



Fish & Wildlife *News*



SPOTLIGHT

CITES Keeps Wildlife Trade Sustainable / **14**

Helping Turtles by Leveling the Playing Field / **18**

50 Years of Commerce and Conservation / **22**

features

On the cover:
Bobwhite at
Karl E. Mundt
National Wildlife
Refuge in
South Dakota.

(PHOTO BY LIZ
JULIAN/USFWS)

SPOTLIGHT: CITES Turns 50 / 12

Sustainable Wildlife Trade / 14

Countries work together to ensure commerce doesn't rob world of species.

By BRIDGET MACDONALD

Leveling the Playing Field / 18

*Turtles face unique challenges—
CITES can help.*

By BRIDGET MACDONALD

Golden / 22

*Celebrating 50 years of the Convention
on International Trade in Endangered
Species of Wild Fauna and Flora.*

MORE FEATURES: Plovers in Peril

**Communities help plover, endangered
in Great Lakes / 25**

By MELISSA A. CLARK

**Piping plovers struggle for survival amid
a marauding Mother Nature / 27**

By DAN CHAPMAN

**Climate change doesn't spell doom for
the resilient bird / 29**

By OLIVIA GIEGER

departments

Director's Message / 1

News / 2

Curator's Corner / 31

Field Journal / 32

Our People / 34





Martha Williams,
Director

50 Years of Trade and Conservation

As many people here in the United States were preparing for Thanksgiving, I was thinking about snapping turtles, glass frogs, and jaguars—or any other wildlife species that's traded. During the holiday I was in Panama City, Panama, as part of the U.S. delegation to the 19th Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES CoP19).

CITES is celebrating its 50th anniversary this year, and it serves as proof that species conservation and the economy can go hand in hand. CITES doesn't ban international wildlife trade. It regulates it, as needed, to ensure that international trade in plants and animals doesn't threaten their survival in the wild.

As anyone who knows about the American alligator market (p. 8) will tell you, the legal and sustainable trade that CITES requires encourages conservation that keeps populations healthy. As Dr. Rosemarie Gnam, head of the Service's Division of Scientific Authority for CITES, says of the alligator, "We took a species that was on the brink of extinction in the 1960s, and after a short period without any harvest, we were able to reopen the commercial trade in a way that is biologically sustainable and legal."

The CoP, which happens every two or three years, was an incredible experience that gave me insight into how other nations and cultures value fish and wildlife species. It also confirmed for me the vast importance of capacity-building efforts to ensure CITES' success. Many of the most celebrated plants and animals on Earth come from countries without the needed capacity to manage the trade in those species. CITES is only as strong and effective as each of its member nations.

We are working to help every nation have what it needs to manage its wildlife trade to keep those celebrated species—and the ones most aren't familiar with, like sea cucumbers—around for the benefit of future generations.

Starting in 2018, we began providing financial assistance, in the form of scholarships for students representing areas with high biodiversity and limited capacity for wildlife management, to attend the CITES Masters Course offered at Spain's Universidad Internacional de Andalucía. We have been able to support students from Latin America, the Caribbean, and, in partnership with the Department of the Interior's International Technical Assistance Program, Central and East Africa (p. 11)

Our staff has also served as lecturers and thesis mentors.

I was excited to see that many of the CoP delegates who are helping lead CITES into the future are graduates of this course.

CoPs are not just about adding species to the CITES Appendices to regulate their trade. They're also about making decisions to improve the status and use of species in trade. At CoP19, the United States, Nigeria, Canada, Côte d'Ivoire, Kenya, Mexico, and Senegal proposed ways to decrease transport mortality for CITES-listed species (p. 9). The proposal, which was accepted and went into effect in February 2023, included recommended making sure all member nations have access to transport regulations as well as training on them.

It doesn't need to be Thanksgiving for me to be thankful for CITES and its 50 years of ensuring that international trade in plants and animals doesn't threaten their survival in the wild. □

Record Numbers of American Eels Pass Site of Removed Bloede Dam in Maryland



Maryland documented record numbers of juvenile American eel using the eel-passage structure at the Daniels Dam on the Patapsco River last year—an estimated 36,500.

In 2018, the total was just 36. The Bloede Dam, the only downstream barrier on the Patapsco River preventing American eel from making their way to Daniels, was removed that year with support from the Disaster Relief Appropriations Act of 2013.

The law allocated more than \$100 million to the Service to make human and wildlife communities stronger after Hurricane Sandy.

The \$20 million project to remove the Bloede Dam was made

possible through a partnership among American Rivers, the Maryland Department of Natural Resources, the National Oceanic and Atmospheric Administration, the Service, and Friends of the Patapsco Valley State Park. It has included a robust monitoring effort to document the ecological conditions of the river and the response of the aquatic communities.

“The Bloede Dam removal is a perfect example of how the Disaster Relief Appropriations Act funding improved quality of life for fish, wildlife, and people by targeting projects that offered both immediate and long-term benefits,” says Rick Bennett, who coordinated the Hurricane Sandy resilience effort for the Service. “It really was an investment in the future.”

The Bloede Dam on Maryland’s Patapsco River was removed in 2018.

