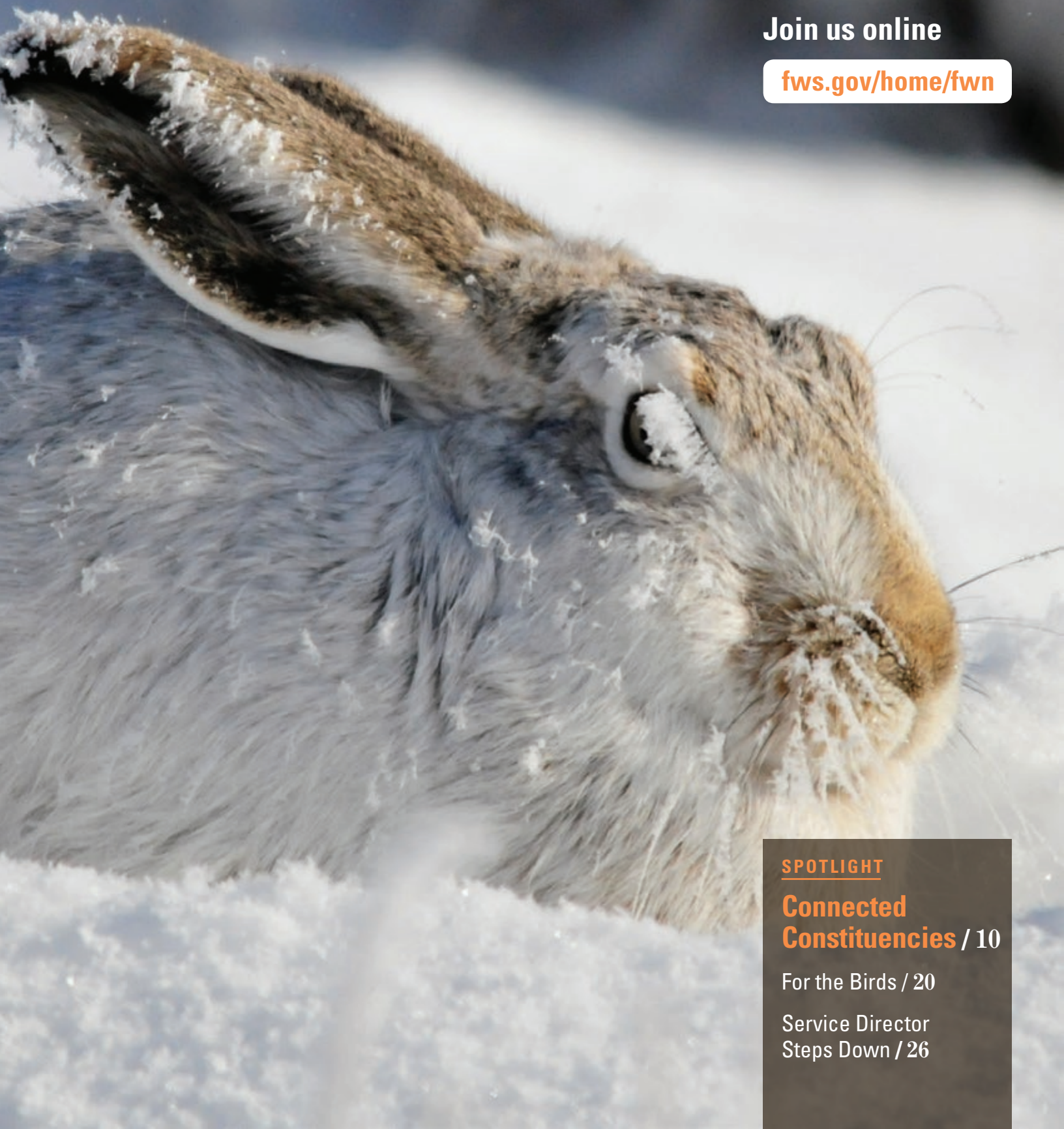




Fish & Wildlife *News*

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Betsy Hildebrandt,
Assistant Director
for External Affairs

Connecting Our Constituencies

We know that to thrive as an organization and remain relevant in society, we must adapt to the changing world. And this past summer, the Service leadership approved a new way for the U.S. Fish and Wildlife Service to tell our conservation story.

In doing so, they recognized that we cannot continue doing business as usual—we need to communicate with the public in different ways and reach people outside our traditional audiences.

The country is changing. Fewer people hunt, fish or even spend a lot of time in the outdoors so many of us love.

We can't rely on our traditional audiences to reach everyone who cherishes all the things that conservation brings—wild things and wild places, clean water and air, and so much more.

It is up to us to find and engage new groups to tell our conservation story.

And that is a key part of the new communications strategy.

We will not ignore our traditional audience, which has done, still does and will do wonders for the U.S. Fish and Wildlife Service and for conservation. But we must augment that constituency with groups who in the past were left out of the conservation conversation and who can help us succeed in achieving our mission for all Americans.

We need to appeal to the next generation, and that means going to cities, where the majority of Americans live. These young people will often be people of color and of diverse ethnicity. We must also do a better job engaging federally recognized Native American and Alaska Native tribes. We must reach all these Americans—and more—to succeed.

Another part of the strategy is to communicate as “One Service” rather than our disparate regions and programs.

And yet another will improve our storytelling, both telling stories better and telling better stories to engage audiences who may not be familiar with the Service or even wildlife conservation.

Instead of focusing on processes and organizational machinations, we will talk about wild things and wild places, heralding the Service's role in preserving them. Or the public servants committed to them.

This will work!

People don't want to have to send their children or grandchildren to a history website so they can see a monarch butterfly or an elephant. They need to know that nature is there for them if they need to “dip their toes” in its calming waters after a week filled with the hustle and bustle of everyday life.

Starting on p. 10, you will see some of our early efforts at a Connected Constituency. There are still many groups to reach—the business community, chambers of commerce, religious groups and more. We hope you join in!

Betsy Hildebrandt is the Service's Assistant Director for External Affairs.

A Nose Ring Helps Researchers Studying Importance of Wetlands



USFWS

Visitors to Red Rock Lakes National Wildlife Refuge in Montana may be treated to a rather strange sight during future visits: a duck with a nose ring.

Say what?

That's right. Researchers are conducting a long-term demographic study of female lesser scaup at the refuge, which supports one of the highest recorded nesting densities of the species in North America.

The nasal marker, applied in 2011, allows the duck to be easily identified at a distance if she returns to the study site, providing researchers with valuable survival data.

Why go to all this trouble?

Across the 11 states of the arid Intermountain West, wetlands are very scarce resources, making up less than 2 percent of the total land area. And nearly

The individual in the picture was banded as a duckling in 2008 and subsequently recaptured and nasal marked in 2011.

The nasal marker does not affect adult female survival, and the female's bill is not punctured. There is no septum between the holes in the bill of a duck, so the small pin that holds the two discs of the marker on simply slides right through.

90 percent of wetlands in the region occur on just 10 percent of the land. If you are a duck in search of water, pickings are slim and far apart.

Researchers know that this female and other ducks across the region need wetland connections. But what this study has revealed is the critical importance of female pre-breeding body condition on if, and when, she nests. The earlier she can nest, the more likely she is to successfully fledge young.

The study has also demonstrated the cost of that success can be high. When local wetland conditions are good, many females nest successfully and female survival during the breeding season increases. The unfortunate result of this success comes the following winter — female survival during non-breeding seasons is lowest after a breeding season with good wetland conditions. Conversely, during dry breeding seasons, when many hens choose not to nest, survival during the following non-breeding season is higher.

The relationship is likely a result of females investing significant amounts of energy raising a brood when wetland conditions are good. Consequently, they end the breeding season in poor body condition — just when they need to molt feathers and build fat reserves for fall migration, both costly annual events. When females begin these activities late in the breeding season, and in poor body condition, researchers believe it is more difficult for them to prepare for the fall migration, which has a direct and negative impact on their survival rates.

So, what can we do?

Maintaining, improving and restoring wetland connections for when females start heading back south is one of the most important activities we can take. These birds use state and federally managed "semi-permanent" wetlands (i.e., those with open

water throughout the growing season in most years) across the Intermountain West as metaphorical gas stations to top off their tanks during migration, allowing them to rest and recover from their travels. These publicly owned and managed wetlands make up more than 60 percent of semi-permanent wetlands in the region, creating the connections migratory birds need to travel between breeding and wintering grounds.

Quality management of these wetlands provides the fuel birds need for their migration and keeps these linkages intact, so the cycle can repeat itself next year.

And it all begins with data derived from a duck's nose ornament — ain't wildlife conservation grand! □

BRIAN ALLEN, Fish Springs National Wildlife Refuge, Mountain-Prairie Region; JEFF KNETTER, Idaho Department of Fish and Game; JOSH VEST, Intermountain West Joint Venture; JEFF WARREN, Red Rock Lakes National Wildlife Refuge, Mountain-Prairie Region

Artist's 'Big Foot' Project Highlights Human Impact on California's Species in Peril

Beverly Mayeri's clay pieces were once described in a 2003 *New York Times* review as evoking "something rare in contemporary art—a richly complicated human presence."

Now, 13 years later, the sculptor is still showing how that human presence is affecting us. California's endangered wildlife inspired Mayeri's *The Big Foot*, a 68-inch tall photo collage of vulnerable species in California pasted onto a papier-mâché human foot.

The project, which weighs 40 pounds, took two years to conceive and build in her studio, and Mayeri finished the collage while she was artist-in-residence at the de Young Museum in San Francisco earlier this year.

"Why use a big foot?" asks Mayeri, speaking from the studio she shares in Sausalito, California, with two other artists. "I like it because it suggests we are trampling on the earth like oversized giants. It's also a reference to the carbon footprint

of the environmental movement. We use far too much of the earth's resources.

"Since these species are located here in our own state, we may be in a position to help some of them survive. People are capable of making a difference."

Once Mayeri, who has often featured environmental themes in her art, decided on *The Big Foot* project for her de Young residency, she began searching for photos of state and federally listed species in California.

Each of the 164 photos on *The Big Foot*, from the blue whale and California condor to the Delta smelt and Bay Checkerspot, Lange's Metalmark and El Segundo Blue butterflies, is numbered, so each species on the list can be identified and the photographer credited. There is a water line at the top of the foot that depicts the rise in sea level expected in the future if humans don't cut fossil fuel use. The collage of plant, animal and fish images goes up to this water line.

Mayeri says this sculpture emphasizes that our carbon and environmental footprints—our human footprints—are too big for a healthy planet.

"The inspiration for this project came from a ceramic foot I had done in 2010," Mayeri says. "That project had waterlines suggesting the rise in sea level, and scratched into the dark water or oil stain are scenarios of human-caused problems for life at sea."

Mayeri hopes *The Big Foot*, which won't be sold, will eventually find its way into the lobby or other public viewing area of an environmentally conscious company. She'll also be open to showings where requested.

Her work is part of the Smithsonian Archives of American Art, and in private and public collections such as Los Angeles County Museum of Art, High Museum of Art, Racine Art Museum and Museum of Modern Art in Honolulu. □

STEVE MARTARANO, San Francisco Bay-Delta Fish and Wildlife Office, Pacific Southwest Region



STEVE MARTARANO/USFWS

Beverly Mayeri with *The Big Foot*, her 68-inch tall photo collage.

What is OSM?

From caribou and permafrost to massive refuges accessible only by float planes, most folks recognize that Alaska is different. So different, in fact, that an entire federal initiative, the Federal Subsistence Management Program, operates only in the Alaska Region.

For rural Alaskans, subsistence fishing and hunting provide a large share of their food—annually they harvest about 18,000 tons of wild foods, including salmon and moose. An economic benefit to be sure, but the harvest of wild foods also connects Alaskans to the land and a way of life that has been passed down for thousands of years.

“Like many in the Arctic, my family relies on the land for food,” Keemuel Kenrud, an Arctic Youth Ambassador, writes in a blog.

The Federal Subsistence Management Program and the Office of Subsistence Management (OSM), which supports the program, aim to ensure that wild resources on federal lands remain available to people like Kenrud.

