



Fish & Wildlife *News*



SPOTLIGHT

**Reaching Out
to Veterans / 8**

Urban Oasis / 10

'Teamwork Makes
the Dreamwork' / 16

features

SPOTLIGHT: *Reaching Out to Veterans* / 8

Urban Oasis / 10

At Rocky Mountain Arsenal National Wildlife Refuge near Denver, the Arsenal Anglers offer fishing program to those who need a little extra help.

By MICHAEL D'AGOSTINO

Creating Memories / 14

Ridgefield National Wildlife Refuge honors veterans with inaugural Veterans Day waterfowl hunt.

By BRENT LAWRENCE

On the Lookout / 18

Marine veteran helps Service enforce federal wildlife laws on the U.S.-Mexico border.

By AL BARRUS

'Teamwork Makes the Dream Work' / 16

Husband and wife Army veterans find happiness on the hunt.

By AMANDA SMITH

MORE FEATURES

Wildlife's Best Friend / 22

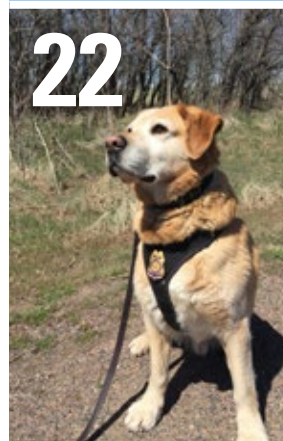
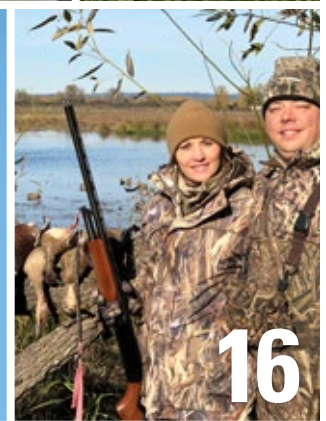
Furry federal wildlife canines protect public lands for wildlife and people.

By JENNIFER STRICKLAND

Longing for Longleaf / 26

Service, many others join together to bring back signature tree

By BRIAN COOKE



On the cover:
A red maple
flowers at
Missisquoi
National Wildlife
Refuge in
Vermont.

KEN STURM/USFWS

departments

From the Directorate / 1

News / 2

Curator's Corner / 30

Life After the Service / 31

Field Journal / 32

Our People / 34

Humbled and Proud



USFWS

Joining Principal Deputy Director Margaret Everson for the unveiling of the 45th quarter in the America the Beautiful Quarters Program were staff of the Rhode Island National Wildlife Refuges. From left to right: Christina Carrington, Gayle Kimball, Margaret Everson, Charlie Vandemoer and Karrie Schwaab.

If you were to gather all those who have been privileged to lead the U.S. Fish and Wildlife Service, I am certain that they would all agree that “our people” are our greatest asset. I feel the same way.

You are the ones who overcome tremendous challenges and ensure that wildlife species great and small can thrive in today’s world.

One of my highest priorities and greatest sources of inspiration is spending time with you. I get to see first-hand how you support conservation and what type of work and innovative projects you are doing.

Much of your work highlights one of my favorite aspects of the Service, underscored in the first few words of our mission: “working with others.”

In November, soon after rejoining the Service, I visited Rhode Island National Wildlife Refuge Complex for the launch of the America the Beautiful quarter commemorating Block Island National Wildlife Refuge.

There I talked to staff who shared with me examples of how conservation efforts have been successful through partnering with state and local communities. One of the projects, the Providence Parks Urban Refuge Partnership, works to engage city youth in the outdoors and conservation. The partnership has brought inner city youth to the national wildlife refuge, and engaged local schools in classroom instruction and field trips to local city parks.

It was the same in February, on the opposite coast, spending time with our team in California.

While visiting Sacramento National Wildlife Refuge, I met with a wide range of partners including staff from a California water district, the California Waterfowl Association, The Nature Conservancy and the National Audubon Society. To a person, they spoke of the value of their partnership with the Service and the importance of working together to balance the many competing needs for water to support fish and wildlife, agriculture, recreation and the more than 3 million people living in the nearby metropolitan area.

For instance, together with rice farmers and duck hunters in the Sacramento Valley, we provide year-round food and habitat for 6 million waterfowl and hundreds of thousands of other water birds and wetland wildlife.

Hearing about these efforts left me both humbled and proud of the work we do every day, across the country.

It is not just that the conservation challenges we face are great. It is the realization that our conservation work affects everyone and that we cannot be successful without “working with others” to achieve our mission.

That’s why we need to think broadly and be willing to work creatively with anyone who is looking to find a solution to a wildlife conservation challenge. □

River Herring Return to the Merrimack River in Record Numbers

There were wide smiles last spring when staff from the Massachusetts Division of Fisheries and Wildlife reported the large number of river herring (both Alewife and Blueback herring) filling the fish lift buckets at the Essex Dam in Lawrence, Massachusetts, the lowermost dam on the Merrimack River. Years of hard work had paid off, and success was clearly evident.

In 2018, the Merrimack River broke its modern record for fishway passage of river herring at the dam, with the most river herring since the fishway was built in the 1980s. Nearly 450,000 river herring passed the dam, operated by Enel Green Power

North America, Inc. It's likely the strongest run since a series of dams created barriers to fish migration in the early 1800s. The previous 20-year average was fewer than 25,000 river herring. Thousands more have also passed at tributary hydroelectric plants where few or zero river herring were observed in the last two decades.

The high returns can be attributed to both improvements in fish passage and a successful "truck and transport" program. Over the years, tens of thousands of adult river herring have been collected at the Essex Fishway and neighboring rivers, then trucked to good spawning habitat above the barriers.

Additionally, fish passage engineers with the Service and National Oceanic and Atmospheric Administration (NOAA) have been working

with dam owners to improve fish passage at the Essex Dam and other tributaries to the Merrimack. Several failing passage structures have been rebuilt in the last few years, and dam owners have committed to building new fishways where there is a strong potential for increasing populations.

The newly returning adults are offspring of those that previously made it to good spawning habitat above the dam on their own or by truck.

Even though 450,000 fish seems like a large number, it's likely a sliver of the runs that once swam up the Merrimack River.

River herring were once plentiful in coastal rivers from Florida to Labrador, Canada, and they were an important food source for indigenous and colonial communities. Even then, responsible harvest and conservation was

necessary for sustaining the human communities dependent on the fishery. For example, in 1623, Plymouth Colony passed a Fish Law, which included regulations to ensure the safe passage of fish to spawning grounds. Colonial Mainers set alewife harvest days and established fines for offenders.

But the Merrimack became an epicenter for American industrialization. And the legacy of dam construction and habitat modification is still apparent. The ability for fish to swim to spawning grounds on their own is severely limited; thus, they often need a human boost to overcome our man-made obstacles.

The return of the river herring can only happen through the cooperation of long-standing partnerships among the Service, Massachusetts Division of Marine Fisheries, Massachusetts Department of Fish and Game, New Hampshire Fish and Game, NOAA and public-private partnerships with the hydropower industry.

The Service and partners continue to look for opportunities to open up historic habitats to fish, from dam removals to working with dam operators on other solutions. A self-sustaining population without the need for trucking is a long-term goal, and with hundreds of thousands of fish returning, the goal seems much closer. □

MICHAEL BAILEY and CATHERINE GATENBY, Fish and Aquatic Conservation, Northeast Region



River herring are stocked in Northwood Lake, good habitat in the Merrimack River watershed.

J. MASTERSON/USFWS

Fisheries Maintenance Action Team Saves Money Removing Ruhl Dam in Vermont

Dams are expensive to repair, maintain and operate, and they come with environmental costs such as poor water quality and poor ecosystem health, and sometimes less recreation. Many dam owners and communities around the world are weighing the costs and benefits of maintaining dams, while factoring in the benefits of healthy free-flowing rivers with economically valuable and viable fisheries. Often, dam removal costs less than long-term safety repairs, maintenance and environmental compliance costs.

That's what the landowner of the Ruhl Dam on Cold Brook in Wilmington, Vermont, decided. The small hydropower dam was no longer generating power, so the owner gave the Connecticut River Conservancy (CRC) permission to remove it, which would restore fish passage and another piece of the Connecticut River watershed.

But removing a dam is not cheap either.

The CRC received funds from the Service's National Fish Passage Program and its Partners for Fish and Wildlife Program for the project on Cold Brook. They also received funds from the National Fish and Wildlife Foundation, and a Vermont State Wildlife Grant. Trout Unlimited assisted with the design of the project, and it will assist with restoring the riverbanks.



TROUT UNLIMITED



USFWS

The cost for the project from design to demolition to restoring the riverbanks post-demolition was estimated at \$62,000. The partnership had \$47,000.

Not to worry. The Fisheries Maintenance Action Team, staffed by heavy equipment operators from the Service's Northeast Region Fish and Aquatic Conservation Program and Silvio O. Conte National Fish and Wildlife Refuge rode in on their backhoes and bulldozers to expertly remove the dam themselves. The Service also

(Top) Workers remove Ruhl Dam.
(Left) An Eastern Brook trout swims in Cold Brook.

contributed expertise in fish and stream ecology during demolition and will assist with restoration of riverbanks and instream habitat. Overall, the Service saved the project \$15,000 and contributed in-house knowledge and capacity to remove the dam.

Cold Brook is roughly 8.3 miles long. It's a tributary to the North Branch of the Deerfield River, which then flows into the Connecticut River. The Ruhl Dam has been prohibiting fish access to 5.5 miles of quality nursery and spawning habitat for several decades.

Cold Brook is neither very big nor very long, but it's part of a larger vision of the CRC to restore the health of the Connecticut River watershed for everyone living in and around the river for generations to come.

Historically, Cold Brook was known for its brook trout and for being a cold headwater stream. "Restoring the cold water tributaries of the Connecticut River is a priority for the Connecticut River Conservancy," says Andrew Fisk, CRC's executive director.

Headwater streams hold keys to the health and condition of rivers downstream. With vegetated banks, they reduce the amount of contaminants entering the stream, which improves water quality and can reduce water treatment costs. They facilitate how sediments are distributed downstream, which helps maintain river bottom habitat for fish and invertebrates and reduces siltation. And because of their connection to groundwater and subsurface water flows, they help control base flows in larger streams, which can reduce flooding downstream.

Finally, headwater streams offer refuge during hot summers and safety for fish reproduction.

Together, these key functions work to keep rivers in good shape.

Removing dams that block fish migration and alter natural flows is another key to maintaining strong populations of fish and healthy rivers.

The Ruhl Dam went out in August, and already Eastern Brook trout are finding their way to the cool waters of Cold Brook. Anglers will definitely be happy. □

California Sea Otter Numbers Exceed Key Threshold for Third Consecutive Year

Southern sea otter numbers have declined off the coast of California since peaking in 2016, but the average population count remained above 3,090 for the third consecutive year, meaning southern sea otters can be considered for delisting under the Endangered Species Act (ESA). According to data released by the California Department of Fish and Wildlife (CDFW) and U.S. Geological Survey (USGS), last year's average count of 3,128 was 58 sea otters lower than the 2017 survey. Southern sea otters, studied as an indicator of near-shore ecosystem health, are protected as threatened under the ESA.

"Reaching this threshold is a milestone in southern sea otter recovery, but it will be important to review all factors influencing the population to determine whether or not delisting is appropriate using the best available science," says Lilian Carswell, southern sea otter recovery coordinator for the Service. "For the southern sea otter, those factors include ongoing threats such as shark bite mortality, lack of range expansion and changes in prey."

The mainland population of sea otters was largest in the central part of the species' range; it increased slightly in the southern part of the range. North of the central region, however, the five-year trend in sea otter populations continued to drop. Changes at the range ends have



LILIAN CARSWELL/USFWS

implications for the long-term outlook for sea otter recovery.

"We continue to recover high numbers of shark-bitten sea otters along the northern and southern ends of the range. These are the same areas we've documented a decrease in abundance. This trend is concerning and is likely impacting population expansion and recovery," says Mike Harris, senior environmental scientist with CDFW.

In addition to the sea otter population along the mainland California coast, researchers also survey the sea otters at San Nicolas Island in the Southern California Bight. This population, established by introducing sea otters back into the area in the late 1980s, struggled at low numbers through the 1990s. However, over the last decade,

A southern sea otter settles down to rest in a small patch of feather boa kelp.

the population has grown rapidly at an average rate of about 10 percent per year.