(PHOTO BY BOHEMIAN BALTIMORE/CREATIVE COMMONS)

The project also responded to an immediate public safety need at Patapsco Valley State Park—the Bloede Dam had been the site of numerous injuries and deaths over the years.

“In addition to reopening important habitat for migratory fish, the removal of Bloede Dam has helped improve the public safety and resilience of the local community,” says Mary Andrews, environmental engineer with the NOAA Fisheries Office of Habitat Conservation. “The project eliminated what had been a serious public safety hazard for decades,

reduced the risk of flooding in Patapsco Valley State Park, and improved the ability of the ecosystem to withstand storms and severe weather.”

Removing the first downstream barrier on the river, which is a tributary to the Chesapeake Bay, reopened vital upstream habitat for a variety of aquatic species, including American eel. These catadromous fish, which migrate from the ocean to freshwater rivers as juveniles, can access an additional 183 miles of habitat in the Patapsco River watershed, including tributaries.

The removal also opened 65 miles of spawning habitat for blueback herring, alewife, American shad, and hickory shad. In 2021, Maryland documented small numbers of herring upstream of the site of the Bloede Dam for the first time in more than a century.

The Bloede Dam had a fishway many migrating eels were unable to navigate past. This left many juvenile eels stuck in crowded habitats downstream of Bloede Dam, with relatively few making it into the more open habitats upstream.

Since Hurricane Sandy struck the East Coast in 2012, we have helped fund 32 coastal resilience projects in 11 states with the money from the Disaster Relief Appropriations Act. Removals of 12 dams, including Bloede, have restored nearly 100 miles of mainstem river to their natural state. □

BRIDGET MACDONALD, External Affairs, Northeast Region

Big Casts Toward Common Goals

Everyone should have the opportunity to fish. Our Western Washington Fish and Wildlife Conservation Office and Rods and Reels in Need, whose mission is to provide free fishing gear to military and underprivileged families, have teamed up multiple times to back up that sentiment.

This partnership dates to 2019, when we worked with Rods and Reels in Need to provide free fishing gear for underprivileged families through a holiday gift drive. Over 120 rod and reel combos as well as other tackle were donated for that effort.

Rods and Reels in Need and the Service continued to address the lack of gear while also tackling the lack of fishing knowledge and skills with two fishing events for Big Brothers Big Sisters of Southwest Washington in 2021 and '22. Pairs of adult volunteers and children, and their families, were provided with free fishing

gear, essential skills instruction, and fishing access. Youth participants were surprised by the free gear as well as the tugs of fish on their lines.

“While COVID has heavily impacted all of our community, the youth in Big Brother Big Sisters, often from single-income homes, felt the strain even more. This activity provided an opportunity to get outdoors and engage in a positive, pro-social activity with their family or mentor,” says Moriah Chandler, program manager of Big Brothers Big Sisters of Southwest Washington. After the events, program pairs and families now had the gear and knowledge to continue fishing.

Mission accomplished! Service interns Hannah Fewerda and Eric Klingberg pose with donated used tackle boxes they cleaned out for the nonprofit Rods and Reels in Need. (PHOTO BY DAN SPENCER/USFWS)



To further broaden access, the Western Washington Fish and Wildlife Conservation Office started a fishing tackle loaner program with the Timberland Regional Library. In 2021, we provided the library with fishing kits—gear as well as skills and lake fishing access information. By 2022, the program expanded to three more libraries and Big Brothers Big Sisters of Southwest Washington. Plans are in the works to add two more libraries in 2023.

Expanding the fishing tackle loaner program requires gear and support for libraries and their staff. Rods and Reels in Need has agreed to be an additional source for technical assistance along with gear maintenance, repairs, and replacements.

We are very fortunate to have such a valuable partner and are happy to return the support. One of the nonprofit’s biggest needs is processing and prepping donated gear. Most of the donated gear is used, often unorganized, and sometimes in poor condition. While free gear is very much appreciated by program recipients, no one should receive rusty hooks or a non-functioning reel. As such, it is important to sort

A little brother poses with his big brother and new free fishing gear before putting it to use.

(PHOTO BY DAN SPENCER/USFWS)

through the gear, determine what is appropriate to redistribute, organize it, and prepare it for recipients.

In fall 2022, Rods and Reels in Need received a massive load of gear, so Service cavalry was called in for help. A Service employee and two all-star AmeriCorps Service interns, Hannah and Eric, sorted through over 25 donated tackle boxes that were loaded with hooks, weights, bobbers, lures, and other gear. Four hours later, they had sorted all the usable tackle into bins based on gear type and target species. The team then scrubbed out, rinsed, and dried the tackle boxes and organized them in the supply room. Rods and Reels in Need doesn’t have a staff, so it would have been an overwhelming task for founder and President Larry Stamp. And the sooner the gear is prepared, the quicker it makes its way into the hands of future anglers. »

Continued from previous page.

Rods and Reels in Need then teamed up with Northwest Fishing Partners to host a fishing gear giveaway and lake fishing event on December 10 in Lacey, WA. While we could not be there in person, we did provide staffing support to prepare gear, including loading up over 40 tackle boxes with new and used tackle. We also provided bobbers, complete with U.S. Fish and Wildlife Service logos.

