U.S. Fish & Wildlife Service Fall 2024

Fish & Wildlife News

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On the cover: Boardwalk trail at Billy Frank Jr. Nisqually National Wildlife Refuge
(M. SCHRAMM/USFWS)

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Service's Florida Manatee Lead Has 'Full Circle Moment' While Escorting Group of College Students on Tour of SeaWorld Orlando Rescue Center

October 30, 2024, was an emotional, "full circle" day for Service biologist Terri Calleson at SeaWorld Orlando as she helped escort and educate about 25 college students visiting the Rescue Center there to observe rescue and recovery operations for manatees, sea turtles, and corals.

The visit reminded Calleson, our Florida manatee recovery lead, of how a summer job at SeaWorld Orlando when she was a college student inspired her to become a manatee biologist. "I was initially interested in other marine animals and then I saw a fascinating species in the Florida manatee that faced lots of threats and needed help. And I thought, 'This is where I'm going to focus my efforts.'"

All these years later, Calleson feels a special kinship with the students from Bethune-Cookman University (BCU)—one of America's historically black colleges and universities—visiting SeaWorld Orlando as part of our Florida Ecological Services Office's diversity outreach program.

Dr. Sarah Kreji, associate professor of biology and integrated environmental science at BCU, pointed out that BCU has a collaborative, internship program with the Service, under which we provide projects for the students. The program also calls for one field trip per semester, and this semester it was to SeaWorld Orlando.

Previous semesters have included field trips to national wildlife refuges, such as Merritt Island and Lake Woodruff, as well as the national fish hatchery in Welaka. This is the sixth semester for these internships at BCU. Thirty-nine student projects have been completed so far, with another nine student projects initiated this semester.

"Thanks to these projects and excursions our students have seen and done lots of unique things," says Dr. Kreji. "They've had opportunities to network, get exposed to potential careers, and will have stories to tell about amazing things going on to help protect threatened and endangered species. In this particular case, I want to thank the folks at SeaWorld and the Service for making it happen."

Calleson adds: "SeaWorld is one the Service's most important partners in manatee recovery efforts. They are a key member of the Manatee Rescue and Rehabilitation Partnership and almost always have the most manatees in human care. They are caring for 25 manatees here in Orlando and six at another location. Almost all have a great chance to get healthy and return to the wild—the primary goal of the manatee rescue, rehabilitation, and release program."

BCU student Shaunace Bowen, a junior and biology major, was impressed and inspired by seeing clinical veterinarian Dr. Dana Lindemann and members of the rescue team treat a wounded manatee. "I want to be a veterinarian. I got good feelings of peace and relief from seeing them take such good care of that injured animal. It was like confirmation that this is what I'm supposed to do," says Bowen.

Bethune-Cookman University students look on as a member of the SeaWorld Orlando Rescue Team feeds a young manatee. (PHOTO BY KEN WARREN/USFWS)

A big part of the students' tour—led by Lorri Braso, supervisor of SeaWorld Orlando's rescue team and Brant Gabriel, curator of animal rescue operations—was seeing where and how injured sea turtles are rehabbed.

Our Southeast Region sea turtle coordinator Karen Frutchey told the students how much the Service relies on and appreciates its partners. "SeaWorld has the facilities and the expertise to nurse sea turtles back to good health. They do it willingly and they do it well. Under Section 6 of the Endangered Species Act, the Florida Fish and Wildlife Conservation Commission (FWC) manages the Florida Sea Turtle Stranding and Salvage Network. They pick up sick and/or injured sea turtles and take them to the proper rehab center. FWC has done that on our behalf for four decades and they do a great job."

The BCU students also went to SeaWorld's Coral Rescue Center where they were briefed on efforts to save Florida's coral reefs and saw 18 species of corals being nurtured in a building designed to mimic undersea lighting conditions where corals can thrive.

Calleson says: "I really hope this visit to SeaWorld Orlando opened these young people's eyes in terms how rewarding a career with an agency or partner organization working to help an imperiled species can be. That was certainly the case with me." □

KEN WARREN, Florida Ecological Services Office, Southeast Region

Connecting Spanish-Speaking Kids with Nature

The Service mission is about conserving nature — and connecting people with it — for the benefit of future generations. We do this work where people are — on the landscape, yes, but also in digital spaces. And despite our name, the U.S. Fish and Wildlife Service conservation mission extends beyond the United States, as we work internationally to conserve nature for future generations.

Through a podcast collaboration with CumbreKids media, we're reaching out to share the amazing wonders of nature and the passions of our experts with a new generation of Spanish-speaking kids, and the parents and families who listen alongside them. Co-founders and hosts Katherin Aguilar and Gerwuin Riera join four Service experts to take kids on a journey exploring our fascinating world: one plant, animal, or place at a time. In the process, the collaboration inspires curiosity about the world around us and encourages families to find personal connections with nature — helping to nurture future conservation leaders around the globe.

Podcasts are particularly powerful for connecting with Hispanic and Latino families in the U.S., Spain, and Latin America. And Latinos can be a compelling for conservation: according to the Nature of Americans report, 83% — a more significant proportion than any other racial group — recognize the benefits of nature as being highly important. Through CumbreKids, the Service is partnering to reach kids in Spain, the U.S., and across Latin America to spread messages about conservation.

The collaboration features two podcasts: Cráneo, which covers all things science and has appeared among the top "Education for Kids" podcasts in 45 countries, including among the top 10 in the U.S.; and Camaleón, which explores animals and plants with lessons about conservation and the environment.

Each episode explores the sounds and wonders of a featured topic and follows the interests of kids who submit questions in advance. Kids even help host the episodes themselves. Gema, a 10-year-old Venezuelan living in Colombia who wants to be a biologist, is featured on episodes about ocelots and Puerto Rican harlequin butterflies. Isabella, a 7-year-old from Colombia who wants to develop vaccines, appears on episodes about carnivorous pitcher plants and the invasive lionfish. Alongside the hosts, Service experts help paint vivid pictures in the mind while answering questions and sharing fascinating stories about the work that fuels their passions and about how they landed in conservation careers.

The episodes seem to be hitting the mark. Since the first one dropped on July 11, families played seven episodes over 33,000 times in about three months. More than 500 questions were shared for Service experts to answer, and kids spent more than 13,600 hours learning about science and conservation topics from Service experts. With more than 100,000 families following Cráneo on Apple Podcasts, Spotify, Amazon music, or YouTube music, the collaboration has given the Service a new way to connect kids worldwide with our passionate employees and the nature around them.

In honor of Latino Conservation Week and Hispanic Heritage Month, the Service also worked to connect CumbreKids with our partners at the Hispanic Access Foundation to create a special kids activity in both English and Spanish that can be completed at any nearby park. □

MARILYN KITCHELL, Office of Communications, Headquarters

(Above) Ocelot podcast. (PHOTO COURTESY OF CUMBRE KIDS)

(Below) Ocelot artwork as inspired by Service expert Laura Marta de la Garza and colored by child listener Luciana Gabriela Gutierrez, from Mexico. (PHOTO COURTESY OF CUMBRE KIDS)

LEARN MORE

Find links to the podcasts.

Study Assesses the Coastal Barrier Resources Act as a Significant Climate Adaptation Strategy

A study published in August in *Nature Climate Change* underscores the effectiveness of the Coastal Barrier Resources Act (CBRA) in safeguarding coastal regions while realizing substantial savings for taxpayers. Established in 1982, this critical legislation has successfully limited development on barrier islands by redirecting federal funding away from ecologically sensitive areas, thereby mitigating risks to vulnerable communities.

Rather than imposing restrictive regulations, the CBRA leverages market mechanisms to promote conservation. By removing federal subsidies in designated areas of the John H. Chafee Coastal Barrier Resources System (CBRS), the law encourages responsible development practices. When President Reagan signed this legislation into law, he emphasized its dual impact: "This legislation will enhance both wise natural resource conservation and fiscal responsibility. It will save American taxpayers millions of dollars while, at the same time, taking a major step forward in the conservation of our magnificent coastal resources."

The study contributes to an expanding body of research indicating that CBRA has effectively fulfilled its objectives over the past four decades and will continue to serve as a crucial strategy for climate adaptation in the future. Key findings from the August study, conducted by researchers Hannah Druckenmiller, Yanjun (Penny) Liao, Sophie Pesek, Margaret Walls, and Shan Zhang, include:

The John H. Chafee Coastal Barrier Resources System consists of about 3.5 million acres in 23 states and territories along the coasts of the Atlantic, Gulf of Mexico, Great Lakes, U.S. Virgin Islands, and Puerto Rico. (PHOTO BY STEVE HILLEBRAND/USFWS)

Significant Cost Savings: The CBRA generates considerable savings for the federal government while enhancing the property tax base in coastal counties.

Reduction in Flood Insurance Claims: The CBRS significantly lowers flood claims to the National Flood Insurance Program, producing an estimated annual savings of $930 million for taxpayers.

Strategic Redistribution of Development: The CBRA effectively decreases building density within the CBRS—achieving 83% fewer buildings per acre—while facilitating a 37% increase in development density in adjacent areas. This pattern indicates that the designation can strategically direct growth away from the most vulnerable zones, benefiting nearby communities with enhanced natural amenities and improved flood protection.

Positive Local Revenue Trends: There is no evidence of declining local tax revenues within the CBRS; on the contrary, neighboring areas experience an impressive annual revenue increase of $911 million. □

LEARN MORE

- Studies show benefits of the Coastal Barrier Resources Act
- The Coastal Barrier Resources Act

Communities Rally Around Monarchs in Illinois

It's all hands on deck in the Service, as we rally for a future filled with monarch butterflies and we're pleased that so many partners in Illinois are right there with us.

On Sunday, August 11, 2024, more than 700 community members came out to show their support for monarch conservation and to learn about how they can make a difference in their own neighborhoods at an event with the Monarch Coalition near Hackmatack National Wildlife Refuge.

On Sept. 14, 2024, more than 60 community members came out for a similar event at Crab Orchard National Wildlife Refuge.

The best part of these events is that visitors had fun with monarchs. With interactive activities, information about growing monarch pocket gardens, and learning about how we track individual monarchs, the free events were the perfect way to rally behind monarchs.

In addition to all the activities, community leaders at the event near Hackmatack welcomed a newly revitalized monarch pocket garden that's within the Crystal Lake Park District. First created in 2018 as an Eagle Scout project by Paul H. Joswiak from Troop 158, First United Methodist Church, this pollinator gem boasts swamp milkweed, New England aster, marsh blazingstar, cardinal flower, and a host of other native plants. »

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The Butterfly Roundup at Crab Orchard is an annual program that's part of the Becoming an Outdoors-Family Program, now in its 20th year, offered at the refuge. Referred to informally as B.O.F., the program is a series of Saturday learning opportunities and workshops that focus on teaching basic outdoor skills to individuals and families to help them enjoy nature and encourage them to spend more times outdoors.

"Our B.O.F. events continue to allow families to learn new skills together and when you provide the whole family with an experience, you immediately create a group of people that can go and do this together," says visitor services manager Neil Vincent. "This is super exciting!"

With a single flap of fragile, feather-light wings, the monarch butterfly embarks on a 3,000-mile journey of endurance starting in the Midwest of America's Heartland. Facing many challenges including loss of habitat and anthropogenic climate change, their persistence is an extraordinary phenomenon worthy of exploration, understanding and protection. We partner with local landowners, states, Tribes, federal agencies, industries, academia, and nonprofit organizations to conserve or improve habitats for monarch butterflies. □

The events were fun education programs where visitors learned about the importance of monarchs and pollinators across the landscape through fun, hands-on activities.
(PHOTO BY USFWS)

Baltimore's National Aquarium Uses Chesapeake WILD Funding to Bring New Life for the Inner Harbor

Since opening in August 1981, the National Aquarium has taken on many roles within the Baltimore community.

For the more than 750 species that call the aquarium home, it serves as a sanctuary and an engine for conservation — for people and animals alike.

For the more than 1.2 million annual visitors, whose admissions ticket purchases help keep the aquarium running, it's a source of wonder and discovery — an immersive, educational experience replete with interactive exhibits, artistically designed displays, and a tropical rain forest on the top floor.

The National Aquarium also serves as a hub for community engagement and acts as a collaborator rooted firmly within Baltimore's network of businesses, nonprofits, and institutions.

Now, the aquarium is expanding its community engagement role to making the Inner Harbor more accessible and generate more opportunities for community members to connect with natural resources.

In 2023, the National Aquarium mapped out a multifaceted community engagement proposal with funding from a Chesapeake Watershed Investments for Landscape Defense (WILD) grant and support from partner organizations around Baltimore, including the Maryland Department of Transportation, the Maryland Port Administration, and the Greater Baltimore Wilderness Coalition. Our Science Applications Program administers Chesapeake WILD grants in partnership with the National Fish and Wildlife Foundation.

The goal of the National Aquarium's collaborative effort is to invest in longstanding relationships within the community to increase native tree supplies, improve habitat connectivity for imperiled species in the Chesapeake Bay, and bring more community engagement into the Inner Harbor through field trips, volunteer seed collection, and habitat restoration opportunities that connect to ongoing initiatives in Maryland.

"There is a lot of overlap between our organizations, and we wanted to leverage our connections instead of working in silos," says Charmaine Dahlenburg, director of field conservation at the aquarium, reflecting on the collaboration-driven proposal.

Leveraging connections across such a wide range of partners and with a pool of funding from different sources has generated a series of projects that touch on a variety of conservation and community engagement goals. According to Dahlenburg, this community-based approach allows the aquarium to honor its commitment to local investment.