Scientists from CDFW, USGS and the Monterey Bay Aquarium have conducted this range-wide census of southern sea otter populations every year since the 1980s, except for 2011, when poor weather conditions prevented completion of the field research. Researchers compute the annual population index and evaluate population trends, providing the Service and other resource agencies with insight into southern sea otter abundance and distribution. □

Travis Air Force Base Puts #NoBounds on Endangered Species Protection

As home to the largest airlift organization in the Air Force, Travis Air Force Base in Solano County, California, is critical to the overall mission of the Air Force. The base is also critical to the protection of threatened and endangered species, such as the California tiger salamander.

The base is surrounded by 17 ponds, offering ideal habitat for the salamander because it uses the ponds for breeding, then returns to underground burrows, where it spends most of its life. The base's Natural Resources Management Team has observed the California tiger salamander traveling more than half a mile from a breeding pond to a burrow in upland habitat on the base, and the species is known to travel farther.

In 2017, a year with high rainfall, juvenile salamanders emerging from a breeding pond along the base boundary attempted to cross a runway where military aircraft take off and land daily.

In response, the team put measures in place to monitor and relocate the species and avoid impacts that could threaten their survival and prevent aircraft from flying safely. Personnel began using dipnets to check breeding ponds for larvae. This identifies which ponds are used for breeding each season, and shows larvae development and pond water levels. The team also installed traps and fencing to keep the salamanders off the runway. »



PHOTOS: KIRSTEN CHRISTOPHERSON/AIR FORCE CIVIL ENGINEER CENTER, TRAVIS INSTALLATION SUPPORT SECTION

More than 800 juvenile salamanders were relocated either from the actual runway or from the fencing and traps used to prevent them from making it to the runway.

The team continues to study the movements of California tiger salamanders on and off the base.

The base has made a significant contribution to recovery of other species, too, including vernal pool fairy shrimp, vernal pool tadpole shrimp and Contra Costa goldfields, by using grazing as a land management tool, conducting long-term demographic studies, monitoring species and educating the

(Top) As part of their species monitoring efforts, Travis Air Force Base personnel install silt fencing and pitfall traps to reroute California tiger salamanders away from the runway. (Bottom) A threatened California tiger salamander crosses the runway at Travis Air Force Base.

public. Its natural resources management team also maintains survey maps that illustrate each location where threatened and endangered species have been found on the base.

Wetlands in California are extremely limited, so the Sacramento office of the Service works closely with the base,

providing guidance and approval for base projects that impact habitat such as wetlands, which are used by at-risk species.

Conserving the population of California tiger salamander on the base keeps runways clear of wildlife, reducing hazards to the aircraft.

The hard work personnel put into their environmental management projects shows that the #nobounds hashtag frequently used in their social media posts applies to not only their military mission but also their efforts to protect at-risk species. □

VERONICA DAVISON, External Affairs, Pacific Southwest Region

Elkhorn Slough Designated 'Wetland of International Importance'

The Secretariat of the Ramsar Convention on Wetlands has chosen California's Elkhorn Slough as a "Wetland of International Importance."

With this recognition, Elkhorn Slough joins 38 other wetland sites in the United States and more than 2,330 sites worldwide in a network of globally important wetlands designated under the world's oldest international environmental treaty. The Ramsar Convention was signed in Ramsar, Iran, in 1971, and almost 90 percent of U.N. member states have adopted the treaty.

"I am proud that Elkhorn Slough is being recognized internationally for what we on the central coast of California have long known: that this wetland is

an environmental crown jewel," Representative Jimmy Panetta said at a ceremony celebrating the designation. "This designation is a reminder of the importance of protecting the diverse wildlife and conserving these waters for future generations to enjoy," he added.

Elkhorn Slough enters Monterey Bay at Moss Landing and is partially located in the National Oceanic and Atmospheric Administration's Monterey Bay National Marine Sanctuary. It has long been recognized for its biologically rich diversity and unique scientific research studies, as well as the estuary's recreation, tourism and education opportunities.

"Elkhorn Slough is a spectacular wetland on the central California coast, hosting a rich diversity of plants and animals and beloved by the local community," Mark Silberstein, executive director of the Elkhorn Slough Foundation, said at the ceremony. "Every day, hundreds of people from kayakers to birdwatchers and other visitors enjoy the sea otters, seals, fish, shorebirds, eelgrass beds and marshes of the Elkhorn Slough. We're pleased these wetlands have now earned international recognition."

To be designated as part of the Ramsar Convention on Wetlands of International Importance, a wetland site must fulfill at least one of nine criteria, such as hosting more than 20,000 shorebirds at a time, serving as fish nursery habitat or supporting threatened species. Elkhorn Slough met all nine. The designation was approved by the U.S. Department of State and the Service. »



HAZEL RODRIGUEZ/USFWS

Elkhorn Slough, managed by the California Department of Fish and Wildlife, is a seasonal estuary rich with intertidal marshes, mudflats, eelgrass beds and oyster communities that nourish wildlife. More than 340 species of birds, 100 species of fish and more than 500 species of invertebrates have been documented in the watershed. Its distinctive estuarine communities are among the rarest and most threatened habitats in California. They are home to more than 140 Southern sea otters that feed, rest and raise their pups in these wetlands.

Wetlands serve key functions in pollution control and food provision. They are also cradles of biodiversity, hosting young fish and other marine species as well as rice paddies—all of which are critical to the food chain for humans and wildlife worldwide.

The Service approves Ramsar designations.

And as Paul Souza, Regional Director of the Service's Pacific Southwest Region, told the audience: "Healthy wetlands help support healthy economies. The rich and diverse ecosystems of Elkhorn Slough help both our wildlife and our local communities thrive. Visitors from across the globe come to the slough to immerse themselves in its serene beauty and observe the wildlife that call the area home." □

Endangered Woodpecker Joins Baseball's Mascot Club

Take a look at the all-new mascot for the all-new Fayetteville Woodpeckers Minor League Baseball team. Note the fierce gleam in the eye, topped by a scarlet crest.

Yes. It is our friend, good ol' *Leuconotopicus borealis*. Most folks know him as the red-cockaded woodpecker.

The tiny flier, protected as endangered under the Endangered Species Act, is now the official mascot for the Houston Astros' single-A baseball team that landed in Fayetteville, North Carolina, last year.

The city is ringed by public and private lands where the woodpecker makes its home. That includes Fort Bragg, where officials with the U.S. Army and the U.S. Fish and Wildlife Service have worked hard to make sure the woodpecker thrives in the base's longleaf pine forests. In fact, the base hit its 2012 recovery target five years ahead of schedule.



COURTESY OF THE FAYETTEVILLE WOODPECKERS

Minor League Baseball has a new mascot, and a new team: the Fayetteville Woodpeckers. The team, based in Fayetteville, North Carolina, has adopted the endangered red-cockaded woodpecker to adorn team caps, shirts and other items. Note the bat; that bird's been busy.

Team officials announced the name November 4, capping a "Name the Team" contest that drew more than 1,300 entries. They narrowed the finalists to five: Fatbacks, Fly Traps, Jumpers, Wood Dogs and Woodpeckers.

When those names were put to a vote, the winged contender gathered the most yeas. That settled it. The marketers got busy, creating a determined-looking bird grasping a bat with some hefty chunks missing—hammered out, no doubt, by a hard-beaked hardballer.

"We had our fingers crossed for the woodpecker," says Mark Zarthar, the team's president. "We thought it was the best fit."

That's not just marketing talk. The red-cockaded woodpecker, Zarthar knows, is synonymous with the region—Fort Bragg, especially. The installation, he says, has done a "fantastic job" helping ensure the bird thrives.

"We think the name not only will help the community understand [about the woodpecker] but also let them know what Fort Bragg has done," he says.

The Woodpeckers have at least one new fan—Will McDearman, who heads the Service's red-cockaded woodpecker recovery efforts. He works in Jackson, Mississippi, »

but suddenly has Fayetteville in his sights.

"I think that is fantastic," says McDearman, whose team of choice is the Atlanta Braves. "I think I'm definitely going to have a new favorite team."

Fayetteville is one of a handful of teams in Minor League Baseball to embrace an endangered species as a mascot. More than 250 teams comprise the organization, which provides talent for Major League Baseball. The teams' names run the gamut, from birds (Akron Rubber Ducks, anyone?) and other winged creatures (Salt Lake Bees), to fish (Carolina Mudcats), to bovine menaces (Durham Bulls).

And now, a bird that nests in cavities high off the ground. McDearman can think of no better mascot.

"Red-cockaded woodpeckers are tough and persistent," he says in an email extolling the bird. Talk about tough: What other birds hammer at living trees to make nests?

And this: They're "defensive and protective"—surely, a key attribute for the Fayetteville team's infield.

Red-cockaded woodpeckers, McDearman notes, are also family oriented (as is baseball) and "fiery"—they thrive in forests that periodically burn. In other words, they can take the heat.

Here's hoping that the 2019 Fayetteville Woodpeckers can, too. □

MARK DAVIS, External Affairs, Southeast Region

REACHING OUT TO VETERANS

Waccamaw National Wildlife Refuge Joins with Special Operations Wounded Warriors for a Feral Pig Hunt

Feral pigs are widely considered a nuisance species. It is estimated that the wild hogs cause \$1.5 billion in property damage every year all over the United States on both public and private lands, according to the Mississippi State University Center for Resolving Human-Wildlife Conflicts. They are an invasive species that can disrupt entire food chains.

"They're really bad for the ecosystem," says Craig Sasser, refuge manager at Waccamaw National Wildlife Refuge in South Carolina. "They outcompete everything in the swamp. They destroy roads and dikes, and they do a lot of damage to nearby farms. The refuge has developed a comprehensive management plan that includes public hunting, trapping and enclosures to keep the impacts from feral pigs to a minimum."

When confronted, they can be vicious creatures who will stop at nothing to escape. Fortunately, they are no match for U.S. Special Forces wounded warriors turned hog hunters. Last year, a dozen Special Forces veterans went into the swamps at Waccamaw Refuge. When they were done, they had a dozen confirmed kills of feral hogs: a one-to-one success rate.

The hunt was sponsored and organized by Special Operations



SOWW

Wounded Warriors (SOWW) in partnership with the Service, the South Carolina Department of Natural Resources (SCDNR) and private landowners. SOWW was founded in 2012 to provide outdoor experiences to a select group of active duty and veteran U.S. Military Special Operations Forces who have been wounded in battle. Most have received the Purple Heart Medal. Waccamaw Refuge welcomed SOWW back in November for a deer hunt.

"We are very thankful of the opportunity that Craig Sasser and our partners at U.S. Fish and Wildlife Service provided," says Joel Pellicci, vice president of SOWW. "SOWW has learned that introducing or reintroducing our Wounded Warriors to Mother Nature can deliver healing and incredible therapeutic benefits. We operate under the belief that if you sit around a campfire long enough, you can fix most problems," he adds.

"I really thought my hunting days were over due to my amputation until SOWW and people I met at the refuge showed me that I still could do it. My love for the outdoors was lost until now. I am back!" Andrew, a medically retired Green Beret, said at the event.

Waccamaw Refuge is 35,000 acres in size and located in South Carolina's Low County, west of Myrtle Beach. It is home to many species such as federally

Two wounded warriors and a volunteer, accompanied by a cameraman, carry a feral pig through the swamp at Waccamaw National Wildlife Refuge.

endangered red-cockaded woodpeckers, swallow-tailed kites, black bears, osprey, woodstorks, wood ducks, wild turkeys and white ibis, which can be threatened by the habitat destruction of feral hogs.

"The coolest part to me," says Sasser, "was working with a veteran who was partially paralyzed. He had a specialized wheelchair fitted with rubber tracks that made it an all-terrain vehicle like a tank. We were able to take him to a specialized refuge stand that was designed to be user-friendly for people who are mobility-impaired."

SOWW provided the hunter with a specialized rifle that he was able to use with one hand. It was a very special hunt for this veteran because he was reunited with one of his friends from his squad who is also a disabled veteran.

The hunt was supported by a large group of volunteers from SOWW, the Service and SCDNR. The volunteers cleaned the hogs and the meat was divided up among the wounded warriors. □

PHIL KLOER, External Affairs, Southeast Region





REACHING OUT TO VETERANS

All veterans have put a hold on their lives while they defend our lives, liberties and lands.

