIELSON/USFWS

Zeta Days at the Refuge

“I have lived in Kansas all my life, but I think this is the first time I saw a live cottonwood tree,” says Helen Betweet, a Beta Phi Zeta Sorority member who, along with about 25 sorority members and their families visited Marais des Cygnes National Wildlife Refuge in Kansas during Zeta Days at the Refuge, an initiative of the Service and the African American sorority to promote outdoor recreation and environmental education.

“I would tell other sorority members, ‘Put these types of trips on your bucket list. If you are traveling to a city, check to see if you can include an afternoon or day trip to a refuge. You will not be disappointed,’” Betweet adds.

Among the sorority chapter’s activities during their Zeta Day at the Refuge, members planted native milkweed and took a ranger-led tour. The experience at Marais des Cygnes Refuge was reflected at national wildlife refuges across the country as about 400 adults and children from 18 local chapters of Service partner Zeta Phi Beta Sorority, Inc., visited national wildlife refuges and other public lands in late May.

Zeta and the Service signed a historic memorandum of understanding in 2015 to work cooperatively to engage urban youth in outdoor recreation, biological sciences and healthful activity in nature. Zeta Days at the Refuge brought the two partners together for some fun outdoors and reached out to people not always included in the conservation conversation. »

? MORE INFORMATION

For more information on managing rights-of-way for monarchs, visit bit.ly/2rugQwm



WETTE LOPEZ

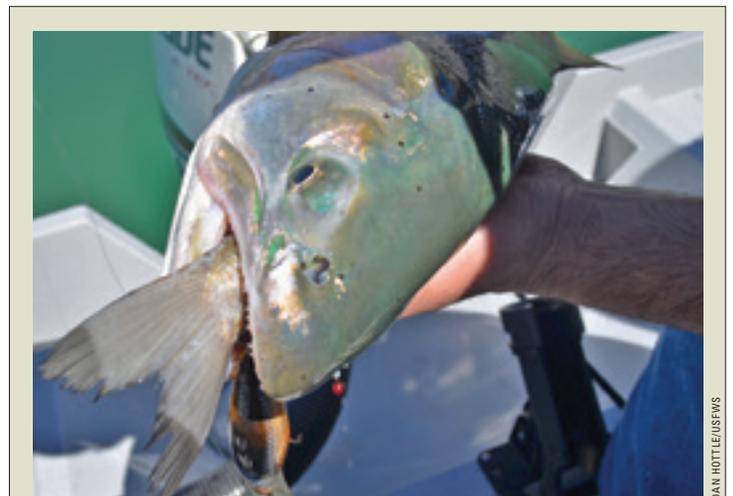
“We encourage our members and youth to lead healthy lifestyles and to make informed decisions about education and community involvement,” says Dr. Mary Breaux Wright, international president of Zeta Phi Beta Sorority. “Our partnership with the U.S. Fish and Wildlife Service facilitates healthy outdoor recreation as well as learning about careers and community engagement related to conservation.”

At Arthur R. Marshall Loxahatchee National Wildlife Refuge, members of Zeta Phi Beta and its youth auxiliary learned about the importance of the Everglades ecosystem to biodiversity and its impact on our daily lives, and took part in interpretive hikes, nature scavenger hunts, archery and craft projects.

At other refuges, Zetas engaged in kayaking, observing and photographing wildlife, removal of invasive species and environmental education.

“We are pleased to partner with Zeta Phi Beta Sorority in initiatives like Zeta Days at the Refuge,” says Cynthia Martinez, Chief of the National Wildlife Refuge System. “It is critical that a new generation of conservation stewards are nurtured among people who don’t know much about national wildlife refuges and the Fish and Wildlife Service. We always welcome diverse communities to their public lands.” □

Zetas visit Stewart B. McKinney National Wildlife Refuge in Connecticut.



DAN HOTTLE/USFWS

Comeback Trail

Thanks to more than 700 inches of Sierra Nevada snow this winter and record-high water flows, the prehistoric “monster” Pilot Peak strain of Lahontan cutthroat trout is migrating farther into native Nevada waters than it has in more than 80 years. This 26-inch adult Lahontan cutthroat trout was caught by an angler in mid-meal from a boat at Pyramid Lake. The lake-form trout can grow up to 40 pounds feeding primarily on tui chub, which are abundant in the lake.

Protecting Military Readiness and the Gopher Tortoise



CHRIS POTVIN/MISSISSIPPI ARMY NATIONAL GUARD

The gopher tortoise ranges from South Carolina to Louisiana inhabiting open longleaf pine forests, sandhills, and scrub habitats.

A first-in-the-nation conservation plan, crafted by the U.S. Department of Defense, the Service and state wildlife agencies in Alabama, Florida, Georgia and South Carolina, protects at-risk gopher tortoises while helping military bases continue training and testing missions across the tortoise's Southern turf.

The Gopher Tortoise Conservation and Crediting Strategy is like a savings account where the military can make deposits now (tortoise credits) that will be available for future use.

The goal is to keep the tortoise from needing to be listed under the Endangered Species Act, a designation that could complicate the military's training or bombing exercises. This strategy encourages conservation investments today, but should the tortoise require protection in the future, the credit strategy will allow the military to continue its mission without new conservation requirements being imposed.

"It's a unique approach to help the military balance mission activities with conservation responsibilities," says Maureen Sullivan, Deputy Assistant Secretary of Defense for Environment, Safety and Occupational Health. "We hope [it] can serve as a model for similar initiatives for other species and in other regions of the country."

Adds Cindy Dohner, the Service's Southeast Regional Director: "This crediting strategy ensures the military has the regulatory predictability it needs to carry out critical missions and training while at the same time providing conservation benefits for the gopher tortoise. This kind of solution-oriented partnership offers flexibility for the military, private landowners, public agencies and others that keeps working lands working, contributes to our nation's military readiness, and provides hunting, fishing and recreational opportunities." □

Americans Show Strong Participation in Hunting, Fishing and Wildlife Watching

Enjoying the nation's wildlife legacy is increasingly popular with many Americans, according to preliminary findings of the 2016 National Survey of Fishing, Hunting and Wildlife-Associated Recreation.

The survey shows that 101.6 million Americans – 40 percent of the U.S. population 16 years old and older—participated in wildlife-related recreation in 2016. The survey illustrates gains in wildlife watching—particularly around the home—and fishing, with moderate declines in the number of hunters nationally.

40 percent of the U.S. population participated in wildlife-related recreation in 2016.

These activities also are drivers behind an economic powerhouse, where participants spent \$156 billion—the most in the last 25 years, adjusted for inflation.

"This report absolutely underscores the need to increase public access to public lands across the United States," says U.S. Secretary of the Interior Ryan Zinke. "Hunting and fishing are a part of the American heritage. As a kid who grew up hunting and fishing on public lands who later took my own kids out on the same land, I know how



Wildlife watchers spent \$75.9 billion in 2016 on their hobby.

important it is to expand access for future generations. Many folks east of the Mississippi River rely on friends with large acreages or pay high rates for hunting and fishing clubs. This makes access to wildlife refuges and other public lands more important.”

The survey, the 13th in a series conducted nearly every five years since 1955, shows substantial increases in participation in wildlife watching—observing, feeding and photographing wildlife. The report indicates these activities surged 20 percent from 2011 to 2016, to 86 million participants. Expenditures by wildlife watchers also rose sharply—28 percent—to \$75.9 billion. Around-the-home wildlife watching increased 18 percent to 81.1 million participants. More modest gains were made for away-from-home wildlife watchers: a 5 percent increase to 23 million participants.

More Americans also went fishing. The report indicates an 8 percent increase in angling participation to 35.8 million. The greatest increases in participation—10 percent—were seen in the Great Lakes area. Total expenditures by anglers nationwide rose 2 percent to \$46.1 billion.

Hunting participation dropped by about 2 million participants but still remained strong at 11.5 million hunters. Total expenditures by hunters declined 29 percent to \$25.6 billion. However, expenditures for related items such as taxidermy and camping equipment experienced a 27 percent uptick, and hunting trip-related expenses increased 15 percent.

“Hunters and anglers form the foundation of wildlife conservation in the United States, consistently generating more funding for habitat and wildlife

management than any other source,” says Service Principal Deputy Director Greg Sheehan. “Industry, federal and state fish and wildlife agency initiatives that focus on hunter and angler recruitment, retention and reactivation are crucial to sustaining these conservation dollars and ensuring the next generation of wildlife enthusiasts has

the opportunity, access and awareness to pursue these time-honored American traditions.”

This year’s survey also gathered two new categories of data: archery and target shooting. Findings show there are more than 32 million target shooters using firearms and 12.4 million people engaged in archery, not including hunting.