"We really focus on Baltimore City, and Baltimore youth in particular," she said "We have staff trained in education. We already have a strong presence »

National Aquarium Inner Harbor Wetland. (PHOTO BY NATIONAL AQUARIUM)

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in South Baltimore as a stakeholder within Masonville Cove Urban Wildlife Refuge Partnership. People can visit to engage in environmental education and action, or to just connect with nature."

Of these many projects, perhaps the most notable will be the National Aquarium's Harbor Wetland, aimed at reintroducing tidal marsh habitat to Baltimore City. The 8,000-square-foot floating wetland, featuring a live oyster reef, to promote habitat connectivity and public access opened in August 2024.

This wetland campus offers visitors and residents of the area a direct line of access to the Inner Harbor, a space made inaccessible for many years due to industry and pollution. Dahlenburg says: "For me, seeing Harbor Wetland opened for the first time in Baltimore City is a big deal. I really think we will be surprised to see some animals we haven't seen in a long time. ... One day we'll get to a point where the harbor is fishable."

In addition to Harbor Wetland, the aquarium will use WILD funding to engage community members in public bioblitzes and community workshops focused on environmental education for Baltimore youth at Masonville Cove, Hart-Miller Island, and Cox Creek.

Finally, to support an ongoing statewide habitat restoration effort in Maryland called the 5 Million Trees Initiative, the National Aquarium and its partners will use Chesapeake WILD funding to establish a local hub to train volunteers for hands-on conservation efforts, including native seed collection, tree grow out, and wetland planting.

With such a variety of projects and goals underway, the National Aquarium is paving a path toward a bright future. □

KIARA KAMARA, Science Applications, Northeast Region

Kamara was a RAY Fellow, and August 2024 marked the end of a two-year fellowship with the Service.

Collaborative Conservation Leads to Removal of Apache Trout from Endangered Species List

In early September, Secretary of the Interior Deb Haaland announced that after more than five decades of recovery efforts by federal, state, and Tribal partners, the Apache trout was being removed from the federal list of endangered and threatened wildlife. The restoration of Arizona's state fish marks the first sportfish and the first trout delisted due to recovery, a significant conservation success under the Endangered Species Act.

"After more than 50 years of devoted efforts among federal, state, Tribal, and nongovernmental organizations, the incredible recovery of the Apache trout reminds us of the transformational power that collaborative conservation efforts — grounded in Indigenous Knowledge — can have on fish and wildlife," Secretary Haaland said at a recovery celebration. "This recovery is a testament to the importance of the Endangered Species Act and its tools and resources that are allowing the Interior Department and the federal government to protect vital species in every corner of America," the Secretary added.

"Thanks to resources from the President's Investing in America agenda, the U.S. Fish and Wildlife Service and partners were able to reopen over 60 miles of habitat and reinforce existing conservation efforts, resulting in today's impressive announcement," said U.S. Fish and Wildlife Service Director Martha Williams. »

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"We are making investments like these all across the nation, with benefit to both people and wildlife for generations to come."

The Bipartisan Infrastructure Law provides a once-in-a-generation opportunity to invest in the nation's rivers and streams, benefitting communities and species like the Apache trout. Apache trout projects funded through the Bipartisan Infrastructure Law include the 2022 Apache Trout Recovery Fish Passage Infrastructure Project and the 2023 Crooked Creek Route 55 Culvert Fish Passage Project, both led by the White Mountain Apache Tribe.

The Apache trout is found exclusively in streams of the White Mountains in the eastern part of Arizona. It is one of only two species of trout native to that state and is sacred to the White Mountain Apache Tribe. First described as a unique species separate from Gila trout in 1972, a year later, it gained protection under the Endangered Species Act of 1973 due to habitat loss and introduction of non-native species. It was subsequently downlisted to threatened in 1975. By 1979, 14 known populations occupied 30 miles of habitat. Today, thanks to conservation efforts, 30 populations occupy 175 miles of habitat.

Essential conservation actions, including the removal of non-native trout and reintroduction of Apache trout, have driven this recovery. Apache trout require continual management to maintain conservation barriers and prevent hybridization with non-native species. To address these needs, the Service, U.S. Department of Agriculture's Forest Service, White Mountain Apache Tribe, Arizona Game and Fish Department, and Trout Unlimited will collaborate under a cooperative management plan to safeguard and sustain Apache trout populations and their habitats over the long term.

In 1955, the White Mountain Apache Tribe closed off streams on the reservation to angling of Apache trout. (PHOTO BY USFWS)

The Apache trout's recovery journey involved an initial recovery plan developed in 1979, a revised plan in 1983 and a second update in 2009. Additionally, a comprehensive species status assessment was conducted, incorporating the latest scientific data to evaluate the species' current needs, conditions, and threats and to model future scenarios. The Service actively engages with Tribes, federal agencies, state and local governments, conservation organizations, communities, and private citizens on recovery under the ESA to help inform ideas and innovative ways to conserve and restore imperiled species and carry out on-the-ground recovery implementation actions.

The ESA has been highly effective and credited with saving 99% of protected species from extinction. Thus far, more than 100 species of plants and animals have been delisted based on recovery or reclassified from endangered to threatened based on improved conservation status, and hundreds more species are stable or improving thanks to the collaborative conservation.

In addition to being named 2023 Recovery Champions, the Apache Trout Recovery Implementation Team won the 2024 Carl R. Sullivan Fishery Conservation Award from the American Fisheries Society for outstanding contributions to the conservation of fishery resources. □

Healthy Habitat for Hitch: Partnerships With Tribe, State, Others, Critical to Efforts

Recovering populations of Clear Lake hitch isn't just a goal for the Robinson Rancheria Pomo Indians of California. It's critical to their culture and way of life.

Luis Santana, a fish biologist with Robinson Rancheria, explains the importance of this species as subsistence to the Tribe with his own personal challenge to eat what is genetically good for his body.

"My ancestors are from central Mexico, and so when I did my genetic analysis on what I should be eating, it came back—venison, a lot of zucchini, and a lot of berries, and I do eat that stuff, but not often enough," he says.

While historically a form of subsistence, Santana sees multiple benefits of the fish to the Tribe. "Getting back to more fish would obviously help because it's a lot healthier and better for the people, but what I'd like to emphasize is how critical our efforts are now and in the future to preserving the hitch for future generations for the mental and spiritual benefits to the Tribe."

The importance of Clear Lake hitch to local Tribes has given momentum to recent efforts to increase the populations of this native fish through several habitat restoration efforts. These efforts take cooperation, collaboration, and, of course, funding. »

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According to Jerrod Sellers, a fish and wildlife biologist with our Sacramento office, there is hope that improving habitat for the fish can also help improve the health of the lake.

"The hitch is the canary in the coal mine for Clear Lake," he says. "My role is to work with all partners, including the Tribes, to look at the science and make recommendations on habitat restoration projects or data collection efforts that could help the hitch."

Working with partners to implement habitat restoration projects, such as a project at Scott's Creek, is critical, says California Department of Fish and Wildlife biologist Ben Ewing.

"Partnerships are very important—the number one priority—because there's strength in numbers," says Ewing. "It's a huge undertaking. The more people who can help and contribute knowledge and time to projects is priceless."

Projects that restore the floodplain, create additional habitat, and bring back native vegetation can improve spawning conditions for the hitch.

One such partnership project that has received funding is the Tejada Ranch Habitat Management Project, a National Fish Passage Program project funded through the Bipartisan Infrastructure Law to modify channels on a stream bank and remove debris. This work aims to help larval hitch reach Clear Lake or refugial pools until there is enough flow in the tributaries to move them into the lake.

Luis Santana, biologist with the Robinson Rancheria Tribe, holds a tule perch. (PHOTO COURTESY OF THE ROBINSON RANCHERIA TRIBE)

"This effort showcases a really great partnership effort with the Service, the Robinson Rancheria Tribe, and a private landowner," says Alex Jones, a Fish and Aquatic Conservation biologist and Culvert Aquatic Organism Passage coordinator with the Service. "We hope this will help us build momentum for other local landowners to see the great work done and want to improve hitch habitat on their land."

Ultimately, the partners hope this work will reduce the number of hitch stranded in isolated pools when tributaries rapidly dry up during spawning season. Over the past few years, Santana and his team have rescued hundreds of stranded fish and returned them to the lake. With this restoration project, the fish will be able to follow their natural life cycle to migrate up the tributaries and then return to the lake after spawning. In addition to benefits directly to the fish, this project will also reduce the issue of the streambank encroachment onto private land.

Santana and partners teamed up with the Habematolel Pomo of Upper Lake on another restoration project to clear non-native blackberries and other invasive plant species from a tributary that the hitch use for spawning. "As you clear the invasive plants, the native plants come back," he says. "Once natives come back thick and plentiful, then we've done our job at that site."

Clear Lake hitch in Clear Lake. (PHOTO BY JOHN HEIL/USFWS)

Along those same lines, invasive fish species such as carp and goldfish are also problematic. "We can no longer just focus on the lake. We have to look at the ponds and lakes upstream, too," says Santana.

"Hitch are really important to me. I love fish—it's what I built my career around. So, if I can save hitch here and give back to the community who raised me, that's great." □

JOHN HEIL, Office of Communications, Pacific Southwest Region

Sequoia's Slender Salamanders a Precious Sight

Stepping carefully among the woody debris at the ravine's base Kate Bocskor, senior fish and wildlife biologist at our Sacramento Fish and Wildlife Office, scanned the moist earth for a rare salamander. This is the part of being a wildlife biologist that drew her to the field: exploring ecosystems and the species that call them home.

Bocskor has been evaluating the relictual and Kern Canyon slender salamanders of the Sequoia National Forest for nearly four years. Her work contributed to the proposal to protect both kinds of salamanders under the Endangered Species Act. Yet despite the countless hours of reading, writing, and compiling data at her desk, she had seen the salamanders in only a handful of photos.

That changed in early May when Bocskor left her desk to search for the two rare species. Casey Moss, a field technician with the U.S. Geological Survey and an expert in slender salamanders, and Sequoia National Forest biologist Ron Rozar led Bocskor and colleagues from the Sacramento Fish and Wildlife Office into the Kern River Canyon.

"We started looking around 1 p.m. in the lower Kern River Canyon, where Kern Canyon slender salamanders can still be found but seem to be disappearing," Bocskor says. "Some of the locations haven't had a sighting in decades. We didn't find this species at those sites or, as it turned out, at any of the others we visited."

Most active on rainy nights, Kern Canyon slender salamanders are colored like mud and hide in crevices within boulder outcrops or under moist logs like their invertebrate prey. With just a handful of sites in the lower Kern River Canyon serving as their remaining range, seeing a Kern Canyon slender salamander takes not only planning, but luck.

"Some of those lower sites are already too dry for salamanders to be at the surface," Moss says. "In that sense, it wasn't unusual to not find any. Higher up on Breckenridge Mountain, we began looking for the relictual slender salamander in places where their numbers have been declining over time but where there was still a good chance of seeing one."

By 6 p.m., they still hadn't seen either species, and evening was setting in. At the last site, water trickled into a ravine below a spring. The biologists carefully peeked under rocks and logs that looked like perfect cover objects for the relictual slender salamander. Nothing.

"We knew that last site was where we were most likely to see a salamander, so we were feeling pretty disappointed," recalls Bocskor. "But then Ron Rozar called out that he found one! It was so exciting, and after that, we got a better idea of where to look. We ended up finding four."

Bocskor captured this photo of a relictual slender salamander after hours of searching. (PHOTO BY KATE BOCSKOR/USFWS)

Sequoia National Forest has been conducting surveys to monitor water quality and is identifying methods for preserving and improving relictual slender salamander habitat. Their habitat can look like little more than a wet or muddy spot on the forest floor where a spring brings water to the surface. Staff have been working to prevent erosion around these areas and are maintaining habitat sites by leaving natural cover objects in place.

"One really gets a sense of how vulnerable these small and delicate animals are," Rozar says. "Sequoia National Forest is eager to work with the Sacramento Fish and Wildlife Office and other partners to better understand where the salamanders can be found, what their precise habitat needs are, and how we can connect the populations at different sites in order to conserve these two amazing species."

We're currently determining the final listing status of the two species after public review of the proposed rule. If they are protected, we'll consider the next steps to take in collaboration with Sequoia National Forest and other partners to recover the species.

"It was exciting enough to see their actual habitat after working on the species for so long, but to finally see individuals made the species and their plight more real," says Bocskor. "I feel fortunate I get to contribute to the conservation of these unique salamanders." □

CAL ROBINSON, Office of Communications, Pacific Southwest Region

Local Alliance Helps National Pollinators

Our Carlsbad Fish and Wildlife Office awarded the South Bay Parkland Conservancy (SBPC) $40,000 through a cooperative agreement to continue restoration of overwintering habitat for the western monarch butterfly and other Southern California pollinators.

The five-year project will restore six acres of native coastal sage scrub at Hopkins Wilderness Park in Redondo Beach in Los Angeles County. The park is a Xerces Society-identified site for the western monarch, and an oasis of open space within a highly urbanized area that provides residents access to a more natural environment.

"South Bay Parkland Conservancy is pleased to receive this grant award to help overwintering monarchs by continuing the restoration of native habitat in Hopkins Wilderness Park," says Jacob Varvarigos, the Conservancy's project lead and board member.

The grant was issued as part of the Service's pollinator conservation initiative to strengthen coordination among partners by increasing resources, building capacity, and expanding the availability of native plants.

Overwintering is a vital phase in the western monarch's life cycle. It provides a specialized microclimate for rest and energy conservation before spring mating and migration north. The coastal sage scrub community of native plants is found closer to the coast. It is populated by shorter, softer, and drought-deciduous plants such as sea cliff buckwheat, purple sage, bush sunflower, and California sagebrush. These native plants also provide a home for the endangered El Segundo blue butterfly, the threatened coastal California gnatcatcher, and the cactus wren, among other species.