The U.S. Fish and Wildlife Service is dedicated to making sure the lands we manage are welcoming to everyone, and veterans hold a special place in our heart and on those lands. We are honored to help veterans find relaxation and restoration in the outdoors.

Whether it is hunting, fishing or just enjoying the beauty nature has to offer, veterans—everyone for that matter—can find peace in the outdoors.

We are also proud to give veterans job opportunities on their transition back to civilian life. Read on for just a few examples.

Military veterans pose for a team photo after a disabled veterans hunt on Colusa National Wildlife Refuge.

—JON INYATT/USFWS

URBAN OASIS

At Rocky Mountain Arsenal National Wildlife Refuge near Denver, the Arsenal Anglers offer fishing program to those who need a little extra help.

By MICHAEL D'AGOSTINO



MICHAEL D'AGOSTINO/USFWS

For residents in the Denver-metro area, Rocky Mountain Arsenal National Wildlife Refuge offers an accessible, and often unforgettable, escape from the stress of urban life and personal struggles. For participants in the Arsenal Anglers program, the refuge provides a peaceful place to redefine who they are, or who they strive to be, in the face of physical and emotional setbacks.

Arsenal Anglers is a free, volunteer-run therapeutic fishing program that provides adaptive equipment and hands-on assistance for people of all backgrounds and abilities, many of them local veterans.

Groups visit on Thursday evenings throughout spring, summer and autumn to relish the sights, sounds and smells surrounding Lake Mary, an 8.4-acre, 12-foot-deep lake teeming with fish and wildlife. Any stress that participants arrive with begins to melt away as they cast rods, bask in the sun and wait for a “big one” to bite—and bite they do! Largemouth bass is the most common catch, although channel catfish, bluegill, yellow perch, and white and black crappie are possibilities. »

Arsenal Anglers lead volunteer Ray Fetherman helps a local veteran with his fishing line.

Ray Fetherman, 60, is the lead Arsenal Anglers volunteer and organizer. A retired director of facilities for Colorado's Veterans Community Living Center at Fitzsimons, he studied wildlife biology during his college years. So for him, helping others while reacquainting them with nature comes naturally. Arsenal Anglers is also the only program Fetherman knows of in the urban Denver-metro area focused specifically on assisting veterans and patients of all ages and abilities to fish outdoors by providing customized adaptive angling equipment. "Maybe if we didn't have such a program," he explains, "they might never get out to fish again."

Many participants possess limited ability to move their arms, hands and legs. That's where the Arsenal Anglers come in, facilitating enjoyable fishing excursions with adaptive equipment. "We get people who have fished their whole life. And we get other people who have never fished but see that there's an opportunity to get out," Fetherman says. "And they love it!"

The refuge's close proximity to city and suburban neighborhoods and homes is an added convenience. "It's great that somebody can drive out there at 3:30 p.m., fish for three or four hours and then drive back to the facility and not miss their meds or anything else," Fetherman adds. "You don't have to drive 1,000 miles to find a place where there's good fishing, good wildlife viewing and a great outdoor experience. It's kinda right out there in your backyard."



GABY RUFFE/USFWS

Connecting Local Communities

Established in 1989, Arsenal Anglers predates Rocky Mountain Arsenal's 1992 designation as a national wildlife refuge. The program has helped hundreds of individuals with physical limitations overcome their disabilities and go fishing. Volunteers assist 50-60 individuals annually and have reached more than 500 local residents since 2007.

Kids, young adults, veterans and volunteers alike connect with nature and each other in lasting and meaningful ways. "Those three or four hours last for, you know, six weeks until they can come back out again. Sometimes they come back out, and when I'm talking to them, they tell me that they've been waiting to get back ever since they left... It just adds another quality factor to their life," Fetherman says.

A largemouth bass swims in an aerated aquarium tank after it was caught during an Arsenal Anglers event in July. It was later released back into Lake Mary.

Melissa Blair-O'Shaughnessy agrees. She's the recreational therapy director for Colorado Veterans Community Living Center, which has brought veterans to Arsenal Anglers for many years. "It has made a tremendous impact," she says. "The program brings endless joy to those that feel they may not be able to experience the outdoors again."

One regular participant who attests to the program's importance is 65-year-old veteran Mike Lundy. "It's a relaxed and calm atmosphere," he explains. "For my personal benefit, it's nice to get out into the fresh air, around water... I feel free to do what I want to do," Lundy adds. »



GABY ROFFEU/SFWS

Arsenal Anglers volunteer Ray Fetherman displays a channel catfish caught by a local nursing home patient.

Allen Sherrell, 74, a first-time participant in July 2017, shares similar sentiments. “It was a good experience to be in nature and catch a couple of fish,” Sherrell says. “I was stationed there a long time ago with the 244th combat engineers. It was enjoyable to be back and catching fish. It’s unique as they assist those that need extra help!”

A Long-lived Fishing Legacy

Honey Masters, 73, is longtime volunteer. She first joined Arsenal Anglers when her 9-year-old grandson became a refuge volunteer. He’s now 21 and still visits the refuge with family. Masters, meanwhile, has been fishing since she was a child. “My daddy used to take us fishing all the time,” she says. “And when I found out about this program, I just had to do it.”

The volunteers’ energy and participants’ enthusiasm ultimately encourages her continued involvement. She generally arrives 30 minutes early to prep for each week’s evening visitors. “We have all the rods, we have the hooks, the bait... If an angler loses theirs to a fish—if the line snaps or something—all they gotta do is grab another rod,” Masters adds.

Fishing around Lake Mary affords elderly, sick or disabled participants an opportunity for excitement, levity and playfulness, notes Masters.

High-Tech Fixes Aid Anglers

Peter Pauwels created Arsenal Anglers in 1989 along with two revered local fishermen, now both deceased, and his most notable Arsenal Anglers contribution is still used today. He created several types of adaptive fishing rods. Each aids individuals with varying degrees of disability. Pauwels built the equipment, >>

a cornerstone of the program, himself in his small company's manufacturing shop. He combined knowledge of mechanical engineering and occupational therapy, which he studied in college, although he didn't major in either. "I just took the courses that corresponded and it worked out very well," Pauwels says with a chuckle.

As a young man, Pauwels had a girlfriend who worked at Craig Hospital, while his college roommate was a quadriplegic who had been a patient at the same facility. Pauwels later became a longtime volunteer at Craig Hospital, where the adaptive rods are now stored. Arsenal Anglers borrows the adaptive equipment for refuge visitors as needed.

Many of the modified fishing rods use electric reels with varying degrees of automation. Depending upon the abilities of the patient, the rods are adjustable and customizable. Some individuals simply have grip issues, which minor modifications to a standard rod can

improve. Others require more creative solutions. Take for example, the "sip and puff" system, created for people paralyzed from the neck down. "It is for a quadriplegic like Christopher Reeve," Pauwels explains, referring to the late actor. "He would operate his wheelchair by sipping and puffing on a tube. And we could [similarly] mount this fishing rod on the wheelchair and operate it by sipping and puffing on a tube." Alternatively, a joystick can be integrated into other fishing rods for those with limited hand and arm motion.

For Pauwels, watching participants successfully catch and release fish from the refuge's docks along Lake Mary was always the biggest payoff. "A lot of them didn't think that they would be able to participate in outdoor recreation like that anymore," he explains.

"When I think of the cost of our docks—and when you amortize that cost out of all the people that have been able to enjoy the outdoors because of them—then that

cost seems so small," Pauwels says. In some instances, patients have even been wheeled down to Lake Mary's accessible fishing docks in their hospital beds to reconnect with nature.

Pauwels has since moved on to new endeavors. He now provides wheelchair accessible rafting trips on the Colorado and Gunnison Rivers.

For Fetherman, the rewards and returns for Arsenal Anglers continue. "I keep coming back because I just think it's great that we can get these people with physical disabilities—who probably never thought they might be able fish again—out there fishing." □

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

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Stunning mountain vistas are visible from Lake Mary, providing a rejuvenating break from city life and personal struggles.



MICHAEL D'AGOSTINO/USEFWS

CREATING MEMORIES

Ridgefield National Wildlife Refuge honors veterans with inaugural Veterans Day waterfowl hunt.

Story and photos by BRENT LAWRENCE



(Top) Waterfowl fly over Ridgefield Refuge. (Bottom) Veteran Sal Trujillo (left) and guide Richard Hannan sit in blind.



From an ADA-accessible blind at Ridgefield National Wildlife Refuge in Washington, Sal Trujillo watched as the first rays of sun peeked above the surrounding hills. Flocks of mallards, pintails and tundra swans soon filled the sky.

Trujillo and 10 other U.S. military veterans celebrated Veterans Day with their first waterfowl hunt as a part of the inaugural Ridgefield National Wildlife Refuge Veterans' Waterfowl Hunt.

"Getting veterans into the outdoors is so important," says Trujillo, who started fishing five years ago through a Fallen Outdoors/Community Military Appreciation Committee of SW Washington fishing event for veterans. Trujillo has since bought his own boat and takes other veterans fishing. After his successful day in the field at Ridgefield Refuge, he hopes to do the same with waterfowl hunting.

"The outdoors allows veterans to focus on something new and clear our minds from daily life. This is a great opportunity

to learn something new and make new friends. Plus, we'll eat what we harvest," says Trujillo, who served five years in the Army 101st Airborne, including a deployment in Iraq.

"The U.S. Fish and Wildlife Service has increased hunting, fishing and recreational opportunities on public lands these veterans served to protect," Robyn Thorson, Pacific Regional Director for the Service, said at the event. "We can't think of a better way than to honor these veterans on Veterans Day than by introducing them to waterfowl hunting and this fantastic urban national wildlife refuge. We hope today is the first in a long tradition of waterfowl hunts that expand to include more veterans over the years."

The Lower Columbia Chapter of the Washington Waterfowl Association played an essential role in organizing the event, including coordinating guides and holding a special dinner for the veterans. Additional partners included Ridgefield American Legion Post 44, Fallen Outdoors, Community Military Appreciation Committee of SW Washington, Heroes Northwest, Cabela's, Gerber Knives, Stein Distributing, Larry Hoff, Rose Real Estate and Evergreen Home Loans.

Richard Hannan, retired Assistant Regional Director for the Service's Pacific Region and member of the Washington Waterfowl Association, guided Trujillo during his hunt. Hannan's discussions with the veteran brought back a flood of memories.

"I choked up a little when Sal shot his first duck and (my Chesapeake Bay retriever) Daisy brought it back to him," Hannan says. "It reminded me of taking my dad hunting and introducing him to the outdoors I love and that he never had the chance to experience because of the demands of the uniform (as a 30-year Navy veteran) and family.