“The relationship with the Service has been an absolute blessing for Rods and Reels in Need. The enthusiasm, caring, and genuineness they bring to the table is contagious to all around them,” Stamp says. “Without the help and support of the Service, I doubt our past events would have been as successful as they were. I look forward to more events to come in the next year and the continued opportunity to work with the Service.”

The feeling’s mutual, because everyone should have the opportunity to fish!

Note: Another partner, the Friends of Northwest Hatcheries, purchased gear for the library fishing tackle loaner program and Big Brothers Big Sisters events. We thank them for their continued support. □

DAN SPENCER, Fish and Aquatic Conservation, Pacific Region

Service Launches Center for Pollinator Conservation

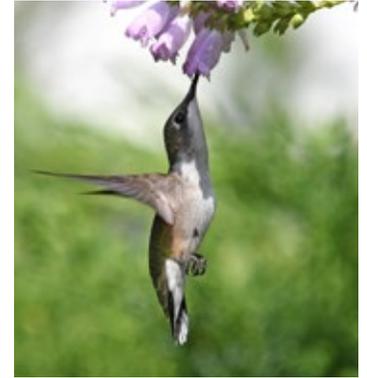
To address the decline of pollinator populations across North America, the Service has launched the Center for Pollinator Conservation. The national center will contribute science, provide decision support, and coordinate and share best practices with land managers for overcoming some of the biggest challenges facing pollinators.

“The Center for Pollinator Conservation will advance our existing conservation efforts and welcome all those interested in enhancing pollinator populations,” says Service Director Martha Williams. “Given the importance of pollinators to food security, opening this center will improve how we work as an agency, dedicate shared resources, and provide a space where we can engage and unite with others to conserve pollinators.”

Secretary of the Interior Deb Haaland first announced the Service’s intent to launch the center as part of the inaugural Monarch Butterfly Summit in June 2022.

The center will initially launch as a virtual collaborative space and will focus on three key themes: highlighting the importance of pollinators, understanding and responding to threats, and coordinating action to reverse declines. Anticipated work for the center’s first year includes conducting assessments on the current state of pollinator conservation and science across the Service; listening to agency programs and other partners across the country about how the center might function and what it might provide; and developing mid- and longer-term strategies for the center and its work, including the announcement of a physical hub for its operations.

During the past 30 years, pollinator populations have suffered a steep decline. Examples include the decline of the American bumble bee by 90%, the monarch butterfly by 80%, and the Allen’s hummingbird by 88%. Pollinators face big challenges, like climate change, pesticide exposure, and habitat loss. The center will work to amplify and add to the ongoing efforts to improve the state of pollinators.



Ruby-throated hummingbird feeds from an obedient plant. Obedient plants bloom from August to October and can grow up to four feet tall. These long, tubular flowers are a great way to attract hummingbirds. (PHOTO BY JIM HUDGINS/USFWS)

Since 2015, the Service has dedicated more than \$25 million to conserve pollinators, particularly the monarch butterfly. Establishing the center is another major investment to protect and promote pollinator health. The Service will continue to make pollinators a priority, share progress with interested parties, and base decisions on the best available science. □

Golden currant provides some of the very earliest native plant flowers for pollinators. These ground nesting digger bees were taking advantage of the early food source.

(PHOTO BY TOM KOERNER/USFWS)



Federal Excise Taxes Help Turn Former Cranberry Bogs into Havens for Wildlife and Fish

Like any commodity, cranberries are subject to changes in the market. The native plant, which naturally grows in soggy bogs in the Northeast United States, has been commercially farmed on a large scale for a century and a half, perhaps longer. But farming the berry is not so economically viable anymore—and that has afforded opportunities to put federal excise taxes paid by fishing tackle manufacturers to work for conservation.

Using funds from National Coastal Wetland Grants derived from the Sport Fish Restoration Act, the Massachusetts Department of Fish and Game's Division of Ecological Restoration and the Service have engaged in several restoration projects in what had been known as the cranberry capital of the world. The group embarked on one endeavor to return a well-used farm into a natural wildlife habitat. It's the largest freshwater ecological restoration project to be accomplished in the northeastern United States.

The large Tidmarsh Farm in Plymouth, Massachusetts, had operated since the 1890s. In 2010, the owners dedicated the farm not to development but to conservation, to restore the land to its soggy soils, forests, uplands, and open waters—for fish and wildlife and people to enjoy.

Some 480 acres of farmland have been converted back to the natural maple-cypress woodlands, lowland bog, and miles of stream. The lands have been reshaped and contoured and revegetated with native trees as well as upland and wetland plants.

Gone are nine dams, dikes, and water control structures that formerly regulated flows and flooded the cranberry marshes on a seasonal basis. Their removal offers unfettered ocean-to-headwater access to upstream spawning habitat for alewife and blueback herring—fish that spawn in fresh water and live the majority of their lives in salt water. They are a favored fare of striped bass while they too cruise the Atlantic Ocean.