Although it once dominated Southern California, estimates say anywhere from 60%–90% or more of this type of habitat has been lost to development and other anthropogenic threats, including wildfires, habitat fragmentation, and climate change.

"Pollinators are largely being impacted by changes to their habitat, and the availability of native plants is critical to their survival," says Carolyn Lieberman, coastal program coordinator for the Carlsbad Fish and Wildlife Office. "We're proud to partner with SBPC and the City of Redondo Beach on this project that benefits monarchs and other species and engages the community in the stewardship of natural resources," she says.

The Service and the Conservancy have been partnering for years to rewild habitats in the South Bay and inspire conservation in future generations. To date, approximately three acres of the park have already been restored, and through this grant, community members can continue to expand habitat and learn about the native species in their area during volunteer restoration events. □

JESSICA D'AMBROSIO, Office of Communications, Pacific Southwest Region, and AGA CHENFU, South Bay Parkland Conservancy

(Top) Volunteers clear a new area for planting. (PHOTO COURTESY OF SOUTH BAY PARKLAND CONSERVANCY)

(Above) City of Redondo Beach Mayor Jim Light (far right) and South Bay Parkland Conservancy board members celebrate the opening of a community library at Hopkins Wilderness Park on Oct. 20, 2024. (PHOTO COURTESY OF SOUTH BAY PARKLAND CONSERVANCY)

(Left) An El Segundo blue butterfly on coast buckwheat. (PHOTO BY ERIC PORTER/USFWS)

PARTNERS NEEDED

Conservation partners from Newhall Land and Farming company (owned by Five Point Holdings, LLC), the Service, Dudek, Jodi McGraw Consulting, and FLx environmental consulting firms. (PHOTO BY USFWS)

Conservation is not easy. It takes money, materials, equipment, labor, and plenty of expertise. It is a job that no one organization can accomplish. We turn to partners not just because they are in our mission statement but because we need these valuable allies to achieve the conservation that this country, and the world, deserves. ››

Seniors, the New Jersey Youth Corps, and Service Law Enforcement officer join in in a multigenerational planting at an Elizabeth Urban Wildlife Refuge Partnership event at the Peterstown Community Center that benefits the community and supports pollinators of Elizabeth, New Jersey. (PHOTO BY CHELSI BURNS/USFWS)

GOATS TO THE RESCUE

Their grazing efforts are helping restore an endangered butterfly's habitat.

By NATHAN HURNER

Goats gathered in a corral wait for their opportunity to graze at a project site. (PHOTO BY NATHAN HURNER/USFWS)

A weathered corral appears in the middle of sagebrush. A small trailer sits behind the wooden fence posts. Inside the corral is a herd of goats. They spring up from their rest as Service wildlife biologist Lara Enders enters the corral with Dennie Cook, owner of High Desert Graziers and of the goats.

"These goats are going to help Carson wandering skipper," says Enders. "We are using them for targeted grazing to restore the butterfly's habitat."

The targeted grazing project is part of a collaborative effort between our Reno field office and the Bureau of Land Management's Sierra Front Field Office. This is an experimental effort to improve habitat for an endangered butterfly, the Carson wandering skipper, and to Enders' knowledge this is the first project using targeted grazing to benefit an endangered species in Nevada.

The Carson wandering skipper is an orange butterfly that calls northern Nevada and a portion of eastern California home. There are only three known populations; the northern-most is found near Honey Lake in California, the southern-most population is found near the Carson River, and the third population lies north of Reno, Nevada. It is this third population where the Service and BLM are experimenting with targeted grazing to restore Carson wandering skipper habitat. The goal is to reduce overgrown vegetation on a BLM Area of Critical Environmental Concern.

Daniella Dekelaita, a wildlife biologist for the BLM, notes that, "The biomass build up [on this site] may be a factor working against Carson wandering skipper." Biomass refers to the total quantity of organic material that comes from plants or animals in a given area. "The overgrowth in vegetation appears to be crowding out nectar plants, which could make it difficult for Carson wandering skippers to find food," Dekelaita adds.

Goats?

But why use targeted grazing instead of other management tools?

"Prescribed fire is a tool that would certainly remove biomass, but we had concerns that fire could kill overwintering pupae that are found at the base of saltgrass and may also remove too much of the plant resources that we want to keep," Enders says. "Mowing is another tool, but it would leave a lot of cut biomass that we would still need to remove from the site. These factors naturally led us to a targeted grazing approach, which allows us to remove some, but not all, standing biomass. This method doesn't leave as much biomass behind and is less detrimental to overwintering pupae." ››

Carson wandering skipper is a small orange butterfly with only three populations. (PHOTO BY NATHAN HURNER/USFWS)

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To do the grazing on the landscape, the goat graziers set up a mobile electric fence in the area biologists determined best to graze. Then they herd the goats there. The goats are monitored to ensure the vegetation is grazed down to an agreed-upon height. Biologists want the vegetation at a level that would best allow Carson wandering skippers more space to fly and access the resources they need — flowering plants for nectar, and saltgrass on which they lay their eggs.

Once one pasture is grazed to the appropriate height, the goats are moved to another pasture. They are brought back to the corral for rest and water and repeat this process several times throughout the day.

"I don't know of other projects that use targeted grazing for an endangered species. So, to find that this was the best option for our needs, I think, is cool and unique," Enders says.

Fighting Invasive Plants

An interesting benefit that comes from using goats for targeted grazing is that they have very acidic stomachs. This kills the seeds of the vegetation they eat and limits the recruitment of invasive plants. So, as the goats eat the plants that biologists want out of the area, they also don't need to be concerned that the invasive plants might be reseeded. This is especially helpful for a few key areas that had stands of tall white top, a noxious weed that is invading portions of the habitat.

"Through this management effort, we wouldn't want to spread those seeds, so knowing the seeds do not survive the digestive track helped us know that this was a good management tool for us," says Enders.

Another benefit to the project is the overall health of the land. Because the Carson wandering skipper is a narrow ››

The goat graziers use a mobile electric fence, so they can fence off certain parts of the habitat that need more attention. (PHOTO BY NATHAN HURNER/USFWS)

(Top) Goats get a break from their grazing in an old corral. (PHOTO BY NATHAN HURNER/USFWS)

(Bottom) This is the site of the grazing project, just north of Reno, Nevada. (PHOTO BY NATHAN HURNER/USFWS)

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ranging endemic species (meaning it only exists in a very limited area), it is considered a habitat specialist, thriving in very specific habitat conditions. While the project is in a small area, this effort will help restore a portion of the larger landscape to a more natural state, improving conditions for other local wildlife.

Enders walks around the site, observing the habitat and the grazing that has taken place. "You can see the difference between the two sides of the fence here," Enders points out. There is a noticeable difference in the level of vegetation between the grazed and ungrazed sides. How this will impact the butterfly's population is yet to be known. Fall 2023 was the first round of implementation for this targeted grazing project. Although more time is needed to track the effectiveness of the targeted grazing, this project is one step in addressing a problem facing the skipper.

When asked why the recovery is important, Enders says: "Each species and its habitat play a role in this world. Recovery is important to support and maintain the functional role of this butterfly and its habitat in the larger ecosystem. There is also an inherent value to these species and these areas. Recovery helps maintain the natural beauty of our landscapes which is greater when they are healthy and resilient. Additionally, our agency's mission is the conservation of these species, and that's what we're going to do. We are always looking for the best management tools to help to these ends, and it's an added benefit when that tool is cute, like these goats here!" □

NATHAN HURNER, Office of Communications, Pacific Southwest Region

WATCH

Learn more about Carson wandering skipper.

A FLIGHT FOR WOUNDFIN

Working with Utah and others, our Southwestern Native Aquatic Resources and Recovery Center adds to its population of endangered species. | *By* KEVIN CODY

Woundfin are found only in the Virgin River in southern Utah, Nevada, and northern Arizona. (PHOTO BY USFWS)

On the morning of July 18, 2024, our Southwestern Native Aquatic Resources and Recovery Center (SNARRC) in Dexter, New Mexico, received a welcome addition to the facility with the arrival of 559 wild federally endangered woundfin. The fish arrived on a flight from Hurricane, Utah, on a Utah Division of Wildlife Resources plane. These wild woundfin joined the captive population at the center with the goal of increasing genetic diversity and adding numbers to the broodstock, or breeding adults.

Woundfin are found only in the Virgin River in southern Utah, Nevada, and northern Arizona. The species was protected as endangered more than 50 years ago in 1970 under the Endangered Species Conservation Act. Woundfin were then protected under 1973's Endangered Species Act.

"Addressing the threat of non-native fish has historically been the largest hurdle, but after around 25 years, we successfully removed red shiner from Utah and much of the Arizona portions of the river in 2021," says Steve Meismer, local coordinator for the Virgin River Program. "The next step is to address limiting factors, typically water temperature and minimum flows. One of the largest challenges with woundfin is that we are trying to do a lot with a little bit of habitat. As a result, we are looking to see if we can stock into other locations in the basin to see if we might be able to expand the range outside of the historic area while not affecting the communities."

Giving Woundfin a Genetic Boost

SNARRC has housed woundfin since 1979, with an initial population of 240 individuals. Over the next 25 years, fish were periodically added to the captive population. The last augmentation happened in 2004.

"Adding wild-caught individuals to a captive population is critical in supplementing the population with genetic diversity," says Wade Wilson, SNARRC's director. "At SNARRC, woundfin naturally spawn in our ponds with the addition of stone substrate to the bottom of the pond. During that spawning period, not every individual will spawn and pass their genetic information to the next generation. This also happens in the wild, and the type of genetic information lost differs between the wild and the captive populations, so they start to become genetically different over time. Adding wild individuals mitigates this divergence."

A Race Against Time

The successful operation of transporting the woundfin from southern Utah to SNARRC was a race against time. With one of the warmest weeks of the summer occurring, woundfin would be concentrated in schools, making capture possible. However, it was also the start of monsoon season, leading to more storms that increase turbidity and cool the river. This causes the woundfin to disperse, making capture in large numbers difficult.

Over two days, a Utah crew from the Washington County Field Office went to the river to collect fish using a seine, a net that hangs vertically in the water with floats at the top and weights at the bottom. The seine is pulled downstream for 10 meters then toward the bank to corral the fish, a method that minimizes stress on the fish during capture.

The two-day total of 559 woundfin collected surpassed the original goal of 500 fish. The captured fish were put in handheld coolers and driven to the Washington County Water Conservancy District's Water Treatment Facility, where a temporary holding tank was set up. ››

(Top) Woundfin are transported from Hurricane, Utah, to Roswell, New Mexico. (Left) Woundfin in the holding tank awaiting transporting to the airport. (PHOTOS BY UTAH DIVISION OF WILDLIFE RESOURCES)

Service staff put woundfin into large tanks for quarantine purposes. (PHOTO BY USFWS)

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The following morning, Utah staff spent the early hours prepping the fish for transport. The fish were loaded into aerated coolers and onto the plane, flown to Roswell, New Mexico, and then driven 20 miles to their new home. At SNARRC, the woundfin were placed in quarantine tanks before being added to the existing population, where they will play a vital role in the recovery of the species.

"Each of our captive populations is considered a refuge population that acts as a genetic reserve should the wild population decline or go extinct," Wilson says. "The woundfin program uses the refuge population as broodstock to spawn new individuals in the spring-summer that are then tagged with Visible Implant Elastomer (VIE, injected colored silicone marks) and stocked back into the Virgin River two years later in the spring. The VIE mark allows fish when captured, to be identified as stocked versus wild."

Having a plane for transport was a vital aspect of the operation's success. Transporting fish causes stress, making it difficult to keep all of them alive. Reducing the amount of travel time, as well as other stressors such as heat, helps ensure a higher survival rate. While the typical protocol is the use of a fish transport truck with fish culture staff operating it, the rarity of wild woundfin prompted biologists to seek an alternative.

Partnership in Action

This operation shows the impact of working together to support a protected species. Multiple organizations played key roles, from permitting and logistics to the physical operation to the eventual arrival of woundfin at SNARRC. Each step along the way made a difference and will hopefully lead to a brighter future for a species that needs our help.

"This project faced many hurdles," says Melinda Bennion, the project leader for Utah's Washington County Field Office. "We hadn't been able to collect enough adult woundfin in 20 years. We'd never held woundfin in a temporary holding facility. We had never flown woundfin. It took a lot of moving parts and a lot of people from hatchery to finance folks, helping to coordinate this transfer of endangered fish across state lines. In the end, the stars really aligned for us on this project, and things couldn't have gone smoother, and that was due to the partnerships and relationships built…This project was a great example of why partnerships are imperative for the recovery and conservation of native species." □

KEVIN CODY, Office of Communications, Southwest Region

THE RIGHT THING TO DO

A Sagebrush Conservation Design analysis of national parks and national wildlife refuges gives managers support for actively combating threats like invasive annual grasses.

The Missouri River slices through the landscape of north-central Montana. Before it meets the earthen mass of the Fort Peck Dam, there's a place where the river still floods regularly, filling the large cottonwood galleries lining its floodplain. From there, steep coulees lined with ponderosa pine and Douglas fir meet grassy ridges that climb up nearly 1,000 feet to sage-steppe plains.

Sagebrush habitat at the Charles M. Russell National Wildlife Refuge Complex is some of the best in the National Wildlife Refuge System. Paul Santavy, refuge manager and project leader at the complex, says the refuge is host to somewhere around 150,000 acres of core sage-grouse areas — and supports many other species besides.

"This sagebrush ecosystem is so important," he says. "There are so many different species that are obligates to a sagebrush community and they can't live anywhere else."