"Sal mentioned more than once how sometimes he and many other vets go to some dark places in their heads as a result of their service to our nation. By going outdoors he and others are able to push those thoughts away and heal. I think we created some great memories. I know it did for me." □

BRENT LAWRENCE, External Affairs, Pacific Region

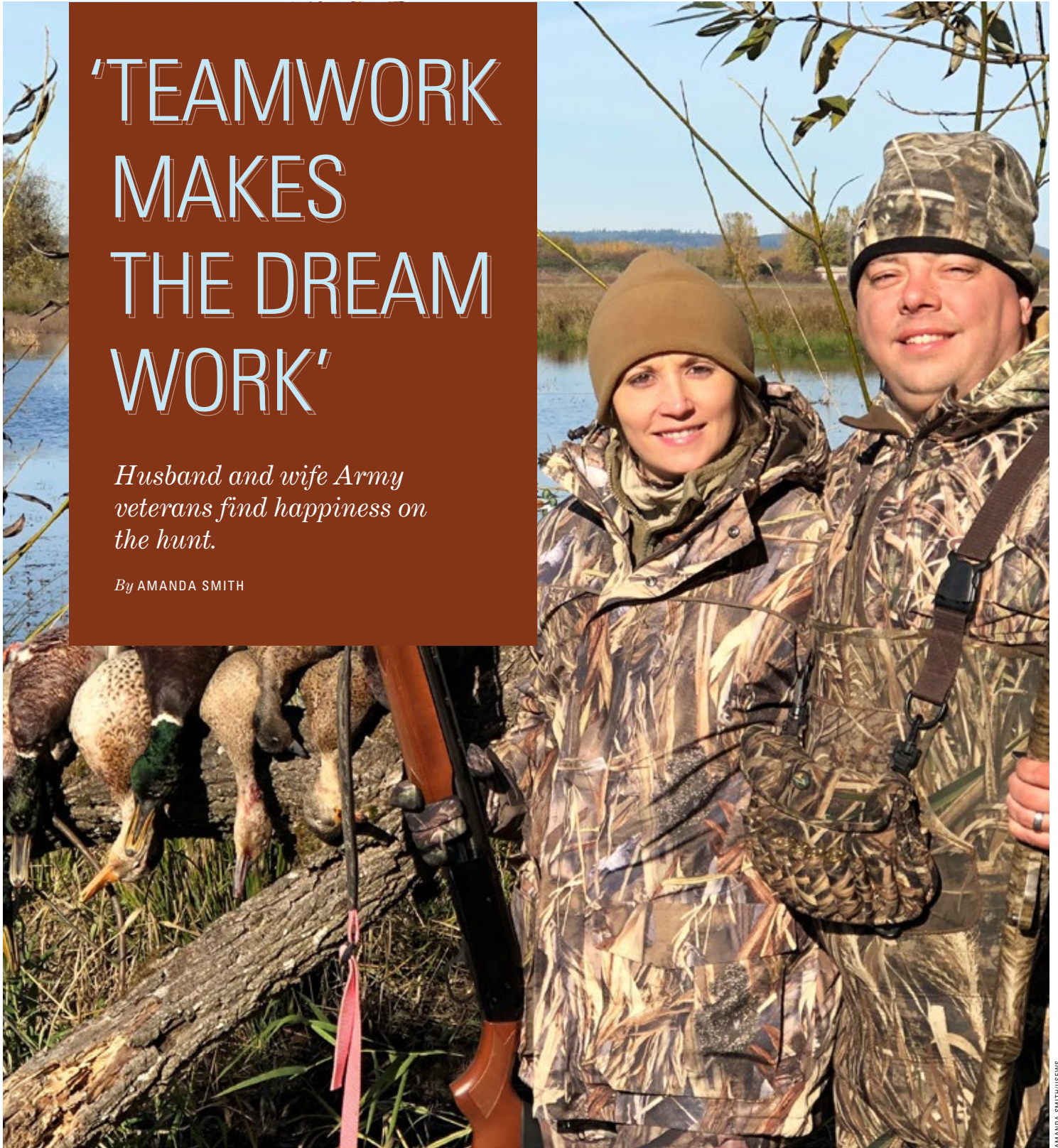
Ridgefield National Wildlife Refuge



'TEAMWORK MAKES THE DREAM WORK'

*Husband and wife Army
veterans find happiness on
the hunt.*

By AMANDA SMITH



AMANDA SMITH/USFWS

Most parents of young kids, myself included, are happy when they can manage the occasional date night together. The amount of planning, coordination and determination to get out of the house and spend quality time with my spouse can sometimes seem like more trouble than it's worth.

(Previous page) Jennifer and Doug Hawkins at the Ridgefield National Wildlife Refuge Veterans Day Waterfowl Hunt.

For Jennifer and Doug Hawkins, it is hard to imagine things getting much busier. Married for eight years, the couple recently moved across the country with their four children ages 12, 11 and 6 years, and 20 months. Both are full-time, active-duty military and count 32 years of service between them. Jennifer, 36, recalls meeting Doug, 32, early in their Army careers. "I liked how adventurous and outgoing he was—he encouraged me to try new things."

One of those new things was waterfowl hunting. While a deep love for nature is something they share, the warmth in Jennifer's voice tells me it was her love for Doug that encouraged her to try duck hunting. "I grew up in the Midwest out in the woods with my parents from an early age, fishing for walleye and bow hunting white-tailed deer, but I had never tried waterfowl [hunting] before. I wasn't sure I'd be any good at it, but Doug convinced me to give it a shot."

Jennifer's first shot at waterfowl hunting came this past November during the inaugural Ridgefield National Wildlife Refuge Veterans' Day Waterfowl Hunt. The first of its kind, the event brought together veterans, volunteers and community organizations as a way of giving back to those who have given so much to their country.

Jennifer was one of several of the veterans that day to bag their first bird. And, as I watched her return from the hunt, weighted down with gear, fatigue and the evidence of her first successful waterfowl hunt, I noticed that the only smile bigger than hers was on the face of her husband. He was with her every step of the way. Together, camo-clad and beaming with excitement, they walked over to fill me in on their hunt. I could definitely feel the love.

"Teamwork makes the dream work!" Doug said with a grin as he helped Jennifer check in her ducks at the hunt station. "She might have been unsure of herself, but I knew she would be awesome at it and I am really glad we got this opportunity. It was a great day!" Jennifer, surprised and weary from her successful first duck hunt, leaned against Doug. She echoed his gratitude for the chance to get outdoors and "away from the stress of it all." She was talking about more than the stress of raising four kids under the age of 13.

"As veterans, I think there is a particular need to find relaxing ways of coping..."

"As veterans, I think there is a particular need to find relaxing ways of coping, ways of connecting to the things that make us feel at peace," Jennifer says. "For me, that sense of peace comes when I am outdoors with my husband several times a month." I marvel at both her sincerity and her dedication to going beyond the infrequent date night. In fact, I am so impressed by the way these two carved out time to hunt together, I call her after our initial meeting to find out her secret. Four kids? Two full-time military careers? A recent move across the country? Time for each other? Surely, they had to have a secret.

Jennifer laughs at my astonishment and I can hear Doug laugh alongside her. They have me on speakerphone as they drive through backcountry on their way to their next hunt. Only a few weeks after bagging birds together in Washington, the couple is side-by-side in Ohio hunting white tail deer. "Yes, our life is crazy," Jennifer agrees. "But everyone's life is crazy... I will always make time for doing what I love, on land I love, with the person I love." □

AMANDA SMITH, External Affairs, Pacific Region

ON THE LOOKOUT

By AL BARRUS

Marine veteran helps Service enforce federal wildlife laws on the U.S.-Mexico border.



AL BARRUS/USFWS

If there are snakes on a plane, it's a federal wildlife inspector's job to find them to ensure they enter or exit the country legally. At a seaport, wildlife inspectors need to catch anything fishy that might represent illegal trade in wildlife.

(Previous page) Wildlife Inspector Jeff Moore inspects the paperwork for a bighorn sheep hunting trophy at the commercial port in Nogales, Arizona.

On our southern border with Mexico, the wildlife inspector needs to know why the desert tortoise crossed the border.

Service Wildlife Inspector Jeff Moore, who started his federal career as an enlisted infantryman for the U.S. Marine Corps, is the only wildlife inspector in Arizona. He is tasked with overseeing all the legal and illegal wildlife items crossing via ports of entry in Arizona and New Mexico. This means he has to cover 11 ports spread over two states with a combined size equal to Texas. He's the sole wildlife inspector for 28 percent of the southern border.

Once he got out of the Marines, Moore says he started working for Boeing, "building F-18s, Minuteman missiles and C-17s. Then I started going to school. I got my science degree in applied wildlife management."

When he graduated, he continues, "that's when the economy took a downturn, and budgets got tight, so I came [to Arizona] with U.S. Customs and Border Protection (CBP) as an agricultural specialist. That's when I first found out about the wildlife inspector field."

The Service strives to be an employer of choice among military veterans, and when the inspector there transferred to a different location, she encouraged him to apply for her position.

He got the job, and "I even took a cut in pay," Moore says.

While protecting our borders from drug smugglers, human traffickers and gun runners is the purview of CBP, Moore is right there on the border with them, defending our nation. The difference is which laws and treaties he enforces. CBP is looking for drugs, guns and money, among other things. Wildlife

inspectors are on the lookout for wildlife, and products made from wildlife, coming illegally through ports of entry from Mexico. This means Moore targets such things as hunting trophies, species hobbyists crave and boots made from exotic hide. He attended seven weeks of instruction at the Federal Law Enforcement Training Center to learn federal wildlife laws and how to enforce them.

A big part of Moore's day-to-day is inspecting trophies hunted by American sportsman and -women. "Hunters in Mexico can often take as many animals as they can pay for. For example with bighorn sheep, some states like Arizona offer one sheep per lifetime per hunter. Alternatively, a sportsman can travel to Mexico and take a sheep every year," Moore says.

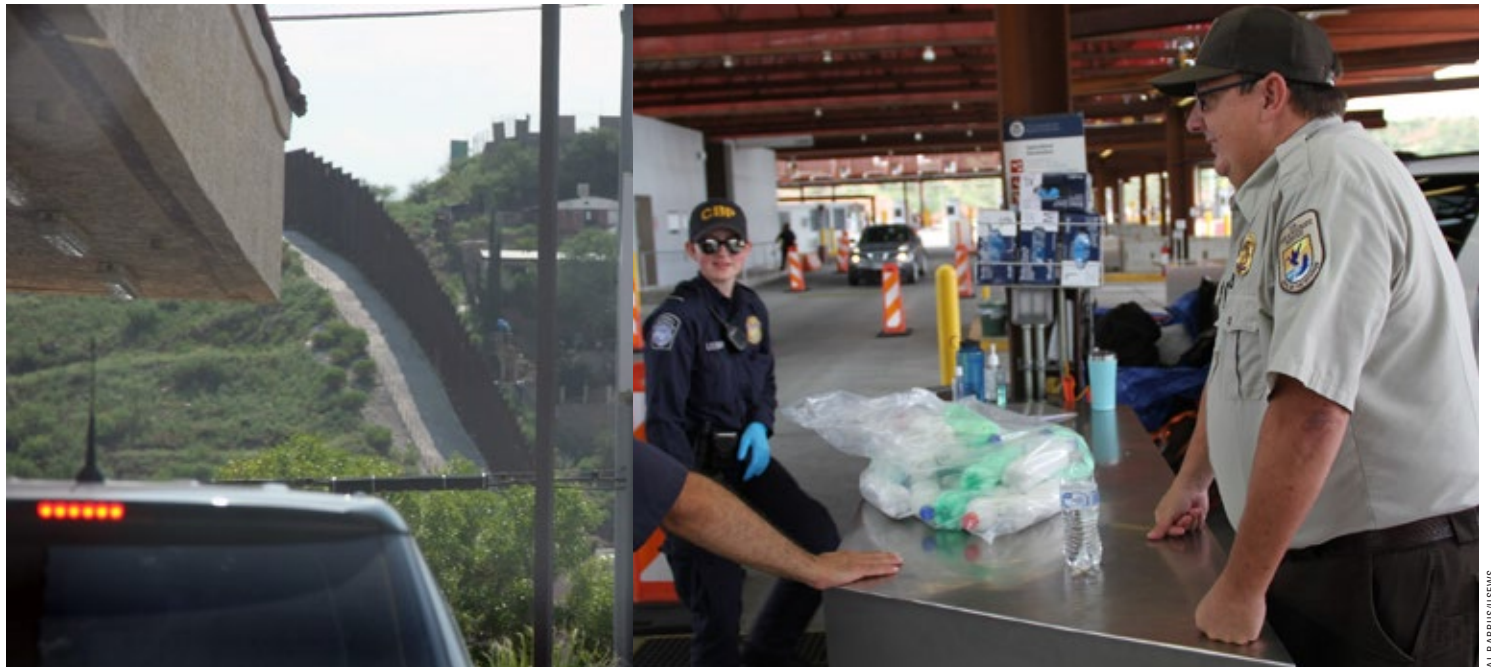
Some of the American hunters cross the border with their fresh trophies, but many others pay Mexican guides and ranchers to coordinate everything for them.

This tends to be big source of income for Mexican landowners as they can make up to \$10,000 or more for a large mule deer, and more than \$50,000 for a bighorn sheep. So they do their best to communicate with wildlife inspectors and make sure their clients' trophies are legally imported with all the required paperwork.

These guided hunts can be good for conservation. The money Mexican ranchers earn from offering these hunts gives them reason to protect and enhance the species and habitats. For instance, the cash from a hunt may be used to build a new water catchment that could benefit many species. »

One day at the cargo port, where the importers declare what they are importing, CBP officers have the commercial items unloaded, then call Moore to come check it out. One importer has mule deer, bighorn sheep and javelina trophies he's bringing in for his customers.

"Bighorn sheep are protected under CITES [the Convention on International Trade in Endangered Species of Wild Fauna and Flora]...so they require additional paperwork that deer and javelina don't. Deer and javelina just require a hunting tag and a hunting license," Moore says. This type of wildlife import highlights the value of highly trained Service wildlife inspectors. Even though javelina are CITES-protected, a specific exemption removes »



U.S. and Mexico populations from the listing. Wildlife inspectors keep current on the changing national and international wildlife laws.