Colorful brook trout now swim in Beaver Dam Creek unimpeded, as do American eel that make a storied downstream migration to spawn out at sea. Their young return to parental streams to act out the timeless and remarkable cycle again years later. More than three and a half miles of stream were reshaped to re-create a natural flow. Some 3,000 stumps and logs were placed in the stream to create fish habitat, slow water velocities, and stabilize stream banks and prevent erosion.

A litany of songbirds, American woodcock, and waterfowl feed, rest, or nest in the novel wetlands of the former cranberry bogs. Visitors can hear the week-week call of hen wood ducks as they take to the wing.

This National Coastal Wetland Grant restoration project began in 2012 and wrapped up in 2017 at which time Mass Audubon bought the property and opened a nature sanctuary for everyone to enjoy. The large site provides a laboratory for scientific research. »



(Top) A great number of species make a home in a restored wetland at the former Tidmarsh Farm. (PHOTO BY BILL PERRY/USFWS)

(Above) Alewife swim from the sea into coastal streams to spawn.

(PHOTO BY RYAN HAGERTY/USFWS) (Left) Wood ducks nest in spring in the former cranberry bogs and rest there during their autumn flights south.

(PHOTO BY ALAN SCHMEIRER/USFWS)

Continued from previous page.



Yellow warblers, one of the songbirds that rediscovered Tidmarsh, take to trees that stand near water.

(PHOTO BY USFWS)

There's more habitat restoration just underway via the same grant source and same partners. The Cold Brook Eco-Restoration project near Harwich, Massachusetts, involves the eventual removal of several dikes and water control structures and reshaping the land on a former cranberry farm. It too will benefit migratory fish and birds — and visitors who will thrill at the sight of waterfowl or the scolding chatter of a bounding belted kingfisher as it alights on a perch overhead. □

CRAIG SPRINGER, Wildlife and Sport Fish Restoration, Headquarters

Wildlife Restoration Funds Finance New Florida Range

Necessity and opportunity coincided in Palm Beach, Florida. The need: Palm Beach is heavily developed and populated, and lacked a public target shooting range. Opportunity presented itself to build a new, state-of-the-art recreational target range following land donations and funding from federal excise taxes paid by firearms, ammunition, and archery manufacturers via the Wildlife Restoration Act (Pittman-Robertson).

Palm Beach County Shooting Sports Complex fully opened in October 2022 following eight years of planning and phased-in construction. The outcome is an enviable public target range that serves a large swath of publics, from the causal target-shooter to the competitive athlete at the upper echelon — Olympians.



Palm Beach County Shooting Sports Complex serves the causal target-shooter and the competitive athlete.

(PHOTO BY FWC)

“Privately owned ranges are getting squeezed out to development in Florida,” says Bill Cline with the Florida Fish and Wildlife Conservation Commission. “The price and demand for land for homes and business eased out places for recreational target shooters to go.” Cline is the agency’s section leader for Hunter Safety and Public Shooting Ranges. It is in his purview to steer new range construction and operation and maintenance of the agency’s 11 public ranges. “Pittman-Robertson funding helps us fill those gaps and build new or enhance existing public ranges to meet the needs of the people of Florida and our visitors.”

According to Cline, a demographics study conducted by the Florida Fish and Wildlife Commission in 2013 revealed that more than 2.3 million people age 18 and older live within a 50-mile radius of the new Palm Beach range.

Since opening, the Palm Beach complex gets about 300 visitors a day on weekends, fewer during the week. They can partake in a variety of shooting sports, all supervised by trained range masters.

The complex adjoins the existing J.W. Corbett Wildlife Management Area, which was purchased by Wildlife Restoration funds in 1947. The excise taxes continue to fund the area’s operation and management. Visitors to the 93-square-mile Corbett can watch wildlife, fish for bream in ponds, and hunt wild turkey, waterfowl, and deer.

The shooting complex also affords classrooms to teach hunter education classes. “To be a hunter,” says Cline, “you have to be a shooter first. Teaching classes here gives students easy access for the live-fire portion of the hunter education course. They get a greater immersion into the safe and responsible handling of firearms, in person, rather on a computer.”

A 3-D archery park is in the works as is an RV park that will accommodate competitive shooters traveling by coach, among others. Also on the near horizon is a 10,000-square-foot administrative building that will support events large and small and will positively affect the local economy. □

CRAIG SPRINGER, Wildlife and Sport Fish Restoration, Headquarters

Salamanders and Chardonnay

Sonoma County in northern California is a wine lover's paradise. More than 60,000 acres of vineyards produce wines known around the world. Many of the wineries have been family-owned for several decades, and there's a deep commitment among them to take care of the land for future generations while sustaining the local economy.

Along these lines, Sonoma County's winegrowers recently finalized a new Safe Harbor Agreement with the Service that supports sustainable agricultural practices while protecting the Sonoma population of the California tiger salamander, an endangered species in Sonoma County.

It's not just the grapes that love the Mediterranean climate and fertile soil of Sonoma County. An incredible array of plants and animals evolved over the county's history to create a biodiverse landscape full of rare and unique species, including the Sonoma distinct population segment of the California tiger salamander.