Some may be familiar with the Alaska National Interest Lands Conservation Act (ANILCA), the 1980 law that established or added to Alaska’s 16 refuges. A lesser-known function of the law was to prioritize subsistence uses by rural Alaskans on federal public lands and water over other consumptive uses. Since 1990, when the federal government assumed management of subsistence on federal public lands



LISA MAAS/USFWS

from the state of Alaska, OSM has administered this subsistence priority.

Dual management of fish and wildlife harvest is another way Alaska is different. Only rural Alaskan residents qualify as “federal subsistence users,” so two sets of regulations govern harvest on federal public lands and waters in the state: one for most Alaska residents and non-residents administered by the state of Alaska and one for federally qualified subsistence users administered by OSM and the Federal Subsistence Management Program.

Any U.S. citizen can submit proposals to modify federal subsistence regulations (i.e., extend a moose season, reduce the harvest limit of salmon). OSM then analyzes the effects of the proposed regulation change on fish and wildlife populations as well as subsistence users, and shepherds proposals through multiple rounds of review, including by the 10 Regional Advisory Councils.

The councils, established by ANILCA, are made up of local subsistence and sport/commercial users, and provide a regional forum for subsistence issues. After discussions, the councils make recommendations to the Federal Subsistence Board, which makes the final decision on proposals. The eight-member board is composed of five federal agencies—the U.S. Fish and Wildlife Service, National Park Service, Bureau of Indian Affairs, Bureau of Land Management and U.S. Forest Service—and three public members with extensive subsistence knowledge and experience who are appointed by the Secretary of the Interior with concurrence from the Secretary of Agriculture.

“Being a [subsistence] user, eating [the food we harvest] every day, handing that tradition down to my family, and showing them why it’s important that we have strong environmental programs, that we have regula-

Subsistence users transport harvested caribou in Northwestern Alaska.

tions, that we have management plans, to protect the way of life for ourselves, I think is critical to the future of Alaska,” Anthony Christianson, the new chair of the Federal Subsistence Board, told Alaska Public Media. □

LISA MAAS, Office of Subsistence Management, Alaska Region

Community Engagement, Innovation Help Key Deer Fight Screwworm Outbreak

In the fight in the Florida Keys to save the endangered Key deer from a parasitic insect called New World screwworms, Service employees in Florida are getting lots of help.

As is often the case when trouble strikes, area citizens have responded.

As of December 15, most of the more than 4,500 preventative treatment doses of an anti-parasitic drug had been administered to healthy Key deer on Big Pine Key with the help of nearly 200 volunteers.

"This community values these special deer and is partnering with us to save them from this infestation," says Dan Clark, manager of the Florida Keys National Wildlife Refuge Complex.

Adds Service veterinarian Erin Myers: "The citizen volunteers have been invaluable. They've been assisting nonstop with administering oral doses both around their homes and in other areas far from their homes."

But while 75 percent of the Key deer population lives on Big Pine and No Name keys, herds are found in some of the more rural parts of the Keys. These backcountry deer are harder to locate than those in more urban environments, and partners have been using innovative techniques to administer preventative treatment to them.

Service staff developed and built medication stations on Cudjoe, Sugarloaf, Torch, No Name and Big Pine keys. The stations lure deer with a mixture of oats, forage pellets and cracked corn and then daub their necks with topical anti-parasitic medication using a self-applying roller system as they lower their heads to eat.

"We came up with the idea and design for the medication stations through research on the Internet regarding various sheep and cattle feeder designs and ideas from deer tick treatment feeders developed in Texas," says Myers. "We've seen deer using the feeders."

These medication stations have been installed along heavily used deer trails on remote sections of the National Key Deer Refuge. "We are seeing fewer infested deer in neighborhoods and also in natural areas, as seen on trail cameras," says Kate Watts, wildlife biologist. "We monitor each medication station daily using trail cameras to document the number of deer treated and to keep a close eye on any other species that may be using the stations."

More than 70 Service employees have deployed down to the Keys in response to the screwworm outbreak.



"These medication stations are just one indication of how innovative and dedicated they've been throughout this situation," Clark says.

Other partners such as the Florida Department of Agriculture and Consumer Services and the Florida Fish and Wildlife Conservation Commission have also stepped in.

The Key deer is the smallest subspecies of the white-tailed deer, standing only three feet in height. Key deer are unique to the lower Keys—and the only large herbivore on them—and can only be found on 20–25 islands. Due to habitat loss, the Key deer was listed as an endangered species in 1967. □

PETER REA, Desoto National Wildlife Refuge, Midwest Region, and KEN WARREN, South Florida Ecological Services Office, Southeast Region



(Top) A Key deer eats at one of the medication stations. (Above) Kate Watts and Erin Myers stand near one of the Key deer medication stations they helped design and build.

Update

While significant strides have been made toward eliminating fertile screwworm flies from the environment, complete eradication remains elusive. On January 13, two Key deer from Big and Little Munson islands were confirmed to have been infested with screwworm.

Nations Take Strides to Increase Trade Protections for Imperiled Species

With scales used in traditional Asian medicine and meat considered a luxury food in many cultures, pangolins hold the unfortunate title of world's most trafficked mammal. But the 17th Conference of the Parties (CoP17) to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in October provided good news for pangolins and their advocates: All eight pangolin species received the highest level of protection CITES gives, halting commercial trade in pangolins.

African grey parrots, one of the most traded of all CITES-listed parrots, also received the highest level of protection.

CITES also gave greater trade protections to the chambered nautilus, popular in jewelry; devil rays, used in traditional medicine; softshell turtles; eaten in East Asia; and chameleons, in demand in the pet trade.

Says John E. Scanlon, Secretary-General of CITES: "The most critical meeting in the 43-year history of CITES has delivered for the world's wildlife. #CoP17 is a game changer for the planet's most vulnerable wild animals and plants."

With former Service Director Dan Ashe as the head of the U.S. delegation, the United States, along with other countries and partners, pushed for, and achieved, these protections and more.

Strong U.S. leadership helped, but as Ashe says, "I was privileged to be a participant and a witness to a remarkable spirit of collaboration as the world pulled together to find global solutions to [wildlife trade] problems."

That U.S. leadership was on display as the member nations of CITES, known as Parties, agreed to close domestic ivory markets to ensure they are not contributing to illegal ivory trade, similar to actions taken by the United States earlier this year. The CITES Parties also rejected proposals to resume commercial trade in elephant ivory.

Lions and other animals and plants also gained new protections under CITES.

Consumers, through their purchasing decisions, can play a significant role in either curbing or contributing to illegal wildlife trade. CITES Parties adopted a resolution, introduced by the United States, and a series of actions that encourage countries to undertake campaigns to reduce demand for illegal wildlife products.



DIRCK BYLER/USFWS

The United States also co-sponsored a resolution with South Africa to give youth a voice in global conservation. The resolution was accepted, which fits tightly with a top Service priority to value the ideas of young people. □

African grey parrots gained greater protection.

What is CITES?

CITES is an international agreement initiated in 1973 and since ratified by 183 Parties to protect certain wild animals and plants against over-exploitation as a result of international trade. More than 35,000 species of animals and plants benefit from CITES protection. Every two to three years, a session of the CoP is held to review, discuss and decide on changes in the implementation of CITES, including changes in protections for certain species.

Service Trains Native American Game Wardens

Maybe you've heard the adage, "There's a game warden behind every tree." While that might encourage ethical behaviors, it's far from a reality.

The Service's Native American liaison for the Southwest Region, Joe Early, knows this too well. Early, a former Wildlife Inspector and member of Laguna Pueblo, runs facilitated training sessions for game wardens who protect fish and wildlife and culturally important resources on tribal lands.

"There's a dire need for training Native American game wardens," says Early. "There's too few of them on the ground, having to cover vast geographic areas. Quality training will help them do their jobs better."

In the fall, game wardens—some from as far away as Montana and Washington—come to the Albuquerque area for instruction as varied as firearms

training, defensive tactics, wildland fire investigations and archeological resources investigations.

"The training we facilitate dovetails with the Service's Native American policy," says Early. "The Service and tribes in many instances share conservation concerns for threatened and endangered species and animals culturally important to Native people, such as hawks and eagles."

Experts from the Federal Law Enforcement Training Center in Artesia, New Mexico, lead some courses. The Native American Fish and Wildlife Society is also a partner in the annual event. To learn more about training, contact Early by phone at 505/248 6602 or <Joe_Early@fws.gov>. □

—————
 CRAIG SPRINGER, External Affairs,
 Southwest Region

Oh Say Can You SECAS: An Unprecedented Vision for Conserving the Southeast Landscape

The Southeast Region's population grew 40 percent faster than any other region over the past six decades. Cities are getting bigger. Rural communities are getting smaller.

Urbanization, population and related growth trends, and a range of related conservation needs prompted federal and state conservation leaders to come together in 2011 to develop a shared, long-term vision called the Southeast Conservation Adaptation Strategy (SECAS).

"Looking out over the SECAS landscape, there has been tremendous progress—a seamless and integrated approach to achieving shared objectives," says Gordon Myers, executive director of the North Carolina Wildlife Resources Commission and current chair of the Southeastern Association of Fish & Wildlife Agencies (SEAFWA). "This approach should make us more cost-effective and better coordinated, more effective and efficient. I have nothing but appreciation for the process."

The five-year process Myers refers to resulted in the release of the SECAS Blueprint 1.0 this past fall. Just as a construction blueprint serves as a plan for achieving an architect's design of a building, the SECAS Blueprint serves as a plan for guiding smarter investments to generate more robust conservation outcomes at a landscape and seascape scale.

Its role is to allow diverse partners, such as city planning agencies, to identify and support the steps necessary to plan, implement and evaluate actions that sustain habitat, mitigate threats, and help resources and people adapt to future conditions.

"Success will require transformational change from a model of competition for resources to one of collaboration in developing and pursuing desired future conditions," says Ed Carter, executive director of the Tennessee Wildlife Resources Agency. "I am excited about where SECAS and the blueprint will take us."

The SECAS Blueprint stitches together the work of the area's six Landscape Conservation Cooperatives (LCCs) into one map of shared conservation and restoration values across the Southeast and Caribbean. The blueprint can be used to illustrate how a range of decisions fit into a larger landscape that supports sustainable populations of fish and wildlife and a strong regional economy at the same time.

Says Susan Gibson, environmental coordinator for the U.S. Department of Defense Southern Region, "In the Southeast, we've long known that a good map was key to conservation and natural resource planning for the region. The blueprint provides us the tool we've needed." »

Mescalero Apache game warden badge



CRAIG SPRINGER/USFWS

Cindy Dohner, the Service's Southeast Regional Director, knows that the SECAS Blueprint is not a "one and done" effort.

"SECAS is an unprecedented example of large-scale landscape conservation planning and implementation that will allow us to keep working lands working and conserve fish and wildlife, Dohner says. "It's one that can be modeled across the country with an emphasis on greater awareness and predictability. It's a first step. We need to begin to tackle the next challenge of how do we expand SECAS collaboration to include a wide array of partners in the business community, private landowners, energy and industrial sectors of

the economy, forest landowners, and state and local leaders and planners, among others."

Partners in SECAS have committed to continuing their engagement and dialogue in shaping the vision for the Southeast. The LCCs will incorporate future change into the blueprint when updating the map annually. □

CYNTHIA KALLIO EDWARDS, Southeast Conservation Adaptation Strategy; GREGG ELLIOTT, Gulf Coastal Plains & Ozarks LCC; LAURA MACLEAN, Science Applications, Headquarters

Gila Trout Swim Mineral Creek

How do you move a thousand captive-raised fish from their hatchery to their release site miles away? Answer: Carefully! It helps to have a helicopter, too. That's what it took (along with a big truck and a lot of shoe leather) to get that many Gila trout safely out to the remote headwaters of Mineral Creek, well inside Gila National Forest in southwestern New Mexico.