As a partnership effort with states and national conservation organizations, the survey has become one of the most important sources of information on fish and wildlife recreation in the United States. Federal, state and private organizations use this detailed information to manage wildlife, market products and look for trends. Conducted by the U.S. Bureau of the Census, the survey is based on a 22,416-household sample surveyed through computer-assisted telephone and in-person interviews. □



MORE INFORMATION

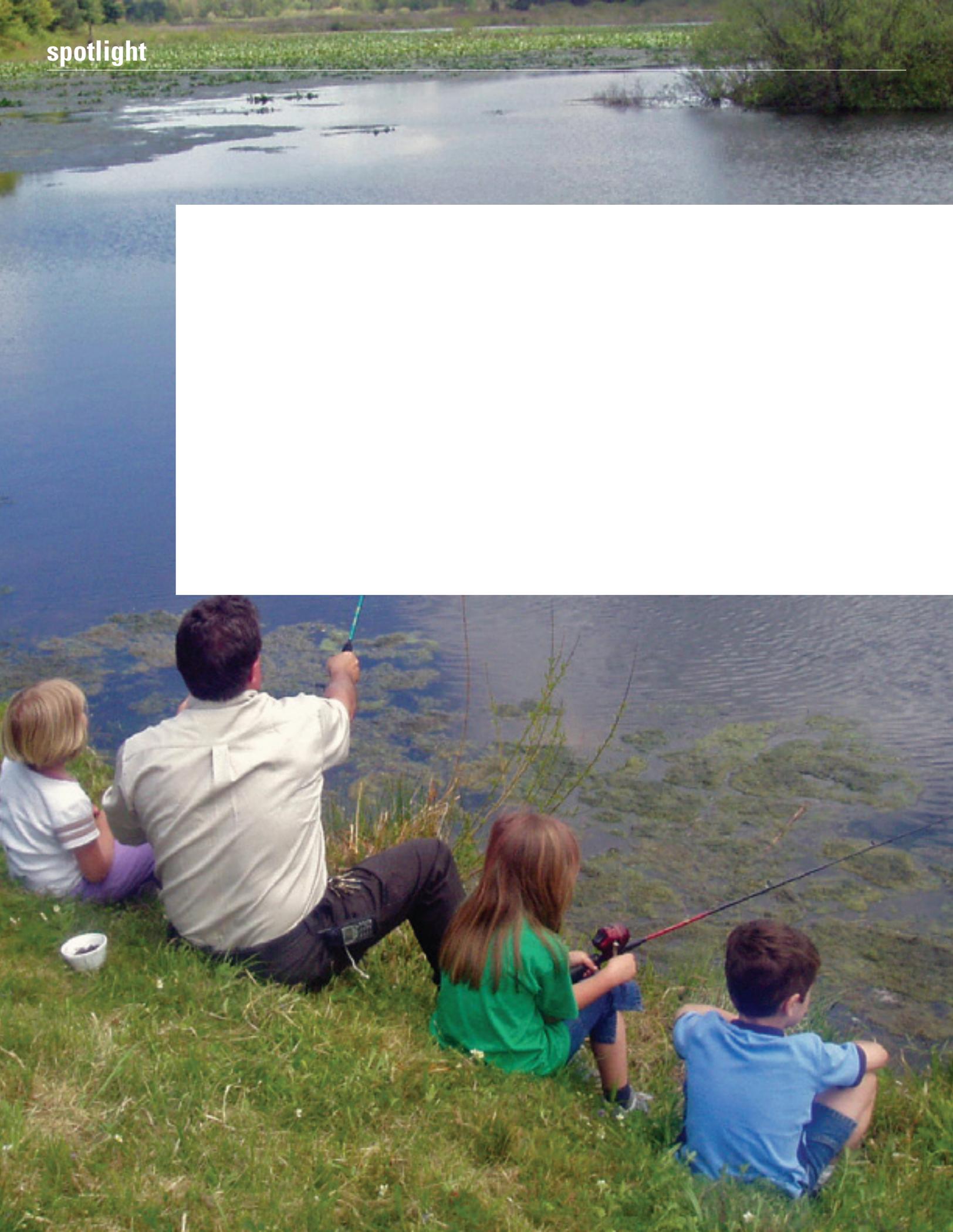
Read the survey at bit.ly/2x9MJNC.



There was an 8 percent increase in angling participation to 35.8 million.

BRETT BILLINGS/USFWS

spotlight



HAVE

*Public lands offer
much in the way
of outdoor recreation*

SOME FUN

Sportsmen and -women were some of the earliest conservationists and remain among its most dependable supporters, so the Service is dedicated to encouraging fishing and hunting and other types of outdoor recreation. Hunting and fishing are well-known for teaching people to respect and value nature. They also generate billions of dollars for conservation through licensing fees, the self-imposed taxes of the Wildlife and Sport Fish Restoration Program and through the federal Duck Stamp. Outdoor recreation, including observing or photographing wildlife, hiking and boating, are also key drivers of both conservation and the nation's economy. The following stories offer just a glimpse of the Service's work for all types of outdoor recreation.



BLUE LINES YELLOW TROUT

The Apache trout has gone from anonymity to the state fish of Arizona | BY CRAIG SPRINGER



Blue meandering lines on maps of eastern Arizona tell a story about the shape of the land and the interactions people have with it. They symbolize the streams that vein off the White Mountains and pour downhill to their inevitable juncture with something larger that may sport another colorful name.

The streams form patterns on the maps that please the eye. Their names stir the imagination. There's no poverty of spirit in some of the labels: Hurricane, Moon, Sun, Stinky, Firebox, Paradise, Soldier, Crooked, Peasoup. These waters harbor some of the last remaining populations of the pretty Apache trout, found nowhere else but in streams that rim the White Mountains of Arizona.

The threatened Apache trout is named for the people. The yellow trout ornamented with black spots, a white-tipped anal fin, and sometimes a raccoon-like eye mask lives naturally only in the headwaters of the White, Black and Little Colorado rivers near the New Mexico border.

The fish has been well known to anglers for some time. Local farmers and ranchers made forays into the high country in summer to catch them. One correspondent, simply "J.H." from Show Low, >>

Bradley Clarkson, a White Mountain Apache Tribe member and Service apache trout biologist, holds a brood fish.

Arizona, wrote in a July 1886 issue of the *St. John's Herald*: "I speak truly when I say it was the most enjoyable period of my life." He recounted how he and his pals caught scads of Apache trout from the White River during a prolonged summer outing.

The Apache trout had become known to science a few years earlier, in 1873, when it was collected by members of the U.S. Geographical Survey, though it was wrongly identified as a Colorado River cutthroat trout. Other scientists collected the yellow trout from the White Mountains from time to time, but it wasn't until a century later in 1972 that the fish was properly recognized as a unique species and assigned its current scientific and common names. A year later it was placed on the endangered species list.

That recent scientific description doesn't mean that others had not already known that the trout was something significant. The White Mountain Apache Tribe was prescient, the first to conserve the fish, closing Apache trout streams to angling in the 1940s. By that time, the trout had been reduced to a mere 30 miles of streams all within the confines of their Fort Apache Indian Reservation.

Places everywhere have their scars, and the White Mountains are no exception. The loss of habitat from excessive timbering was detrimental to the native Apache trout. Poorly managed cattle trampled stream banks and reduced shrubs that would cool trout waters in their shade. Abusive land uses accelerated topsoil erosion into Apache trout streams. High sedimentation during the spring runoff affected trout reproduction; fine sediments clogged porous gravel beds where oxygen-rich water should percolate over incubating Apache trout eggs.

To make matters worse, non-native brown trout, brook trout and rainbow trout were stocked into Apache trout streams. All three species out-compete the native fish for food and spaces to live, and rainbow trout hybridize with Apache trout.

Over the last 75 years, starting with the actions of the White Mountain Apache Tribe, followed by its work with the Fish and Wildlife Service, U.S. Forest Service and Arizona Game and Fish Department, Apache trout populations have rallied. The future looks sunny for the species; it could one day be the first sport fish to be recovered and removed from federal protection.

Conservation work continues. Cattle have been fenced out of select Apache trout streams within the Apache-Sitgreaves National Forest and along streams within the Fort Apache Indian Reservation. Non-native sport fishes are no longer stocked near Apache trout waters. Alchey-Williams Creek National Fish Hatchery, located on the reservation, continues to raise Apache trout for sport fishing. Apache trout from the federal facility are stocked on the reservation, and they are shared with the Arizona Game and Fish Department to be stocked in neighboring national forest waters. Many streams are open to anglers.

Service biologists remain shin-deep in Apache trout work, striving toward that goal of recovering the species. They expend a great deal of energy removing non-native brown trout and brook trout from Apache trout waters. They accomplish this with backpack-mounted electrofishing gear with which the unwanted fish are stunned and then netted from high mountain streams.

A new technology known as environmental DNA guides their work. Fish shed skin cells and excrete bodily waste, both of which contain the animal's DNA. That DNA can be detected in the water. Biologists analyze stream water from several sites over long reaches, and the results specify which stream sections contain the unwanted, non-native trout.

Periodic monitoring continues. Where unwanted, non-native fishes occur downstream, barriers keep them at bay below and the pure Apache trout populations above. barriers exist on 23 creeks.



USFWS



CRAIG SPRINGER/USFWS

(Top) The Service's Jake Washburn and Inez Clawson of the White Mountain Apache Tribe Game and Fish collect eDNA from an Apache trout stream. (Bottom) Alchey-Williams Creek National Fish Hatchery produces Apache trout.