While CITES is an international treaty, in the United States, it is enforced under the Endangered Species Act. That's one of the many laws that Moore's charged with enforcing.

CITES aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival. Many countries have national laws that prohibit the legal sale of many species that people want to buy as exotic pets, so smugglers often use inhumane measures to get those animals to the pet trade.

"I've seen people put birds in toilet paper tubes, socks, hair curlers. I've seen birds in bags. One year, there was a parrot in a wrapped Christmas present they claimed was for a family member and they didn't want to unwrap it. When we X-rayed it, we saw the cage and the bird."

(Left) The differences between the United States and Mexico at the border are easy to see. While Nogales, Mexico, (right) has a population of more than 200,000; Nogales, Arizona, has a population of just 20,000.

(Right) Wildlife Inspector Jeff Moore and Customs and Border Protection Agriculture Specialist Michelle Leonardini discuss the legality of a bottled white fluid.

In these cases, the Service works with the CBP agriculture specialist to determine the best course of action. Many of the birds are protected and the cost of quarantining these birds is not cheap, with the bill running up to \$1,000 or more. The Service will often issue the importer a ticket for the illegal import to help discourage the smuggling and the perpetrator may face criminal smuggling charges.

Wildlife inspectors often discover larger, commercial seizures that are later turned over to a Service special agent for criminal investigation.

But other violators are simply pet owners who are unaware of laws and are traveling with exotic pets.

The way undeclared wildlife is discovered is through random inspection. Moore does this alongside the federal CBP agriculture specialist and officers.

"No iguanas, no deer meat, no octopus, squid, cowboy boots with exotic skins, anything like that?" he asks a family coming through the Port of Entry from central Mexico. "Often if you ask folks if they have any wildlife or wildlife products they will say no, but if you start asking for common encountered items they tend to be more forthcoming."

Moore often has to seize the animal. His office is a temporary home to multiple animals brought in as pets, lacking permits. It's also a warehouse for seized animal products. >>

“This chameleon is from the Arabian Peninsula,” he says, pointing out one animal. “The owner’s from Mexico and brought him in without the permit. He declared him; he just doesn’t have the permit. We don’t have any place that will take him, so we have some options: Do we seize him, and keep him from the owner and then provide for his care long term? Or do we give him back to the owner, refuse him entry and have the owner take them back to Mexico, then put the owner in the system and warn the owner if he ever brings them in again he’ll face further penalties?”

A lot of live animals are transported without permits, and Moore’s office already has two Gila monsters, a Mexican mud turtle and the chameleon. Last year three rattlesnakes were seized, but a local zoo took them.

The Gila monsters are used in public outreach programs, which is a great way to educate people who may be unaware of the laws. And kids enjoy seeing live wildlife in the classroom.

Perhaps the most common, and the most problematic, live wildlife Moore encounters are desert tortoises, which are restricted in Arizona. It’s illegal under Arizona state law to import them without a permit. This is to curtail the spread of upper respiratory disease common among captive desert tortoises, which can have a negative impact on the wildlife population if an infected pet tortoise gets loose.

Desert tortoises are long-lived animals, and it’s not good for them or the environment to be released back into the wild. Even if tortoise species native to the area are released, they could be a genetically distinct subspecies, and this could harm the local gene pools. That’s another reason Arizona prohibits the release of them into the wild.

Conservation is also an important part of his personal life, as the ecosystems he enjoys visiting are enhanced by his work as a wildlife inspector.

During his time as a Marine grunt, he was stationed in southern Spain, guarding a naval communication site. In his free time he learned to scuba dive. He stopped diving for a while when he came back to his landlocked home state of Arizona. But he got back into it, and now goes on multiple trips each year, traveling to see the various tropical coral reefs around the world.

“I mostly go to see the coral reefs, the marine life, the sea turtles. The coral is almost destroyed everywhere. Even some sun tan lotions are toxic to the corals. Hawaii recently banned those to protect their coral.

“Even while on vacation, I find myself checking out vendors, checking for wildlife products being offered for sale to tourists, be it elephant skin boots in Mexico, or sea turtle jewelry and bracelets in the Maldives. I even catch myself scanning my fellow passengers, looking for signs of restrictive and prohibitive wildlife being brought back to the U.S.” □

AL BARRUS, External Affairs, Southwest Region

Working for Veterans

Beyond efforts to make the outdoors accessible to returning veterans, the Service is committed to both the recruitment and retention of veterans, especially those disabled during their military service.

We support and hire veterans through partnerships with the Departments of Defense, Labor and Veterans Affairs, Paralyzed Veterans Association and Office of Personnel Management.

It’s not only the right thing to do but also a smart move.

Right because the men and women of the military have made numerous sacrifices to defend our freedoms and the least we can do is help them transition to civilian life. Whether they choose a career in conservation or not, our internships and jobs provide veterans with job training and experience.

Smart because veterans are highly trained individuals used to performing jobs in tough situations.

For Navy and Marine Corps veteran Jason Mercado, a permits examiner in the Service’s Midwest Region’s Migratory Birds Program, it was learning how to use his time wisely. “The military teaches you how to prioritize because things can go wrong very quickly when your priorities aren’t straight. And I’ve applied that to my job as a permits examiner.”

For more information, <fws.gov/odiwm/veterans>.

By JENNIFER STRICKLAND

*Furry federal wildlife canines
protect public lands for
wildlife and people.*

wildlife's best friend



KATE MIYANO/USFWS

It's May 2018. At Rocky Mountain Arsenal National Wildlife Refuge outside of Denver, Colorado, a specialized group of law enforcement officers are in training. Federal wildlife canine officers from around the country have come together with their most loyal partners, their federal wildlife canines, or K-9s for short, to spend time as a team, share experiences, train and receive annual certification.

Lex from Charles M. Russell National Wildlife Refuge in training.

These high performing K-9s are lean, fit, obedient, alert, calm and professional. The quality of the Service's K-9 unit is well-known throughout the country, and teams are often called upon to help their state and local police departments, border patrol and others.

The first K-9 up for training is Lex, a high-energy male Belgian Malinois whose home station is Charles M. Russell National Wildlife Refuge in Montana. One of Lex's claims to fame is when state game wardens reached out to request help from Lex and his handler, Officer Deb Goeb, to locate a rifle that was used to illegally kill a bighorn sheep. The wardens suspected the rifle had been stashed in the brush for days, but with Lex on the case, it was only a couple of hours before he lowered his body into the sagebrush, signaling, "Come look what I found." There, between his paws, was the rifle they had been searching for.

On this day, Goeb is testing Lex on his ability to detect drugs.

Lex runs his nose along the brick-red tile floor of an old refuge building. With his nose leading the way, Lex is searching for the scent of four common substances: heroin, cocaine, methamphetamine and marijuana. When he picks up on a scent, Lex lies on his belly, head facing the smell and waits patiently for his reward: a 12-inch piece of black rubber radiator hose with teeth marks on its center. Goeb offers him the toy and Lex jumps up and bites down. They play a quick game of tug of war while Goeb congratulates Lex on his success. "Good boy, good boy," she says.

"In dog brain, narcotics are associated with play," says Officer Chris Hoag. "For the dogs, drug detection isn't work, it's a game. Their drive is the reward at the end of the task."

A Day in a K-9 Life

Suddenly, Lex's training exercise is interrupted by an urgent phone call.

"There's been an incident," Federal Wildlife Officer Josh Frazier says.

Somewhere on the refuge, a stolen car is speeding away while a second vehicle is suspected to be loaded with drugs. Frazier calls in the assistance of one visiting K-9 unit to detect narcotics in the one vehicle, and two other K-9 teams to help apprehend the driver of the stolen vehicle. The perpetrators picked the wrong day and wrong place to engage in criminal activity.

This action-packed experience is just another day in the life for the federal wildlife canine officers and their furry partners. Officer Rob Barto, one of the officers who responded to the incident, notes that the presence of his K-9, Rex, often imparts a positive influence to his interactions.

"When a K-9 is present, people change their attitude. It goes from confrontational to cool," he says.

Rex is a veteran K-9 with seven years of service under his collar, and it shows. He trots with swagger and confidence. Rex and Barto traveled to Colorado from Alaska, where they patrol nearly 2 million acres at Kenai National Wildlife Refuge. Of the seven dogs in the K-9 program, Rex is the only golden Labrador retriever.

To pass his wildlife detection certification, Rex must detect frozen chunks of black bear, sheep and moose hidden across the refuge. Tail swaying, Rex ambles down a gravel path framed by grass and a dense grove of skinny trees. A faint breeze threatens to throw him off the scent.

A few minutes tick by and Rex sniffs around a pile of chopped tree trunks. He sits to indicate his discovery: a chunk of black bear. His reward is a black rubber ball at the end of a loop of thin rope. Unlike Lex's youthful play, Rex is happy to simply hold his reward in his jaw, no jumping needed.

Rex finds all five hidden wildlife parts and passes his certification with flying colors. After he completes his tests, Rex immediately heads toward the car in search of air conditioning. His thick coat is better suited for cold Alaskan weather than this early-summer Colorado sun. »

The National K-9 Unit

The current K-9 roster consists of Cajun, Falko, Gino, Lex, Nate, Rex and Ukkie. Each has his or her own glossy business card, complete with a photo and biography. These elite animals possess an incredible diversity of skills: tracking, drug detection, wildlife detection, evidence search and protection.

The Service's K-9 program was pioneered by two former federal wildlife officers who saw the value that trained canines provide in finding evidence and detecting contraband. Since starting in California in 2000, the program today boasts seven K-9s stationed across the country, from Kenai Refuge in Alaska to Lacassine National Wildlife Refuge in southwest Louisiana.

Hoag and K-9 Cajun are stationed at Lacassine. Their duty is to keep the four national wildlife refuges in the Southwest Louisiana National Wildlife Refuges Complex safe for visitors and wildlife. They are also quick to offer assistance to their state partners, the Louisiana Department of Wildlife and Fisheries,

whenever needed. Once, Hoag and Cajun were called to help on a case where two endangered whooping cranes were killed in Louisiana. Although several sites had already been searched by field agents, Cajun located additional undiscovered evidence, which later was linked to the suspects.

It takes a long time to find a high caliber dog to handle the diversity of work required of a federal wildlife K-9.

"We want high energy dogs that have high drive are incredibly social and also incredibly obedient. We want to be able to take these dogs...anywhere we go," says Barto.

Like other law enforcement K-9s, the federal wildlife K-9s undergo an intensive physical where they are screened for genetic issues and must complete a variety of medical examinations. Aspiring K-9s

are also tested for drive and focus, two essential characteristics for success.

Raised for this work from puppyhood, federal wildlife K-9s start training early, with 10 weeks of basic handler training before their second birthday. Once chosen, K-9s spend a year and a half in training. K-9s and their handlers then spend four to six weeks together before the dogs are ready to be sent into the field for their new career. They continue their training with their handler throughout their careers, including annual courses, such as the one at Arsenal Refuge, in obedience, control, tracking, trailing and detection.

"It's not like picking a high school football player. It's like picking an Olympic athlete," says Hoag. "Hundreds of dogs are screened before one is chosen."

The Service's Office of Law Enforcement also uses dogs, wildlife inspection canine teams, created in response to the scourge of wildlife trafficking. These seven dogs, with their wildlife inspector handlers, interdict illegal wildlife and wildlife products at our nation's ports of entry. >>

Federal wildlife K-9 teams in training at the Rocky Mountain Arsenal National Wildlife Refuge in Commerce City, Colorado.



KATE MITLAND/USFWS

More Than a Sidekick

At the end of the day, one of the most important roles K-9s play is being a partner and best friend to their handlers.

“Oftentimes, it’s just me and Rex out in the Alaskan wilderness,” says Barto. “He’s a partner I can count on every day no matter the time, place or circumstance.”

“Nate is constantly by my side, everywhere I go,” adds Officer Adam Rawlinson. He and K-9 Nate are stationed at Crab Orchard National Wildlife Refuge in southern Illinois. “Nate and I work together all day. Even if I need to get into a helicopter, patrol boat, airboat, canoe or ATV to access a remote part of the refuge, Nate comes with me.”

The Service’s K-9s are also trained ambassadors to the public. They find people lost on vast public lands, participate in community and environmental education events, and help to de-escalate situations to protect both the officer and the public. In addition to keeping their refuge safe, Rawlinson and Nate are active participants in community outreach and can often be found visiting with local school groups.