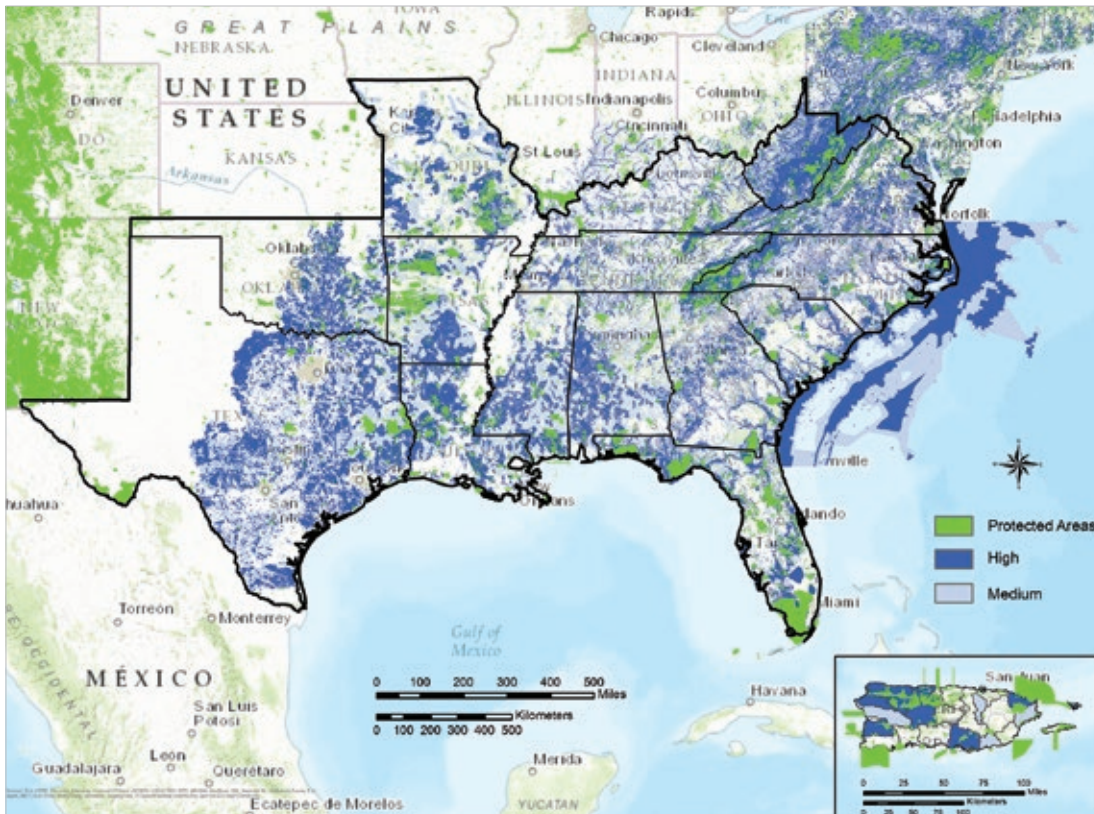
On November 18, the Service, New Mexico Department of Game and Fish, and U.S. Forest Service released the young Gila trout, ranging from 6 inches to a foot in length, into Mineral Creek. These rare, yellow trout were spawned, hatched and raised in captivity in 2015 and 2016 at the Service's Mora National Fish Hatchery. Hatchery fish are carefully paired and spawned to maximize genetic diversity of offspring, improving chances of their survival in the wild. The captive fish were also purposely subjected to rigorous swimming conditions in the hatchery to further ensure their fitness when released.

These trout traveled by truck eight hours to meet a helicopter at Gila National Forest's Glenwood Ranger Station. The aircraft made multiple flights carrying an aerated tank at the end of a long line, each time full of Gila trout. Biologists from the three agencies had hiked several miles into the rugged country to meet the trout and place them in the cool, shaded runs and pools of Mineral Creek, a tributary of the San Francisco River near Alma, New Mexico.

? MORE INFORMATION

Learn more about the Southeast Conservation Adaptation Strategy and the SECAS Blueprint at <secassoutheast.org>.

The SECAS Blueprint 1.0 shown here represents lands with high conservation value, but it is not an acquisition boundary. In fact, much of the "high" priority area is already in the conservation estate, while the "medium" areas are important for promoting and maintaining connectivity.





CRAIG SPRINGER/USFWS



CRAIG SPRINGER/USFWS

This release is a large step forward in conserving Gila trout, which live only in New Mexico and Arizona along the Mogollon Rim, notes Andy Dean, lead Gila trout biologist with the Service’s New Mexico Fish and Wildlife Conservation Office. “This repatriation into Mineral Creek adds another stream to harbor Gila trout, as outlined as a necessity in the Gila Trout Recovery Plan,” he says. “Not only does this add a population within the San Francisco River drainage, it also helps establish Gila trout populations across a larger geographical area. More Gila trout over a larger area adds greater security to this rare fish.”

That desired security will be achieved when the Mineral Creek population is naturally reproducing, and fish of multiple ages swim its waters, perhaps in 2018.

Mineral Creek came to the attention of biologists as a candidate stream to receive Gila trout after the massive Whitewater-Baldy Fire of 2012. Destructive as it was, the forest fire actually made Mineral Creek suitable for Gila trout. The fire burned in the headlands of the stream and summer rains washed a slurry of ash and debris down the creek, removing unwanted competing non-native fishes. Though the mountain slopes and streamside vegetation are not fully stabilized post-fire, sufficient habitat exists to harbor Gila trout in Mineral Creek. With so few suitable streams available to repatriate Gila trout in the watershed, biologists seized the opportunity.

Mineral Creek was not the only stream to receive Gila trout from Mora National Fish Hatchery this autumn. More than 8,600 Gila trout were placed in several other waters to advance the species’ recovery and entice anglers to go after native trout in native habitats of southwest New Mexico.

The Gila trout is protected under the Endangered Species Act. The species was listed as endangered in 1973, and due to conservation measures, was downlisted to threatened in 2006. A year later, select Gila trout populations were opened to angling for the first time in 50 years. □

CRAIG SPRINGER, External Affairs, Southwest Region

(Right) Gila trout arrive at the treetops over Mineral Creek. (Left) Andy Dean releases Gila trout into Mineral Creek.

Connected Constituency

*An audience that
looks like America*

by MATT TROTT

Girl Scouts gather before helping plant 80 native plants to aid the monarch butterfly at San Diego Bay National Wildlife Refuge.



KAT JONSSON/USEFWS

“Connected Constituency” is the key to the Service remaining relevant in a changing world.

Our traditional stakeholders—the sporting community, environmental groups and state wildlife agencies—are critical to conservation success, but the nation is changing and to ignore the changes is to risk irrelevance.

We must draw in new audiences—including people of all colors who live in cities. We cannot for one moment ignore those who have long supported our actions. While we continue to tend these relationships, we need to reach out to those who, in the past, have been ignored or forgotten by the Service.

When we are able to connect both these audiences—new and traditional constituencies—and provide them an understanding and appreciation of the Service’s mission and its value to them, while continuing to reach out to new audiences, our relevance—and therefore our future—can be assured.

The following stories offer a glimpse of how the Service is creating this Connected Constituency. □

MATT TROTT, External Affairs, Headquarters



MEGHAN KEARNEY/USFWS



DJ MONNETTE/USFWS

Native American students and mentors at the meeting.

Increasing Native American Participation

Across Indian country one can find beautiful areas of untrammelled land, more than 100 million acres, stewarded by people who value their natural heritage.

“As tribal people, our relationship with the natural world goes back thousands of years. We’ve evolved with these resources and have an ingrained cultural, spiritual and ecological connection with them,” says John Banks, director of the Penobscot Nation’s Natural Resources Department.

But Native Americans who do get natural resources degrees generally find work in tribal organizations and are underrepresented in the larger conservation world.

In October, the Service, U.S. Forest Service, USDA-APHIS National Wildlife Research Center and the Shakopee Mdewakanton Sioux community brought 16 Native American students to the Wildlife Society’s annual meeting in an effort to change that.

“What we are trying to do is get more Native Americans engaged in the Wildlife Society,” says Scott Aikin, the Service’s National Native American Programs Coordinator. In turn, Aikin hopes that will “engage more diversity within the field of natural resources or fish and wildlife conservation.”

The students, all pursuing degrees in natural resources or fish and wildlife management, “really got a lot out of the meeting,” Aikin says. The work the Service is doing to recover the Mexican wolf attracted a lot of interest, he says.

In addition to the wildlife aspects, the program allows students to share their experiences in the field, creating a kind of support network.

Talbrett Caramillo, a member of the Jicarilla Apache Nation attending San Juan College in New Mexico, told the Wildlife Society’s blog that at school “I just felt isolated. I haven’t met students here on campus that are really pursuing anything in wildlife.”

He told the blog that he had been thinking of leaving school. But after attending the conference, he said, “Being accepted is a big sign telling me to keep pursuing wildlife and stay in school.”

Aikin’s already excited about bringing students to Caramillo’s state next year. The meeting’s in Albuquerque, New Mexico, which Aikin says will be “an excellent opportunity to engage a lot of Native American communities that live in and around the Albuquerque area.”

Because the Service places great value in increasing diversity within the agency, Aikin says he expects the program to continue “as long as we have the resources.” □

MATT TROTT, External Affairs, Headquarters

'Awesome Experiences'

Service partners with Greening Youth Foundation to place members of Phi Beta Sigma, Zeta Phi Beta into Service internships

by MATT TROTT

For several summers, Southwest Louisiana National Wildlife Refuge Complex has hired interns through the Wildlife Refuge Exposure to Diversity (WiRED) Initiative at the Greening Youth Foundation, which reaches out to diverse, underserved and underrepresented youth to develop a new generation of natural resource stewards. WiRED is a Service-only initiative that placed 11 interns this past year.

Diane Borden-Billiot, the visitor services manager at the complex, says, "The Southwest Louisiana National Wildlife Refuge Complex has been fortunate to host [these interns]. It is a great way to obtain and become familiar with different perspectives regarding what we do every day."

In 2014, the Service joined forces with leading African American fraternity Phi Beta Sigma Fraternity, Inc., to help youth experience the natural world and promote interest in conservation and the biological sciences. A year later, the Service inked a similar partnership with Zeta Phi Beta Sorority, Inc., the sister organization of Phi Beta Sigma. Since then, refuges, hatcheries and other Service offices have teamed up with local chapters of the fraternity and sorority

to engage youth in outdoor recreation, biological sciences and healthy activity in nature. Service leadership has also attended the groups' meetings, with then-Director Dan Ashe speaking at Phi Beta Sigma's International Conclave in 2015. The internships are an extension of this outreach.

Lee Irvin, a member of Phi Beta Sigma and student at the University of Arkansas at Pine Bluff, has interned at the complex the past two summers. Fellow Pine Bluff student Kharisma Day, a member of Zeta Phi Beta, just finished her first summer internship.

Borden-Billiot encourages others in the Service to work with the Greening Youth Foundation or similar organizations to find candidates from

diverse backgrounds for all types of internships. With the help of the foundation, the refuge complex placed interns enthusiastic about engaging in an immersive experience with the Service.

Meet Kharisma Day

Day, from a small town in Arkansas, says, "I knew how to fish as well as farm since I was 6 years old. Pretty much our life was spent being outdoors."

That's not to say she hasn't had obstacles. Day says she is highly allergic to red wasps. "It was a big fear of mine because being stung by those insects was a life or death situation." But she overcame that fear "because being outdoors is something that I love."

Kharisma's love of nature was solidified through time spent with her grandfather on his farm. There, she picked purple-hulled peas and learned that cotton from the farm was used as material for clothes and other products.

"Our food, clothes, shelter and pretty much our way of life are connected to nature," she says. "I just wish people



(Left) Lee Irvin has spent two summers at Southwest Louisiana National Wildlife Refuge Complex. (Right) Kharisma Day scouts the wildlife at Sabine National Wildlife Refuge.

would take the time out to spend a day outdoors.”

Her internship definitely made an impression. “I was so honored to have this opportunity to be able to do something I love to do on a professional prospective.”

And she is ready to dive into conservation as a career.