At present, Apache trout exist in 28 populations and swim in 170 miles of stream. The lot of this native fish has changed significantly over time. In what is really only a brief period, the species has transcended from anonymity and mistaken identity, to the point when the White Mountain Apache Tribe waded in to protect this key part of their natural heritage to becoming the official state fish of Arizona. □

CRAIG SPRINGER, External Affairs Southwest Region



HUNTING

AND

MORE

*Service's Partners for
Fish and Wildlife Program
helps Michigan landowners
turn land into wildlife havens*

by JIM HUDGINS

What do you get when, over a 19-year timespan, you combine two landowners, three biologists, 120 acres of land and a passion for hunting, fishing and wildlife? A series of successful projects by the Service's Partners for Fish and Wildlife Program that have restored more than 80 acres of habitat for many species of wildlife including migratory birds and a number of game species.

This diverse mix of wildflowers and grasses provides food and cover for native pollinators, migratory birds and game species, such as white-tailed deer.

In 2012, when Steve Lamier purchased 120 acres in Hillsdale County, Michigan, he followed the lead of previous landowner and friend Bill Prince and engaged the Partners Program to do what it does so well—work with landowners to restore wildlife habitat on private lands.

Lamier, with wife Rebecca, notes, “We fell in love with this gorgeous piece of ground; the wetlands, fields and trees.” They took over where Prince left off—continuing to work with the Partners Program to restore wetlands—and managed the land with new energy and excitement.

Partners biologist Jim Hazelman gave technical and financial assistance to restore two wetlands—Prince also restored several wetlands—and provided the Lamiers with advice on how to manage their land for wildlife. “I’m a city boy,” says Lamier. “We try to do whatever we can to enhance the land.”

With guidance from Hazelman and Prince, and his own passion to improve the land, Lamier has drawn down a wetland to recharge the vegetation, repaired berms, controlled invasive species such as autumn olive, pruned the trees and maintained the grasslands. He hopes to continue his efforts for many years to come.

Those efforts, in part, are directed at supporting the Lamiers’ passion for hunting. Both Steve and Rebecca are avid hunters of waterfowl, turkey and deer. The combination and positioning of the habitat pieces within their land make the property very attractive for wildlife, and great for hunting. Mallards and Canada geese use the wetlands and nest in the adjacent grasslands. Wood ducks use the wooded wetlands and the adjacent more-open wetlands. Wild turkeys use the woods, and each spring the toms are strutting in the grasslands. In early summer, young turkey poults move among the grasses and wildflowers, foraging for abundant insects. White-tailed deer find food and shelter in the woods and in the blocks of planted pines and grasslands. These deer also forage on the grasses and flowers. All of these game species use the wetlands for water, food and cover. Each of these key habitat pieces has been improved through the efforts of the landowners combined with the technical and financial assistance from the Partners Program.

“We are privileged and very fortunate to have this land as our backyard,” Lamier notes. “In the past, I’ve driven 3½ hours to hunt and got out a few times during the season.” He continues, with a smile, “Now I not only get to sleep in, but I can hunt almost every day in season for a couple >>



Rebecca and Steve Lamier, standing with Partners biologist Jim Hazelman, are now proud stewards of more than 80 acres of wildlife habitat restored through the Partners Program.

of hours in the morning. And, it's much easier for Rebecca and me to coordinate our schedules so we can get out and hunt together."

Lamier has added several elevated deer blinds, fixed at key spots on the property. He also has a mobile blind and tree stands that can be set at the start of each season. And he has developed some food plots, to make the land even more attractive to wildlife.

As passionate as he is about hunting, when Lamier describes his goals, he says they are working to provide good habitat for all animals and looking at a bigger picture. "It's truly amazing in spring waterfowl migration, to see the diving ducks we don't see in the fall — canvasbacks, 'bluebills' [scaup] and mergansers — and the songbirds and sandhill cranes."

Noting that they derive great pleasure in giving back, Lamier recognizes that maintaining habitat on this land helps to

filter water that eventually flows to Lake Erie, and absorbs carbon through the trees and grasses, which improves air quality. "Ultimately this is about good stewardship — leave it better than you found it. We've taken Bill's vision and tried to improve it."

Bill Prince began working on that vision in 1999 when he approached Partners biologist Steve Dushane. Prince saw potential for the property, which consisted mostly of highly erodible cropland, drained wetlands and a 17-acre woodlot. A portion of the land was enrolled in the U.S. Department of Agriculture's Conservation Reserve Program and Prince turned to the Partners Program for assistance with wetland restoration.

Prince's first project was to restore a 14-acre wetland that remains in place today, nearly 18 years after the project's completion and eight years after his habitat development agreement expired. Additional projects followed in 2002, 2007 and 2011. Partners biologist Hazelman helped Prince restore two wetlands in the woodlot and plant nine acres of trees, all with the goal of improving and connecting habitat for the federally protected copperbelly water snake. Another Partners biologist, Meri Bryant, assisted Prince in establishing 53 acres of grassland, focusing on a diverse stand of native warm-season grasses and wildflowers. This stand benefits migratory grassland birds such as bobolinks, whose populations are in decline, as well as native pollinators including the monarch butterfly.

Given the significant loss of wetlands across southern Michigan, restoration of this habitat type has been a priority since the Partners Program began 30 years ago. As the program grew and evidence mounted about grassland declines, those habitats became a priority as well. Essentially, restoring lost habitats, such as wetlands and grasslands, is a way to help

USFWS

restore declining populations of wildlife—waterfowl, and other wetland birds, and grassland songbirds—that depend on these habitats.

Prince bought the farm from family members and remembers when the “land washed and was eroding badly.” “I enjoy hunting, fishing and the outdoors, but my goal was bigger than that,” he says. “Basically, I wanted to make the land right again.”

Looking over the land he’s known for 50 years, Prince breaks into a big smile. “I’m really proud of what it has become!” □

JIM HUDGINS, Partners for Fish and Wildlife Program-Michigan Private Lands Office, Midwest Region



Bill Prince with Partners biologist Jim Hazelman.

Partners for Fish and Wildlife

“Working with Steve, Jim and Meri through the Partners Program really helped me along the way,” Prince says.

Throughout its history, Partners biologists have found and built relationships with motivated landowners, like the Princes and Lamiers, and have worked with them to voluntarily restore wildlife habitat. With little fanfare, the Partners Program has moved forward, an acre at a time, to improve habitat for a wide range of declining species. Those biologists have found that while all landowners have their own interests in and visions for a piece of property, ultimately, as Steve Lamier says, most want to be good stewards of their land for future generations.



Grassland habitat restoration is ultimately about helping to increase wildlife species, such as bobolinks, whose numbers have decreased due to habitat loss.

*Like other national
wildlife refuges, Upper
Souris National
Wildlife Refuge holds
many attractions*

WHAT A SIGHT

story by MICHAEL D'AGOSTINO

photos by TIM ZELTINGER

Wild turkeys eat acorns, insects, fruits, nuts, and seeds during daylight hours, while roosting in the refuge's trees at nighttime.

Wetlands and waterfowl, marshes and moose, grasslands and great horned owls are just a few of the conspicuous and camouflaged sights to behold on the 32,092 acres of Upper Souris National Wildlife Refuge in north-central North Dakota that draws more than 100,000 visitors annually.

One repeat visitor to Upper Souris is Kim Fundingsland. “I’ve been visiting refuges since as long as I can remember walking... ‘cause my dad was big into hunting and fishing and outdoor activities. So, I was exposed to national wildlife refuges at a very young age,” says the 64-year-old Fundingsland, a local news writer born and raised in North Dakota.

From hunting and fishing to wildlife photography, he enjoys a variety of outdoor activities on wildlife refuges in North Dakota, Montana and Wyoming.

What are the biggest draws to Upper Souris?

“It’s fishing and enjoying nature in as natural an environment as you could find in today’s world,” notes Fundingsland.

Tim Zeltinger agrees. The 55-year-old, who lives near Upper Souris, enjoys both fishing and photography on the refuge, where he also brought his son and his son’s fellow Cub Scouts over the years so the youngsters could enjoy Upper Souris the same way Zeltinger had as a youth.

“I grew up in a single-parent home—my dad had passed away—so we had some local people that kind of took me and my brother under their wings,” Zeltinger

explains. Fishing with older mentors at a young age made Zeltinger keenly aware of the many modern threats facing America’s natural places.

“To me the refuge is kind of untouched territory,” explains the award-winning self-taught photographer. “It’s not just wildlife,” Zeltinger adds. “Trying to get untouched nature shots is getting tougher and tougher.”

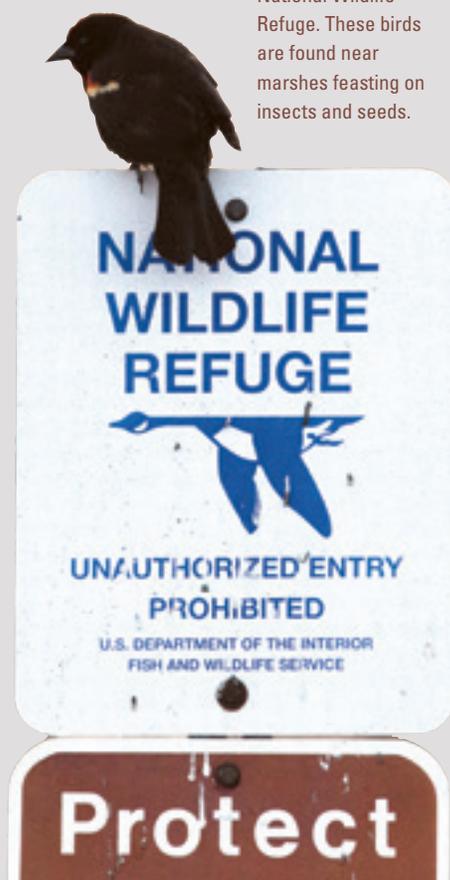
Zeltinger often frequents Upper Souris and nearby J. Clark Salyer National Wildlife Refuge to capture nature’s many spectacles, from dancing sharp-tailed grouse to bedazzled night skies,

And what else brings visitors in addition to fish and photography? Birds!