A 2024 paper published in *Rangeland Ecology & Management* agrees. The study, which identifies core sagebrush habitat found on national parks and national wildlife refuges, points out two of the complex's six refuges (UL Bend and Charles M. Russell National Wildlife Refuges) as the cream of the crop when it comes to sagebrush habitat. Both made the list of the top five wildlife refuges that provide what's considered "core sagebrush areas" under the Sagebrush Conservation Design, a geospatial decision support framework that identifies the most resilient sagebrush habitat in the western United States. Besides offering some of the best habitat found on Service-managed land, the two refuges also provide connectivity to the largest blocks of sagebrush habitat in Montana, which are managed by both private landowners and the Bureau of Land Management.

But, like his ranching neighbors and land managers across the sagebrush sea, Santavy is staring down the barrel of a big problem: invasive annual grasses. A flash drought in 2017 kick-started a cycle of Japanese brome expansion on the refuge complex and surrounding areas. A lack of rainfall in April and May, combined with soaring temperatures in July, meant that native grasses and forbs didn't grow well that year. Then, heavy rains in September and October created perfect growing conditions for Japanese brome, which took advantage of the moisture and the lack of competition to spread wildly. ››

Sagebrush Conservation Design

With the release of the Sagebrush Conservation Design in 2022, rangeland researchers attempted to map the habitat quality of the imperiled sagebrush steppe on the scale of the entire biome to evaluate sagebrush condition and prioritize areas for conservation investment. Now, in 2024, a special issue of *Rangeland Ecology & Management,* the result of a collaboration among Department of the Interior bureaus and over 20 partner organizations, brings together a suite of research that leverages the Sagebrush Conservation Design to answer big questions about sagebrush conservation.

(Previous page) The sagebrush ecosystem makes up one-third of the land mass of the continental lower 48 (across ~175 million acres of public and private lands). (PHOTO BY EMILY DOWNING/ INTERMOUNTAIN WEST JOINT VENTURE)

Pre-treatment photo of Japanese brome, an invasive annual grass at Charles M. Russell National Wildlife Complex. The team plotted areas for herbicide treatment of this invasive annual grass. (PHOTO BY BILL SPARKLIN/ USFWS)

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Santavy says the pulse of Japanese brome that year made him wonder if the refuge had tipped over a threshold with invasive annual grasses. A team of refuge specialists used satellite imagery and ground checks over the next several years to identify the types and spread of invasive annual grasses on the landscape. Because they had millions of acres of land to cover, they used core sage-grouse habitat to focus their search and then worked on getting finer scale tools to identify where Japanese brome was growing on the refuge complex.

Bill Sparklin, the lead author of the research published in *Rangeland Ecology & Management* and a regional invasive species biologist, assisted Santavy and his team with the work by modeling where invasive annual grasses existed on the landscape over time. The modeling painted a bleak future for the refuge complex.

"Ecologically, I'm concerned," Santavy says. "In big years, it really takes over the understory around sage. There isn't much else. And every year it does really get worse." ››

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Sparklin says that in the application of Sagebrush Conservation Design, there is a lot of focus on Bureau of Land Management lands and private lands. National parks and national wildlife refuges are often overlooked due to their smaller footprints. This also stems from the directive with which parks and refuges were established: to preserve land from development, not to actively manage it against dynamic threats like invasive annual grass. But, he says, that small land footprint means that parks and refuges often have more capacity per acre to manage habitat. That's why his research team thought it was important to specifically apply Sagebrush Conservation Design to those lands in the analysis.

"The flip side of that [capacity] is that there's a hesitance to manage because parks and refuges are considered these 'protected areas,'" Sparklin says. "There's a legacy idea of once we give it the designation of protecting it, it stops exploitation and what used to be the threats. But when we think about climate change , fire, and invasive species, that designation doesn't address those threats, so we need to think about active management a lot more."

Sparklin's work—both the large-scale research showing important sagebrush habitat across the West and the more focused modeling for the refuge—convinced Santavy that action was needed if the refuge wanted to combat the Japanese brome and conserve its sagebrush landscapes. A never-before-seen influx of funding from the Bipartisan Infrastructure Law and the Inflation Reduction Act provided the refuge with the opportunity to apply the herbicide Rejuvra to combat Japanese brome across the two refuges, something that Santavy says his team was hesitant to do at first. In the long run, he says, it's clear that this work will benefit the sagebrush habitat he manages.

Light green Japanese brome, an invasive annual grass, growing in sagebrush country at the Charles M. Russell National Wildlife Refuge Complex. (PHOTO BY BILL SPARKLIN/USFWS)

Even with historic funding through the Bipartisan Infrastructure Law and the Inflation Reduction Act, continued funding and capacity will be needed to turn the tide on invasive annual grasses in the Charles M. Russell National Wildlife Refuge Complex. Sparklin's research emphasizes the potential payoff of such strategic investments. □

READ MORE

If you would like to read the full journal article documenting Sparklin's findings, please see "An assessment of conservation opportunities within sagebrush ecosystems of U.S. national parks and wildlife refuges" in the November 2024 issue of Rangeland Ecology & Management.

RESTORING GOLD CREEK VALLEY

Restoration project gets $5 million in Bipartisan Infrastructure Law funding, set to transform habitat for bull trout.

By JAN PETERSON

Bull trout have specific habitat requirements that are called the Four Cs: cold, clean, complex, and connected habitats. (PHOTO BY JOEL SARTORE/NATIONAL GEOGRAPHIC AND WADE FREDENBERG/USFWS)

Washington's Snoqualmie Pass has always served as a trade route. Tribes traveled the pass for trade, hunting and fishing. It evolved over time from foot paths to wagon ruts to paved roads.

The trade route underwent its greatest transformation when then-President Dwight D. Eisenhower signed into law the Federal-Aid Highway Act of 1956, which created the U.S. system of interstate highways that includes Interstate 90.

"There's a reason there's an interstate there, because it always has been from time immemorial. The west side liked the Yakima Basin fish because they were fatter," says Mitch Long, executive director of Kittitas Conservation Trust.

But in building I-90, contractors introduced problems for fish and other wildlife species that depend on the habitat in the region to survive. Migration pathways were cut off along with the cold, clear water anadromous fish must have to survive.

Today, that area, about a 55-mile drive along I-90 from Seattle, is about to experience another massive transformation, one that will reopen those pathways of wildlife migration and return the cold, clear water that the Endangered Species Act-protected bull trout and other anadromous fish need to survive. Thanks to a $5 million grant from the National Fish Passage Program with funds made available through the Bipartisan Infrastructure Law, the Gold Creek Valley Restoration Project is expected to break ground in summer 2025. The Bipartisan Infrastructure Law money and in-kind matches provide $8.4 million toward instream restoration work for 2.5 miles of streambed. The project will limit dewatering and disconnection of the river. This will reduce stranding and allow upstream passage of adult bull trout to their spawning habitat in summer.

The entire project is expected to cost about $50 million. When complete, it will open eight miles of upstream habitat, reconnect 245 acres of floodplain, and restore recreation opportunities at a beautiful and beloved site.

The Gold Creek Valley Restoration Project is a partnership among the Kittitas Conservation Trust, the Confederated Tribes and Bands of the Yakama Nation, USDA Forest Service, and several of our programs, including Fish and Aquatic Conservation, Ecological Services, and Partners for Fish and Wildlife, along with many other federal and state groups and private landowners.

"The Gold Creek Valley Restoration Project represents a unique, landscape-level opportunity to restore habitat across ownership boundaries. Thanks to partners and private landowners working together, we can save a bull trout population that's close to dying out," says Kathryn Furr, Yakima Basin integrated plan coordinator for the Forest Service.

"The project started with this idea that the creek goes dry due to human impacts, so we started monitoring groundwater and surface water to see where the water was going and why it's leaving Gold Creek," says Katy Pfannenstein, fish biologist and Gold Creek project lead with the Habitat Restoration and Conservation Program at our Mid-Columbia Fish and Wildlife Conservation Office, in Leavenworth, Washington.

Project partners made an important discovery about 10 years ago, Pfannenstein says. "We discovered the large gravel borrow pit used to build I-90 is pulling water from the creek because ››

(Top) Today, what looks to be a beautiful pond is in reality a large gravel borrow pit that is pulling water from adjacent Gold Creek. (PHOTO BY LENA CHANG/USFWS)

(Bottom) Biologists Katy Pfannenstein and Amy Horstman discuss the project that will restore Gold Creek for bull trout and other species. (PHOTO BY LENA CHANG/USFWS)

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of how physics works. It was never restored."

Instead of returning to Gold Creek, which is designated critical habitat for bull trout, the water is trapped in the human-created pit, preventing it from going where it is direly needed.

Furr explains the problem further: "Gold Creek originates in the Alpine Lakes Wilderness and provides cold water that is key for species to persist in the face of climate change. We have an opportunity to re-create the function of the stream and undo the harm humans caused to this area."

Adding to the problem is that logging and removing old-growth trees doubled the width of Gold Creek's channel, leaving it far too wide and with less riparian zone, or important transitional habitat between the creek and land. That means the water is spread out over more surface. Juvenile bull trout get caught in little pools and adult bull trout cannot migrate to spawning areas as the creek dewaters.

"With the creek going dry, there are isolated pools that little baby fish get stuck in, so Yakama Nation and Washington Department of Fish and Wildlife folks scoop up the fish to save them, so they don't dry out or get eaten by birds or are predated on in these little pools that will dry up," Pfannenstein says.

Fish are released into the reservoir the following year.

To fix the problem, Kittitas Conservation Trust with the assistance of the Service will supervise contractors who will refill the borrow pit and restore Gold Creek to its natural wetland landscape using helicopters and ground-based equipment. "When you're doing restoration, it's not flat. A lot of artistic creativity is involved. What do you think the river wants to do with this log?" Long says. More than 140 engineered logjams will be reintroduced to the streambed, and the riparian habitat will be restored.

Long says that now is the time to save the remaining bull trout populations in the Yakima Basin. Diversity means resiliency. Three populations in the Yakima Basin have already been lost. At one time, there were at least a dozen in the basin.

"Bull trout, they're kind of the unsung hero of fish in the cold-water realm," Long says. "Bull trout for a long time were kind of persecuted – they ate salmon, they were a predator. They're the epitome of what a trout or salmon species should be, but no one thinks about them. From my perspective, if bull trout go, it's the canary in the coal mine."

Mel Babik, Kittitas Conservation Trust's restoration director, says watching other experts plan on how to restore the area to its natural state has been fascinating. "It's amazing working with these top-tier botanists," she says. "They want not ››

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only native plants, but genetic-specific stock that are getting their start on a nurse log."

A nurse log is a tree or log that is fallen but provides nutrients for new trees and other plants to grow on.

The project transcends even bull trout, Babik says. "Restoration is different. You're holistically improving this environment. What I love about this restoration project is we're restoring for whatever comes next."

Furr adds: "The Gold Creek Valley Restoration Project represents a truly transformational project. Fisheries agencies are poised to reintroduce salmon and steelhead above Keechelus Dam after an absence of over 100 years. Gold Creek will be the primary spawning tributary for these restored runs of anadromous fish, bringing benefits to bull trout, spring Chinook salmon, sockeye salmon, and ESA-listed steelhead. The project will reestablish stream flow and historic wetlands, reduce the risk of flooding to private land, and implement activities across ownership boundaries to bring about restoration at a landscape scale."

The Gold Creek Valley Restoration Project has been named one of 10 Transformational Fish Passage Projects across the nation.□

JAN PETERSON, for the U.S. Fish and Wildlife Service Pacific Region

(Upper right) Ohio's Troy Dam is part of the larger Great Miami River Watershed Barrier Removal and Habitat Restoration initiative. Removing this dam, in combination with other projects, will eliminate barriers to fish passage, eliminate safety hazards, reduce flood risk, and increase recreational opportunities.
(PHOTO BY USFWS)

The Power of Transformational Aquatic Connectivity

Across the United States, millions of aging, obsolete, or poorly designed dams, roads, and levees are causing widespread ecological damage and putting communities at risk. These barriers trap fish, preventing them from finding food, shelter, and habitat to spawn. Outdated and aging infrastructure affects us, too: it degrades water quality, can heighten flood risk, and creates dangers for recreational users.

Restoring aquatic connectivity offers a win-win solution for both people and nature.

Under the Investing in America agenda, a historic $3 billion has been earmarked for aquatic ecosystem restoration. This investment, driven by the Bipartisan Infrastructure Law and Inflation Reduction Act, is already making waves, with over $970 million channeled into nearly 600 projects across 45 states.

In 2022, the Federal Interagency Fish Passage Task Force was launched to coordinate strategic deployment of these funds. By uniting federal agencies and non-federal partners, the task force is ensuring taxpayer funding is spent wisely by magnifying the community and environmental benefits beyond what any single effort could achieve.

This collective action is producing grand-scale, community-centric restoration projects, called Transformational Fish Passage Projects, that not only rejuvenate ecosystems but also bolster the climate resilience and economies of communities across the country.

Fish Passage Benefits Economies

Fish passage projects are a powerhouse for local economies. They generate jobs by employing local experts for technical assistance, consulting engineers for design, and construction crews for building and removal tasks. The benefits extend far beyond the immediate site, fueling long-term economic growth that can ripple throughout the region.

Fish Passage Benefits Communities

Barriers that pose a threat to fish often pose a threat to human communities. Undersized culverts that block fish passage are prone to being clogged by debris, resulting in flooding that closes roads, imperiling local communities and contributing to significant property damage and other safety issues. The same dams and spillways that prevent fish from migrating can also pose threats to recreational boaters, swimmers, and anglers. Failed culverts and dams can block roads and access to emergency services, cause widespread property damage, and put human lives at risk.