“I believe what drew me to conservation as a possible profession is that I will be actually making a difference,” she says, adding, “Being outdoors solidified the deal for me.”

While Day revels in her connection to nature, her friends are more hesitant.

They “have a new-found appreciation for nature when spending a day outdoors with me,” she says, adding, “Actually one of my best friends went hiking for the first time.”

Meet Lee Irvin

Growing up in a small town in Illinois, Irvin says, “I fished, hunted and observed nature every chance I got.” It helped to have parents enthusiastic about his budding passion. “My parents loved the fact that I was so connected

with nature so I was able to be outside more often.”

He says he always knew he wanted to protect wildlife.

Irvin remembers playing in the woods behind his parents’ home as a 9-year-old, “when I noticed a fallen bird nest. I picked it up along with four eggs and I climbed up the tree and placed the nest back from where it fell.” He says his parents saw this and stared at him. Thinking he was in trouble, he “asked what was wrong and they replied, ‘You are going to do great things for this world.’”

But, he says, “Little did I know until I became an adult there was a way to turn my passion into a successful career.”

After his summers with the Service, Irvin is more convinced than ever that he will go into conservation. “There are so many awesome experiences during both internships,” Irvin says.

The “coolest, hands-down,” he adds, was qualifying as a wildland firefighter, earning his “red card” in firefighting lingo. The toughest, he says, was the pack test for that red card. That’s a physical fitness test that measures minimum required aerobic endurance and muscular strength

for wildland firefighters. It’s called a pack test because you must walk three miles in 45 minutes while carrying 45 lbs.

Reaching Everyone

With the Urban Wildlife Conservation Program and partnerships such as those with Phi Beta Sigma and Zeta Phi Beta, the Service is trying to engage diverse audiences and grow a more diverse workforce.

To reach more people and become a more diverse agency, Irvin says the Service should tell its story to students—grade school to high school—in diverse communities. “An early impression is a lasting one,” he says.

To reach her friends and others like them, Day also encourages outreach “that will help strengthen the ties to the local community.” She mentions afterschool programs as one idea.

Don’t be surprised if you see Day and Irvin “wearing the brown” of the Fish and Wildlife Service one day. “FWS would be an awesome employer,” Day says. □

MATT TROTT, External Affairs, Headquarters

Inclusion Creates Ownership

Harvesting the power of co-management for bird conservation in Alaska

by TAMARA ZELLER



DONNA DEWHURST/USFWS

A new plan will guide the harvest of emperor geese, a species that hasn't been harvested in nearly 30 years.

The Migratory Bird Treaty between the United States and Great Britain (on behalf of Canada) set the foundation for bird conservation in North America. While the prohibition on hunting from March 10 to September 1 that resulted was a critical provision in protecting birds while they breed and raise their young, it made the traditional spring-summer subsistence harvest of migratory birds by northern indigenous peoples illegal.

In Arctic and sub-Arctic regions, fall, and its attendant bird migrations, come earlier than in more southerly latitudes, and by September, many birds are already gone. Prior to 1918, when the treaty was enacted, the traditional spring-summer harvest had occurred for thousands of years as an integral part of the northern peoples' subsistence way of life and thus continued despite the closed season. Efforts to enforce the treaty in Alaska resulted in hardship for the subsistence communities and created conflict between indigenous peoples and government agencies.

To remedy this situation, Alaska Natives and others worked to successfully amend the treaty in 1997. The amendment authorizes a regulated spring-summer subsistence harvest of migratory birds in Alaska and improves bird conservation by including subsistence harvest in the management system. The amendment also states that subsistence harvest is to remain at traditional levels relative to bird population sizes and that subsistence harvesters are to have a meaningful role in harvest management and bird conservation. This inclusion of Alaska

Natives as true partners in the management of migratory birds returns to them a sense of ownership, thereby improving bird conservation in Alaska, in the Pacific Flyway and across the nation.

To implement these provisions of the amendment, the Alaska Migratory Bird Co-Management Council (AMBCC) was formed in 2000 as a co-management partnership among the U.S. government (represented by the Service), Alaska (represented by the Alaska Department of Fish and Game) and Alaska Natives (represented by the Native Caucus, which includes Alaska Native representatives from 10 geographic regions across the state). The AMBCC considers recommendations for subsistence harvest regulations and other topics related to bird harvest and conservation. These proposed regulations are based on traditional and cultural practices of Alaska Native peoples as well as western science. Traditional Ecological Knowledge is also a key component in both the development of regulations and the review process.

“The AMBCC is one of the best examples of co-management in the state of Alaska today,” says Patty Schwalenberg, AMBCC executive director. “Alaska Natives have ownership in this process because they are included as an equal partner, and their advice and expertise is seriously considered when issues begin to be discussed.”

By working together, these three partners have been able to successfully engage Alaska Natives in 1) the development of regulations; 2) the review and approval of the proposed regulations; and 3) in the implementation of the regulations during the spring-summer subsistence season.



As a result, the AMBCC’s first management plan was approved last September. This plan will guide the harvest of emperor geese, which haven’t been harvested in nearly 30 years.

“Co-Management, collaborative management, cooperative management, call it whatever you want. All we know is what we have at the AMBCC works. It works for all partners and most importantly, it works for the conservation of the migratory birds we all enjoy,” says Schwalenberg.

The first legal Alaska subsistence harvest season was just 13 years ago in 2003. The AMBCC partners have made much progress since, and continue to work together to fine-tune harvest regulations and related processes and to heal from the decades of conflict. Though challenges remain, much progress has been achieved through this unique partnership—a truly collaborative approach to manage harvest and conserve migratory birds for current and future generations. □

TAMARA ZELLER, Migratory Bird Management, Alaska



(Above) People buy Duck Stamps during a festival in Barrow. (Left) The AMBCC logo features a Yup’ik mask by artist Katie Curtis from Toksook Bay, Alaska. It depicts a Canada goose surrounded by eight feathers, which represent the steps to implement a legal, regulated spring subsistence bird hunt: Notify people of the intent to form management bodies, meet to share ideas, send out ideas and listen, choose the form of management bodies, start rule-making, recommend rules for Alaska, link with management in other U.S. Flyways, and link with the nation.

Investing in Green Space

Building connections for wildlife, people, environmental resilience in Baltimore

by KATHY RESHETILOFF

Students from Curtis Rec Center decorated storm drains.



KAREN MULLIN/GREATER BALTIMORE WILDERNESS COALITION

What began as the restoration of an abandoned area near Baltimore Harbor has grown into a nationally recognized partnership connecting Baltimore City residents to the outdoors.

The Service designated Masonville Cove as the nation's first Urban Wildlife Refuge Partnership on September 26, 2013. But even before that, work to mitigate the construction of the Masonville Dredged Material Containment Facility was underway. The local community worked with the Maryland Port Administration on three objectives: restore Masonville Cove, establish an environmental education facility at the site and secure seed funding for environmental education.

The Masonville Cove Environmental Education Center opened in 2009. In October 2012, a portion of Masonville Cove's nature area was opened to the public. The nature area includes

walking trails and offers opportunities for bird watching and fishing from a designated pier. A floating dock was installed for kayakers and canoeists.

“Masonville Cove enables the Brooklyn and Curtis community to participate in the watershed cleanup program,” says Rodette Jones, Curtis Bay resident and garden manager of the Filbert Street Garden, a one-acre community garden, native plant conservation project and education space. “The community is now fully aware of pollution and how it affects the streams surrounding the land.”

Since Masonville Cove’s designation as an Urban Wildlife Refuge Partnership, the Service’s Chesapeake Bay Field Office and Patuxent Research Refuge, Living Classrooms Foundation, the Maryland Port Administration, and the National Aquarium have matched more than \$1.9 million in partner contributions with either funds or in-kind support. Approximately 14,500 students and more than 660 teachers have participated in environmental education programs. Students and residents took part in planting rain gardens to treat runoff, creating schoolyard habitats for birds, butterflies and other wildlife, and improving coastal resiliency with shoreline plantings.

And the partnership has expanded.

“Investing in green space is the key to revitalizing Baltimore communities,” says Heide Grundmann, steward, neighbor and user of Gwynns Falls/Leakin Park in southwest Baltimore.

“Just as Masonville Cove was transformed from an industrial site to a natural area now used by students and families, existing and future green spaces in Baltimore have the potential to improve the quality of life for area residents and wildlife alike,” she adds.

Access to green spaces can improve residents’ health, provide educational



and recreational opportunities for young people, foster a sense of community and entice more businesses to build a vibrant local economy. They also provide vital habitat for wildlife while increasing a city’s sustainability by reducing storm-water run-off and protecting streams and rivers from pollution.

But many green spaces and parks in Baltimore are not well-used because of a lack of funding, staff or both, leaving them less attractive as destinations for local residents. And, though Baltimore sits on the Patapsco River and has dozens of smaller tributaries and streams, many families cannot access these bodies of water, which could and should provide recreational and economic opportunities for all residents.

Given the success of Masonville Cove, the partnership began to look at similar conservation efforts in and around Baltimore City. Several other initiatives including the South Baltimore Gateway Plan, Middle Branch Plan and Greater Baltimore Wilderness Coalition shared this vision of providing more community access to nature.

Encouraged by the enthusiasm for this common vision by other neighborhoods, the team created a plan for an expanded “Rivers to Harbor” Urban Refuge Partnership. Collaborating with community-based organizations, government agencies and other institutions, the Service will connect more Baltimore residents with green corridors and Chesapeake Bay waters. Building stronger connections to

People work on a community garden in Baltimore.

nature and wildlife enhances the social and economic vitality of Baltimore communities and provides the foundation for a shared regional ethic of environmental stewardship.

Over the course of the next 10 years, the partnership will extend from the communities around Masonville Cove and Middle Branch into surrounding watersheds such as Jones Falls, Gwynns Falls and the Patapsco River. The Baltimore Rivers to Harbor Urban Refuge Partnership will focus on:

- Expanding youth employment opportunities and conservation careers;
- Enhancing connectivity and accessibility of green spaces; and
- Restoring and protecting green space through habitat restoration and land protection projects that provide wildlife habitat, climate change resiliency, and community recreation and education. □

KATHY RESHETILOFF, Chesapeake Bay Field Office, Northeast Region

? MORE INFORMATION

Learn more about the Northeast Region Urban Business Plan <<http://bit.ly/2gguLxK>>

Connected to the Land

Arctic Youth Ambassador wants everyone to feel 'Power of Nature'

by MATT TROTT



USFWS

"Being outdoors is important to our Yup'ik culture," says Keemuel Kenrud.

Keemuel Kenrud comes to conservation naturally.

His grandfather, Pete Abraham, works for the Service at Togiak National Wildlife Refuge in Alaska. He raised Kenrud to respect the land and its natural inhabitants.

Kenrud quickly found a new world opening up. "I would explore the wilderness and observe birds and game to learn how they lived their daily lives. What came from those experiences was something I couldn't learn from a book," he says.

This past summer, Kenrud joined his grandfather, as a Refuge Information Technician (RIT) for Togiak Refuge, a job he loves and respects. As an RIT, he plays an important role both to the Service and to Alaska Natives by being the physical and cultural bridge between the two. He teaches Service staff about cultural

issues and acts as a translator, adviser, biology technician and outreach specialist. In addition, he participated as a youth facilitator at several coastal resilience workshops in Alaska. And he serves as an Arctic Youth Ambassador, playing a critical part in this unique program established by the Service, State Department and Alaska Geographic.

As an Arctic Youth Ambassador, he builds conservation awareness at home and abroad about lives in the Arctic and some of the issues impacted by climate change. One key topic for him is his Native culture and values. His grandfather gave him a deep understanding and appreciation of them, and now he seeks to instill them in others.

"Being outdoors is important to our Yup'ik culture. Even at a young age, I felt our connection with nature," he says.

Being an Arctic Youth Ambassador “gives a 19-year-old like me the opportunity to voice my opinions and beliefs about my culture, and why it is important to spread the knowledge of who we really are.”

But, as fewer people embrace the outdoors, Kenrud says, “My Yup’ik culture is slowly washing away.”