Everyone who meets the K-9s, except for the criminals they help bring to justice, loves them and the K-9s are treated like celebrities in their communities. “If you forget our names, just call us by our dog’s name,” says Officer Josh Hindman, Ukkie’s handler. “We will respond just the same.” □

JENNIFER STRICKLAND, External Affairs,
Mountain-Prairie Region



Cajun relaxes after finding evidence in Louisiana.

TORTOISE: RANDY TATE/THE LONGLEAF ALLIANCE. WOODPECKER: BRADY BECK/COURTESY OF THE LONGLEAF ALLIANCE



LONGING *for* LONGLEAF

*Service, many others join together
to bring back signature tree.*

By BRIAN COOKE



RANDY TATE/THE LONGLEAF ALLIANCE

In the early 1800s, North America's longleaf pine forest stretched from eastern Texas to southern Virginia and south into central Florida. Overall, these forests covered about 90 million acres — nearly the size of Montana.

Today, that acreage is less than 5 million acres, which would easily fit into New Jersey. Of these remaining acres of this former signature tree of the American South, only about 12,000 highly fragmented acres are mature, “old growth” forests. That's less than half the size of Florida's Walt Disney World Resort.

The Service is working with countless private landowners, state and federal agencies, and conservation groups, to restore the glory of the longleaf.

But despite the work, there are relatively few places where one can go to get a sense of what longleaf forested areas were like 250 years ago. One such location is the Joseph W. Jones Ecological Research Center in southwest Georgia. It's a special place, according to Rhett Johnson, a co-founder of the Longleaf Alliance, a nonprofit organization created to ensure a sustainable future for longleaf pine ecosystems. “When you're in the middle of a longleaf forest like the one at the Jones Center,” Johnson says, “it's not hard to imagine 90 million acres of longleaf spread across the South. The vistas are overwhelming. There's also the sea of wildflowers and grasses, the birds and

these distinctive, columnar trees with their long, shiny needles and huge pinecones. But you can also imagine the early settlers taking it for granted because it was everywhere.”

And the dense, tightly grained wood from these forests was used to build some of America's great cities and railroads, as well as cottages, castles and mines in the British Isles. In addition, vast sections of the forest were cleared for crops, grazing and human development, while fire suppression and feral hogs degraded other longleaf areas.

A Couple of Johnny Appleseeds

By the 1990s, so few people remembered these immense forested areas that their loss was hardly felt. And many of the scientists who had dedicated their careers to studying longleaf were near the end of their lives. Fewer people than ever appreciated the “whispering pines” with forest floors that were bathed in dappled sunlight that filtered through high, open tree canopies.

Two professors at Auburn University—Johnson and Dean Gjerstad—knew many of these scientists and realized that, like a language only spoken by a handful of elders, longleaf expertise and appreciation were in danger of dying out. Johnson recalls, “We first looked at longleaf just as a tree, but then we realized what a unique and valuable ecosystem it was. Healthy longleaf forests have incredible biodiversity. They're like living museums when you consider how little is left. After a few years of lonely longleaf research, we looked around and found that longleaf was still disappearing at a pretty rapid rate. But the people who were really knowledgeable about it were disappearing even faster.”

They decided it was time to take action. Johnson says, “We had a couple of meetings in 1994 and we found more interest in longleaf restoration than we'd expected. But no one wanted to take the lead. We had to do it ourselves and on our own time. We both had day jobs, but it was very rewarding, especially in working with private landowners. It was like we were Johnny Appleseeds: We'd scatter like a covey of quail and go to four different states. And it wasn't just about hunting or timber: Some landowners were just excited about restoring this historic, iconic landscape.”

As time went on and they established the Longleaf Alliance, Johnson says, “Darned if it didn't take off. We realized that we weren't capable of managing growth and interest, and that we needed partners.”

8 Million Acres in 15 Years

In 2007, the Longleaf Alliance joined forces with more than 20 other organizations from federal and state agencies as well as the private sector. That partnership became ALRI—America's Longleaf Restoration Initiative.

The group's conservation plan, which was drafted in 2009, calls for an increase in longleaf-dominant forests to 8 million acres by 2025. It's an ambitious goal, for several reasons. One is that so much former longleaf habitat has been and continues to be cleared for agriculture and development. Another is that longleaf ecosystems depend on frequent, low-intensity fire, which is a difficult management prospect for forests near developed areas. In addition, longleaf management and restoration efforts are often complicated by the endangered or threatened status of many creatures that live in that habitat. »

Previous page: (Top left) An at-risk species that thrives in healthy longleaf ecosystems, gopher tortoises dig burrows that provide habitat for more than 360 other species. (Right) An endangered species, red-cockaded woodpeckers prefer to make their homes in old-growth longleaf forests. (Bottom) The Longleaf Stewardship Fund helps fund burn crews so longleaf landowners have access to trained and qualified experts.



RANDY TATE/THE LONGLEAF ALLIANCE

Healthy longleaf pine ecosystems are home to an incredibly diverse range of plants and animals, including many that have become difficult to find across the South.



MORE INFORMATION

A longer version of this article was published by The Longleaf Alliance. <<https://bit.ly/2Cmld0u>>

Employing a Powerful Conservation Tool

This is where the Service, an important ALRI partner, comes in. According to Aaron Valenta, chief of the Service's Division of Restoration and Recovery in the Southeast Region, "Our primary interest in longleaf restoration is that it's an ecosystem that holds a whole suite of species, including many that depend on that ecosystem for survival." In fact, longleaf forests are associated with 29 species on federal threatened or endangered lists.

The Service has a powerful tool in the restoration process. It's called a safe harbor agreement, and it's a voluntary agreement between the Service and non-federal property owners. According to Valenta, "The lumber industry in the Southeast was facing a potential crisis related to red-cockaded woodpeckers, which are closely reliant on longleaf pine forests that are maintained as an open forest canopy and that burn every few

years. Those companies were worried that the Endangered Species Act (ESA) would prevent them from harvesting their land. We went to landowners and proposed an agreement: 'If you manage the land in a way that we both find acceptable and a red-cockaded woodpecker moves onto your land, you'll have no liability under the Endangered Species Act.' Once they had the legal right to not worry, red-cockaded woodpeckers became a non-issue."

This approach is proving useful for other longleaf-dependent species such as the threatened Eastern indigo snake and the gopher tortoise, which is protected as threatened west of the Mobile and Tombigbee rivers in Mississippi and Alabama and is a candidate for ESA listing east of the rivers. "Not all of these species are listed under the Endangered Species Act," Valenta explains, "but we're not waiting for that to happen. Our vision is to work with private landowners and state and federal agencies by understanding their needs in the context



RANDY TATE/THE LONGLEAF ALLIANCE

of restoring endangered, threatened or at-risk species. For the gopher tortoise, landowners are stepping up to help manage the land to prevent the species from being listed.”

Other ALRI partners provide a wide range of services and perspectives related to the restoration effort. Here are a few examples:

The USDA Natural Resources Conservation Service and the USDA Forest Service’s Cooperative Forestry staff work with state governments, private landowners and other partners to raise awareness about longleaf habitat and relevant assistance programs such as the Cooperative Forestry Assistance Act.

The Department of Defense works with the Service on land use activities that might affect listed species such as the red-cockaded woodpecker or at-risk species such as the gopher tortoise.

The National Fish and Wildlife Foundation manages the Longleaf Stewardship Fund, which has helped restore and enhance more than 1.5 million longleaf acres.

The Conservation Fund is working with private landowners to establish and maintain the Coastal Headwaters Forest, a functional longleaf ecosystem in the Florida Panhandle and southern Alabama.

“The Most Successful Ecosystem Restoration Project on the Planet”

According to Ken Arney, the acting regional forester of the Forest Service’s Southern Region, “It’s quite a success story, and I mean that in a collective sense, since a lot of agencies and groups have been involved. It’s evolved to be what The Nature Conservancy has described as the most successful ecosystem restoration project on the planet. I think we’ve made a lot of progress, even though we have a long way to go.”

Longleaf pine is a fire-dependent ecosystem, which can create complications in terms of land management.

While this initiative will transform parts of the South, the effort also has implications for landscape-wide ecosystem restoration efforts elsewhere. Arney says, “Our hope is that we can reach our goal of 8 million acres by 2025 while also demonstrating that this kind of effort can be replicated in other landscapes around the country.” □

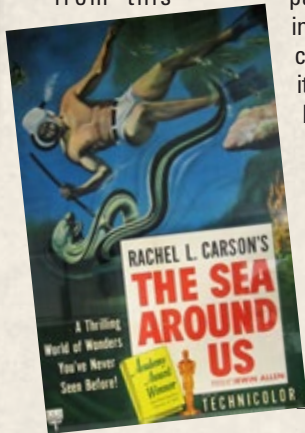
Brian Cooke is a science writer based out of Fort Collins, Colorado. He received a degree in journalism-science writing from Lehigh University. Brian’s writing and editing work has included assignments for several U.S. Forest Service divisions, the National Park Service and various environmental services companies.

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. Jeanne retired in November but provided articles to keep Curator's Corner going.

The Ultimate Irwin Allen Film

Have you ever seen a movie that was directed or produced by the late, great Irwin Allen? Several decades ago, he was the king of big budget disaster movies. *The Towering Inferno*, *The Poseidon Adventure* and *Voyage to the Bottom of the Sea* are just a few of his excursions into the exciting world of the larger-than-life, dramatic movie genre. Irwin also made Rachel Carson's book *The Sea Around Us* into a movie! It includes bombastic, dramatic narration and vivid videography, as would be expected from one of his films. We have a framed movie poster from this



particular film in our museum collection, and it is proof that Rachel Carson knew how to write movie worthy books along with the best of authors. Eat your heart out, J. K. Rowling.

Hot Outfits



Back in the 1970s, the official Service uniforms were made of polyester, which was very popular back then because it did not wrinkle and lasted forever. The Service uniforms were actual leisure suits, and boy,

did they convey that hip '70s vibe. Far out! We have a collection of them from a retired manager from National Elk Refuge whose wife ordered him to get rid of them. She said that if the house ever burned down, there would be a charred pile of molten plastic in the closet where the suits resided! My lasting thought on these horrible fashion statements is that it must have been highly uncomfortable to wear a polyester suit on a stifling, humid summer day on a refuge down South. This uncomfortable situation would never, indeed, be the definition of leisurely!

Paunchy Tiger

An adult pouncing, mounted tiger in our collection is a favorite of those touring the archives. Visitors love to take



selfies standing by the outstretched claws of the massive beast. One visitor, a biologist and tiger expert from India, told me that our tiger was definitely a zoo specimen. It is. She knew because its fur is worn in patches at its elbows from continual resting on hard surfaces like cement. In addition, it has a paunch from regular zoo feedings and lack of exercise. I can attest that, I, and many adult visitors might also be a bit paunchy! Does that mean that we live a life of captivity also?

How to Fool a Whooping Crane



The whooping crane and Sandhill crane are the only two crane species in North America. The whooping crane was pushed to the brink of extinction with only 21 specimens remaining by 1941 because of habitat loss and unregulated feather trade and egg collection. Now, thanks to the conservation of significant portions of their range, such as the breeding grounds at Wood Buffalo National Park in Canada and the wintering grounds at Aransas National Wildlife Refuge in Texas along with laws such as the Migratory Bird Treaty Act regulating the taking of birds and bird parts, there are more than 800 of these majestic birds. Captive breeding efforts

have been used to rear and reintroduce the species to portions of its former range. Patuxent Wildlife Research Center just wrapped up 50 years of captive breeding efforts, and now all captive breeding is done by private facilities such as the International Crane Foundation in Wisconsin. In captivity, one rearing method that was developed involved humans feeding chicks by hand while wearing outfits with whooping crane puppet heads so that they will not get used to or imprinted upon humans. We have an entire costume, a wooden puppet head and an arm puppet head from various captive breeding centers. I guess baby cranes are easily fooled! Oh well, so are curators!

Sandhill Cranes

Just one wonder in Colorado's San Luis Valley.

Twelve intrepid FWS Retirees from Colorado, Utah, Washington and Louisiana joined together in Alamosa, Colorado, last March to watch the antics of Sandhill cranes and other wildlife, learn about national wildlife refuges in San Luis Valley and enjoy the company of kindred spirits.