Removing or right-sizing instream structures throughout our watersheds improve public safety, enhance community resilience to the risks associated with a changing climate and aging infrastructure, restore the cultural value of our natural systems, and provide new and improved recreational opportunities.

COMMUNITY FORESTRY

Service supports partners restoring forests and storing carbon in Central America. | *By* GINGER DEASON

A community member shows xate in a forest. (PHOTO BY GINGER DEASON/USFWS)

Mesoamerica is one of the world's biodiversity hotspots—with only half a percent of the world's land area, it's home to 7% of the world's biodiversity.

It is also home to the Five Great Forests: the Maya Forest in Guatemala and Belize, the Moskitia in Honduras, the Indio Maíz/Tortuguero in Nicaragua and Costa Rica, La Amistad in Costa Rica and Panama, and the Darien in Panama. These forests provide habitat for famed species such as the jaguar, scarlet macaw, and Baird's tapir, as well as lesser known but equally threatened species like the Central American river turtle and the white-lipped peccary. All of the five great forests are in protected areas, and together they hold about 50% of Mesoamerica's forest carbon.

Unfortunately, threats like forest fires and cattle ranching have taken an incredible toll on the five great forests, causing extremely high deforestation rates. The Maya Forest, for example, has lost approximately 33% of its forest since 2000.

The five great forests are also important sources of local communities' livelihoods and provide critical ecosystem services. Most communities located in and around these forests rely on them for food, shelter, and income. These local communities, many of which are made up of Indigenous Peoples, manage about half of the remaining area of the five great forests. In the case of the Maya Forest in Guatemala, the communities' role is critical to its conservation, and we are determined to support this local work.

The Maya Forest (Selva Maya, in Spanish) is the largest of the five great forests. Measuring about 15 million hectares, about the size of Georgia or Michigan, it stretches through Mexico, Guatemala, and Belize. The largest Central American portion lies in Guatemala's northern department of Petén.

Like the other great forests, the Maya Forest is a carbon sink and is very important for mitigating climate change. In 1990, the Guatemalan government created the Maya Biosphere Reserve within the Maya Forest in an effort to preserve its forest ecosystems. Designated a UNESCO Man and Biosphere Reserve, the Maya Biosphere Reserve has zones that allow for different levels of conservation and use. The multiple use zone is intended to enable sustainable natural resource use with few negative impacts on the diverse ecosystems found within the reserve.

In 1994, the Guatemalan government instituted the forestry concession program, which provides concessions, or leases, to groups to manage large tracts of public land in the Maya Biosphere Reserve's multiple use zone. These forestry concessions allow the concessionaire to harvest timber and non-timber forest products according to a plan that the National Council for Protected Areas, or CONAP in its Spanish acronym, approves.

The leases originally began as 25-year leases, but recently some concessions have been renewed for 30 years, a testament to their success. Currently, there are 14 concessions, and all but two of them are managed by local community groups. Within these concessions, the deforestation rate is close to zero (0.4% in 2022) and, under the watchful eye of the communities, the forest fires that occur there account for less than 2% of all forest fires in the biosphere reserve. For over 25 years, the concessionaires have proven their ability to successfully protect the forests and the valuable resources and ecosystem services they provide.

With funding from our Central America Program in International Affairs, the Wildlife Conservation Society (WCS) is working with two concessionaires in the Maya Forest: the Selva Maya Association of Agricultural and Forest Producers (ASOSELVA, its acronym in Spanish) and Carmelita.

The Carmelita concession, managed by a community of the same name, covers about 54,000 hectares (133,436 acres, about the size of Redwoods National and State Parks) and is managed for timber, non-timber forest products, and ecotourism. In 2019, it was the first concessionaire to have its lease renewed and the first to receive a 30-year lease. In 2021, Carmelita began working with WCS on forest restoration, testing different treatments on former cattle ranches to determine which allowed for faster regeneration and growth. After determining that native species enrichment was the best treatment, the organizations developed a strategy to identify priority areas for restoration, giving special attention to those affected by fragmentation. The results of this project will provide crucial guidance for future investments in forest landscape restoration in the Maya Forest.

The other concessionaire, ASOSELVA, is a newer community group located outside of the concession it manages. It signed an agreement with the Guatemalan government on April 5, 2024, to manage two tracts of land totaling over 36,770 hectares (the size of Las Vegas, Nevada). ››

An ASOSELVA member installs a camera trap.
(PHOTO BY WILDLIFE CONSERVATION SOCIETY)

(Above) The entrance to the Carmelita concession. (PHOTO BY GINGER DEASON/USFWS)

(Left) Five Great Forests. (MAP BY WILDLIFE CONSERVATION SOCIETY)

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These two tracts, La Corona and El Morgan, are known as "The Shield" because they are located on the far western edge of other concessions and shield the rest of the area from forest fires and encroaching cattle ranches. The Shield is made up of healthy forests and important water resources including rivers, wetlands, lagoons, and seasonal swamps. La Corona is home to two-thirds of Guatemala's most important scarlet macaw nesting population.

WCS is working with ASOSELVA to build its capacity in forest and, financial management, and organizational development. With the assistance of WCS, during the first year of the project, ASOSELVA developed and implemented a biological monitoring program to evaluate key species and habitats. The project will also increase community capacity to monitor threats and protect biodiversity within the area. Successful implementation of this project will translate to over 33,000 hectares of forest and its associated carbon stocks managed and protected for at least 25 years.

We also support Asociación Balam ("balam" means "jaguar" in the local Mayan language) in the Maya Forest. Asociación Balam is working in deforested areas just south of the Maya Biosphere Reserve, assisting local communities near the Belize border with their reforestation efforts.

Through the provision of technical assistance, plants, and seeds, two community groups are using agroforestry techniques to restore ecosystems, protect forest remnants, and develop income-generating activities that are based on forest protection instead of deforestation. Managing forests for non-timber forest products such as palm leaves (xate, *Chamaedorea elegans*), allspice (*Pimenta dioica*), and fruits provide local communities with both income from sales and increased nutrition for home consumption.

Asociación Balam is also helping these local communities receive payments for ecosystem services from Guatemalan and global programs. All of these activities provide communities with income-generating opportunities and incentives to keep the forest standing and to reforest or restore areas that have been deforested or degraded.

In the first year of this project, 181 hectares (447 acres) were planted in agroforestry systems and 966 hectares (2,387 acres) of forest were placed into payments for ecosystem services programs.

These projects highlight the importance of working with local communities to find creative solutions that not only protect forests and support carbon sequestration but also provide livelihoods for people living near protected areas. Developing alternatives to activities that deforest or degrade large forests is essential for healthy, productive forests that store carbon, generate other ecosystem services, and provide for surrounding communities.

If these concessions continue operating as planned, in 2049, it will be interesting to see what Carmelita, ASOSELVA, and other concessionaires accomplish through their hard work and dedication to the forests they are charged with protecting. And if Asociación Balam is able to support more communities with projects that replace rather than cut down forest, future satellite photos will hopefully show a reversal of deforestation that helps the Five Great Forests remain great. □

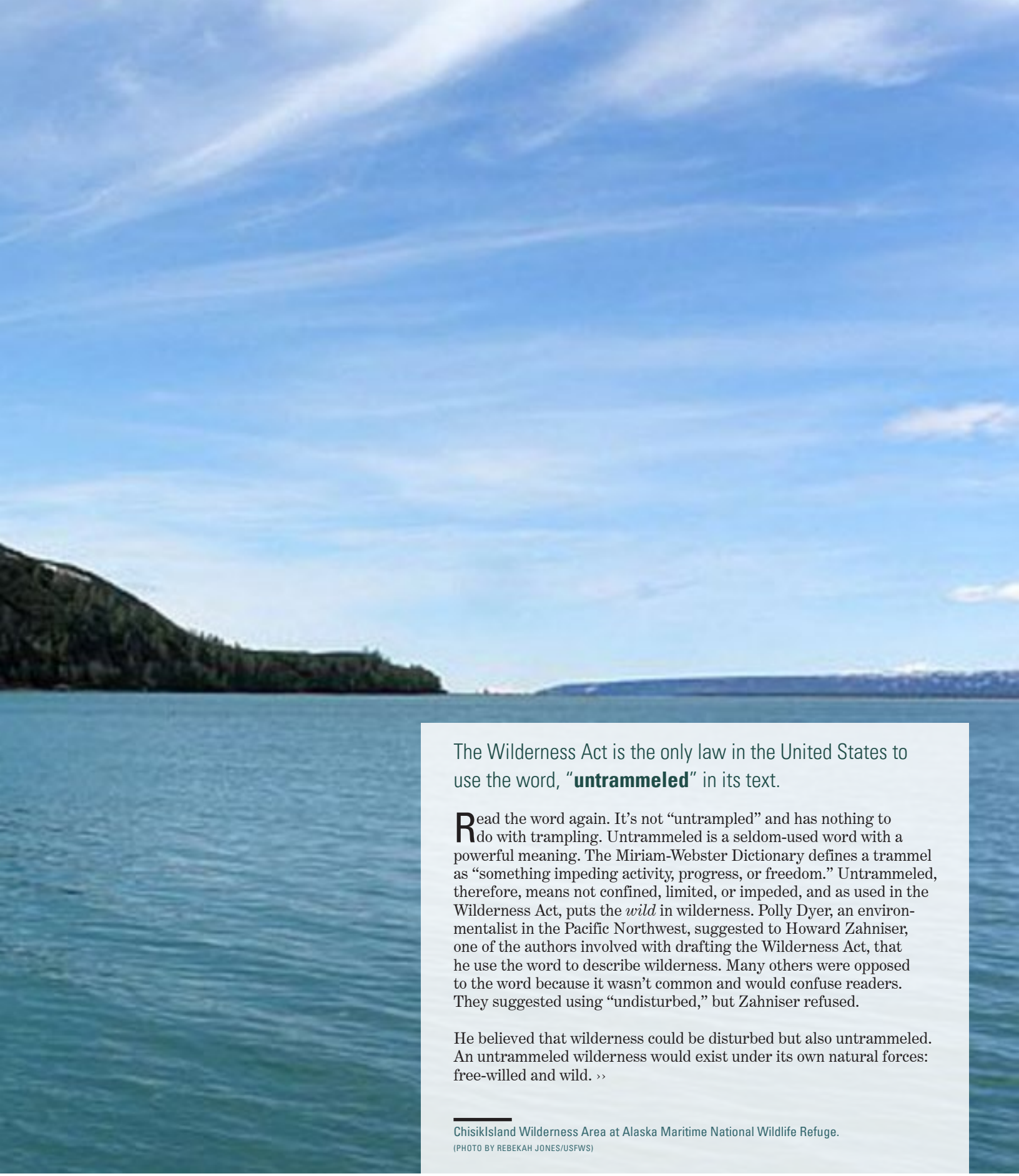
GINGER DEASON, International Affairs, Headquarters

Forest reforestation at Carmelita. (PHOTO BY WILDLIFE CONSERVATION SOCIETY)

UNTRAMMELED BY MAN

Wilderness, where man himself is a member of the natural community.

By MICHELLE REILLY



The Wilderness Act is the only law in the United States to use the word, "**untrammeled**" in its text.

Read the word again. It's not "untrampled" and has nothing to do with trampling. Untrammeled is a seldom-used word with a powerful meaning. The Miriam-Webster Dictionary defines a trammel as "something impeding activity, progress, or freedom." Untrammeled, therefore, means not confined, limited, or impeded, and as used in the Wilderness Act, puts the *wild* in wilderness. Polly Dyer, an environmentalist in the Pacific Northwest, suggested to Howard Zahniser, one of the authors involved with drafting the Wilderness Act, that he use the word to describe wilderness. Many others were opposed to the word because it wasn't common and would confuse readers. They suggested using "undisturbed," but Zahniser refused.

He believed that wilderness could be disturbed but also untrammeled. An untrammeled wilderness would exist under its own natural forces: free-willed and wild. ››

ChisikIsland Wilderness Area at Alaska Maritime National Wildlife Refuge.
(PHOTO BY REBEKAH JONES/USFWS)

Continued from previous page.

Use of the word "untrammeled" in the Wilderness Act still garners criticism but for different reasons. The Wilderness Act states that wilderness is "untrammeled by man, where man himself is a visitor who does not remain." Critics suggest that this sets man apart from nature and that untrammeled wilderness refers only to pristine nature ignoring Indigenous presence on the land before European arrival. Critics also read into the word untrammeled and conflate it with pristine and pure, two words never used in the Wilderness Act. Did those involved in the Wilderness Movement mean to suggest wilderness was pure land devoid of human history of use? Although the authors' intentions are unknown, we can do our best to uncover reasonable interpretations using the records that were left behind.