California tiger salamanders are amphibians, which means they seek out wetlands, ponds, and vernal pools to lay their eggs. Young salamanders start as legless, fish-like larvae that take at least 12 weeks to mature for life on land.

Once they leave the water, the salamanders seek animal burrows or other holes in the ground where they can stay moist and hide from predators. They live in these underground burrows

most of the year and only come out to breed in the late winter after their breeding ponds have been filled by seasonal rainfall. Some salamanders will travel more than a mile to find the nearest breeding pond.

California tiger salamander habitat has declined in recent years due to housing development across the Santa Rosa Plain and ongoing drought. Because of these threats, the Service protected the Sonoma population of California tiger salamander as endangered in 2003.

When a local economy depends on agriculture, putting a species on the endangered species list does not go unnoticed. Any farming operation causes some disruption to the land and soil that could put species like salamanders at risk. In the case of grape vines, their productive lifespan doesn't last forever, and they often need to be replanted after 25 to 35 years to maintain the same level and quality of harvest.

To reduce the risk of adversely affecting Sonoma County salamanders and violating the Endangered Species Act, in 2019, Santa Rosa Plain winegrowers, the Sonoma County Farm Bureau, SAVE, North Bay Water District, and the Service developed a Safe Harbor Agreement that supports the wine industry and the salamander. Winegrowers that enroll in the agreement pledge to follow agricultural best management practices while performing vineyard maintenance



and replanting existing vineyards. These practices, such as preserving gopher burrows, only mowing between vines during certain months, and avoiding destruction of wetlands, are environmentally sustainable, preserve salamander habitat, and contribute to the health of the land as much as the health of the vines. In exchange for creating or protecting salamander habitat, participating winegrowers get our assurance that vineyard activities covered in the agreement can continue without requiring additional permits related to the Endangered Species Act. Each participating winegrower commits to a 10-year period, after which members can re-enroll for another 10 years.

California tiger salamander.

(PHOTO BY ADAM CLAUSE/UC DAVIS)

Safe Harbor Agreements are one of the many tools the Service uses when working with private landowners to find balance between agriculture and species recovery. With the support of partners like winegrowers in Sonoma County, the California tiger salamander will remain part of the county's rich biodiversity and long agricultural history. □

CAL ROBINSON, Office of Communications, Pacific Southwest Region

CITES TURNS 50

American Alligator Shows How CITES Appendix II Listing Can Help

By the 1960s, a fearsome reptile that had survived on Earth for 200 million years was nearing extinction. Decades of habitat loss and market hunting had diminished populations of American alligator throughout its range, from the southeastern United States to eastern Texas.

In 1967, the American alligator was protected as an endangered species under a law that preceded the Endangered Species Act of 1973.

Many people believed it would never recover.

Later, Alligator

Twenty years later, we removed the American alligator from the endangered species list. Thanks to collaborative efforts by the Service and state partners, populations had rebounded across its range, and the species was thriving.

Notably, the market for American alligator skins was thriving as well.

How Is That Possible?

This seeming paradox is a perfect illustration of how the Convention on International Trade in Endangered Species of Wild Fauna and Flora, better known as CITES, helps ensure a legal and biologically sustainable wildlife trade.



Not a Ban, a Balance

In 1979, American alligator was added to CITES Appendix II, which includes species that may become endangered without counterbalances on the trade of the species.

“We took a species that was on the brink of extinction in the 1960s, and after a short period without any harvest, we were able to reopen the commercial trade in a way that is biologically sustainable and legal,” says Dr. Rosemarie Gnam, head of the Service’s Division of Scientific Authority for CITES. “A sustainable trade supports alligator habitats, benefits human communities, and provides an economic incentive to keep populations healthy.”

Most of the 38,700 species protected by CITES are on Appendix II, including American ginseng, paddlefish, African lions, and many stony corals.

“For these species, you want a process in place to ensure trade is legal and biologically sustainable, so both the species and the trade can persist,” Gnam explains.

Label Conscious

How does it work? The CITES Parties, currently 183 countries and the European Union, have agreed that all crocodilian skins must follow a universal labeling system.

American alligators are a CITES success story. (PHOTO BY ROBERT H. BURTON /USFWS)

When an American alligator is harvested, it receives a tamper-resistant, self-locking tag with a unique barcode that tells you when and from where the alligator was taken.

“The system provides complete traceability, which ensures you are getting a legally caught alligator, and one we have found comes from a sustainable population,” Gnam says.

Traceability for Turtles

Other native reptile species would benefit from a traceable trade like that the one that has allowed American alligators to persist in the wild and in the »

Continued from previous page.

market. Just as the southeastern United States provides vital habitat for American alligator, it's home to a globally significant biodiversity of turtle species, many of which are subject to demand at home and abroad for food, medicinal purposes, and as pets.