COURTESY OF BOB STREETER

We had only one hard-and-fast rule: Be dressed and ready in the motel parking lot no later than 6:00 a.m. All were early!

We arrived at the viewing area on Monte Vista National Wildlife Refuge just as dawn was breaking. The Sandhills were on time!

No sooner had we gotten out of our vehicles, readying our cameras and binoculars, then the trumpeting sounds of the earliest birds heralded their approach to breakfast. Large and small flocks flowed in with an ever increasing cacophony of crane calls. Accompanying the cranes were flocks of Canada geese, mallards, northern pintails, American wigeon, northern shovelers and cinnamon teal, each with their own signaling calls. In this high mountain valley in south-central Colorado, we watched with rapture as the sun rose

over a tapestry of wetlands, barley and hay fields, the ever-increasing volume of crane music filling our ears.

More than 20,000 Sandhill cranes, migrate biannually through this valley. The cranes were returning from their wintering roosts at the Bosque del Apache National Wildlife Refuge in New Mexico to refuel before heading for their northern Rocky and Canadian breeding territories. Interrupting their frantic feeding, the birds also treated us to pair-bonding “dancing” and the ritualized “unison call” behaviors.

At lunch, Service archaeologist Meg Van Ness told us about a major discovery called the Miller Site, where a trove of Native American artifacts have been retrieved. We then scouted the site and found arrowhead and spear-point chips and other artifacts that had been unearthed by winds and weather.

Late afternoon found us at the nearby Alamosa National Wildlife Refuge where staff gave a guided tour, focusing on the unique water management operations that utilize water rights from the Rio Grande that passes through the refuge to enhance wetlands and waterbird habitats. We saw more waterfowl and an occasional flock of Sandhills.

The second morning found all eager to again welcome the cranes to their feeding sites. We went to another viewing area just behind the Monte Vista maintenance shops and were rewarded by more unforgettable sounds and sights. In addition, a bald eagle and great horned owls joined us near our observation post, as did a herd of several hundred elk. What a precious gem our national wildlife refuges are!

After a mid-morning breakfast, we got to appreciate the new headquarters office building complex of Baca National Wildlife Refuge in the northeast corner of the San Luis Valley. For those interested in a completely natural experience, the neighboring hot springs is the site of a friendly nudist colony! With the Sangre de Cristo peaks swathed in fresh mantle of white snow, towering above, we drove through the sage-grass vegetation and were treated to bands of elk, including one of about 40 trophy bulls. The stories of the challenges of managing these lands adjacent to the Great Sand Dunes National Park and a Nature Conservancy Preserve were again most engaging and educational.

After a last opportunity for crane viewing at Alamosa Refuge, we all left with a sense of wonder at the beautiful sights and sounds we experienced together with the Sandhill cranes and to the fantastic job our refuge folks are doing. A hearty shout-out of thank-yous to all who had made our San Luis Valley excursion a memory of a lifetime! □

BOB STREETER, President, FWS Retirees



World War II Veteran Carried Special Memories of Outdoors to the Very End

By BRENT LAWRENCE

My dad passed away on December 22. A 90-year-old World War II veteran, he had a stroke on Halloween morning and it significantly affected his ability to communicate in his final weeks.



COURTESY OF BRENT LAWRENCE

However, it couldn't stop him from teaching me a final lesson.

Dad was never a particularly sentimental man. During a visit to Missouri in November, Dad and I mostly talked about his therapy, how I could help him while home and the next steps in his recovery. Due to his speech problems, I would do most of the talking and he'd nod or work to get out a few words.

One day with most of our family visiting him at the rehabilitation facility, Dad started trying to talk. His words were particularly tough to understand because he was excited. Mom tried to understand him but it was nearly impossible, with the words growing more unintelligible as his excitement level rose. Mom looked around for help translating, but my siblings could not understand him.

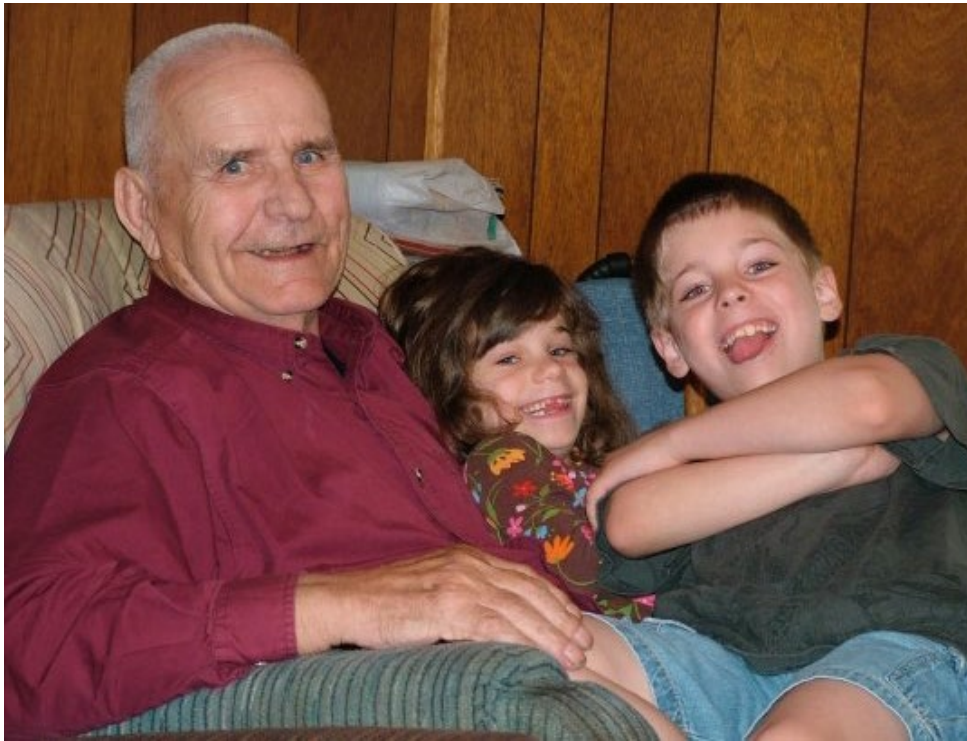
I could.

Albert Lawrence grew up on a southern Missouri farm during the Great Depression. He joined the military when he turned 17, and then returned home to get married, raise a family and work. Lots of work, often juggling a full-time job or two, and picking up side jobs mowing lawns, cutting trees or milking cows.

He never took time for recreation.

About 20 years ago, after Dad had finally retired from his full-time job because his knees were unable to withstand the daily grind of working on a loading dock, I took him on a duck hunt. It was a miserable day on Pomme de Terre Lake, so cold that the water would instantly freeze on the aluminum boat railing and our gloves. The ducks flew high that day, and we didn't fire a shot.

We'd occasionally let Thunder, my chocolate Labrador retriever, run on the nearby island. He'd always take a swim in the frigid water, and his coat would freeze stiff when he climbed back in the boat. >>



COURTESY OF BRENT LAWRENCE

Dad and Thunder had one thing in common that day—they loved that miserable morning. They were immersed in nature and the outdoors, and they were enjoying every single freezing minute of it.

Many times over the years, Dad would bring it up, with a shine in his eyes and excitement in his voice. It always started with “Do you remember that time...” He would talk about Thunder’s icy coat and the frozen boat. He’d recall the ducks flying overhead and the bald eagles perched in the trees. He’d talk about it being so cold. He talked about it with a level of pure excitement that I rarely saw from him.

That frigid day on Pomme de Terre Lake is only time I remember him slowing down and enjoying the outdoors. Memories of that day stayed with him to the very end.

So there we were in a room full of people, and a man who couldn’t speak was trying to tell a story nobody else could understand. Except for me. The glow in

his eyes and his excitement level said it all. I knew what he was trying to say.

I grabbed his hand and recounted the story. “Dad, do you remember Thunder’s icy coat and the frozen boat? The ducks flying overhead? And the extreme cold?”

He nodded in relief that I understood.

He remembered. We remembered. We cried.

Those memories, and many others, have sustained me in the weeks since his passing. Fortunately, there are many individuals who help create similar outdoor-related memories me and many other people. I get to work with them on a daily basis.

There’s Rick Spring, the disabled U.S. Navy veteran who has donated his time to build ADA-compliant hunting and bird-watching blinds at Ridgefield and Willapa National Wildlife Refuges. Rick builds blinds and he builds memories. He does it

so that all people can experience the outdoors without limitations.

Dion Hess, the Lower Columbia Chapter of the Washington Waterfowl Association and the staff at Ridgefield National Wildlife Refuge worked together to put on the first Ridgefield National Wildlife Refuge Veterans’ Day Waterfowl Hunt (p. 14). They introduced 11 military veterans to the outdoors and hunting that day, giving them a gateway to the outdoors.

It was there that I met Sal Trujillo, a disabled Army veteran who was experiencing his first hunt. He was hunting from one of the ADA-compliant blinds that Rick built. Sal told me about the importance of outdoor recreation in helping him and other veterans stay away from “some pretty dark places.” Just as Dion started Sal down the path of outdoor-related memories, Sal now makes a difference by taking other veterans on outdoor excursions.

I witnessed Nancy Zingheim’s unyielding determination to fulfill the dying wish of a virtual stranger; all for the benefit and enjoyment of other people. Nancy’s inspiring 4,000-mile journey made sure that Rita Poe’s gift of nearly \$800,000 to eight national wildlife refuges and four other parks in the West happened as promised. These two strangers managed to do something to help future generations connect with nature through conservation and outdoor opportunities on our public lands.

These people live and breathe conservation and wildlife, and they all go the extra mile to share that passion. They are creating memories of the outdoors.

I know that Dad remembered.

Rest in peace, Dad. □

BRENT LAWRENCE, External Affairs, Pacific Region

transitions

Pacific Southwest Region



After 16 years with the Service and more than 38 years of federal service,

Carmen Unchangco

retired in February from the Ventura Fish and Wildlife Office in California. Carmen came to California in 1980 and began her career in the apprenticeship program with the Department of Defense at the former Long Beach Naval Complex. After 17 years as a civilian employee with the U.S. Navy, she moved to Ventura County to become a file clerk with the former Minerals Management Service from 1997 to 2002. Since 2002, Carmen has served as a budget analyst for the Service in Ventura, where she has been responsible for the development, analysis and execution of all appropriated and non-appropriated funds. "While Carmen's long career comes to a close, the impact she has had on our office will last for many years to come," says Erik Germain, administrative officer for the Ventura office. "Through her dedication and hands-on training style, she has empowered a new generation of budget staff to be highly successful in their own careers." □



On December 22, after 28 years with the Service, botanist **Connie Rutherford** retired

from the Ventura Fish and Wildlife Office in California. Connie coordinated recovery plans for many plant species in Southern California, including San Benito evening primrose, robust spine-flower and six other species found in the mountains around the Los Angeles basin. She facilitated actions resulting in the removal of the Eureka Valley evening primrose from the federal endangered species list, and the downlisting of the Santa Cruz cypress and Eureka dune grass from endangered to threatened. In May 2018, she was awarded the Service's Recovery Champion Award. When asked what advice she would give to people interested in a career in conservation, Connie says: "Get out as much as you can in the world. Don't think that you have to get a full-time job right away: Volunteer, take internships, and travel; get out and meet people, go to different places and try to understand how things work." □

Midwest Region



President Donald J. Trump has selected Acting Midwest Regional Director **Charlie Wooley**

to serve as the Federal Commissioner representing the United States on the Great Lakes Fishery Commission. In addition to his Service responsibilities, Wooley joins the U.S. delegation that includes the State Commissioner, Academic Commissioner and the Commissioner at Large. Commissioners of the United States are appointed by the President for six-year terms.

Wooley's work on Great Lakes issues goes back decades, including a historical milestone of serving on detail at the House of Representatives' Merchant Marine and Fisheries Committee, drafting the Great Lakes Fish and Wildlife Restoration Act of 1990 which was passed by the 101st U.S. Congress.

"While I look fondly back on that personal milestone, I'm excited to get started with this commission's outstanding reputation of great binational efforts. Efforts that include sea lamprey control, cutting edge sound science and foresight of potential threats to the Great Lakes that could impact the \$7 billion treasure of the U.S. and Canada," he says.

Canada and the United States share the Great Lakes fishery, which attracts millions of anglers, supports valuable commercial and charter fishing, is a mainstay for native peoples and is the very fabric of a healthy environment.