Bearce Lake in the wilderness area at Moosehorn National Wildlife Refuge provides great opportunities for hiking, kayaking, and fishing. (PHOTO BY KEITH RAMOS/USFWS)

The first draft of the Wilderness Act was written in 1956, and before passage in 1964, 65 drafts were written. Many supported the idea of wilderness preservation but some groups opposed it. Over the eight years of drafting, many compromises were made, sections were rewritten, and language was changed. In an article in *Living Wilderness* in the late 1950s, Zahniser wrote:

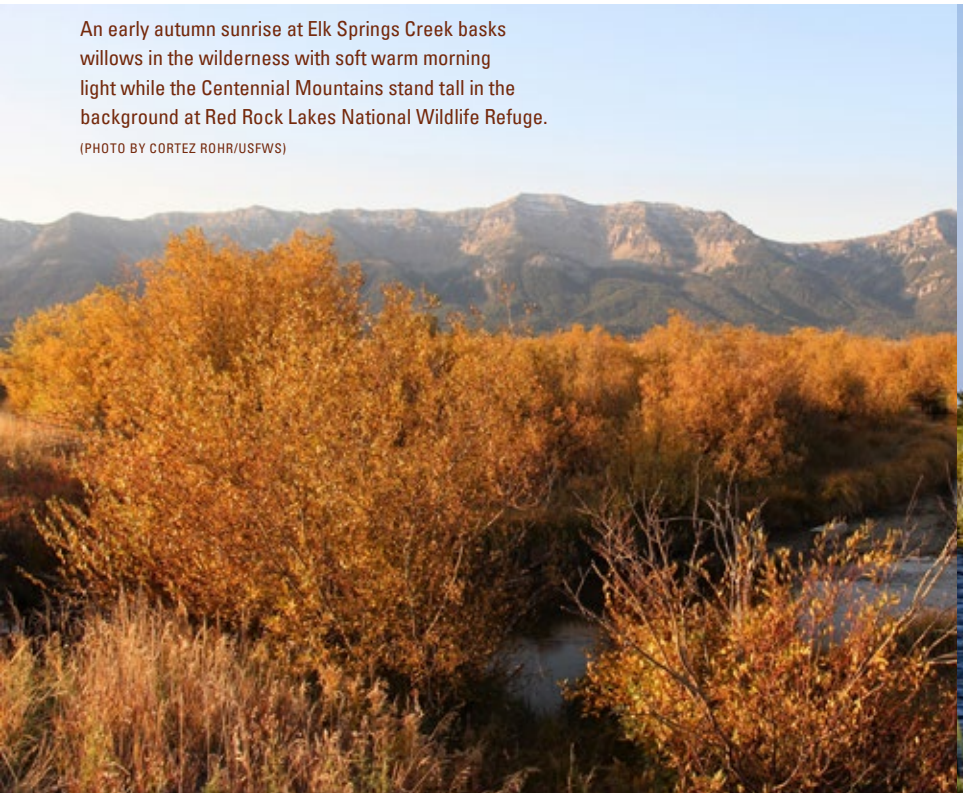
"In the wilderness it is possible to sense most keenly our membership in the whole community of life on the Earth … We deeply need the humility to know ourselves as the dependent member of a great community of life…to know wilderness is to know a profound humility, to recognize one's littleness, to sense dependence and interdependence, indebtedness, and responsibility."

In 1956, at the International Union for the Protection of Nature, Sigurd Olson, another member of the Wilderness Society and co-author of drafts of the bill, quoted British author and historian G.M. Travelyn when asked to describe his idea of wilderness, "We are literally children of the Earth and removed from her, our spirit withers and runs to various forms of insanity."

In a testimony before the Committee on Interior and Insular Affairs in 1957, Zahniser stated, "It is also characteristic of wilderness to impress its visitors with their relationship to other forms of life, and to afford those who linger an intimation of the interdependence of all life…"

These two authors seemed to believe that humans were a part of nature, not separate from it, and earlier drafts of the bill suggest the same. In a draft of the wilderness bill from 1957, wilderness was originally defined "as an area where the Earth and its community of life are untrammeled by man, where man himself is a member of the natural community, a wanderer whose journeys are but visits and whose travels leave only trails" (emphasis added). This earlier draft of the bill emphasized that man is very much a part of the natural environment and not separate from nature. This sentiment is contrary to critics' interpretations that claim that wilderness sets man apart as "other."

Criticism that untrammeled wilderness refers only to pristine nature seems equally misguided. The proposed definition of wilderness in the Wilderness Act was much stricter than previous regulations for administrative wilderness and not overly well received by industries or the USDA Forest Service. The Forest Service argued that, according to the Wilderness Act, lands previously impacted by humans in any way could no longer be considered as candidates for wilderness designation. Defining wilderness like this came to be known as the "purity definition of wilderness." The timber industry and others invoked the notion of "pristine" wilderness to prevent commercially valuable lands from being included in the National ››



An early autumn sunrise at Elk Springs Creek basks willows in the wilderness with soft warm morning light while the Centennial Mountains stand tall in the background at Red Rock Lakes National Wildlife Refuge. (PHOTO BY CORTEZ ROHR/USFWS)

Monomoy Point Light in the distance at Monomoy Wilderness. (PHOTO BY USFWS)

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Wilderness Preservation System. It is important to note that it was parties opposed to the wilderness system—not wilderness advocates—who embraced the purity definition of wilderness.

Polly Napiryuk Andrews, Cup'ik Tribal member, offered her Cup'ik perspective, "An unfortunate misunderstanding has been that the wilderness idea somehow erases Indigenous people from the landscape. It is true that pre-contact Indigenous populations and their activities were, until recent years, little understood. But the Wilderness Act's description of Wilderness as a place '. . . where man is [currently] a visitor and does not remain' does not imply that wilderness lands were 'pristine' or devoid of any Indigenous history or effect (Kaye, Andrews, Dimientieff, 2021)."

The intentions of the men and women involved in the early movement to protect land in its natural state as "untrammeled wilderness" seemed to be focused on protecting land for all as a counter to the industrial development trends at the time. In Section 2(a) the act states its purpose: "In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness."

Untrammeled does not mean un-peopled, pure, or pristine. And it has nothing to do with the land being trodden or untrodden. Untrammeled wilderness is wild and free. □

MICHELLE REILLY, Arthur Carhart National Wilderness Training Center, National Wildlife Refuge System

MUSEUM OBJECTS COME TO LIFE

In this series we highlight the "Treasures of the Service" from the museum collections of the U.S. Fish & Wildlife Service Museum and Archives, the Service's National Fish and Aquatic Conservation Archives, the National Wildlife Property Repository, and the collection at DeSoto National Wildlife Refuge, containing over 250,000 artifacts excavated from the 1865 wreck of the Steamboat Bertrand.

Take a Virtual Tour of the U.S. Fish & Wildlife Service Museum and Archives

For the first time ever, the U.S. Fish & Wildlife Service Museum and Archives is pleased to announce the opening of four online museum exhibits available on Google Arts and Culture: Wildlife Portraits for a Cause, The First Stewards, Journey Under the Sea-Wind with Wildlife Illustrations, and Bob Hines, National Wildlife Artist. In addition to the exhibits, there are over 150 artifacts in the online collection that all help tell the story of conservation history. We hope you visit and enjoy the experience. Experience the Museum via Google Arts and Culture.

(CATHERINE BLALACK, WILDLIFE BIOLOGIST AND COMMUNICATIONS SPECIALIST; CREATIVE RESOURCES DIVISION; HISTORY, LIBRARY & PARTNERSHIPS BRANCH, ARTWORK: "BADLANDS FERRET FAMILY" BY DUSTIN TWISS OF THE OGLALA SIOUX IN SOUTH DAKOTA)

The 'Real' Rachel Carson

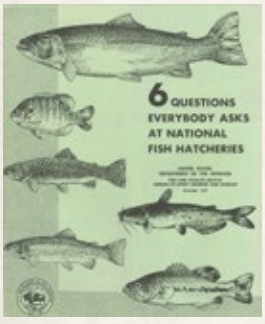
Sometimes, ordinary things can be the most fascinating. A few years ago, the Rachel Carson Council donated a large number of books from Rachel Carson's personal library to the U.S. Fish & Wildlife Service Museum and Archives. The books help to reveal a very intimate side of an introverted woman seldom seen smiling in photographs.

One is a book about fairies from her childhood library. Another is *How To Live With A Cat*. Anyone who knows anything about cats recognizes that they have their own mysterious personalities! What could Carson's cat have been doing that caused her to acquire that book? Perhaps she bought the book or maybe it was a gift, but either way, it remained in her library. (The book is still in print, if you are curious.) Evidently, when Carson died, the books on her nightstand were Agatha Christie novels.

The fact that Rachel Carson's library included fairy tales, a cat advice book, and classic mysteries illustrate her authenticity—Rachel Carson was a "real" woman we can more readily identify with. She was much more complicated than the solemn figure usually portrayed in photographs. It's always good to remember that we are all so much more than the face we show in public.

(ELLEN MURPHY, VOLUNTEER, U.S. FISH & WILDLIFE SERVICE MUSEUM AND ARCHIVES)

Fishing for Answers at Hatcheries



This brochure, Circular 157, was printed in 1964 by the Government Printing Office for the Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife. It is titled, "6 Questions Everybody Asks at National Fish Hatcheries." Even though this was printed 60 years ago, these are still questions commonly asked today by visitors to national fish hatcheries across the nation. "What kind of fish do you raise?" has a response explaining that each hatchery raises fish most needing management in the location of the hatchery, with an emphasis on sport fish. Today, the answer is the same, but with an emphasis on native, threatened, and endangered fish taking priority over sport fish for most hatcheries. "What do you feed the fish?" is another question and answer. The question very often heard by the ever-hopeful angler is, "Where do you stock the fish?" This question is especially common at facilities that do raise some sport fish.

(APRIL GREGORY, CURATOR, NATIONAL FISH & AQUATIC CONSERVATION ARCHIVES)

The Journey of a Monkey

This is a monkey wrench used at Jones Hole National Fish Hatchery on the Utah-Colorado border. A monkey wrench is a wrench that is adjustable, useful when dealing with multiple sized nuts. The company that manufactured this tool was Whitman & Barnes Mfg. Company, which operated in the late 19th and early 20th century. The company was founded in 1877 when Whitman & Miles Company and George Barnes & Company merged. The company made various tools over the years, most notable were their drills and wrenches. This monkey wrench dates to around 1906, based on the type of company mark on the side of the tool. Interestingly, Jones Hole National Fish Hatchery was founded in 1968, 62 years after this tool was crafted. That means that likely someone brought this old tool from offsite. It could have been someone's grandfather's wrench. Then, the tool was used at Jones Hole for a maximum time of 35 years until it was donated in the National Fish & Aquatic Conservation Archives in 2003.

(TAYLA BAHR, MUSEUM TECHNICIAN, NATIONAL FISH & AQUATIC CONSERVATION ARCHIVES)

transitions

Northeast Region

After 35 years with the Service, **Cherry Keller**, Endangered Species Program biologist at our Chesapeake Bay Field Office, retired Aug. 23, 2024.

Keller (seen, surveying for seaside alder, photo by Genevieve LaRouche/USFWS) spent an enormous part of her career dedicated to the recovery of the Delmarva fox squirrel, which was protected as endangered in 1967. She forged multiple cooperative relationships with Maryland and Delaware state partners as well as county and local entities and private landowners to improve and expand habitat for the squirrel. Keller forged close relationships with biologists at Chesapeake Marshlands, Chincoteague, and Coastal Delaware National Wildlife Refuges and other wildlife professionals to translocate squirrels and monitor their movements and ability to expand their range. In 2015, the efforts of Keller, and many others, paid off: The Delmarva fox squirrel was removed from the List of Endangered and Threatened Wildlife. Her dedication to the recovery of this species included using Light Detection and Ranging (LiDaR) scanning to identify potential Delmarva fox squirrel habitat, hosting multiple outreach events for the public and the media, conducting five-year reviews to evaluate status and recovery of the species, developing a post delisting monitoring plan, and presenting the interim results of the post delisting monitoring.

Keller also worked on the monitoring, restoration, and recovery of other species including small-whorled pogonia and Puritan tiger beetle as well as conducting Species Status Assessments for seaside alder and Bethany Beach firefly. With the expansion of terrestrial windfarms in Maryland, Keller worked tirelessly with representatives in the industry to reduce and offset the loss of bat and avian species and developed one of the first wind Habitat Conservation Plans in the country.

No matter the issue or the species involved, Keller was committed to using the most up-to-date and best available scientific data to guide recovery efforts and her recommendations to her superiors and others in her field. She mentored dozens of endangered species biologists over the years at both the Chesapeake Bay Field Office and other field offices in the Northeast Region with her extensive knowledge of sections 7 and 10 and recovery, and her analytical and critical thinking skills. She developed project review processes for species that provided consistency and efficiency for the Chesapeake Bay Field Office with respect to informal and formal consultations.

In 2024, Keller moved to Wyoming, where she received her Ph.D in wildlife biology from the University of Wyoming in 1989, and continued to work on endangered, threatened, and at-risk species as a senior level biologist for the Chesapeake Bay Field Office. □

KATHY RESHETILOFF, Chesapeake Bay Field Office, Northeast Region

Pacific Southwest Region

Clark Winchell retired from the Service after 28 years, most recently supervising our Carlsbad Fish and Wildlife Office's Conservation Partnerships Division staff, which consists of Partners for Fish and Wildlife, Coastal Program, civil engineering, section 10 recovery permits, and section 6 staffers, who are responsible for coordinating and providing support to our state and local partners on voluntary habitat restoration and species recovery projects.

Winchell (seen, surveying California red-legged frogs, photo courtesy of the partner reintroduction team) was a leader and significant partner in recovery of threatened and endangered species over the course of his career. He authored or co-authored more than 25 peer reviewed scientific articles on a range of topics including: snowshoe hare, San Bernardino flying squirrel, salmon, California red-legged frog, San Clemente Island shrike, coastal California gnatcatcher, wildfire impacts, and improving outcomes for landscape-scale conservation planning.

He loved sharing his passion for the Service's mission with students and volunteers, and in 2015, forged a partnership with the University of California, San Diego, to establish an internship program with the University's Environmental Systems Program. Through his efforts, numerous students, most being first-generation Americans, learned about the work of the Service and gained practical experience in resource conservation.

Winchell worked with the Department of Defense to spearhead the removal of non-native goats from San Clemente Island, which allowed native plants and animals to rebound, leading to the full recovery and delisting of the San Clemente Island paintbrush, lotus, larkspur, and bush-mallow plants and San Clemente Bell's sparrow. He was recognized in 2022 with a Recovery Champion Award for this partnership.