Turtle harvesting tends to follow a "boom and bust" pattern, in which demand shifts from one species to another as populations are depleted. To ensure the trade is legal, traceable, transparent, and biologically sustainable, the United States proposed adding several North American turtle species to CITES Appendix II— alligator snapping turtles, common snapping turtles, three species of softshell turtles, five species of broad-headed map turtles, and four species of musk turtles. At the 19th Conference of the Parties to CITES, all of these proposals were adopted, with the inclusion on Appendix II occurring February 23. □

BRIDGET MACDONALD, Office of Communications, Northeast Region

CITES TURNS 50

Parties Work to Improve Transport Conditions for CITES-listed Species

A private plane, two personal attendants, and your favorite snacks: a first-class experience reserved for the rich, the famous...and pandas.



Bei Bei, the beloved 4-year-old giant panda born at the Smithsonian's National Zoo in Washington, DC, received such first-class treatment on his way to China in 2019 to participate in a cooperative breeding program. On a private flight donated by FedEx, the 240-lb. panda flew in comfort accompanied by a zookeeper, a veterinarian, and a full supply of apples, bamboo, and sweet potatoes. A Service wildlife inspector ensured it was shipped legally and humanely. After a 16-hour flight, Bei Bei arrived safely at his destination.

Unfortunately, this degree of attention and care is not afforded to all wildlife during

transport. Proper care, including sufficient space and access to fresh water, is not always implemented or enforced, even though it is required. As a result, containers may be overcrowded, poorly ventilated, or unsanitary. This presents several risks, including potential injury, illness, or death of individual animals and the spread of disease to completely different species like people.

Several pandas have safely flown on the FedEx Panda Express, a custom-decaled Boeing 777F. (PHOTO BY FRANK KOHN/USFWS)

A study on legal international trade of 7.5 million live animals between 1988 and 2001 found mortality rates ranging from 0.65% among mammals to 3.14% for reptiles and 4.96% for amphibians. While these percentages seem low, they can translate to large numbers of dead animals when millions are transported annually. Consider, for example, the average 3.4 million reptiles shipped every year that are protected under the Convention on International Trade

in Endangered Species of Wild Fauna and Flora (CITES); a 3% mortality rate means more than 100,000 dead reptiles every year. »

Poor transport conditions can stress animals and disrupt their immune systems, leading to a higher risk of disease spread and animals falling ill during and after transit. Inadequate conditions and lack of safety measures (i.e., proper packaging or barriers) increase the chance of pathogen transmission, which could have implications for zoonoses, diseases spread between animals and humans. In some cases, this can affect the health and well-being of transit staff, border agents, wildlife inspectors, and other frontline workers involved with live animal shipments.

CITES is an international treaty that regulates international wildlife trade, and it requires that member Parties ensure all species included under CITES Appendices are transported in compliance with the International Air Transport Association (IATA) Live Animal Regulations (for animals), the IATA Perishable Cargo Regulations (for plants), and the CITES Guidelines for the Non-Air Transport of Live Wild Animals and Plants.

Despite their importance for wildlife and people, these regulations are not always consistently followed. One challenge is that getting copies of the IATA regulations (typically \$300 per book per year) can be expensive. Additionally, Parties rarely have enough inspectors or expertise for the volume and complexity of wildlife being transported. Regulations also differ depending on whether a CITES-listed animal is traveling internationally or domestically. »

Continued from previous page.



A Service wildlife inspector examines a live animal shipment. (PHOTO BY USFWS)

To improve transport conditions for CITES animals and plants, the United States and six other Parties submitted a proposal to the 19th meeting of the Conference of the Parties to CITES. The United States, Nigeria, Canada, Côte d'Ivoire, Kenya, Mexico, and Senegal recommended that Parties have better access to and training on the IATA transport regulations. The proposal also recommended collaborating with IATA to make key content of the IATA regulations accessible to all Parties free of charge on a secured platform. In addition, it encouraged Parties to apply these regulations to the domestic portion of an international CITES shipment and to share best practices in live animal and plant transport at a workshop. The proposal was adopted with minor amendments and took effect February 23. □

EMILY M. RONIS, International Affairs, Headquarters

CITES TURNS 50

CITES Parties Take Strong Stance to Support Enforcement of Gillnet Ban to Help Vaquita



A mother and calf vaquita surface in the waters off San Felipe, Mexico. (PHOTO BY PAULA OLSON/NOAA FISHERIES)

If the population of a species declines by nearly 50% each year, how long will it persist? The answer depends on whether humans intervene.

Thanks to decisions adopted by the Parties at the 19th meeting of the Conference of the Parties (CoP19) to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the world has chosen to intervene, and the future of the world's most endangered marine mammal feels a little more hopeful.

In the early 2000s, numbers of vaquita, one of the smallest marine mammals in the world, with the smallest range—it is found only in the northern part of the Gulf of California—were already low due to decades of deadly entanglements in fishing gear.

Then about a decade ago, a sharp increase in illegal fishing for a large fish called totoaba led to a catastrophic decline in the vaquita population—close to 50% each year.

Today, 10 or fewer vaquita remain.

The totoaba could face extinction, too, due to insatiable demand for its swim bladder—the driving force behind the illegal fishing. Considered a delicacy in some parts of the world, a single totoaba swim bladder is valued at tens of thousands of dollars.

Strength in Numbers
Despite the diminishing numbers of vaquita, there's still hope for the species.