That’s where the Service and the RIT program come in — reaching Alaska Natives and others no longer at home in nature.

Kenrud says he thinks the Service does “a good job reaching out to people.” But, as with everything, he adds, “there is room for improvement.”

He mentions several ideas to help children find their connection with nature, including “having more school visits.”

He’d also like to help Togiak with a program Abraham started, “River Ranger for a Day.” The program is intended to get children to feel the connection to nature by exposing them to the beauty of the Togiak River and its diversity of wildlife.

Programs such as River Rangers and Arctic Youth Ambassadors make Kenrud’s hope for future generations — “that they get to experience the power of nature, in the same way I’ve experienced it, and our grandparents before us” — possible. □

MATT TROTT, External Affairs, Headquarters



Keemuel Kenrud fishing in Alaska.

COURTESY OF KEEMUEL KENRUD



Keemuel Kenrud escorts Togiak National Wildlife Refuge Supervisor Ronnie Sanchez on a trip on the Togiak River.

USFWS

FOR THE BIRDS

*All over U.S., people celebrate centennial
of Migratory Bird Treaty*

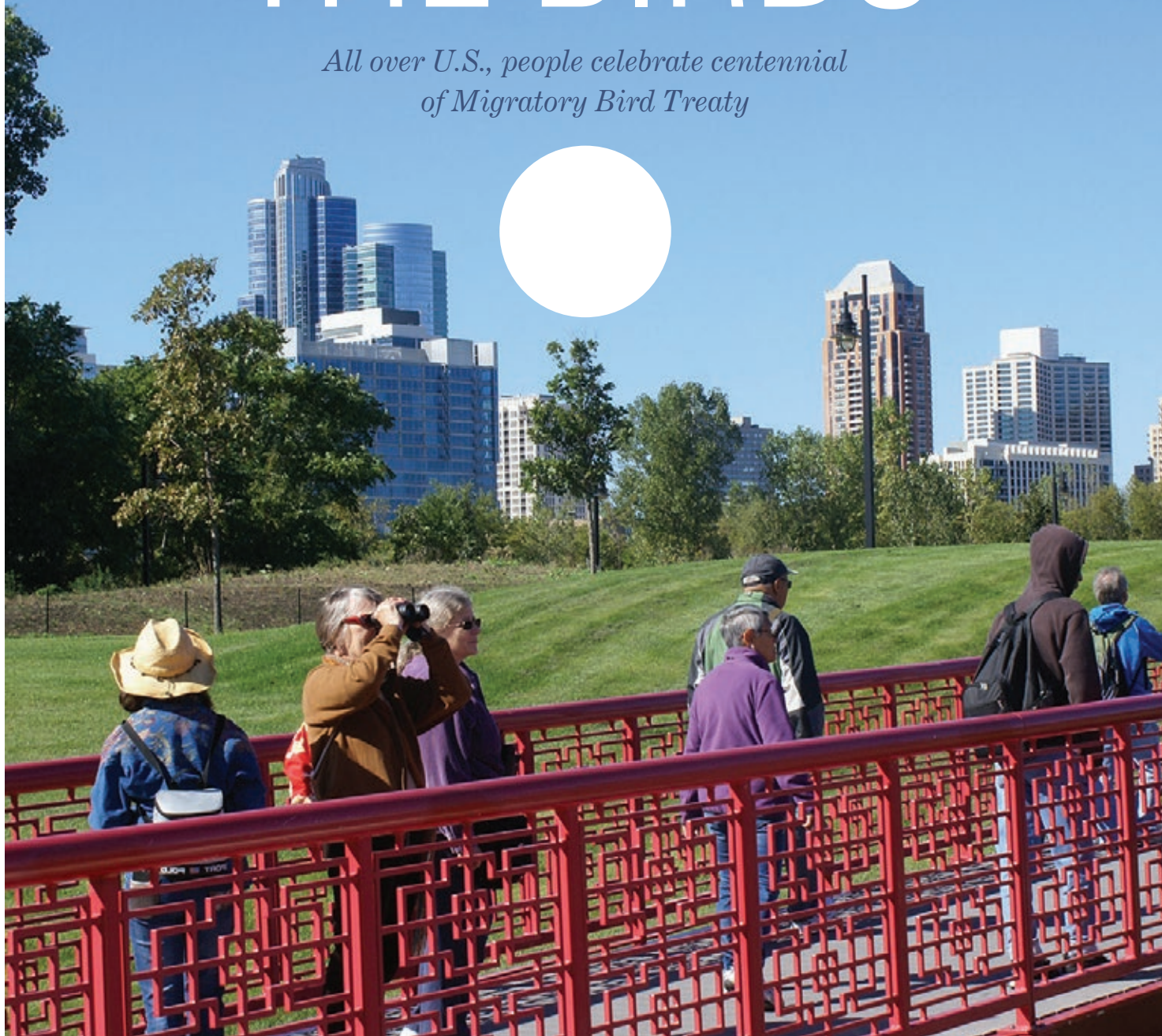
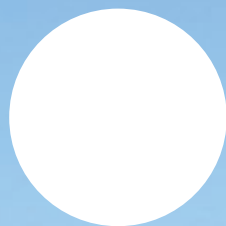


PHOTO COURTESY OF AUDUBON GREAT LAKES

In 2016, the Service and partners celebrated all over the country the centennial of the most important document to aid in the protection of migratory birds in North America. The Convention between the United States and Great Britain (for Canada) for the Protection of Migratory Birds—also called the Migratory Bird Treaty—was signed August 16, 1916, codifying the United States’ and Canada’s commitment to protecting our shared bird resources. In 1918, the United States signed the Migratory Bird Treaty Act, the domestic legislation that formally implements the United States’ commitment to the 1916 treaty. This treaty and three subsequent international conventions, with Mexico (1936), Japan (1972) and Russia (1976), both connect us with partners dedicated to migratory birds, and protect the birds that travel among and inhabit these nations.

MIDWEST

Chicago Centennial Celebrations Embrace a Wide Range of Audiences

The Migratory Bird Treaty Centennial came to the Windy City in a big way this past summer.

The Chicago area was the focal point for the Service’s regional centennial celebration, and the National Audubon Society Chicago Region worked with the Service’s Midwest Region and community partners to develop a variety of events in communities throughout the Chicago area celebrating the importance of birds in our lives and cultures.

The main event, at Lincoln Park Zoo, highlighted local efforts such as the Urban Bird Treaty program, as well as regional and national efforts in migratory bird conservation. Young people were also able to show off their skills in a youth art contest, with five-time Federal Duck Stamp artist and Minnesota native Joe Hautman as a judge.

Throughout the Midwest, the Service worked with partners to celebrate the Migratory Bird Treaty Centennial with



COURTESY OF AUDUBON GREAT LAKES

local events, including youth and adult hunting events, bird festivals, and other bird-centric gatherings.

“This centennial is a unique opportunity to create awareness and increase support for migratory bird conservation through promoting key actions and engaging the public in centennial-related activities like our event in Chicago,” said Tom Cooper, the Service’s Midwest Region Migratory Bird Program Chief.

A key partner, Audubon Great Lakes, hosted a number of centennial events connected to a broad range of social and

International refugees learned about the importance of birds, wildlife management and park spaces.

geographic diversity, touching Chicago’s north, west and south sides, in addition to the wider Chicago metro area with events in Cook County, Lake County and DuPage County, as well as northern Indiana.

Audubon Great Lakes engaged urban audiences around the centennial with two dozen partners, including the National Park Service, the Chinese-American Museum of Chicago and RefugeeOne. >>

Previous page: A bird walk through a Chicago area park focused on the significance of birds in Chinese culture.

Highlights of these events include:

■ Bird walks, led by Audubon's Junior Naturalist Aidan Cullen, where participants identified common neighborhood birds while also looking for fall migrants that were passing through on their way to their wintering grounds in Central and South America.

■ Trips for 25 refugees, including Congolese Swahili-speakers, Syrian, Iraqi and Somali Arabic-speakers as well as individuals from Burma and Afghanistan, led by Audubon Great Lakes. The trips offered information on ethnobotanical uses of native plants, wildlife management practices, bird migration behaviors, as well as broader introductions to park spaces and their amenities.

■ A bird walk for 30 participants starting at Ping Tom Park, including a discussion about the appreciation of birds and nature in Chinese culture. After a cultural exploration of Chinese music and traditional practices inspired by nature in general and birds in particular, Audubon staff led the group on a bird walk along the river bank. □

LARRY DEAN, External Affairs, Midwest Region
Contributing: Audubon Great Lakes



Many events in the Chicago area focused on getting urban youth into the outdoors.

SOUTHEAST

Migratory Bird Treaty Centennial Establishes New Partnerships

The Migratory Bird Treaty Centennial campaign helped raise awareness of the importance of birds to humans and the natural world, and inspired people to take simple but meaningful actions for bird conservation.

Another positive outcome of this national celebration was the strengthening of traditional partnerships—such as the century-old conservation alliance with Canada—and the creation of nontraditional partnerships, such as the Service's burgeoning relationship with SeaWorld Parks & Entertainment, which includes all national SeaWorld and Busch Gardens locations.

The Service reached out to SeaWorld to help create awareness about the importance of migratory bird conservation using SeaWorld's extensive educational resources, reach and availability of migratory species ambassadors. What followed was an enthusiastic effort by SeaWorld to leverage the occasion of the centennial to raise the profile of migratory bird conservation and connect with visitors in its parks across the nation.

As of October, more than half a million people had engaged to explore the world of migratory birds and were inspired to act for bird conservation through the efforts of SeaWorld Parks & Entertainment.

Among the highlight activities of the centennial partnership with SeaWorld:



Refuge intern Rozz gets acquainted with lorikeets at Busch Gardens Williamsburg.

■ Busch Gardens Tampa Bay and Busch Gardens Williamsburg hosted centennial events in August that engaged a total of nearly 4,000 guests.

■ Educational booths at Wild Days events reached 23,600 park guests at SeaWorld San Diego and SeaWorld San Antonio.

■ Busch Gardens Tampa Bay's centennial celebration engaged guests in bird-related crafts, a bird call karaoke contest and educational stations focused on bird conservation. The event also welcomed back summer campers who had helped assemble nest boxes earlier in the year.



Visitors to Busch gardens Tampa Bay flock to the banding station to learn how the Service tracks birds.

■ Busch Gardens Williamsburg reached local communities through events such as the Historic Jamestown Birds of Prey program and Newport News Parks and Recreation Summer Camp.

■ SeaWorld San Antonio ambassadors shared centennial messaging at a Bexar County, Texas, government meeting where May 14 was declared Bexar Bird Day. □

RACHEL FISK LEVIN, Migratory Bird Program, Headquarters, and RESEE COLLINS, Migratory Bird Program, Southeast Region



Children at Busch Gardens Tampa Bay created bird boxes.

SeaWorld-Centennial Partnership by the Numbers

275,663 guests and students learned about migratory bird conservation through programs and events at SeaWorld and Busch Gardens parks.

245,000+ online users were reached with SeaWorld and Busch Gardens centennial social media content.

19,415 young people participated in centennial-focused activities during summer camps and field trips at SeaWorld and Busch Gardens parks.

6,100 SeaWorld community members received centennial information via emails or texts.

4,100+ SeaWorld and Busch Gardens ambassador employees received information about the centennial.

3,540 people were reached through local community activities highlighting the centennial.

NORTHEAST

The Big Apple Goes Big for Birds New York City: Migratory Bird Treaty City of the Year?



New York City Parks Commissioner Mitchell J. Silver (left) prepares to release a rehabilitated dove in Central Park, following the lead of Service biologist Scott Johnston.

The centennial was also celebrated in an unlikely setting as staff members from the National Audubon Society's New York City headquarters office rang the New York Stock Exchange opening bell on August 1 in honor of the Migratory Bird Treaty Centennial. The occasion was featured on CNBC and Yahoo Finance, among others.

"What an awesome way to celebrate the centennial of the Migratory Bird Treaty," says Chandra Taylor Smith, Audubon's vice president of diversity and inclusion. >>



Students from the Mather School do some urban bird watching.