Winchell also led the reintroduction of a genetically unique clade of the California red-legged frog to Southern California via importation of egg masses from a location in Mexico to reintroduction sites on public and private lands in Riverside and San Diego counties, to restore range connectivity and further the recovery of the species. He was recognized with a 2023 Recovery Champion Award for his work with the reintroduction team. »

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Winchell leaves behind a wealth of knowledge and an impressive legacy of conservation. His vision and dedication to protecting wildlife contributed to improving the status of many species and their habitats in Southern California. Winchell's sound judgement and good humor provided staff with positive guidance and sometimes much needed laughter. His impact will be long-lasting. Thank you for the many years you've given to the Service and the world of conservation. Congratulations on your retirement and a well-lived career! □

Southeast Region

Todd Hopkins retired from the Service in September, leaving behind an impressive 23-year legacy of landscape-scale conservation efforts such as the Service's Landscape Recovery Tool, the Peninsular Florida Landscape Conservation Cooperative, the Strategic Assessment of Gulf Coast Landscapes, the Florida Cooperative Conservation Blueprint, and the Service's contributions to the Army Corps of Engineers' South Atlantic Coastal Study.

While based in Reno, Nevada, Hopkins served as the Service's science coordinator for the Great Basin Landscape Conservation Cooperative, a five-state, self-directed partnership delivering conservation and climate resilience through partners.

Each of his endeavors relied on collaboration with an array of partners. "For me, the greatest joy of this kind of work was the opportunity to work with all kinds of people from all different organizations, places, and cultures," Hopkins says.

He co-authored the *Resistance and Resilience to Fire and Invasive Weeds Strategy*, which the Bureau of Land Management used for 14 Western states. He founded the Great Basin Weather and Climate Forum as well as the Great Basin Consortium to strengthen collaboration between scientists and managers.

One of the last projects Hopkins worked on was funded by the Deepwater Horizon oil spill settlement. The Strategic Assessment of Gulf Coast Landscapes, led by Mississippi State University, created a suite of tools for use by individuals and organizations interested in maximizing conservation benefits across the Gulf Coast Region. One tool, the Conservation Vision Tool, was developed with the Partnership for Gulf Coast Land Conservation. The partnership subsequently required the use of this tool by organizations making proposals for land conservation projects. To date, using an updated version of the tool, the partnership has protected 56,000 acres in the Gulf states. "I was very privileged to have been a part of such audacious conservation," Hopkins says. Jessica Henkel, The Water Institute Director of Research Operations praises Hopkins' work, saying, "Todd played a critical role in the collaborative process to identify the land conservation priorities for the Northern Gulf of Mexico."

Early in his career, Hopkins spent a decade diligently working on high-profile and cutting-edge Everglades restoration projects defined by the program level Comprehensive Everglades Restoration Plan. He and his team helped blaze trails in project planning and implementation of the Comprehensive Everglades Restoration Program.

Reminiscing about Everglades restoration, Hopkins says, "It was groundbreaking work — new policies, procedures, regulations, and organizational structures. It meant we hit every brick wall head-on and at high speed. A huge win was completing the bridge over the Tamiami Trail, a project that let water flow back into Everglades National Park."

Overall, Hopkins has nearly 30 years of experience in large landscape collaboration and conservation, having held scientific, regulatory, and leadership positions with the Service, the Florida Department of Environmental Protection, and the Rookery Bay and the San Francisco Bay National Estuarine Research Reserves.

This spring, Hopkins received the Department of the Interior's Meritorious Service Award for "outstanding leadership and exemplary work to accomplish conservation while working with others." The award citation recognizes that "Todd gained a national reputation for sharing leadership with others and collaborating to deliver conservation." In doing so, "Mr. Hopkins permanently changed the U.S. Fish and Wildlife Service culture for the better. Shared leadership, cooperation, and inclusion became cultural norms." □

NANCIANN REGALADO, Gulf Restoration Office, Southeast Region

Southeast Region

Daffny Pitchford has been named the Southeast Deputy Regional Director.

Pitchford has been with the Service for nearly 26 years. She has navigated a variety of roles from teaching youth and visitors about all things wild in Virginia Beach to guiding regional communications and during each step, her love of the natural world and people have always been her motivators.

Pitchford has held a number of positions within the National Wildlife Refuge System, serving as a visitor services professional, an assistant refuge manager, project leader, an assistant refuge supervisor, an area refuge supervisor, and a division manager supervising the biological, planning, realty and visitor services programs in the Southeast. Before the Deputy Regional Director position, she served as the Assistant Regional Director for the Office of Communications in the Southeast.

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Pitchford's introduction to the Service began at her alma mater, North Carolina Central University. She was on a course to pursue a Ph.D. in microbiology, but her career direction changed when the Service visited her university to recruit potential employees. Pitchford interviewed for and accepted a position, entering public service through the Outstanding Scholar's Program. □

Headquarters

Jake Li has been named Assistant Director for Ecological Services.

Li previously served as Deputy Assistant Administrator for Pesticide Programs at the Environmental Protection Agency, where he focused on protecting endangered species from pesticides, implementing the policy priorities of the current administration, and overseeing a nearly 600-person office.

As Assistant Director for Ecological Services, Li leads our efforts to list and recover threatened and endangered species, conserve coastal barrier islands, restore natural resources impacted by hazardous substances, provide environmental reviews of federal projects, and manage decision support and mapping tools.

Before joining EPA in 2021, Li worked for over a decade in the nonprofit sector focusing on conserving endangered and at-risk species. From 2018–2021, he worked at the Environmental Policy Innovation Center to increase the speed and scale of conservation, particularly with private landowners and businesses. From 2010–2018, Li served in various positions at Defenders of Wildlife. There, he led the organization's work to improve how the Endangered Species Act is implemented, especially in collaboration with federal agencies, industry, and congressional offices. Before Defenders, Li represented the regulated community as an environmental lawyer.

He is positioned to step into the Assistant Director for Ecological Services role, given his commitment to conservation, passion for leadership, and experience working with industry and environmental advocates to find practical, fair, efficient, and durable solutions to wildlife conservation.

Li holds a J.D. from Cornell University, where he also completed graduate courses in conservation biology and herpetology, and a B.S. from Drexel University. He is the co-editor of *Endangered Species Act: Law, Policy, and Perspectives* (3rd ed, 2021).

Outside of work, Li enjoys surveying for reptiles, amphibians, and other wildlife, mountain biking, rock climbing, skiing, and home renovations. □

Headquarters

Dana Bivens has been selected as the Chief of Staff for the National Wildlife Refuge System in Headquarters, starting Nov. 18, 2024. For the past three years, Bivens has led congressional communications as the Pacific Region's congressional and legislative affairs specialist, engaging with Congress and liaising with the field and Headquarters Congressional and Legislative Affairs staff to support our legislative and fiscal needs.

From 2020–2021, she worked as a Pacific Region public affairs officer, supporting communications with the media and members of the public, and creating communications products to highlight the amazing work we do every day.

In 2015, Bivens joined the Service as a Presidential Management Fellow in HQ's Division of Budget and Performance as a formulations analyst. In that role she supported communications with appropriations committee staff, managed program budgets, and helped write the annual budget request to Congress.

In her free time, Bivens is an avid equestrian and has been competing in the sport of Three Day Eventing from a young age. She also enjoys trail running with her husband, David, traveling, hiking, kayaking, and spending time with her two cats. □

Pacific Region

Juliette Fernandez has been named chief of the National Wildlife Refuge System in Hawai'i, Idaho, Oregon, Washington, and the Pacific Islands, including America Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

"The Pacific Region of the U.S. Fish and Wildlife Service is home to some of the world's most extraordinary natural resources and wildlife, stretching from the Mariana Trench to the Great Basin," says Hugh Morrison, Regional Director for the Service's Pacific Region. "Juliette Fernandez's exceptional leadership abilities, deep expertise in natural resource management, and commitment to fostering inclusive partnerships will be instrumental in ensuring the continued success and vitality of the National Wildlife Refuge System."

Fernandez is currently the project leader for the Ridgefield National Wildlife Refuge Complex, which consists of four refuges along the Columbia River near Vancouver, Washington. Her professional journey has taken her from managing a refuge near her hometown of Nogales on the international border of Arizona and Mexico, to leading projects that prioritize equitable »

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access to green spaces and fostering meaningful connections with diverse communities in urban areas.

Her expertise in natural resource and conservation management has been demonstrated at refuges across the country and in the field, as a regional supervisor for the National Wildlife Refuge System in Arizona and New Mexico and nationally. Throughout her career, Fernandez's work has been driven by sound science and respect for communities and conservation partners.

"I am truly grateful to join a team that shares a deep commitment to conservation, equity, and building lasting connections with our communities," says Fernandez. "My journey has taught me the power that comes with understanding and embracing our diverse cultures and perspectives. I look forward to learning from the entire team and working side by side to protect our iconic public lands and waters and ensure everyone who visits a national wildlife refuge feels a sense of belonging and stewardship."

Fernandez will oversee 67 national wildlife refuges, four marine national monuments and one national monument, two conservation areas, and one waterfowl production area. □

MEGAN NAGEL, Office of Communications, Pacific Region

Southwest Region

Brent Lawrence has been selected as the Assistant Regional Director for the Southwest Region's Office of Communications, starting Dec. 1, 2024. Lawrence brings an impressive depth of experience—both inside and outside the federal govern-ment—to this important role.

Lawrence has served as Deputy Assistant Regional Director for the Pacific Region's Office of Communications for the past 2½ years. Prior to that, Lawrence was a senior public affairs officer for the Pacific Region and in Headquarters, leading the messaging and outreach on some of the Service's most complex and controversial issues. Lawrence joined the Service in 2012 after a career in the private and nonprofit sectors. He served as director of public relations and digital media at the National Wild Turkey Federation, corporate communications specialist for Bass Pro Shops out of its headquarters, and spent many years as a journalist for newspapers and magazines in Missouri. Lawrence holds a Bachelor of Arts degree in communications from Missouri State University.

Lawrence has built a track record of caring for his employees and pursuing the Service's conser-vation mission through strong communications and storytelling. He is committed to employee development and well-being, and he is a committed practitioner of cross-program and multi-regional conservation communications. □

honors

Mountain-Prairie Region

David Lucas, the Colorado Front Range National Wildlife Refuge Complex manager, has won the 2024 National Wildlife Refuge Association Refuge Manager of the Year award.

This prestigious award is presented to an individual refuge manager who has demonstrated exceptional dedication and made significant contributions to the conservation and enhancement of the National Wildlife Refuge System.

Over the last 10 years, Lucas's leadership transformed Rocky Mountain Arsenal National Wildlife Refuge from a U.S. Army Base to a premier urban refuge visited by over 1 million people a year. This remarkable achievement was followed by the successful opening to the public of the Rocky Flats and Two Ponds National Wildlife Refuges, which support thriving wildlife populations with multiple urban connections.

Lucas's leadership and hard work brought many improvements to the refuges in the Colorado Front Range National Wildlife Refuge Complex. These improve-ments include hiring bilingual rangers; building nature-based recreational opportunities, such as hiking/biking trails, archery, and catch-and-release fishing; managing and growing a healthy and successful bison herd; restoring 15,000 acres of short grass prairie, mixed grass prairie, and riparian habitats; and successfully reintroducing the endangered black-footed ferret to Rocky Mountain Arsenal National Wildlife Refuge.

These amazing efforts in conserving wildlife and their habitats in an urban environment and in connecting urban commu-nities to the outdoor are a result of Lucas's vision and leadership, an amazing national wildlife refuge team, and coordination and collaboration with the local communities and partners. □

Pacific Region

Robert Luna knows Toppenish National Wildlife Refuge in Washington better than anyone else.

As an engineering equipment operator for more than 33 years, Luna has dedicated his life to maintaining the refuge and improving its habitat for plants and animals. In recognition of his innovation, passion, and diligence, Luna was named the National Wildlife Refuge Association's Refuge Employee of the Year.

"Robert has been the heart and soul of Toppenish National Wildlife Refuge for more than three decades, and his contributions are beyond measure," says Trevor Sheffels, the acting deputy project leader for the Central Washington National Wildlife Refuge Complex. "He is always focused on advancing the refuge mission, which is evident through the dedication he exhibits daily and his willingness to go above and beyond. Robert is also quick to offer to help others, both professionally and personally. He is a well-respected member of the local community, and the refuge system could not ask for a better ambassador. It is an honor to work with Robert and learn from his vast experience."

According to Sheffels, Luna regularly comes up with innovative ideas in the day-to-day management of the refuge. For example, Luna recently noticed a shift in irrigation practices by a private landowner adjacent to the refuge. His observations led to his recommendation to extend a delivery ditch and install two new water control structures. Not only did his design provide a way to deal with excess water that had been flowing to the refuge, but it also re-routed that same water to another wetland unit for beneficial wildlife use.

Despite his accomplishments, Luna was surprised to hear that he received an award.

"I never do anything for praise," Luna says. "I let my work speak for itself. I'm proud of what I do and I'm always happy to show anybody the kind of work I do. I see the vision of the Fish and Wildlife Service, and you know, I enjoy it." □

LEV LEVY, Office of Communications, Pacific Region

Headquarters

Each year, the Association of Fish & Wildlife Agencies honors individuals and organizations for their exemplary commitment to conservation stewardship through its annual awards program. This year, two Office of Conservation Investment staff members were honored as Special Recognition Award winners.

Richard Aiken, chief economist for the Office of Conservation Investment, was recognized for his decades of work coordinating the National Survey of Hunting, Fishing and Wildlife Associated Recreation.