An international team of researchers published a genomic analysis in *Science* in 2022 that confirmed the remaining population, though small, is genetically healthy and can still recover if authorities enforce existing conservation measures.

Both vaquita and totoaba are listed on Appendix I of CITES, which consists of species threatened with extinction and provides the greatest level of protection, including a prohibition on international commercial trade.

But protections are only as good as their implementation. During the last visit to Mexico by the CITES Secretariat, local fishermen noted that fishing with illegal gillnets from illegal entry points happens daily without consequence. Illegal fishing is encouraged by a lack of alternative ways to make a living or to fish without using the gillnets known to be lethal to vaquitas. Despite Mexico's ban on gillnets in the Vaquita Refuge, there has been a resurgence in their use.

Zero 'Zero Tolerance'
Gillnet fishing is banned in the Vaquita Refuge, a federally protected region in the Gulf of California. The Zero Tolerance Area is a small priority region within the refuge where nearly all vaquita detections in the past five years have been made. Fishing activities of all types and transit of any vessels without authorization are strictly prohibited in the Zero Tolerance Area. »

Continued from previous page.

Yet, both have continued. In the last two published efforts to count vaquitas inside the Zero Tolerance Area, hundreds of fishing skiffs using gillnets were documented with no observations of enforcement actions.

Protecting a Community

It's not just vaquita that suffer from unchecked illegal fishing—it also undermines legitimate fisheries that many people in the region depend upon for their livelihoods. Fishing is the most important economic activity for the communities near the vaquita's remaining habitat in the Upper Gulf.

These communities have suffered economically from the impacts of national and international legislation meant to protect vaquitas and totoaba. The only way to sustain the fishing economy in the Upper Gulf is for fishermen to convert to legal and sustainable fishing practices.

And one thing is clear: The vaquita can't wait.

During CoP19, the United States urged the other Parties to support strict enforcement of the gillnet ban and illegal fishing prohibitions. The united front for this support at CoP19 is critical to affirm the merit of the treaty, and to save a species whose days are numbered unless we act. □

BRIDGET MACDONALD, Office of Communications, Northeast Region

CITES TURNS 50

Investing in Conservation Leaders through the CITES Masters Course

CITES, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, is a key conservation tool for plants and animals impacted by both legal and illegal trade. We know that the treaty is only as effective as the ability of member countries to implement it.

We have long recognized the importance of strengthening CITES, in particular in countries with high biodiversity but lacking in capacity to effectively implement the treaty and combat wildlife trafficking.

In 2018, we started collaborating with the U.S. Agency for International Development (USAID) West Africa Biodiversity and Climate Change Program to provide scholarships and technical support to the CITES Masters Course at Spain's Universidad Internacional de Andalucía.

Our initial funding supported students from Latin America and the Caribbean, while the USAID program supported students from West Africa. In addition to scholarships, our staff contributed as academic lecturers and advisers, working collaboratively with students and their respective CITES Authorities to develop projects in alignment with the needs of their home countries. The scholars produced such theses as a population assessment of Guyana's CITES-listed black caiman, an analysis of the regeneration capability of Belize's threatened rosewood tree, and an assessment of CITES implementation in Trinidad and Tobago.



Last year, we partnered with the Department of the Interior's International Technical Assistance Program to support students from Central and East Africa, regions where we have more than three decades of experience working with partners to secure species and habitats and strengthen capacity for conservation. Through its West Africa Biodiversity and Low Emissions Development Program, USAID supported its third cohort of scholars from West Africa, and provided technical support to the entire cohort.

CITES Masters Course students learn about identification of CITES-listed turtle species. (PHOTO BY DAVID MAHABIR)

Graduates of the CITES Master's Course have become CITES leaders and advocates for wildlife policy in their home governments. We look forward to learning from each other, continuing to collaborate throughout our conservation careers, and collectively finding solutions to more effectively manage natural resources and combat the illicit wildlife trade. □

CITES TURNS 50



Representatives of 183 countries and the European Union gather in Panama City, Panama for the 19th CITES Conference of the Parties. (PHOTO BY FRANK KOHN/USFWS)

IN NOVEMBER 2022, OVER 2,000 REPRESENTATIVES from more than 150 nations, nongovernmental organizations, industry, and academia gathered in Panama City, Panama, for two weeks. Their job at the 19th Conference of the Parties (CoP19) to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, or CITES: to improve global trade in wildlife to ensure it doesn't threaten the survival of wild animals and plants.

This year marks the 50th anniversary of CITES, which was finalized in March 1973. For the golden anniversary, participants at the CITES CoP19 did not disappoint.

They took a strong stance to conserve a wide range of known and lesser-known species and improve CITES implementation on matters ranging from ending illegal trafficking in totoaba (see p. 10) and restricting trade in live African elephants to ensuring conservation of turtles (see p. 18) and curbing the illegal trade in cheetahs and jaguars.



“With 1 million species facing extinction around the world, international trade often represents the tipping point for wildlife already impacted by habitat loss and degradation, climate change, invasive species, or disease,” says Department of the Interior Deputy Assistant Secretary for Fish and Wildlife and Parks Matthew J. Strickler, who led the U.S. delegation to CoP19. “No one country can solve these problems alone. Seeing nations come together and take a collaborative, strong stance for wildlife over the past two weeks gives me hope that together we can meet the challenge.”