The celebration continued at the Wildlife Conservation Society's New York Aquarium, where partners built a receiver tower to track radio-collared birds, including endangered roseate terns and threatened red knots. Tagging work was funded by Bureau of Ocean Energy Management. Students participating in the science club at the International High School in New York City will work on a project to track the birds and monitor their flight patterns. Students will present their results at a mini-centennial symposium at the New York Aquarium event.

Even if New York City must share the title of Migratory Bird Treaty City of the Year with other cities around the country, the Big Apple and its residents showed that they're for the birds. □

SCOTT JOHNSTON, Migratory Bird Program, Northeast Region

Maybe that's going too far because so many other cities participated or hosted an event in celebration of the 100th anniversary of our nation's most significant bird conservation treaty. But the biggest media market in the world—New York City—sure did its part to celebrate.

To begin with, Mayor Bill de Blasio declared May 5 "Migratory Bird Treaty Centennial Day" in New York. To celebrate, the city's Department of Parks and Recreation hosted an event in Central Park. Students from the Mather School experienced bird watching—many for the first time—in Central Park, and Parks Commissioner Mitchell J. Silver released rehabilitated doves, with an assist from Service migratory bird biologist Scott Johnston.

PACIFIC SOUTHWEST

Sixth-Graders Learn About ‘Superpowers’ of Migratory Birds at Salton Sea National Wildlife Refuge

Surrounded by desert, mountains and farm fields, Sonny Bono/Salton Sea National Wildlife Refuge is a much-welcomed oasis for migratory birds passing through the heart of southeastern California. In November, the refuge hosted nearly 100 sixth-graders to celebrate the 100-year anniversary of the Migratory Bird Treaty.

Felicia Sirchia and Peter Sanzenbacher, Service biologists, are passionate about connecting young people with the outdoors. The two led the charge to invite the local sixth-graders, many of whom had never visited the refuge, despite its proximity to their community. “Many of these students are underserved when it comes to experiencing nature. We wanted

to teach them tangible outdoor skills — how to use equipment and how to identify migratory birds,” says Sanzenbacher.

The day began with discussions about bird migration and the everyday challenges birds face, warming the students up to the idea of wildlife. The sixth-graders participated in an interactive game where they “transformed” into birds so they could learn about and experience the different challenges migratory birds face along their long journeys, including predators and storms. Then the students learned about the “superpowers” of migratory birds, those special physical and behavioral adaptations that allow them to migrate great distances between their breeding and overwintering areas.

The sixth-graders were finally introduced to the basics of bird identification, both sight and sound, and learned how to use binoculars and scopes to test out their new skills and identify the spectacular birds of the Salton Sea. “Over the course of the day, we saw the students become more confident in their birding abilities, and seek out the awesome diversity of wildlife in their backyard,” Sirchia says. “It was great to see the students become empowered.”

Chris Schoneman, project leader at the refuge, believes that this event can be expanded. “It was a terrific example of how we can provide our communities with an even better nature experience when we combine our talents within FWS and our volunteers and refuge Friends groups. We hope to continue this experience with our local schools into future years.” □

JOANNA GILKESON, External Affairs, Pacific Southwest Region

(Left) Sixth-graders learn about migratory birds. (Right) Service fish and wildlife biologist Gjon Hazard helps new birders.





LISA COX/USFWS

Key Member of Service Family Steps Down

Ashe and a Girl Scout check on a milkweed planting, done to help monarch butterflies.

by MATT TROTT

Appreciation for the people who worked with him drove Dan Ashe when he served as Director, throughout Service career.

Dan Ashe has garnered his share of accolades over his 22 years with the Service, the last five and a half as Director, but when it comes to naming what he thinks are his greatest accomplishments, he hesitates. “I think I will let other people decide whether things have been great.”

That’s not to say there aren’t things he is proud of. In summary, Ashe says he is proud of his work with the Service “in a variety of capacities” and his work “on things that are important and consequential.”

Specifically, he mentions the Refuge System Improvement Act in 1997—a framework document for managing the National Wildlife Refuge System—the Service’s first scientific integrity policy, the climate change policy, landscape-scale conservation and more.

But when you speak to Dan Ashe, what you hear is his appreciation for the people who worked with him. He doesn’t say he is proud he did this or he did that. Instead he says “we developed,” “we drove conservation.”

Fitting with that, Ashe says what he will miss most at the Service are the people.

“We use the word family a lot here in the Fish and Wildlife Service,” he says, “and in many regards it feels that way.” And he will miss working with that family on issues big and small.

Chad Karges, the manager of Malheur National Wildlife Refuge in Oregon, was thankful for Ashe’s help dealing with a major issue a year ago: the illegal occupation of the refuge. “Dan’s engagement was fundamental to lessening impacts to Service employees and resources,” Karges says.



Ashe speaks at the Ivory Crush in New York City, the second such event designed to raise awareness of the poaching crisis that threatens the existence of elephants.

But the Service family needs to grow to remain relevant, and Ren Lohofener, who just retired after 27 years with the Service, including eight years as Pacific Southwest Regional Director, credits Ashe for seeing that, calling him “a force for change within the Service.”

He lauds Ashe’s support of diversity in our hiring to expand our family so we better reflect the diversity of our audience.

The Service family has always played an important part in Ashe’s life. His dad, Bill, was a career employee with the Service, and Dan Ashe grew up around the refuges of the Southeast.

At an event in June, he told an audience that he used to be known around the Service as “Bill Ashe’s son.” >>



Ashe and the Service's Susan White see the sights around Palmyra National Wildlife Refuge in the Pacific.

The idea of family extends also to some of the advice Ashe has for his successor. "Love the people that work for you," he says, "and they'll go to the ends of the earth for you."

His father, Ashe says, taught him that. Bill Ashe was very supportive of the people in the field, and Ashe says he learned to always support the field because much of the work "that gets done in the Fish and Wildlife Service gets done by this thing we lump into 'the field.'"

Don Campton, science adviser and fish biologist in the Pacific Region, recalls meeting Ashe at a national gathering of Service scientists back when Ashe was Science Advisor to the Director at the time. "At the meeting, Dan asked all of us, 'What are your needs?'" Campton told him that the Service needed online electronic

access to scientific journals, something that Campton says was relatively new at the time. Campton says he is sure Ashe had heard that need before, and he "made that request a reality."

"It is impossible," Campton says, "to overstate the value of those contributions to the Service."

That kind of support may be key as the Service faces challenges in the years ahead—the biggest in Ashe's mind is the growth of human population, 10 billion by midcentury. The increase, he says, means that "every day is the best remaining day" for wildlife.

He tells people this when he talks to them—because it is true, he says, and integrity is important to Ashe, something else he got from his father.

"Love the people that work for you, and they'll go to the ends of the earth for you."

But it doesn't mean "we won't have success."

Ashe is optimistic.

What it does mean, he says, is that people "will have to make places for [wildlife species] to survive." People will have to be "energetic enough and skilled enough to make places for them to survive."

And Ashe thinks they will.

"I see young people who are talented and energetic and dedicated, and they have tools and will have tools we have never imagined possible to bring to the task, so I am optimistic about the future."

Lohofener agrees there are challenges ahead and says Ashe positioned the Service to overcome them. "Dan will be recognized as a pivotal director during a time of global challenges."

Bryan Arroyo, the Assistant Director for International Affairs, has seen Ashe

work on the world's stage. "Dan's leadership has transcended borders, taking the conservation mission of the Service global."

And thanks to Ashe, Arroyo adds, the Service has become a key player worldwide. "His balanced approach between conservation and sustainability has made him and the Service a trusted partner around the globe, allowing us to be influential on both domestic and international conservation policy."

Whoever follows him will find plenty of notes on how to succeed from Ashe, who says he has been gathering advice for a while. Some are quite basic, he says, such as "don't answer your cellphone if you don't know the number; let them leave a message."

More seriously, he reminds the next director that "the U.S. Fish and Wildlife Service is an institution, not a person... your job is to maintain it so that you can hand it off to the next temporary custodian in as good or better condition than you received it."

And he quotes President Lyndon Johnson when he describes what he calls "the dark side of the job." Johnson once said, "Being president is like being a jackass in a hailstorm. There's nothing to do but to stand there and take it." Sometimes, Ashe says, that is the director's job.

But he was proud to represent the U.S. Fish and Wildlife Service, something he has called "the greatest professional honor of my life."

Finally, Ashe thanks everyone. He knows he'll still be working with the Service in his new role as President and CEO of the Association of Zoos and Aquariums. He also knows the Service will succeed, "and I'll be watching." □

Ashe and Mountain-Prairie Regional Director Noreen Walsh release endangered black-footed ferrets.



USFWS

MATT TROTT, External Affairs, Headquarters

The Value of a Refuge — to My Students and Me

story and photos by KELLY PREHEIM

From the moment I saw an iridescent white-faced ibis at Lake Andes National Wildlife Refuge six years ago, the refuge in southeastern South Dakota has been a great resource and an inspiration for me — personally and as a teacher.



The refuge has taught me about animal behavior—specifically bird behavior. As a kindergarten teacher, I have passed that knowledge on to my students by integrating birds into my curriculum. I created a K-4th grade Chickadee Bird Club, which meets once a week. I show students photos of the birds and other animals I've seen at the refuge via my Flickr site. Once the students fall in love with birds, they begin to ask questions. They want to know more. By May, the students can identify hundreds of birds and bird songs, and they have a broader understanding of the natural world. We've also visited the refuge, to go birding and observe bird banding.

One of my goals is to inspire other teachers to integrate nature into their curriculum.



Beyond teaching, Lake Andes is not only a refuge for wildlife, it is also a refuge for me. It's a great place to get away from the busy-ness of life. Being out in nature helps me remember that I'm part of something larger and purer. It leaves me content and happy.

It's more than that, though. I report birds I identify at the refuge to the eBird Mobile app. In this way I am helping with citizen science, which is important to me. I also feel the need to share my love of nature with others, so I write a BirdTeach blog.

I've had dozens of awesome moments and experiences at the refuge. A few come immediately to mind.

I'll never forget seeing 21 snowy owls in one day, during the winter 2011–12 irruption.

One time, twin white-tailed deer fawns curiously and slowly walked up to me—so close I could almost touch them.

I've seen a few endangered whooping cranes and thousands of sandhill cranes.

One day I happened upon a sage thrasher, a bird I'd never seen in South Dakota before.

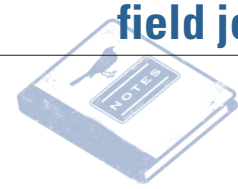
Then there were the shorebirds. When the lake was low one time, there were thousands of them for as far as I could see.



(Left) Endangered whooping cranes sometimes pass through Lake Andes National Wildlife Refuge en route to and from their breeding grounds in Canada and their wintering grounds at and near Aransas National Wildlife Refuge in Texas. (Middle) Snowy owls visit Lake Andes Refuge some years.. (Right) These red fox kits are all eyes—and noses and ears—at Lake Andes.

My experiences at the Lake Andes National Wildlife Refuge have been a valuable resource to my students and me. Refuges are full of life and beauty, so take some time to visit one near you. □

KELLY PREHEIM has been an elementary teacher in South Dakota for 30 years.



NCTC Teaching How to Communicate Science

by JIM BOWKER and KATHERINE "KAT" POWELSON



USFWS

If you had been strolling through the Service's National Conservation Training Center (NCTC) classrooms in early November, you would have observed a group of wildly gesticulating scientists yelling "Zip! Zap! Zop!" and enthusiastically extolling the virtues of ill-conceived home goods such as the "Mini-Blender Brain" or "Blanket Ear." We were not going crazy; we were participating in *Communicating Science: Distilling your Message*, a new course offered by NCTC in partnership with the Alan Alda Center for Communicating Science at Stony Brook University. The class was so useful and empowering that we decided to write about our experience and encourage you to take the course next time it is offered!