That’s what Charles Taft of the Souris Valley Birding Club experiences firsthand. The club, founded in the mid-1990s, includes 15 active participants and has had close to 100 members.

Taft has been visiting Upper Souris for decades and made friends with visitors from as far as the West Coast. Many return year after year, just like the birds they come to watch. >>

A red-winged blackbird rests atop a refuge sign at Upper Souris National Wildlife Refuge. These birds are found near marshes feasting on insects and seeds.





Two sharp-tailed grouse dance in the dense grasslands of Upper Souris National Wildlife Refuge. The courtship display and gathering, where males compete to attract females, is called a “lek.” Visitors can reserve blinds to view these ancient avian rituals on the refuge each spring.

“We got acquainted with a couple from the Los Angeles area,” Taft explains. “They spend maybe six months of year on the road and their passion is predominantly bird photography.”

Taft has lived in North Dakota since 1972 and aims to visit all the national wildlife refuges in the state. He’s a retired pastor who studied geology, so nature has always been close to his heart. His wife completed several botany courses, so exploring the natural world together suits them well.

“We’ve done a lot of traveling and a lot of birding. And, well, anything is fair game: If it’s a rock, I’ll look at it. If it’s a flower, my wife looks at it. If it’s a bird, we both look at it,” Taft says with a chuckle.

Their refuge adventures take them across the United States. Taft and his wife particularly enjoy auto tours. Driving across the country in their 1997 Volkswagen Eurovan camper—from Alaska to Arizona—the Tafts enjoy the unique experience each national wildlife refuge provides and the captivating habitats each protects.

Refuges provide a tranquil, solitary getaway. “We need places where you can go so that you can get some idea of what the land looked like and what it is capable of looking like,” Taft adds.

North Dakota is no exception. “We do have some grassland birds that are easier to find on the refuges than other places” Taft notes. “We have five big refuges within let’s say an hour and 15 minutes’ drive from Minot. We’re a great location to enjoy them.”

For the Tafts, traveling the country to relish rare and ravishing plants, birds, and habitats has become a lifelong hobby. “Over the years, we’ve certainly come to appreciate the wildlife refuges,” Taft concludes. “We’re kind of national wildlife refuge junkies.”

Ron Martin, a 60-year-old North Dakota native and fellow birding enthusiast, wholeheartedly agrees.

“One thing that birders say to me when they come here from other states,” Martin explains, “is they’re just astounded at the sheer number of birds at some of these refuges.”

Indeed, North Dakota is home to a large swath of the Prairie Pothole Region, which spans portions of South Dakota, Minnesota, Iowa and Montana. A mix of grasslands and small, ephemeral, pothole-like wetlands provide breeding habitat for more than 300 bird species including millions of waterfowl. About half the ducks in the United States come from this region, known as North America’s “Duck Factory.”

Martin has been frequenting Upper Souris since 1981, when he started volunteering in Breeding Bird Surveys organized by the U.S. Geological Survey. These surveys take him throughout the state. But Martin’s birding exploits also take him across the continent, visiting refuges in Texas, Florida, Indiana, Minnesota, South Dakota and Montana.

A lifelong North Dakotan, Martin grew up on a farm and works in manufacturing. He became interested in nature at a young age, particularly after a trip to Honduras in 1979 during college, where his faculty-leader was an avid birder.

“I have lots of birding friends who’ve been to many refuges, and I run into them occasionally,” Martin adds. “There’s a group of pretty serious birders that are pretty active on eBird and social media, and I run into those people pretty regularly.”

He recently helped create a Friends organization in 2016 with several community members. The Friends of the Upper Souris Loop Refuges is a 501(c)(3) nonprofit supporting habitat maintenance and outdoor recreational activities for Upper Souris and J. Clark Salyer. From bird hikes to snowshoeing, the new group plans to provide a variety of volunteer opportunities for locals and visitors.

Never been to a refuge before? No problem, says Martin.



MORE INFORMATION

Find your nearest national wildlife refuge <fws.gov/refuges/zipCodeLocator/index.cfm>

“Get your binoculars and check it out!” he adds. From rare birds to wily rabbits and budding blossoms, life abounds and adventures await. “Get out there and give it a try!” ■

MICHAEL D’AGOSTINO, External Affairs,
Mountain-Prairie Region

(Below) A thick fog hangs over Lake Darling at Upper Souris National Wildlife Refuge. The lake is a productive fishery and habitat for waterfowl and migratory birds, including snow geese in autumn.





K. THEULE/USFWS

Male yellow-headed blackbirds sit on the fence next to a water hole on the Pixley Ditch at Cokeville Meadows, Wyoming.

Tips for birdwatching

Now that summer is upon us, and our favorite birds have returned to our local backyards, refuges and parks from their far-flung journeys, some bird-watching tips might be in order. Bird watching is a relatively simple activity that always rewards the careful viewer, no matter your skill level.

□ Go outside! This may seem obvious, but the best way to watch birds is to get outside as much as possible (although there can be much profit in watching birds through your window, too, especially if you have a bird-friendly backyard habitat). The more you are outside, the more you will get to know where and when the birds are likely to be.

□ But good bird watching begins inside. While most bird watching is done outside, you can greatly improve your experience from the comfort of a cushy couch. Field guides, online resources, books, bird sound CDs and more can all provide crucial information.

□ Look for more than just birds.

□ Now that you have a feel for your surroundings, you will start to learn where to look. Birds can be hard to locate. It might be hard to pick out a bird on a shaded branch, so look for motion, which can be easier for the eye to pick up on. You might see some more in the early morning, or at dusk. Many birds also like edge habitat or open areas close to cover.

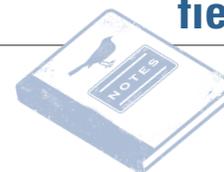
□ Don't just bird watch, bird listen. Many times birds are heard before they are seen, especially in the summer, when the leaves are out. Many experienced bird

watchers bird by ear as much as by eye. At first, the songs may seem like a cacophony of indistinguishable sounds, but with practice, you will be able to hear that that flash of yellow in the trees was a pine warbler, not a prairie warbler.

□ Be colorblind. Many times the color is the first thing that people use to identify birds, but it can also be misleading. For instance, a blue bird may appear grayer under cloudy conditions. Pattern can be a good indicator. Does it have a pattern on its head? Are the wings solid-colored? Other helpful indicators are size, shape and behavior. Have fun!

□ Bird watching offers many benefits, including exercise and stronger observation skills. But the key is to have fun.

CHRISTOPHER DEETS, Migratory Bird Program, Headquarters



Spring Ritual Leaves Lasting Impressions | *by* CLIFF SCHLEUSNER

Spring: It's the most wonderful time of the year in New Mexico. The woods are alive with sights and sounds, none greater than the courtship display of wild turkeys. New Mexico is graced with three of the six subspecies of the wily bird—Rio Grande, Merriam's and Gould's. More than 14,000 hunters go afield each spring during turkey hunting season trying to fool a strutting tom into shotgun or bow range.

For the uninitiated, it's more difficult than it appears to outwit a wild turkey. And you can count me among those who spend some spring days sitting stock-still in the ponderosa forest on a cold morning yelping and cutting with a box call at daybreak hoping to hear that signature response sound that speaks to turkeys nearby. Turkey hunting requires alertness and awareness—a Zen-like living in the moment—like no other endeavor.

Lucky for me I had the privilege to be in the woods this spring once again with my aging father and my teenage son. With my boy, I was doing what my dad has done with me going on 45-plus years. It has become ritual with my family and many others alike.

But were it not for conservation, that ritual may have never come to be. There was a time that wild turkey faced extirpation from unregulated market-commodity harvest and ruined habitats. The woods were hushed in April. The tide turned 80 years ago with the passage of the Wildlife Restoration Act of 1937, commonly called the Pittman-Robertson Act.

Few folks actually enjoy paying more in taxes, but you can count hunters among those who do. The Wildlife Restoration Act was supported by sportsmen and -women, state fish and game agencies, and industry to tax firearms and ammunition with the proceeds going specifically to wildlife conservation.

The outcome has been nothing short of remarkable: State agencies have for 80 years been assured of a steady stream of funding based on license sales and purchase of hunting gear. It's no coincidence that the New Mexico Department of Game and Fish began trapping and relocating wild turkey in 1939, two years into the new law, to ensure the expanding population was composed of genetically robust animals. In 1940, the agency bought a reach of the Rio Cebolla in the Jemez Mountains for waterfowl conservation, today's Fenton Lake State Park. That was followed by the purchase of an eight-mile reach of the Cimarron River and adjacent uplands and many other wildlife management areas across the state, including large tracts of short-grass prairie, prime lesser prairie-chicken habitats. The law funded scientific wildlife research, habitat management and restocking of wildlife. The agency was the first in the country to capture and relocate pronghorn at a time when the population was an anemic 2,400 animals. All this was facilitated by a tax on sporting arms.