Members of The Assessment Group (TAG), including the Service's **Craig Kelling**, were honored for their pivotal role in developing the National Hunting and Shooting Sports R3 Practitioner's Guide. Kelling is an Office of Conservation Investment biologist and TRACS Working Group Chair.

"Congratulations to all of the recipients of these prestigious AFWA awards," says Matt Filsinger, Deputy Assistant Director of the Office of Conservation Investment. "It's exciting to see two of our program staff members recognized at the national level for outstanding work. Both efforts play an important role supporting outdoor pursuits and advancing the work of our partner agencies."

For nearly 40 years, Aiken has been a key figure coordinating the survey and additional addendum reports. He joined the Service in 1985, shortly after completing his master's in natural resources economics at Colorado State University. Conducted approximately every five years, the survey has passed through his hands eight times. As the lead economist and co-director on the survey, Aiken has used his strategic thinking and statistical and economic intellect to help shape the survey into the nation's definitive wildlife-related recreation database and a crucial source of information on participation rates and economic impacts of outdoor activities across the nation.

The work of TAG aims to increase access to and participation in hunting, target shooting, and other outdoor pursuits. Formed in January 2022, TAG is a working group of experts, representing a cross-section of agencies, conservation and shooting-sports organizations, and representatives from industry. The TAG coalition of ~40 professionals worked to review, assess, and update the National Hunting and Shooting Sports Action Plan from 2016. This work, along with providing evaluation for products and topics in the guide's action plan, allowed the TAG members to take a deep dive into recruitment, retention, and reactivation efforts for hunters and shooting sports enthusiasts across the nation. These recruitment, retention, and reactivation efforts are collectively known as R3. »

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Through meticulous research, over 4,000 collective hours of engagement, input from 117 individual stakeholders, and real-world case studies, TAG created a robust R3 Practitioner's Guide that equips practitioners with the tools needed to navigate the evolving landscape of hunting and shooting sports participation. The web-based Practitioner's Guide provides best practices, recommendations, and resources, and current R3 strategies. The release of the R3 Practitioner's Guide will aid R3 community efforts to engage current and future generations of hunting and shooting sports enthusiasts. □

CINDY SANDOVAL, Office of Conservation Investment, Headquarters

Midwest Region

The Friends of **Hackmatack National Wildlife Refuge** were recognized as the Refuge Friends Group of the Year by the National Wildlife Refuge Association.

"We'd like to thank President Steven Byers and the whole team at the Friends of Hackmatack National Wildlife Refuge for their tireless dedication and passion for conservation," says Sarena Selbo, Assistant Regional Director of the National Wildlife Refuge System in the Midwest Region. "It was an absolute joy to be able join in this year's celebration! Steven and the board uphold our agency's values by building positive relationships with so many communities in and around the footprint of the refuge. I'm excited to see how refuge manager Cassie Skaggs and the team work together to grow the refuge and its programs in the future."

The Friends of Hackmatack National Wildlife Refuge were awarded the 2024 Molly Krival Award for Refuge Friends Group of the Year for their exemplary community engagement and conservation efforts. Through grassroots advocacy, the group played a pivotal role in the establishment of Hackmatack National Wildlife Refuge in 2012, and they have not stopped there. The Friends of Hackmatack continues to support the refuge through events like World Migratory Bird Day, Monarch Mania, and Latino Conservation Week. Group members take the long view when it comes to finding innovative ways to support community education, volunteering, and restoration projects. They have also fostered strong partnerships with local businesses and conservation organizations to bring others with them on their conservation journey. Their tireless work has enhanced public involvement and awareness, which has set a high standard for other groups across the country.

Named to honor the late Molly Krival, a pioneer in the Refuge Friends Group movement throughout the National Wildlife Refuge System, this award is presented annually to the Friends group whose contributions are judged to be the most outstanding of the candidate groups nominated. This award recognizes the outstanding contributions by the groups of dedicated volunteers in Refuge Friends organizations who provide essential services to the National Wildlife Refuge System.

Located in southeastern Wisconsin and northeastern Illinois, Hackmatack National Wildlife Refuge was built from the ground up by the conservation community. The refuge was authorized on July 10, 2012, and officially established on November 6, 2012, with a 12-acre habitat easement donation from Chicago-based Openlands, an organization dedicated to the protection of the natural and open spaces of northeastern Illinois and the surrounding region. Now encompassing 530 acres, the refuge has grown as a true partnership effort involving many local, state, and federal agencies, along with citizen-driven groups. □

TINA SHAW, Office of Communications, Midwest Region

in memoriam

Southeast Region

John C. Oberheu, 93, a retired Service biologist, finished his long life's journey with entry into the last remaining pristine ecosystem in October 2024. Like many, his interest in the natural world and all its wonders began at an early age. Unlike most of his future co-workers, it occurred in southern India, where he spent his first 11 years as the oldest son of a Lutheran missionary. That experience, and the subsequent years growing up in Kentucky and rural Illinois, further cemented his strong Midwest values and love for the outdoors. On the advice of his high school principal, Oberheu entered the zoology program at Southern Illinois University, working part time for Dr. Willard D. Klimstra, pioneering zoologist in wildlife management. He graduated in 1953 with a Bachelor of ››

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Science degree and, following two years of military service in the Army, he returned to SIU to begin post-graduate work with "Doc" Klimstra. Oberheu's thesis on the food habitats of mourning doves earned him a Master of Science degree. It was during this period that Oberheu met and married his lifetime partner, Lucy. In 1956 they moved to Kinston, North Carolina, where he began his professional wildlife career as a district biologist with the North Carolina Wildlife Resources Commission. Oberheu's management successes there with both large and small game animals, and straightforward approach to supervision and public interaction, resulted in his promotion in 1959 to lead supervisor of multiple game management areas within National Forest lands in western North Carolina. The Oberheus moved to Asheville, and though only there four years, his love for the area and its people remained with him the rest of his life.

His Service career began in 1963 as a fish and wildlife biologist out of Raleigh, North Carolina. The next 31 years saw Oberheu, Lucy, and daughters Teri and Suzanne call Atlanta, Marietta, and Roswell, Georgia; Washington, DC; and Jacksonville, Florida, home. Oberheu retired to the community of Jacksonville Beach in 1994.

His positions during those years included Southeast Region river basins impact reviewer, pesticide staff specialist, regional refuge biologist, assistant Jacksonville area manager, refuge district supervisor, and realty biologist. Those jobs afforded him the chance to finally fulfill his desire to have a positive impact on non-game species, particularly those protected as threatened or endangered under the Endangered Species Act. In retirement Oberheu continued his passion for all things natural through the writing and publication of his memoirs, as well as various nature-themed, children's books. He also volunteered for 20 years at a local elementary school, where he shared his love of science and nature with the students using items collected during his career, as well as fossils obtained from local beach combing.

A life well-lived in service to the country and its people. RIP. □

JOHN F. MILIO, Retired

A Crescendo Across Alaska

From prime wetlands for nesting to strategic migration staging areas, national wildlife refuges in Alaska host some of the best trumpeter swan habitat for over half of the continent's population.

(PHOTO BY LISA HUPP/USFWS)

Judy Gordon: On Navigating 40 Years of Life and Career in Fisheries

Born in Manhattan and growing up in Brooklyn, Judy Gordon discovered the natural world while exploring the ocean with Jacques Cousteau on television. She watched with rapt attention as Cousteau and other biologists jumped into Zodiacs and zoomed around the ocean, a world far removed from the cityscape surrounding her.

She remembers the first time her mother took her and her sister fishing in Prospect Park in Brooklyn when she was 6 years old, and the excitement of reeling in her first fish. She was curious about the nature she noticed in the city and was a regular contributor to science fairs at school with a specific interest in biology.

She knew, even at that young age, that she wanted to do something in this field. Those early experiences led Gordon to a life in fisheries conservation.

Gordon's family moved to New Jersey where she attended high school. She went on to earn her bachelor's degree in biology from Princeton University, then to earn a master's degree in quantitative ecology with a minor in statistics from Pennsylvania State University.

Gordon's childhood fascination with Cousteau became reality while in graduate school, as she voyaged into the realm of ocean research by making her first strides into conservation with NOAA Fisheries. She would sometimes spend long stretches on research vessels at sea; she'd face extreme weather, even hurricanes, yet Gordon is clear that she would do it again in a heartbeat.

Gordon samples fall chum salmon in the Yukon River, near Eagle, Alaska. (PHOTO COURTESY OF JUDY GORDON)

"There is a moment, whether the sea is perfectly glass smooth or whether there's 30-foot waves, and you're this big — and you realize mankind is this big," Gordon says with her hand up, two fingers measuring about an inch of air.

"Some people might say they hear God in that moment…it's a humbling, amazing experience."

It was a dream come true. She loved being at sea.

But when NOAA did not have the funding to keep her on permanently, one of Gordon's grad school committee members suggested she look into joining the U.S. Fish and Wildlife Service. Gordon landed a permanent position in Fairbanks, Alaska to conduct fisheries work in the nearshore waters of Arctic National Wildlife Refuge. She was one of a handful of women she knew in her field within the state at that time.

Women and people of color were, and still are, in the minority of the fisheries workforce. But Gordon had women to look to as role models along the way, and one of them became an especially important mentor, just as she was navigating her first permanent, federal job with the Service.

Jaqueline "Jackie" LaPerriere, a prolific limnologist — scientist of freshwater systems, encouraged Gordon and reminded her to "take no guff." LaPerriere has since passed, but Gordon remembers her as a wonderful person and a dear friend who landed in her life at just the right time.

LePerriere was someone who really made a difference.

"Jackie was a friend, mentor, and fierce supporter," Gordon said. "As an established female limnologist, she was well aware of the challenges facing many younger women just starting their careers in male-dominated science professions. She was also sensitive to the professional climate in Alaska and specifically in the office I was working in. Jackie had worked with the male fish biologists and knew the previous sole female biologist in the office. Her support and insights into the professional relationships were invaluable for me starting in my first permanent position and 3,000 miles from everything I was familiar with."

The mentors and champions throughout Gordon's career were essential to supporting her successes and challenges along the way.

Vivid in her memory, Gordon shared details about a challenging time from early in her career when one of her co-workers treated her unequally from her peers. This co-worker would disregard her while acknowledging her male counterparts; he would not include her, work with her, ››

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or even say hello. His behavior was incessant and made going to work difficult for Gordon and impacted her ability to do her job.

Yet, Gordon stayed committed to doing right. Every day this co-worker would greet her male colleagues and say nothing to her. But as he turned around to walk away, she would say, "Good morning," to him, no matter what.

Gordon reflected that overcoming this difficult situation took resolve, patience and perseverance, support from her friends and female colleagues and mentors like LePerriere, and ultimately a supervisor who had observed the behavior, acknowledged it, and assured it was being addressed. He was an advocate for Gordon, a true ally.

"One person can make a difference," she says. "But you still need to find it within you…to have that strength. But that one person can give you the space to find that strength."

Now with nearly 40 years of federal service under her belt, many of these in leadership roles, Gordon can see the not-so-distant horizon of the end of her career—Dec. 31, 2024. During these years, Gordon has held positions that included experiences on ocean-going research vessels to the nearshore waters of Arctic National Wildlife Refuge, from the Abernathy Fish Technology Center to the Pacific Regional Office, and now overseeing the entire Fish and Aquatic Conservation Program of the Pacific Region. And over the last decade or so, she's experienced a shift, that she herself has become a role model, mentor, and champion for others.

In a self-effacing realization, she recognizes that sometimes you can be a mentor to someone and not even realize it.

"I just wanted to be a fish biologist. I didn't want to be the 'Black, female fish biologist.' But it does matter that I am… it matters to people."

Gordon, then-Abernathy FIsh Technology Center Director; Patty Crandell, retired Deputy Abernathy Director; and Denise Hawkins, then-Pacific Region regional geneticist and now Puget Sound/Olympic Peninsula National Fish Hatchery Complex Manager at Minnesota Valley National Wildlife Refuge.
(PHOTO BY USFWS)

But Gordon says that at the end of the day, it is not about her. It's about the bigger picture of conservation.

"I'm hoping no matter who it is—no matter what color their skin is, no matter their gender, they're inspired to do a little more because of something I've done."

Gordon recognizes the challenges of conservation for the next generation, particularly in the face of climate change. She emphasizes that it will take perseverance, patience, and acknowledgment of the challenges to make strides ahead. She sees that the next 50 years are going to be very different and asks, "What are we going to do now and going forward? How are we going to think outside the box to deal with the huge issues facing us going forward?"

Gordon hopes she will leave the next generation of conservationists equipped to do the work.

"I remember coming to this region in '98 and I was one of the youngest people in the room—now I'm one of the oldest. Time passes. I've done my part to the best of my abilities. We need some fresh approaches and fresh minds.

"In the time I have left before I go, I will try to empower people as much as I can, in the little ways I can. I hope that I did my part to make sure the people who do the work that matters got it done." □

LENA CHANG, Office of Communications, Pacific Region

Living the Wild Dream

This is one of five employee stories in a multimedia project created to share the unique life and career journeys those Service employees from early career to near retirement, and to elevate the visibility of people of color in conservation, science, and outreach now and for the next generation.

Fish & Wildlife News
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parting shot

On the Road to Recovery // In October, we downlisted the red-cockaded woodpecker from endangered to threatened status. // "Decades of committed recovery work and collaboration drove this remarkable story of recovery. The Service worked closely with the Departments of Agriculture and Defense, private landowners, Tribes, state agencies, businesses, utilities, and conservation groups to reach today's announcement," says Service Director Martha Williams. "The improved status of the red-cockaded woodpecker shows that when we give species a chance, they can thrive. The Endangered Species Act can serve as a catalyst for collaborative efforts like this one to promote recovery and conserve habitats." (PHOTO BY MARTJAN LAMMERTINK)

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