Across the country and throughout the Service are passionate, excited, hardworking individuals trying to do meaningful work in natural resource conservation. To achieve this, we need to be able to communicate our work to

The Communicating Science class lets off some steam.

the general public, agency leadership, elected officials and others who might not understand the technical details of our work. As biologists, scientists, outreach coordinators, economists and other subject matter experts, we are trained to "talk science" to our peers but often struggle to communicate what we do and why it is important across scientific disciplines or to friends, family and others in the public sphere. "Soft skills" development, including communication, has not historically been a part of formal curricula or on-the-job training for scientists. Although you can read plenty of books on communicating science, opportunities to practice with real interaction and feedback are really needed to develop and master this skill. The *Communicating Science* course provided a risk-free space to do just that. There were more than a few belly flops as we dove into the exercises. We quickly realized how difficult it is to

get lay audiences to say, "Sounds interesting, tell me more," and how much scientific professionals like us need this type of training.

The instructors guided us through improvisation exercises to practice connecting with audiences on a personal level, thinking on our feet and staying focused on delivering a message, not just information. We met in small groups to practice using vivid, jargon-free language and analogies to make our messages more engaging and understandable. We tested ourselves against the media glare in NCTC's broadcast studio and learned how to look approachable and convey a relatable and memorable message in an unscripted interview. We even increased the challenge and practiced staying positive and focusing on the takeaway or key idea(s) when communicating with audiences who are not particularly interested or may question our agency position on an issue.

As we worked our way through the succession of exercises, we saw ourselves becoming more effective communicators and translators of science. By giving us the tools and the confidence to use them, *Communicating Science* empowered us to become ambassadors for our work and the Service. By the end of the class, we were anxious to begin putting our new skills to use. NCTC offers many excellent classes, and this was one of the best any of us had taken. If you are interested in learning how to more effectively communicate what you do and its importance to diverse audiences, we encourage you to take this course. And not to give too much away (take the class!), but Zip! Zap! Zop! aimed to teach us that the first step in successful communication is to connect with the person you're communicating with. □

JIM BOWKER, Aquatic Animal Drug Approval Partnership Program, Headquarters, and KAT POWELSON, California Landscape Conservation Cooperative, Pacific Southwest Region

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.



The Bear Necessities

We have a taxidermied bear cub holding a wooden nut holder in our archives. It has really left an impression on our visitors, both because it is so cute and because it is unbelievable that someone would illegally kill it and have it stuffed. It was confiscated because it was poached. One such visitor, a Service law enforcement official, took photos of the cute little bear, and had it duplicated in a wooden sculpture done by renowned wood sculptor Joe Stebbings so he could display it next to his fireplace. It turned out really well!



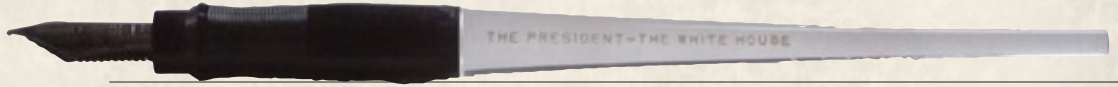
Cat Lady!

So guess what? Rachel Carson was a cat lady! That is so exciting to me because I idolize her so much and it has made her even more relatable to me, a rabbit lady! We received many of Rachel's personal possessions in a magnificent donation from the Rachel Carson Council. Within the collection, were several cat books, funny cat post cards and a binder of photos from a *Time* magazine photo shoot of her with her pet cats. It is wonderful to see the human side of our heroes, and it makes us understand that perhaps her great love of nature and all earth's creatures may have been sparked by her great love of companions like housecats! We should all strive to help all of earth's creatures, just as Rachel certainly did.

Outsmarted



One of our visitors' favorite objects is a large footstool or ottoman covered in zebra skin. This object was confiscated when imported to the United States because the skin is from a Hartmann's Mountain zebra. While the common plains zebra is not protected under the Endangered Species Act, others, including the Hartmann's Mountain zebra, are. This makes it illegal to import it or its parts without permits. The wildlife inspector who saw it was talented enough to recognize it, even though the difference between its pattern and that of non-endangered zebras is subtle to the untrained eye. I am always amazed at the impressive smarts our employees have.



No Joke

We have a pen that was used by President Lyndon Johnson to sign the Wilderness Act in 1964. The acrylic clear and black pen with a metal nib is mounted in a frame and engraved on the side "The President—The White House." We purchased it from an antiques shop in Virginia. It is such an enormous part of the history of wildlife conservation, and it is a miracle that this implement that was given to someone who was instrumental in enacting the Wilderness Act made its way to us. We treasure it! There is no funny story here, just a plea to readers, please donate your important relics to a relevant museum and ensure that they are loved and respected forever.

transitions

Headquarters



Darin Schroeder, former vice president of government relations for the nonprofit American Bird

Conservancy, has joined the Service in a newly created partner specialist position. Darin served on Capitol Hill as aide to U.S. Senator Russ Feingold for more than seven years and with U.S. Representative Ron Kind for six. For Representative Kind, Darin served as communications director and then senior policy adviser, with an emphasis on fish and wildlife conservation and sportsmen's issues. Darin brings more than 20 years of experience with him to the Service and will help lead its efforts to engage national environmental and conservation nongovernmental organizations (NGOs) on the shared conservation mission. "I really look forward to creating and coordinating opportunities for direct dialogue between the Service and national conservation NGOs, bringing new voices to the table, and ensuring that issues impacting our natural resources have a receptive team that can respond with joint conservation action," says Darin. □



Hannibal Bolton, who led the Service's Diversity Retention and Recruitment efforts,

retired at the end of 2016 after nearly 45 years with the Service.

Bolton was the first—and only—member of his family to graduate from college, in 1971, when he received a bachelor's degree in agriculture from the University of Arkansas at Pine Bluff. He went on to earn a master's degree from there in fisheries management, and joined the Service a year later, gathering and assessing data on fisheries and water quality in Southern Indiana.

He rose steadily through the ranks of the Service in various leadership positions within the Fisheries and Refuge programs. After serving as Deputy Assistant Regional Director for Fisheries in the Midwest Region, he came to Washington in 1995 to become Chief of the Division of Fish and Wildlife Management and Habitat Restoration. In that role he led the transformation of Fisheries, expanding its role and importance far beyond the Hatchery System to be a driving force in aquatic conservation. He played key roles in the creation of the Aquatic Invasive Species Program and the National Fish Passage Program, and in the establishment of the National Fish Habitat Action Plan and National Fish Habitat Partnerships that supported it. In recognition, he was inducted

into the Fisheries Management Hall of Fame by the American Fisheries Society.

He joined the senior leadership of the Service, in 2008, as Assistant Director for Wildlife and Sport Fish Restoration, taking on the Diversity Retention and Recruitment role in 2016.

Former Director Dan Ashe said in announcing the retirement: "Selfishly, I'm glad I won't have to serve as Director for more than a few weeks without him by my side. I also know how great a loss it is for our agency to see him go."

Bolton retired to pursue his great passions—fishing, mentoring young people and growing grandchildren who love the outdoors. □

Pacific Southwest



Scott Flaherty, Deputy Assistant Regional Director for External Affairs for the Pacific

Southwest Region, retired in November after an 18-year Service career that began in the Midwest Region in 1998. Before joining the Service, he had a 20-year career in public affairs for the U.S. Army.

As a public affairs specialist in the Midwest Region's External Affairs Office in Minneapolis, Minnesota, he created and

managed the *Fish and Wildlife Journal*, a Web-based tool that collected and disseminated thousands of employee-authored stories about their accomplishments to the Web. The *Journal* was later renamed *Field Notes* and was adopted for use by several regions to report news, accomplishments and activities. He also created the Midwest Region's first internal newsletter, *Inside Region 3*.

In 2006, he joined the Pacific Southwest Region (then the California-Nevada Operations Office) where he built and managed the region's Web presence and served as media spokesman for many high profile wildlife conservation issues in California, Nevada and the Klamath Basin. As Deputy Assistant Regional Director for External Affairs, he introduced the use of video to better connect with audiences about pressing, and often controversial, species listing decisions.

Scott was also responsible for the launch of *Region 8 Roundup*, a biweekly video magazine produced by the region's External Affairs that featured stories about region employees and accomplishments. An accomplished writer, editor and photographer, Scott's stories and photos about Service accomplishments and activities were published in several external publications as well as *Fish & Wildlife News*. □



Ren Lohofener, former Regional Director of the Pacific Southwest Region, retired at the

end of the year.

"He played a key role in the birth of the Pacific Southwest Region as a separate region," former Director Dan Ashe says, "and has worked tirelessly ever since to build a solid foundation for our conservation work in the region."

Before heading to California, Lohofener served as the Regional Director of the Service's Pacific Region. He joined the Service in 1989 after working for six years as an ecologist for the National Marine Fisheries Service. Before that, he was a research associate and adjunct professor at Mississippi State University.

With the Service, Lohofener was a field biologist, the agency's Texas state administrator and Assistant Regional Director of the agency's Southwest Region. He also served as the Service's Assistant Director for the Endangered Species Program.

A native of Kansas, Lohofener received his bachelor of science and master of science degrees from Fort Hays State University in Kansas and his doctorate degree from Mississippi State University. He is also a veteran of the U.S. Army.

In August, Paul Souza replaced Lohofener as Regional Director.

Until the end of the year, Lohofener assisted the agency as an adviser on California water issues to the new Regional Director. □

Mountain-Prairie



National Elk Refuge Manager **Steve Kallin** has retired from the Service, ending 39 years of

federal service in the wildlife profession.

He is a 38-year veteran of the Service, holding a degree in wildlife management from the University of Wisconsin-Stevens Point. He began his career with the U.S. Forest Service, joining the Fish and Wildlife Service in 1979 as assistant manager at Seney National Wildlife Refuge in Michigan. He served in various management and law enforcement positions in wetland management districts in Minnesota, including the first manager of the Windom Wetland District. In 2004, he became the manager of the National Bison Range Complex in northwest Montana. He became manager of the National Elk Refuge in Jackson, Wyoming in 2007.

During his tenure at the National Elk Refuge, Steve initiated elk and bison hunting seasons at the refuge and expanded access to hunt permits from an on-site lottery to an online drawing. He implemented the first Native American ceremonial bison hunt in the National Wildlife Refuge System and played

a critical role in the establishment of the North Highway 89 multiuse pathway. The refuge's 15-year Comprehensive Conservation Plan was completed under Steve's leadership, along with an expansion of the refuge's irrigation system from 1,000 acres to more than 4,000 acres without degrading the area's spectacular scenery.

"It has been a tremendous privilege to work at the National Elk Refuge," he says. "The spectacular beauty of this place, combined with the community's passion for wildlife issues, has made my time both interesting and rewarding. I leave the refuge in the extremely capable hands of its small but dedicated staff and cadre of volunteers."

Steve and his wife, Sue, plan to remain in the Jackson area. □

Southeast



With 37 years of combined military and federal civil service, **Tom MacKenzie** helped explain what

we do for the American people and the world for 18 years with the Service's Southeast Region in External Affairs. From the Regional Office he deployed to cover a wide variety of fascinating subjects for the Service. He helped rescue polar bears in Puerto Rico, helped attach satellite transmitters to loggerhead sea turtles, swam with manatees and invasive Asian swamp eels (not at the same time), wrestled an alligator, saved oiled terns and a pelican during the BP oil spill, scraped

Hunting's Future



JOHN BRADLEY/USFWS

Young hunters Justin, Willow and Woodrow carry forward their hunting heritage. Leading their fathers, they hunt Mearns quail in the San Mateo Mountains of New Mexico. Hunters are integral in conservation's cycle of success: They pay taxes on firearms and ammunition that fund biological research and habitat management by state conservation agencies via the Service's Wildlife and Sport Fish Restoration Program (WSFR). The WSFR Program has a profound influence on conservation, the economy and outdoor pursuits. In 2016, \$1.1 billion was available to the states for fish and wildlife management.

barnacles off an injured sea turtle, supported hog eradication efforts in Louisiana, worked more than a few hurricane responses, several when the storm surge was still going out, and covered wildfires this year in North Carolina. He also worked with tribes in the Northeast and Southeast to bolster their environmental capacity.