In 1950, the Sport Fish Restoration Act was added to the mix to do for fish what the Pittman-Robertson Act did for wildlife. In eight decades' time, more than \$19 billion has been returned to the states for conservation.

When you buy that new turkey gun, arrows or a new bow, a box of shotgun shells or fishing tackle, you should know you are making an investment in conservation's cycle of success. As much as 11 percent of your purchase will go to state fish and game agencies and be returned to you in the form of science-based wildlife and fisheries conservation and management. You'll help pay the salary of a game warden; you will buy fuel for aircraft that carry wildlife biologists who conduct aerial big game or waterfowl surveys. Your money will feed captive-



Cliff Schleusner holds a Merriam's turkey while his dad Cliff Sr. looks on.

raised Rio Grande cutthroat trout destined to be restored to a high mountain stream. And even if hunting and fishing are not your thing, the conservation supports plenty of nongame wildlife and better stewardship of the nation's natural resources.

In New Mexico, more than 200,000 people annually buy hunting and fishing licenses. This supports more than 7,900 jobs contributing more than \$800 million in spending and labor while putting another \$106.5 million back into the public coffers as income and sales tax revenue.

But the greatest dividends for me have immeasurable value: the splendor of watching the first light of day awaken the woods; the sound of a talking tom turkey fills the air from the ridge above me while I sit next to those who I love the most. I will never grow tired of these experiences. □

CLIFF SCHLEUSNER, Wildlife and Sport Fish Restoration Program, Southwest Region

PEOPLE BEHIND A STRONGER COAST

Service works to strengthen natural defenses and protect communities and wildlife from future storms

story BY DARCI PALMQUIST, PATRICIA MURPHY
and LAURI MUNROE-HULTMAN

photos by STEVE DROTER



Saltmarsh sparrows have a narrow window between monthly "flood" tides to nest and fledge their young. With sea-level rise, that window is closing.

After Hurricane Sandy struck in 2012, the Atlantic Coast was down, but it wasn't out. When the "superstorm" cleared, communities from Maine to Virginia went to work repairing an estimated \$50 billion in damage caused by record levels of storm surge and tropical-storm-force winds.

Fish and Wildlife Service staff at national wildlife refuges and fish hatcheries got busy, too—rebuilding washed-out roads, trails and dikes; clearing debris and hazardous materials from miles of coastal beach, marsh and forest habitat; fixing damaged buildings; and restoring power sources.

But they didn't stop there. In addition to the \$65 million in federal funding the Service received for recovery, the agency was granted \$102 million to strengthen natural defenses and protect communities and wildlife from future storms.

For the past five years, the Service has worked with partners and volunteers to make the coast more resilient to sea-level rise and storm surge. Hurricane Sandy was a wake-up call for the Northeast, and these are some of the folks who answered it.

Jen White: Saving Salt Marsh in the Smallest State

Protecting coastal resources—for the people and wildlife that depend on them—has to be a priority when you're in Rhode Island, a state with 400 miles of coastline and one of the highest ratios of coastline-to-land in the country.

"Having a marsh is good because it can slow down waves that would be heading toward homes," says Jen White, Hurricane Sandy coordinator at Rhode Island National Wildlife Refuge Complex.



"If we lose the marsh, that will all turn into open water and you won't have any protection."

White is looking out at the Narrow River estuary at John H. Chafee National Wildlife Refuge, where the Service and its partners, including the Coastal Resources Management Council and The Nature Conservancy, are restoring 30 acres of salt marsh using "thin-layer deposition." The method has been used widely in Gulf Coast states but is just recently gaining traction in the Northeast. The partners used the technique on 11 acres at Sachuest Point National Wildlife Refuge in 2016.

By dredging sediment from the estuary and spraying it onto the marsh, they hope to raise the elevation enough to keep up with sea-level rise and maintain high-salt-marsh habitat. Computer sensors on the dredging and spraying machines >>

"Sea-level rise is really the main issue for marshes, whether you're talking about the habitat they provide for the saltmarsh sparrow or their ability to protect coastal communities from inundation," says Jen White.

monitor the process precisely. The goal is to add six inches of elevation, which will still allow vegetation to sprout. The area will also be planted with about 35,000 plugs of marsh grasses. Marshes are valuable assets for coastal protection—they buffer wave energy and absorb water. But they also harbor an amazing diversity of species, including the at-risk saltmarsh sparrow, whose nests are increasingly threatened as the sea rises.

In a small state with a big coast, investing in high salt marsh will bring dividends for wildlife and people. □



Saltmarsh sparrows nestlings grow quickly and are capable of flight 15 days after hatching.

Matt Whitbeck: Monitoring Marsh Plants

Sea-level rise is serious enough, but couple it with subsidence, or a sinking coastline, and the effects are multiplied. This is the situation Matt Whitbeck faces as supervisory wildlife biologist at Chesapeake Marshlands National Wildlife Refuge Complex.

In Chesapeake Bay, the sea is rising three to four times faster than the global average and has already altered the landscape. Salt marshes are turning to open water, and marsh plants are invading coastal forests. At the predicted rate of sea-level rise, nearly all of the marshes at Blackwater National Wildlife Refuge in Maryland could be permanently flooded by 2100.

That would be disastrous for the plants and wildlife adapted to live in the refuge's forests, marshes and shallow-water habitats.

At Blackwater, Whitbeck and his staff survey vegetation to monitor the ecological effects of sea-level rise and sinking shorelines. By studying plants in meter plots, they can track the vegetation community and determine the dominant species and grass cover at various shoreline elevations.



"There's a Nature Conservancy preserve here, and we knew they were interested in taking action. They had a 'shovel-ready project,'" says Eric Schradung, pictured at right with Service biologist Katie Conrad and Moses Katkowski, coastal projects manager at The Nature Conservancy. "Partnerships are really crucial, and the important thing was having a plan in place."

Whitbeck is determined to respond to the changing landscape with management actions that will increase the resiliency of the salt marsh community.

"In the spirit of maintaining biological diversity, it is important to conserve salt marshes. Strictly from a conservation biology standpoint, maintaining all the parts is really the first order of business," says Whitbeck.

Yet the community benefits are just as important, especially in this time of changing conditions. Salt marshes are nurseries for fish, sponges for flood waters, and buffers for storm surge and strong waves.

By studying the changes brought on by higher sea levels and lower marshes, Whitbeck can plan management actions that benefit salt marsh plants and animals—and the human communities nearby. □

"As the land subsides and sea levels rise, some marshes are going to be able to keep pace, but many are likely to succumb. They're going to slowly drown, they're going to fragment, they're going to break apart and convert to open water."





Eric Schradling: Catching Waves in Delaware Bay

It's a windy day at Gandy's Beach, a Nature Conservancy Preserve on Delaware Bay in New Jersey, and everyone is struggling to keep their hats on. The waves are choppy, kicking up plenty of surf—perfect weather for seeing a recently built living shoreline oyster reef in action.

The reef is a natural defense against the ongoing erosion and flooding that plague this coastline and community. Historical records indicate the Gandy's Beach shoreline has eroded 500 feet since the 1930s and, with more frequent and intense storms and rising seas, the erosion rate is likely to pick up.

“All the wave energy goes up on the beach or, where there's little beach, it hits the marsh mostly at the roots,” explains Eric Schradling, supervisory biologist at the Service's New Jersey Field Office. “It just keeps hitting over and over again and creates this scalloping effect where it takes away the soil underneath the vegetation. The vegetation then slumps in and you have continued erosion.”

Since 2014, the Service and The Nature Conservancy—with help from dozens of volunteers—have built more than 3,000 feet of oyster reefs along the coast at Gandy's, seeding them with oyster spat, or young oysters. Once in place, the structures recruit new oysters and eventually become a self-sustaining reef system.

This living shoreline protects about one mile of sandy beach and adjacent salt marsh and is projected to reduce incoming wave energy by up to 40 percent.

“When a wave hits, there are a lot of nooks and crannies in the reef that dissipate the wave throughout the whole structure or deflect it to the sides or down,” explains Schradling.

By “catching” waves before they reach the shore, the oyster reef will slow the rate of erosion, leaving more land for wildlife habitat and protecting private property. □

Julie Devers: Clearing the Way for Fish and Public Safety

Just outside Centreville, Maryland, Julie Devers is waist deep in water on the side of the road. Measuring tape in hand, she is assessing one of more than 30,000 road-stream crossings in the state. She is checking culverts known to be severe barriers to fish passage.

Devers, a fish biologist with the Service's Maryland Fish and Wildlife Conservation Office, partners with the Maryland State Highway Administration (SHA), NOAA Fisheries and Maryland Department of Natural Resources to prioritize road-stream crossings for upgrade. Public safety and connectivity for fish and wildlife can be enhanced by simply repairing and redesigning these crossings.

“Highways have a maintenance schedule,” says Devers, and through their recommendations, “the SHA could replace [the culverts] when they redo the highway.”