The Great Lakes Fishery Commission, operating through the 1954 Convention on Great Lakes Fisheries, facilitates successful cross-border cooperation that ensures the two nations work together to improve and perpetuate this fishery. The lakes fall under the jurisdictions of two nations, eight states, one province and several tribes, but the fishery resources don't know political boundaries. Canada and the United States recognized decades ago that the best way to manage and sustain the fishery is through continuous, binational cooperation.

The commission focuses its work on the development, coordination and implementation of a binational research program to sustain Great Lakes fish stocks. It also oversees sea lamprey control and the sharing of information critical to sustaining current Great Lakes fisheries. As commissioner, Wooley will serve in a leadership role as the Great Lakes Fishery Commission continues with the implementation of the sea lamprey control program, sets research priorities and strengthens working relationships between international, federal and state partners.

"This body is the eyes and ears of our two countries, the U.S. and Canada, to identify potential threats to the Great Lakes and offer solutions. I'm very honored to pitch in and help as a representative of the United States government," he says. "The Great Lakes Fishery Commission is living proof that international cooperation yields lasting and meaningful environmental gains for this mutually important natural resource. The Great Lakes fishery remains important to our region and country and I couldn't be more pleased to serve the President and the people of our nation in this role." □



Todd Boonstra has been named the project leader for Hackmatack National Wildlife

Refuge and Kankakee National Wildlife Refuge and Conservation Area, two of the newest refuges.

Todd comes to the Midwest Region from Montana where he oversaw operations for more than 15,000 acres of Bowdoin Wetland Management District and functioned as deputy refuge manager and law enforcement officer for the overarching Bowdoin National Wildlife Refuge Complex, which is made up of four refuges. This assignment sharpened an already strong understanding of habitat and easement management for Todd, as he was responsible for the development and expansion

of the refuge and easement program, through local relationships and state and regional networks. Partly because of his fluency in general farming and ranching operations and partly because of his strong skills in wetland delineation and assessing property conditions, Todd was able to work with local landowners, elected officials and nonprofits to support active grassland management, battle invasives and protect vital landscapes in Big Sky Country. Ducks Unlimited honored him with its Partner of the Year Award and its Wetland Conservation Achievement Award for his dedication to conservation in Montana.

"We are excited to have Todd in the Midwest Region. I know his experience and professionalism will help develop the management programs for these two important national wildlife refuges," says Regional Chief of Refuges Charlie Blair.

Todd is well-suited for his new role at refuges that extend across parts of Wisconsin and Illinois, because he can see the big picture and can work with people from all backgrounds and interests to rally around the idea that public land has intrinsic value.

With a solid background in biological and ecological theories and how they apply to habitat management challenges, such as invasive species management, wetland manipulations and active grassland management, Todd is a good fit for Hackmatack and Kankakee.

Born and raised in Minnesota, Todd is a child of the outdoors. Reflecting on his childhood memories, he remembers pretty much always being involved in some form of outdoor activity.

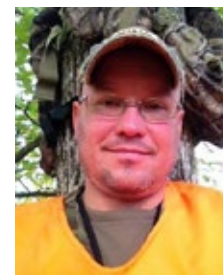
"Whether it was exploring the woods and lakes down the road or hunting and fishing with family and friends, there isn't just one moment when I realized a love for nature. It was just who I was and who I still am. I consider myself lucky to have found a career that continues to build on that childhood joy of being outdoors," he says.

Todd followed that natural curiosity to Minnesota State University at Mankato, where he completed his bachelor of science degree in ecology. He later completed his master of science in Fargo at North Dakota State University, focusing on the nesting behavior of Canada geese. It was while working and living in North Dakota when he became fascinated with the importance of habitat management and the role that local, state and regional partnerships have in conservation efforts.

He and his wife have three kids and a black lab named Gauge. Outside of work, you can find him hunting, fishing, hiking or camping with family and friends.

Hackmatack Refuge was officially established on November 6, 2012. Kankakee Refuge and Conservation Area was officially established on May 25, 2016. □

Southeast Region



Leopoldo "Leo" Miranda has been named Regional Director of the Service's Southeast

Region, which encompasses 10 southeastern states, Puerto Rico and the U.S. Virgin Islands.

Miranda succeeds Cindy Dohner, who led the region from November 2009 until her retirement in August 2017.

"I look forward to working with my Service team, state partners, and all of our friends and partners," says Miranda, 47. "We have made great progress in making conservation programs work. I expect even more progress in the future."

For the last seven years, Miranda was the Assistant Regional Director for Ecological Services, a Service program that oversees the conservation and recovery of more than 400 animals and plants across the region. In that time, Miranda put into effect an at-risk wildlife strategy using the Endangered Species Act's (ESA) regulatory and administrative flexibility to successfully keep almost 175 fish, wildlife and plants off the ESA's list of protected wildlife.

He and his team are also strengthening Service ties with private landowners, state and local governments, the business community and military partners to promote conservation programs. The result: money and time saved—a benefit to conservation.

Miranda began his Service career as a private-lands biologist in his native Puerto Rico where he worked closely with shade-grown coffee growers to promote conservation. Those early connections laid the foundation for his interest in later, large-scale conservation efforts such as longleaf pine restoration.

Before coming to the Service's Atlanta offices, Miranda led the Service's Chesapeake Bay field office in Annapolis, Maryland. There, he oversaw the work of ecological-services biologists and coordinated their work with six national wildlife refuges and one fisheries office.

He received his bachelor's degree in marine biology from the University of Puerto Rico and a master's degree in zoology from North Carolina State University.

An avid outdoorsman, Miranda is equally at home in a deer stand or on the banks of a stream. He has a farm near Columbus, Georgia, where Miranda puts Service policy into action: He's managing the farm habitat for at-risk and listed wildlife including red-cockaded woodpeckers.

Miranda lives in the Atlanta metro area with his wife, son, and four-legged family members Venus, Bromelia, Tanna and Rex. □

Headquarters



Jim Kelley, the Service's representative to the Mississippi Flyway Council, retired last August

after a 27-year Service career. Jim began his career with the Division of Migratory Bird Management's Population Assessment Section at the Patuxent Wildlife Research Center in Laurel, Maryland, where he worked with wood duck monitoring and management.

He later became a staff specialist at the division's headquarters. Jim worked with goose researchers throughout North America and served as technical representative to the Arctic Goose Joint Venture. He also helped refine the approval process for nontoxic shot types for waterfowl and helped establish a toll-free telephone number that hunters and others could call to report waterfowl bands.

In 2000, Jim became the eastern migratory shore and upland game bird coordinator in Minneapolis, Minnesota, where he led the Service's efforts to improve woodcock conservation by working with other federal entities, state agency personnel and non-governmental organizations to increase the amount of young forest habitat in the Midwest and Northeast. He

also co-led the development of a harvest management plan for the species and a range-wide woodcock conservation plan, and served as the co-chair of the interagency Woodcock Task Force.

In 2007 Jim achieved a lifelong goal when he was selected to be the Mississippi Flyway representative, only the third person to hold that position since its establishment in 1952. He was the liaison for the Service to the 14 states in the flyway, working with them on all issues related to migratory bird management, including monitoring, regulations development and policy formulation. He worked there until his retirement.

Jim lives with wife Lindsay and stepson Payden in Centuria, Wisconsin, where he co-owns a bike and cross-country ski shop. □

bumble bees and other pollinators, as well as restore and enhance 750 acres of habitat in Wisconsin's Driftless Area, provide baseline data, improve pollinator habitat and enhance technical support for landowners. □



Midwest Region Realty Specialist **Tamra Adams** received the 2018 Rudolph Dieffenbach

Award. For more than 20 years, Tamra has provided the division of realty and refuge managers with exceptional customer service.

This national award is given annually to a realty employee for significant contributions to the Service land acquisition systems, operation or mission. During her tenure, Tamra has played an instrumental role in the growth and development of the National Wildlife Refuge System. With an emphasis on land acquisitions located in Minnesota, she has effectively closed on acquisitions in 34 Minnesota counties. On average, she finalized 30 acquisitions a year. Over the past five years, that has resulted in the permanent protection of 12,000 acres. The monetary value placed on these lands is estimated to be \$22 million.

Her greatest asset is her professional working knowledge of what makes a successful real estate transaction. She also

honors

Midwest Region



Wisconsin Private Lands Biologist **Bill Kiser** is one of seven grantees of the 2018

National Fish and Wildlife Federation's Monarch and Pollinator Conservation Fund. This very competitive grant will help Bill and partners conduct field surveys for monarch butterflies, rusty patched

knows how to look for solutions when transactions don't go as smoothly as hoped. As one of her co-workers has repeatedly stated, "There has never been a question she cannot answer or problem she cannot resolve."

She also co-developed a regional realty case-tracking system that is being considered for a national roll-out program wide. Her innovative and forward-thinking talent has fostered an increase in our technical abilities and efficiencies, which is critical for our external customers who may compare timelines of private-sector transactions with the federal process.

The award is named after Rudolph Dieffenbach, who acquired more land for American wildlife than any other figure. □

Pacific Region



Cheri Anderson, information and education specialist at Columbia River

Gorge National Fish Hatchery Complex, received the 2018 Rachel Carson Sense of Wonder Award. Honoring the words and legacy of former Service employee and conservationist

Rachel Carson, the award recognizes a Service employee in the field of environmental education and interpretation.

For decades, Cheri has been inspiring and teaching people of all age to get outside and connect with nature. Among her work:

- Cheri created Salmon in the Classroom, teaching students throughout Washington and Oregon about a key part of their natural legacy.

- Thanks to Cheri, anglers of all ages and abilities have been catching the joy of fishing for many years through events she has had a hand in, including Carson National Fish Hatchery Kids Free Fishing Day and Disabled Fishing Day.

- She has spent two decades leading dozens of group tours each fall and winter at Spring Creek and Little White Salmon National Fish Hatchery, reaching thousands of youth and adults.

- She works with partners such as Skamania County Forest Youth Success to create opportunities for youth volunteers to learn fish culture through spawning days and fulfill service commitments by building trails or restoring habitat on hatchery grounds.

- Cheri has created targeted, hands-on programming such as fishing days and cross-country skiing trips towards disabled youth and adults. She also played an important support role in the establishment in 2012 of a year-round, ADA-compliant disabled fishing platform at Drano Lake near Little White Salmon National Fish Hatchery.

Under Cheri's leadership, national fish hatcheries in the Columbia River Gorge are not only places that raise more than 22 million salmon a year but also community spaces where people connect to nature, whether it's through catching a fish, seeing or helping with salmon spawning, or learning about the value of clean water and healthy habitats for fish and people.

For many people living in the Pacific Northwest—particularly schoolchildren in or around the Columbia River Gorge National Scenic Area—or visitors to a Columbia River Gorge National Fish Hatchery, Cheri Anderson just might, at some point, have inspired in them a sense of wonder. □

Southwest Region



A year in the making: The Arizona Game and Fish Department has expressed

its gratitude to **Cliff Schleusner**, the Southwest Region's Chief of the Wildlife and Sport Fish Restoration Program along with grant specialist **Nicole Jimenez**. The two immersed themselves in meeting complex federal compliance requirements to release a Sport Fish Restoration grant for the blue-ribbon trout waters below Glen Canyon Dam on the Colorado River. □

Headquarters

Last fall, the Wildlife Society's Awards Committee approved a proposal submitted by **Christina Milloy**, a fish and wildlife biologist in the Wildlife and Sport Fish Restoration Program (WSFR), and John Organ, formerly of WSFR and now with the U.S. Geological Survey, to annually recognize two outstanding Wildlife Restoration projects in the categories of wildlife management, and wildlife research and surveys. Similar awards have been given for Sport Fish Restoration projects by the American Fisheries Society and WSFR boating projects by the States Organization for Boating Access. This will bring recognition for projects specific to the Pittman-Robertson Wildlife Restoration Act from the Wildlife Society. Christina worked closely with the Awards Committee and drafted all the documents related to the award including the award description, judging criteria and scoresheet. John was appointed to the committee that will make the initial award selections in 2019. □

Fish & Wildlife News

Division of Marketing
Communications
U.S. Fish and Wildlife Service
5275 Leesburg Pike
Falls Church, VA 22041-3803

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New Home

While Monterey ensatina can be found throughout California, the species was recorded for the first time on San Diego National Wildlife Refuge in February. These lungless salamanders breathe through their skin and tissues lining their mouth.



LISA COX/USFWS

Fish & Wildlife News

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Submission deadline:

Summer 2019: by April 25