He also served eight years with the U.S. Small Business Administration, and seven years as a Department of the Army civilian at Oakland Army Base and the Presidio of San Francisco. He served our country for 30 years as an armor officer (active and reserves), and was mobilized twice—for 9/11 and Afghanistan—before retiring at the rank of colonel in 2008. In his civilian career he has served in public affairs, small business development and emergency planning.

We bid Tom fair winds and following seas in this next exciting phase of his life traveling, hunting, playing guitar, fishing, photography, as well as a few other pastimes with family and friends. □

honors

Pacific Southwest



The Service received an “appreciation of support” acknowledgement from Westervelt Ecological Services for collaboration on Bullock Bend Mitigation Bank (Pictured: Left to right, Sacramento Fish and Wildlife Office employees **Jennifer Hobbs** and **Doug Weinrich** receive the “appreciation of support” sculpture from Westervelt Ecological Services’ Greg Sutter and Alicia Cramer.) This 116.24-acre habitat restoration project re-established connectivity between the Sacramento River and an active floodplain. Sacramento Valley has lost 95 percent of floodplain habitat, making this multipurpose bank one of few with benefits to flood management, habitat, plant and animal species, and the local economy. The restoration includes creation of backwater and off-channel refugia habitat that will be inundated from seasonal flooding and used by out-migrating salmonids. The mitigation bank will be used for offsets for riparian and floodplain habitat benefitting listed salmonids, as well as migratory birds such as Swainson’s hawk and many other species. Focusing primarily on habitat conservation, Sacramento Fish and Wildlife

Office staff participated on an interagency review team that included a dozen representatives from federal and state government, as well as nonprofit organizations.

Service-wide

The 2016 Department of the Interior Environmental Achievement Awards allowed Service employees to again show their commitment to sustainability:

■ **Dr. Richard Bennett** of the Northeast Regional Office: After being named a 2016 GreenGov Presidential Awards Climate Champion, he was honored for his leadership of projects to maximize the recovery from Hurricane Sandy and provide resilience from future climate-related storm events.

■ **Ken McDermond** of the Southeast Regional Office: He led the development of a tool that provides the South Atlantic region with data on the impacts of climate change.

■ **Crab Orchard National Wildlife Refuge Comprehensive Environmental Response, Compensation and Liability Act Project Team**: As a result of various industrial activities that took place over 70 years, approximately 22,000 acres within the 43,500-acre refuge became contaminated. For more than 20 years the team ensured that cleanup decisions at the refuge addressed risks to human health and the environment and developed an action plan that provides for long-term site management.

■ **National Wildlife Refuge System Sustainability Program Team**: The team provided leadership to develop a comprehensive approach to improving energy efficiency and achieving carbon neutrality. The improvement projects saved 18,854 million British Thermal Units and avoided 3,810 metric tons of greenhouse gas emissions.

■ **Solar Photovoltaic-Powered Refrigeration and Freezer Project Team at Midway Atoll National Wildlife Refuge**: The team replaced a 75-year-old cold storage unit with an innovative solar-powered unit that saved more than \$3.6 million from replacing in kind and is essentially net zero energy.

■ Winning Honorable Mention, **Rachel Carson and Parker River National Wildlife Refuges Team**: The team implemented simple low-cost ditch remediation techniques to increase the resilience of salt marshes to climate change. □

Pacific



Chad Karges (pictured with former-Secretary of the Interior Sally Jewell), project leader at

Malheur National Wildlife Refuge in Oregon, has received the Theodore Roosevelt Lifetime Achievement Award from the National Wildlife Refuge Association in recognition of his steadfast leadership and his commitment to building partnerships.

“There is no one more deserving of this award than Chad,” says Refuge Association President David Houghton.

Throughout his 30-year career with the Service, Chad has looked for every opportunity to foster community relationships and integrate refuge management into the local area at large. Chad’s engagement of refuge neighbors at all levels has resulted in collaborative solutions that represent robust paths forward for the refuge and the overarching conservation mission. By extending his efforts beyond Malheur’s boundaries, Chad has guided conservation on a 4.6 million-acre multijurisdictional landscape by collaborating directly with many diverse partners.

He also played a critical leadership role during the Service’s response to the illegal occupation of Malheur Refuge. His progressive approach to managing issues with input from partners, consideration of foreseen and unforeseen factors, and accurate evaluation of important components was crucial for the National Refuge System during the occupation.

In a blog on the illegal occupation, former Service Director Dan Ashe says: “It’s an incredible testament to Chad Karges and his fantastic staff that the community of Burns rallied to the defense of the refuge and its work.” □



The U.S. Department of the Interior has presented **Dr. Paul Henson** (pictured with Regional Director Robyn Thorson), the Service’s Oregon state supervisor, with the prestigious Meritorious Service Award for his outstanding leadership abilities and dedication to the mission of the Service.

Paul’s accomplishments have been significant and sustained, engaging local communities to spearhead recovery efforts that have resulted in tangible conservation outcomes during his eight years in his current position.

The Meritorious Service Award is given to career employees in the Department of the Interior who have made exceptional, continuing contributions to the department’s mission.

“Paul’s dedication to finding collaborative solutions for conserving and recovering wildlife is evident in the recent accomplishments in Oregon,” says Robyn Thorson, Director of the Service’s Pacific Region. “Under Paul’s leadership, the Service has taken great strides in conservation. This includes the recovery and delisting of the Oregon chub, the recent downlisting of the Columbian white-tailed deer and the landmark conservation partnerships that helped avoid the need to list the greater sage-grouse.”

Paul has been with the Service for more than 23 years. Before becoming Oregon state supervisor, he served as Assistant Regional Director for Ecological Services in the Pacific Southwest Region and as field supervisor for the Pacific Islands Office. □

Southwest



Trinity River National Wildlife Refuge near Houston, Texas, received the Reach Award from the Houston-Galveston Area Council for the “From Crosswalks to Boardwalks Initiative” (Pictured: Refuge biologist **Laurie Lomas Gonzales** and Refuge Manager **Stuart Marcus** accept the award.) The Reach Award honors a project that demonstrates exemplary public participation. Trinity River has worked with nearly 300 volunteers who contributed more than 3,000 volunteer hours to create a hiking, biking and paddling system designed to get people from the crosswalks of the City of Liberty to the wetland boardwalks of the refuge. As of the beginning of December, volunteers, both local and nationwide, have made the project possible by building trailheads, kiosks, benches, trails and boardwalks during meaningful public service projects. And they are still creating more. □



Directorate Fellow **Colleen Grant** (pictured with Stewart Jacks, left, Assistant Regional Director for Fish and Aquatic Conservation, and Regional Director Dr. Benjamin Tuggle) has been named the Southwest Region’s Early Career Conservationist of the Year for 2016.

Colleen was stationed at Mora National Fish Hatchery, New Mexico, in 2016 where she conducted original research on hatchery-rearing conditions of Gila trout, a threatened species. She performed a comparative study on whether captive-reared Gila trout benefit from exercise — rigorous swimming conditions facing fast water. The fish now face the rigors of Willow Creek in the Gila National Forest, where the species is native. Colleen and biologists from the New Mexico Fish and Wildlife Conservation Office will survey the stream in 2017.

“Colleen’s work will help direct future conservation endeavors and aid in recovering this rare trout species,” says Hatchery Manager Nate Wiese. “Her research findings will be instrumental to the future of conservation hatcheries.”

Colleen is from Los Angeles, California, and is a graduate student at Bren School of Environmental Science &

Management, University of California-Santa Barbara. She anticipates earning a master of environmental science and management degree in the spring. Her research on Gila trout was a continuation of work previously conducted by the 2015 Directorate Fellow Morgan Brizendine. □

CRAIG SPRINGER, External Affairs, Southwest Region

Alaska



Katrina Liebich has been honored with the Service's 2016 Sense of Wonder Award for

excellence in interpretation and environmental education.

Katrina is outreach coordinator for Fisheries and Ecological Services in Alaska, where she finds innovative ways to communicate the science of fisheries management to children and adults.

Among other outreach initiatives, she helped organize trips to Alaska by members of Oregon's Soul River, a nonprofit organization that pairs inner city youth and veterans. A trip to Arctic and Kenai Refuges in Alaska was an opportunity for "youth and veterans to learn from one another, discover Arctic climate change impacts first hand, fly-fish amazing rivers, and meet and exchange ideas with Alaskan youth," she says. The Soul River young people also participated in

a "Creek to Plate" program that introduces youth from Anchorage to safe fishing opportunities. Katrina says the Fisheries Program creates outdoor experiences intended to inspire lifelong conservation of fish and wildlife and the lands and waters that support them.

"I really do believe that inspiring the leadership for all of us to care about our environment is what is going to help secure the future for Alaska's fish and the nation's aquatic species in general," she says. "Fish have their own unique challenges related to their biology, which makes them largely invisible to the American public. We need to help people connect with what they can't really see." □

in memoriam

Southwest

Allan Strand, retired field supervisor of the Corpus Christi Ecological Services Field Office, died in December at the age of 73. Allan retired from Corpus in 2013. He was loved and respected as conservationist and a leader. He led with vision and passion and will be greatly missed. □

Headquarters

Bruce Decker, 56, Chief of IRTM's Communications and Diversity Branch in Head-quarters, died unexpectedly December 16.

Bruce joined the U.S. Coast Guard in 1980 and retired as a helicopter pilot in 2007. He later joined the Service's External

Affairs team in Headquarters as Chief of the Division of Partnerships and Program Support before moving to IRTM. Bruce believed the ultimate success of the Service's mission depended to a great degree upon the ability of IT staff to build trust, and, as a leader and conservationist, he earned the trust and respect of many. He will be greatly missed by many who had the honor of working and serving with him. His sense of humor and optimism will not be forgotten. □

Yale professor **Stephen Kellert**, a "great friend" to the Service and a leading voice in the connections between humans and nature, died November 27 after a long illness. Since his critical work in the 1970s with Service and in the 1980s with E.O. Wilson on the concept of biophilia—humankind's innate connection with the natural world—he was a leading voice in fields of human dimensions of wildlife management, biophilic and sustainable design, and environmental education.

His seminal research on human connections to nature, which was funded by the Service, guided policies on public use, predator control and community outreach on national wildlife refuges. "Steve was a pioneer in committing rigorous social science to conservation goals and his research findings continue to fuel education programs even today," says Miriam Westervelt, NCTC staff member and co-author of two of Kellert's studies at the Yale School of Forestry and Environmental Studies.

Recently, Kellert and David Case worked on a follow-up to the original study on human connections, looking at Americans' attitudes toward nature, broken down by ethnicity, age and other factors. This work, sponsored by a variety of partners, including the Service and Disney, will help those in conservation engage a new, diverse generation of conservationists.

NCTC Education and Outreach Chief Steve Chase calls Kellert "one of the foundational thinkers and researchers in the area of connecting children with nature." He was a key speaker at the 2006 National Dialogue on Children and Nature, a conference at the National Conservation Training Center (NCTC) that helped develop the Children and Nature movement.

NCTC historian Mark Madison remembers him as "a great friend to NCTC and FWS" who taught a variety of classes at NCTC over the past two decades. "He was incredibly generous with his time and committed to the FWS mission," Madison says.

At a January memorial service, students, friends, colleagues and family celebrated his life. Chase, who attended the service, says: "Kellert's contributions to everything we do in conservation cannot be overstated—whether it be sound scientific research, green design, innovative environmental education curricula, mentoring a new colleague, or simply emphasizing the importance of sitting in your backyard after a long day listening to the song of a wood thrush. He practiced and celebrated all of these things."

Fish & Wildlife News

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Big Fish

Garrett Giannetta and Bill Powell, of the Service's Anadromous Fish Restoration Program in the Lodi Fish and Wildlife Office, hold a 7-foot adult white sturgeon captured in the San Joaquin River. White sturgeon are the biggest freshwater fish in North America and can be up to 20 feet in length and weigh up to 1,800 lbs.



LAURA HEIRONIMUS/USFWS

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