Entire roads can be wiped out if culverts are undersized or poorly designed. Flooding from storm surges aren't able to pass through these barriers and can cause

thousands of dollars of damage to roads and property.

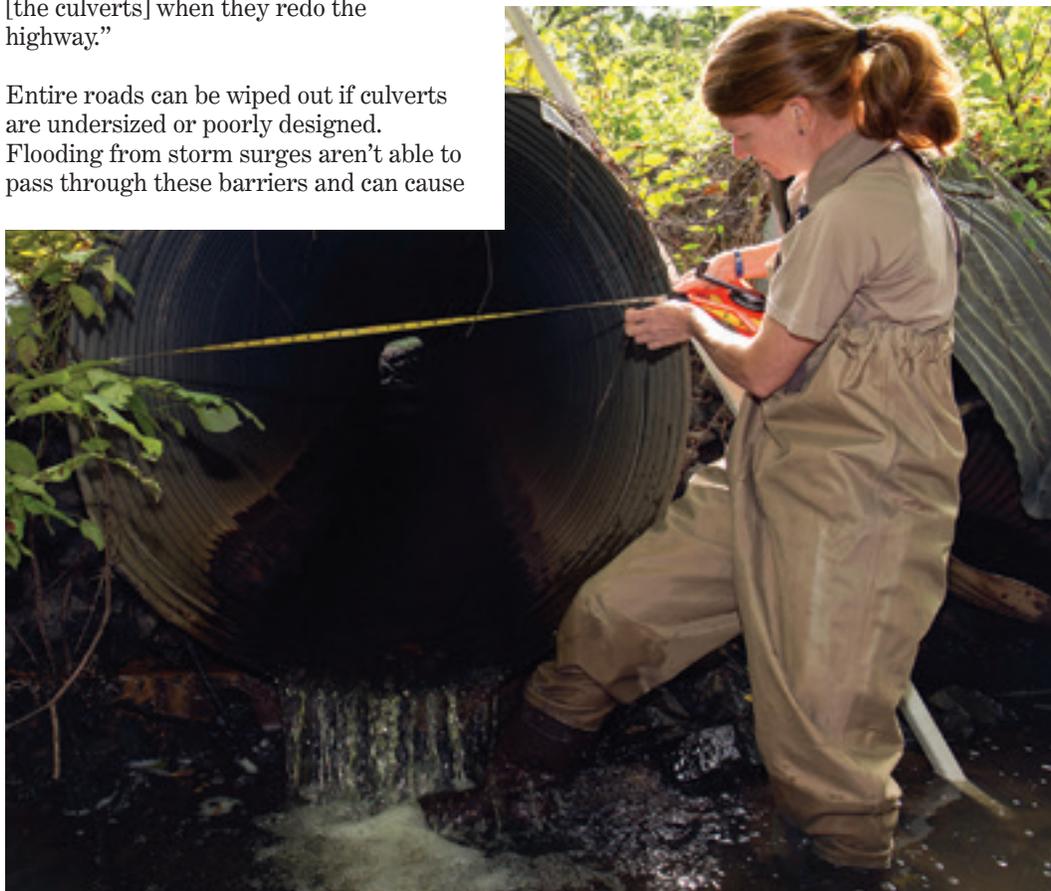
For species of river herrings such as alewife, blueback herring and American shad, the difference between a fish-friendly passageway and a severe barrier is more than a safety concern—it's life or death. These migratory species travel from salt water to fresh water to spawn. If there are blockages along the way, they can't complete their journey. Even for nonmigratory species, such as brook trout, the inability to travel upstream can divide populations, causing a genetic bottleneck.

There are an estimated 210,000 bridges, culverts and dams throughout the Northeast, spanning 280,000 miles of river. In many cases, although the structures serve important functions, old and inadequate designs make them a risk.

Biologists such as Devers are making communities more resilient by giving stakeholders tools to create needed change. Migratory fish are getting a free pass in the process. □

DARCI PALMQUIST, PATRICIA MURPHY and LAURI MUNROE-HULTMAN, External Affairs, Northeast Region

Julie Devers measures a culvert at a road-stream crossing. Undersized culverts inhibit fish passage and can cause flooding during storm events.





**No obituary.
No tombstone.
But a shining legacy.**



*Reclusive woman
donates \$800,000
to national
wildlife refuges,
parks across the
West*

by BRENT LAWRENCE

Nobody really knew Rita Poe until she died.

She moved through the final years of her life with little apparent interaction with others. Few people could recall the tall, thin woman with salt-and-pepper hair and brown eyes. She died at age 66 in her home—a 27-foot travel trailer parked in the shadows of the Olympic Mountains—of colon cancer on Nov. 16, 2015.

Though Rita's life came to a close, her legacy will live on for generations thanks to her final act of astonishing generosity.

With no known friends or heirs in her final years, Rita's closest human connection was Nancy Zingheim, the manager for SKP RV Park in Chimacum, Washington, where Rita had parked her Airstream during the summer of 2015. Their only encounters were when Rita would come in to pay her lot rent or an occasional wave on the street when she walked her dog, an Italian greyhound/basenji mix named I.G.

Then in September, Rita showed up with a question for Nancy: "Will you be the executor of my will?" Nancy agreed.

Rita died a few weeks later, and Nancy got her first look at the will. It was as generous as it was surprising: give almost everything—nearly \$800,000—to eight national wildlife refuges and four parks across the West.

On the list were three U.S. Fish and Wildlife Service refuges in her home state of California, with one refuge each in Washington, Oregon, Idaho, Utah and Texas. The four others recipients were state and national parks from Texas and Wyoming.

Rita's legacy started Nancy on a path that culminated with a 4,000-mile "trip of a lifetime" during which she learned about

wild spaces and public lands, and what made them meaningful to Rita.

Between December 2015 and April 2017, Nancy researched each refuge and park on Rita's list. She called them with questions, intent on making sure that each would live up to Rita's expectations.

A big obstacle for Nancy was fighting to collect \$374,000 owed to Rita from a long-ago inheritance. Once Nancy won that battle and the money came in, she could have considered her work nearly done. Someone else might have simply written the checks.

But not Nancy.

Over the months of searching through Rita's paperwork and photos, Nancy started to understand Rita on a deeper level. The last photo Nancy found of Rita was from a 1981 Texas driver's license. Nancy discovered that Rita was born on October 20, 1949, in California and that she was once a nurse. Nursing may have been what Rita did at some point, but it was clear that it wasn't what fulfilled her. There was an empty spot in Rita's soul that could only be filled on public lands.

Rita's devotion to the places that left a mark on her was infectious, and Nancy was determined to see firsthand where Rita's final act of generosity was going. "I had never heard of a (national wildlife) refuge," Nancy said. "I wanted the money to go to what Rita would have wanted."

So in April, Nancy took two weeks of vacation and headed south in Rita's truck to visit six of the national wildlife refuges. It was a trip Rita would have loved, Nancy said.

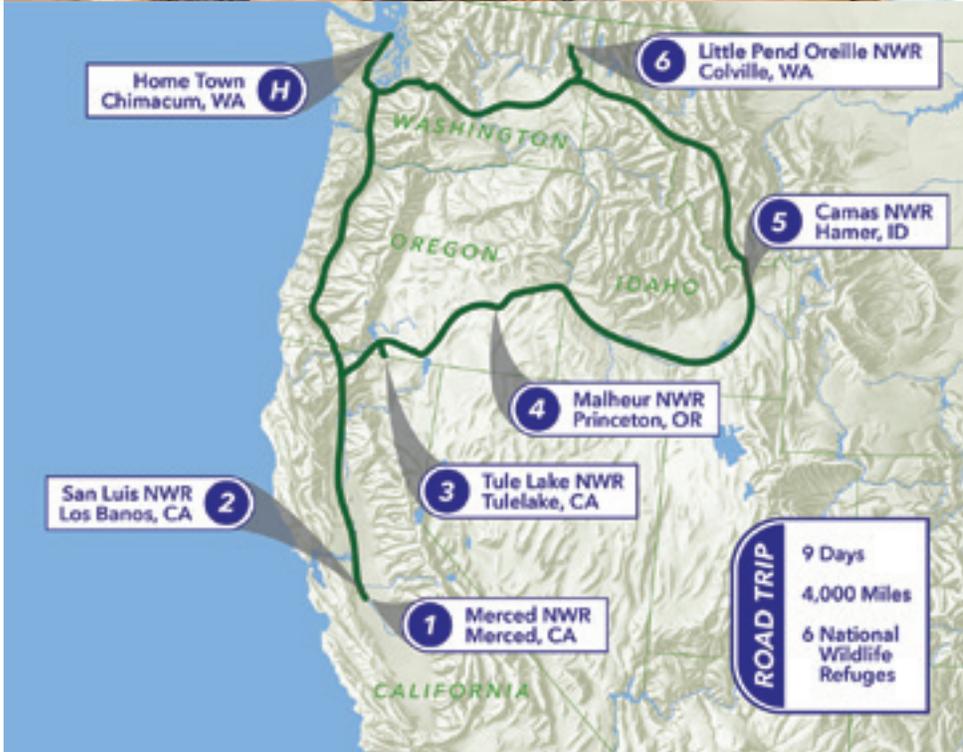
First stop was Merced and San Luis Refuges in central California. Next up was Tule Lake Refuge in northern California, then Malheur Refuge in Oregon, followed by Camas Refuge in eastern Idaho. Nancy's final stop was northeast Washington at Little Pend Oreille Refuge, her personal favorite.

Rita's devotion to the places that left a mark on her was infectious, and Nancy was determined to see firsthand where Rita's final act of generosity was going.



In April, Nancy Zingheim loaded up Rita Poe's truck and visited some of the refuges Rita remembered in her will.

Previous page images by Rita Poe: (Top) Rita's eagle photo at Camas National Wildlife Refuge. (Bottom) Rita's moose photo at Camas National Wildlife Refuge.



Rita's (now Nancy's) dog I.G. and a map of Nancy's trip.

At each stop Nancy asked what the refuge needed and how they could best use the money. Most refuge managers suggested giving it to their respective Friends of the Refuge group, which would enable the money to be used on specific local projects per Rita's intent. Malheur requested it go to the High Desert Partnership, a grassroots organization that brings together disparate groups to work collaboratively in the best interest of the refuge and the local community.

The possible projects are numerous. At Camas, for example, they need to replace dying trees around the visitor center for nesting and roosting birds, as well as finishing a pollinator garden. At San Luis and Merced, they need more family picnic areas.

At Little Pend Oreille Refuge, they could leverage the money as matching funds for a bigger grant. "Maybe an overlook/observation point with an accessible trail," refuge manager Jerry Cline says. "We want it to be something a visitor like Rita would benefit from."

Nine days and thousands of miles later, Nancy arrived back home from her solo trip. She was exhausted, but happy to see her husband and new dog — I.G., which she took at Rita's request in her final days.

Nancy finally had a true understanding of national wildlife refuges, public lands and, perhaps most importantly, Rita. On the open roads of the West, Nancy discovered how the enigmatic Rita could find her peace on public lands.

"Only one person at any of the refuges remembered Rita, and it was because of her Airstream," Nancy says. "She'd go to the refuges and spend all day taking hundreds of pictures. There weren't any [photos] of Rita; just the birds and animals she loved."

And Rita passed that love for wildlife and wild lands on to Nancy. The nondescript stranger in lot #412 at the SKP RV Park changed her life for the better.

“She made me realize that we live in nature and there are animals all around us,” Nancy says. “How often do we take time to sit and watch them? I never stopped to realize the little things like when the birds arrive. I do stop and watch the animals now.... Your refuges are quiet and peaceful. If you’ve never been, you should go to a refuge and spend some time there for Rita.”

Tracy Casselman, the project leader for the Southeast Idaho Refuge Complex that includes Camas, didn’t know Rita, but he knows a lot of people like her visit refuges.

“Rita’s relationship wasn’t with people,” Tracy says. “Her relationship was to the refuges and public lands. She found her peace out there. Her generous gift will ensure that more people will enjoy our refuges in her memory.”

Nancy keeps her memory of Rita and her love of nature close. Rita asked that she be cremated and that her ashes spread in nature away from people. Nancy held on to her ashes for months before finding the right spot near her home.

“A friend found the spot on a hike, and the next day we hiked a mile into the woods and scattered her ashes and some flowers on a hillside overlooking a lake, the mountains and trees. She can hear the birds she loved. I say hello to her every time I drive past.”

No obituary. No tombstone. But a marvelous, shining legacy.

Please, carry on the spirit of Rita with a visit to your public lands. □

BRENT LAWRENCE, External Affairs, Pacific Region

Malheur National Wildlife Refuge



BARBARA WHEELER/USFWS

By the Numbers

The gifts to the refuges and parks:

Camas National Wildlife Refuge (Idaho)	\$ 96,551.48
Little Pend Oreille National Wildlife Refuge (Washington)	\$ 48,275.74
Malheur National Wildlife Refuge (Oregon)	\$ 48,275.74
San Luis National Wildlife Refuge (California)	\$ 48,275.74
Merced National Wildlife Refuge (California)	\$ 96,551.48
Tulelake National Wildlife Refuge (California)	\$ 72,413.61
Bear River Migratory Bird Refuge (Utah)	\$ 48,275.74
Laguna Atascosta National Wildlife Refuge (Texas)	\$ 48,275.74
Hueco Tanks State Park (Texas)	\$ 72,413.61
Choke Canyon State Park (Texas)	\$ 48,275.74
Mammoth Hot Springs Campground, Yellowstone National Park (Wyoming)	\$ 120,689.35
Wild Birding Center (Texas)	\$ 48,275.74

MUSEUM
OBJECTS
COME TO
LIFE

This is a series of curiosities of the Service's history from the U.S. Fish and Wildlife Service Museum and Archives. As the first and only curator of the museum, Jeanne M. Harold says the history surrounding the objects in the museum give them life.



Ki Ferret

On April 3, we lost one of our favorite folks here at the U.S. Fish and Wildlife Service Museum and Archives, Clarence "Ki" Faulkner. He was a Service retiree, and he leaves behind a great legacy and many, many friends, this entire museum staff included. From his time in the 10th Mountain Division and 86th Regiment in Northern Italy in WWII, to his 36-year Service career as a biologist and manager, he never failed to accomplish impressive feats. He worked saving bald eagles, Kirkland's warblers and black-footed ferrets, to name a few species. In fact, a captive-bred ferret was named Ki Ferret in honor of him and was eventually released into the wilds of Colorado. Ki never knew a day without a smile on his face and a kind word to someone. I hope that Ki Ferret is as happy and beloved as his namesake was!



Undercover First!

The Service can boast one of the first undercover agents in our nation's history. His name was John Perry, and his nom de guerre was "Dopey." In the mid-1920s, he dressed up as a "bum" and worked on the waterfront of Lake Michigan with those who pandered in illegally taken waterfowl. Al Capone's organization was selling these ducks and geese on the black market to restaurants in Chicago. Those crooked folks were known as duckleggers! When it came time to prosecute the offenders, they scoffed and said that the only witness against them was a drunken bum. Well, that "drunken bum" showed up to court in his spiffy uniform, to the shock of the black-marketeers. They all pleaded guilty!

Fake Dopey

Our newest exhibit on law enforcement in the Service will include two mannequins that will depict John "Dopey" Perry in his disguise and in his uniform. The mannequins will not be behind secure glass, so all the components had to be more or less expendable. The Internet and Goodwill to the rescue! Every component to these outfits was purchased very cheaply, hand-sewn with ribbon embellishments for the jacket and seams to depict uniform jodhpur or riding pants. We even had a perfect replica of an early felt patch embroidered under the watchful eye of retiree Jerry French by his talented seamstress wife, Pat French. They look pretty convincing, don't they? Even the gun is fake, purchased from a movie prop company. Dopey will now live on at our museum.



transitions

Headquarters



U.S. Secretary of the Interior Ryan Zinke announced in June the appointment of **Greg Sheehan** to

the newly created position of Deputy Director of the Service. Sheehan previously served as Director of the Utah Division of Wildlife Resources and has more than 25 years of experience in wildlife and natural resource management with the state. Sheehan is serving as Principal Deputy Director of the Service until a Director is nominated by the President and confirmed by the Senate.

"We are grateful to have Greg Sheehan join our team and help lead USFWS as we advance a pro-conservation and more collaborative agenda at the Department," said Secretary Zinke. "His experience and proven record in wildlife service as well as his organizational management skills will be an invaluable asset to the Service and the Department."

On his appointment, Sheehan said, "I am thrilled to have an opportunity to work with Secretary Zinke and the great team at the U.S. Fish and Wildlife Service. I look forward to helping promote the fish and wildlife resources in America through collaborative partnerships with states, local government, the sportsmen's community, and others." □



Edward "Eddie" Stoker has joined External Affairs to serve as a liaison between

the Service and national nontraditional partners.

In his role as a Partners and Intergovernmental Affairs specialist, Eddie provides guidance, coordination and support to Service programs, regions and field offices on matters related to national nontraditional partnerships, including those representing communities of color.

Eddie brings to the Service more than 20 years of experience in the private, public and nonprofit sectors helping organizations achieve strategic goals and objectives by effectively communicating, reaching, and engaging with minority and other nontraditional stakeholders.

For his international, national, regional and local work, Eddie has received commendations from the White House; the Vatican; members of Congress; and federal, state and local government agencies.

Eddie looks forward to supporting colleagues across the Service in outreach and engagement efforts involving minority and other nontraditional stakeholders. □

Southwest Region



Jeff Conway has been named the new manager of Ink Dam National Fish Hatchery, located in

Burnet, Texas. Jeff brings with him a great deal of hands-on experience and a treasure of knowledge in fish culture and conservation.

Jeff is a native of Pleasantville, Pennsylvania. He attended Mansfield University of Pennsylvania where he majored in fisheries science. He finished his bachelor's degree in 1994. His conservation work experience started while still a student, interning at Benner Spring Fish Research Station in Pennsylvania, where he assisted in walleye diet studies. Since graduation and through his career he has cultured muskellunge, paddlefish, tiger muskie, walleye, coho salmon and American shad, as well as brook trout, brown trout, rainbow trout and channel catfish. Jeff has worked with rare fish species, too, such as relict darter, Barrens topminnow and Gila trout. His work has taken him from his home state to North Carolina, Kentucky, Colorado and New Mexico.

"I've had a hand in a lot different fisheries conservation projects over the last 25 years," Jeff says. "I am looking forward to the challenges that will come my way at Inks Dam National Fish Hatchery."

"I'm pleased as can be to have Jeff Conway as the manager of Inks Dam National Fish Hatchery," says Stewart Jacks, the Service's Assistant Regional Director—Fish and Aquatic Conservation. "Jeff is a committed fish biologist. If you can catch a fish by hook and line, he's probably at some point in the last quarter century worked with that species. He's also dealt with sensitive species and that will come in handy at Inks Dam."

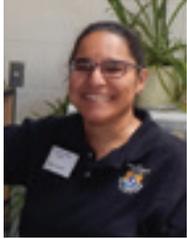
When not at work, you might find Jeff fishing or on a shooting range. He has two affinities for collecting: vintage Land Cruisers and first-edition science fiction novels.

Inks Dam National Fish Hatchery is one of 70 such facilities found across the United States. It raises channel catfish and the endangered Clear Creek gambusia, a rare fish species found only in Texas. It was authorized by Congress in 1930.

□

honors

Southwest



Angela James, a fish biologist at the New Mexico Fish and Wildlife Conservation Office, has been

named the Service's 2017 recipient of the prestigious Legends Award by the American Recreation Coalition (ARC). ARC presents the Legends Award for outstanding efforts to improve outdoor recreation experiences and opportunities for the American people. Angela leads the Native Fish in the Classroom program, which introduces school-age children to science and conservation and helps them connect to native fish and their habitats. The students raise native fishes in their classrooms, learning the value of science, conservation, mathematics and aquatic system health. The program began with four schools and has grown to 10, including four Title 1 schools, with 18 teachers and 429 students participating.

Outreach through the Native Fish in the Classroom program connects people to real-life fish and wildlife conservation issues and inspires them to seek solutions. An introduction to native fish species lays out the program, followed by fish anatomy. How Many Fish is an overview of why and how fish surveys are completed, and The Case of the Missing Cutthroats: An Eco Mystery is a discussion

of fiction mimicking reality. This book discusses native ranges of cutthroat trout, tagging, monitoring and the impacts of humans on aquatic environments. The program closes out with the students reflecting on what they have learned in a writing contest, Time to Say Good-bye. The top three winners of the writing contest have their poems read by all the students just after releasing their fish to the Rio Grande. □

Mountain-Prairie

Ducks Unlimited recognized federal wildlife officers from across the **Prairie Pothole Region** for their ongoing efforts to protect America's prairies and wetlands by presenting the Service with the 2017 Ducks Unlimited Wetland Conservation Achievement Award.

Whether by aircraft, all-terrain vehicle or foot, these law enforcement professionals monitor, investigate and enforce the complex terms of easement contracts with private landowners.

The award was announced at the 82nd North American Wildlife and Natural Resources Conference in Spokane, Washington. The award recognizes unyielding commitment to conserve wetlands and grasslands throughout North Dakota, South Dakota, Montana, Minnesota and Iowa.

Refuge Zone Law Enforcement Officer Brent Taylor accepted the award on behalf of his fellow officers across the country. Based at Tamarac National Wildlife Refuge in Minnesota,

Officer Taylor supports easement monitoring across Minnesota, as well as myriad of conservation compliance priorities. □



James D. Chandler (center), who has served with distinction as the Chief of the Division of Occupational Health, Environmental Compliance and Emergency management for the Mountain-Prairie Region, was recognized with a Department of the Interior citation for "Meritorious Service." His dedicated professional efforts have created a safe and environmentally sound work environment for employees, volunteers and visitors to the more than 140 field stations around eight states in the region. His thorough, user-friendly and common sense approach to safety coupled with his cooperative and effective relationship with regional leadership at all levels has enabled the Mountain-Prairie Region to consistently maintain one of the lowest accident and lost-time rates in the Service. □



The Department of the Interior has awarded Federal Wildlife Officer **Kimberly K. Martin** (second from right) a citation for an "Exemplary Act." On June 27, 2015, Officer Martin assisted a National Park Service Law Enforcement Ranger with a medical emergency on Fitz Island on the Fort Niobrara Scenic River. Officer Martin and the Park Ranger, both emergency medical technicians, received the call and responded with a canoe through swift water to find an unconscious woman on Fitz Island. They provided emergency medical assistance, navigated the canoe back to dry land, and selflessly dealt with a group of belligerent bystanders. □

in memoriam

Northeast



Guy W. Willey Sr., 86, of Cambridge, Maryland, died January 16. After graduation from

Cambridge High School (Class of '48), Guy began working at the Blackwater National Wildlife Refuge as a clerk. In 1951 he left his job at the refuge to serve his country in the U. S. Army during the Korean War. After being stationed in Germany, he was discharged in 1953 with military honors. Upon returning home he also returned to his job at Blackwater. On January 14, 1956, he married Fay Erskine. Fay passed away August 25, 2002.

Guy's love of nature and wildlife led him to his career with the Service. He retired in September 1985 as a biological technician, after 33 years and eight months. His career was dedicated to protecting the marsh and its ecosystems at Blackwater Refuge. Guy contributed significantly to the recovery of the American bald eagle by establishing the protected-area concept for nesting sites, which is used nationwide.

After his retirement from the refuge, Guy continued his dedication to wildlife conservation. Known as the "Squirrel Man," he worked 20 years as a contractor with the State of Maryland Department of National Resources helping

to restore the Delmarva Fox Squirrel population.

Guy was a recipient of many conservation awards recognizing his dedication and contributions to wildlife conservation. He received the Gulf Oil Conservation Award in 1985 and the highest award presented by the U.S. Department of the Interior, the Distinguished Service honor, in 1986. The recognition honors outstanding contributions made during an eminent career in DOI or exceptional contributions to public service. □

Southeast



James "Jamie" Kellum, a forester with the Service for 18 years, died January 27 from injuries he

sustained in a fire at his home. His death is a significant loss to the Service. Jamie was an excellent all-around forester, yet he specialized and excelled in bottomland hardwood forestry and was one of the last great bottomland hardwood foresters. He was well-respected in this field and published various papers relating to bottomland forest management. Jamie obtained a degree in forestry and wildlife management from the University of Arkansas at Monticello (UoAM). He spent more than 20 years as a forester at the UoAM, Dale Bumpers White River National Wildlife Refuge in Arkansas, Blackwater National Wildlife Refuge in Maryland, and lastly served as

the Complex Forester for Southeast Louisiana Refuges Complex. He will be sorely missed by co-workers and his counterparts in the natural resource field. □

Southeast

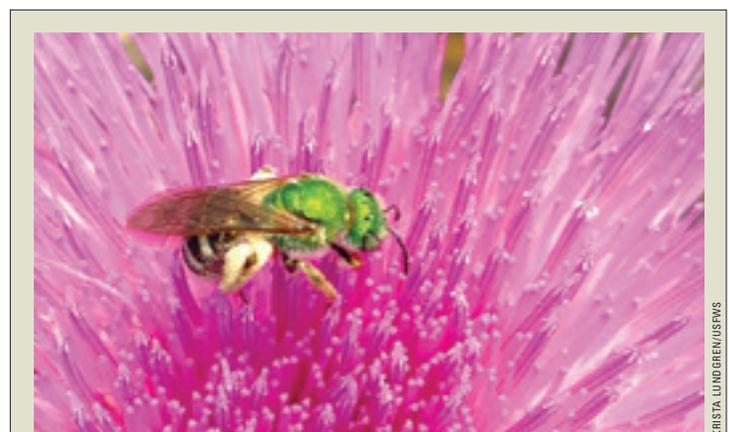


Thomas "Tom" F. Wharton Jr. died May 20 at the Cleveland Clinic. He was 74 years old.

He started his career with Ohio Department of Natural Resources, then in 1974 he began working as a Special Agent for the Service and remained there until he retired after 24 years of dedicated service in 1998. He moved to New Hampshire, Washington, DC, and finally

Georgia where he became the Southeast Region's Deputy Assistant Regional Director for Law Enforcement. After his retirement he continued working as a Sky Marshal and an instructor at the Federal Law Enforcement Training Center. Following his career in law enforcement he enjoyed working as a substitute teacher.

During his time with the federal government, Tom received multiple awards and accolades for his outstanding service. Tom loved the outdoors and could often be found spending time hunting and boating. He also enjoyed traveling, most especially to Belize. Tom spent a great deal of time farming and raising his beloved cattle. Tom's friends and family meant the world to him, and he cherished the time that he spent with them. He treasured his girls and his grandchildren. □



Bee-eautiful

More than 4,000 species of native bees buzz about North America, pollinating plants, such as this sweat bee in North Dakota. They inhabit everywhere from deserts to forests, from wildernesses to backyards.

KRISTA LUNDGREN/USFWS

Fish & Wildlife News

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Ready for their Close-up

Canada geese are flying to new heights as the stars of the 2017–2018 Federal Duck Stamp, which went on sale in June, featuring art by James Hautman. The stamp raises millions of dollars for habitat conservation to benefit wildlife and the American people. Since 1934, sales of the Duck Stamp have raised more than \$950 million to conserve nearly 6 million acres of wetlands habitat on national wildlife refuges around the nation.



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