Strickler’s support team included Service Director Martha Williams and Service Assistant Director for International Affairs Bryan Arroyo. In addition to the Service, which is responsible for implementing

Panama welcomes the Conference of the Parties with an inaugural traditional cultural presentation. (PHOTO BY FRANK KOHN/USFWS)

CITES in the United States, the delegation included representatives from across government and beyond.

In comments after the CoP, Service Director Williams paid tribute to the conservationists the Service has helped attend the CITES Masters Course at Spain’s Universidad Internacional de Andalucía in recent years. “These emerging conservation leaders are the future of CITES, and many of the delegates who demonstrated outstanding leadership at CoP19 are graduates of this course. We will continue to support global efforts to increase the capacity of Parties to implement CITES and ensure all voices are heard in this critical forum.”

[Read more about CITES and CoP19. »](#)

Collage of species that are related to or impacted by the convention.

(COURTESY OF CITES, PHOTOS BY GRÉGOIRE DUBOIS)



What makes it possible for someone in the United States to purchase jewel orchids from Malaysia or to sell American alligator boots in Europe, while ensuring these species persist in their native habitats? The answer is five decades of unprecedented international cooperation on wildlife trade.

In March 1973, nearly 10 months before the U.S. Endangered Species Act was signed into law, representatives from 80 countries gathered in Washington, DC, to finalize another conservation milestone: the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

Known as CITES, the Convention is an international treaty created to ensure the global trade in wildlife doesn't threaten their survival in the wild.

Today, 183 countries and the European Union are Parties to CITES, meaning they agree to uphold its provisions in support of balancing legal, sustainable use with conservation of wild animals and plants.

Participation is mutually beneficial: Sustainable, legal use of wild animals and plants is better for both domestic and global economies than unchecked illegal trade, which can drive species and associated markets to extinction.

Elephant in the Room

Like the Endangered Species Act, CITES was a response to mounting concerns in the 1960s about alarming declines in the populations of iconic species of wildlife. The poster species for the Endangered Species Act was the bald eagle, whose numbers were plummeting due to habitat loss, shootings, and poisoning from DDT.

For CITES, it was the Asian elephant, which had been hunted to the brink of extinction to meet demand for ivory. When the treaty went into effect in 1975, the Asian elephant was among the first species listed. The African elephant was listed the following year.

Thanks to CITES, a system now exists to help elephant range countries around the world better manage their elephant populations and enforce the laws created to protect them.

Making a List

Listing has a different meaning under CITES than it does under the Endangered Species Act, which designates species as either "threatened" or "endangered" and, with limited exceptions, outlaws "take"—defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting.

In contrast, CITES regulates, rather than bans, international trade in species that the Parties include on one of three Appendices.

- Appendix I consists of species threatened with extinction and provides the greatest level of protection, including restrictions on commercial trade. Examples of species currently listed in Appendix I include gorillas, sea turtles, most lady slipper orchids, and giant pandas.

- Appendix II has species that, although not necessarily threatened with extinction, may become so without trade regulation. Most CITES-listed species are included in this Appendix, including American ginseng, paddlefish, American alligator, African lions, and many stony corals.

- Appendix III consists of species protected by at least one country, which needs assistance from other Parties to regulate the legal trade. Examples of species currently listed in Appendix III include map turtles, walrus, and Cape stag beetles. >>

Continued from previous page.

Every two to three years, the Parties convene to consider proposed changes to the CITES Appendices and make decisions about implementing and enforcing its provisions. Changes to Appendices I and II must be proposed by a Party and agreed to by consensus or by a two-thirds majority of the Parties present and voting. In contrast, additions to Appendix III can be done by individual Parties at any time. Today, about 38,000 species of wildlife and plants are listed under CITES.

Checking it Twice

More than just a list, CITES established an international framework for the legal trade of listed wild animals and plants, with common procedures and mechanisms worldwide. How does it work? It comes down to a system of permits.

Each Party to CITES must designate Management and Scientific Authorities to issue permits, make legal and scientific findings, and monitor trade. In the United States, the Service fulfills that role.

Anyone who wants to import or export a CITES-listed species, whether a live specimen or parts and products, must ensure they have the required CITES permits. That includes you!

Crossing the Line

Simply moving a listed species across international borders is considered trade, even if it's for personal use. If you have a pet bird that is a CITES-listed species and you want to take it out of the country, that's considered a trade activity and requires a permit.

Before exporting a CITES-listed species for the first time, a trader needs to obtain a permit or certificate from the country



of origin. Permit requirements vary depending on which Appendix a species is listed on, but ultimately, they revolve around two overarching themes:

- Was the species acquired lawfully and can you prove it?
- Will the removal of the specimen harm the survival of the species in the wild?

What about humane wildlife shipment? CITES covers that, too. For all CITES-listed species, traders must demonstrate that living specimens are prepared and shipped in a way that minimizes the risk of injury, health impacts, and cruelty (p. 9).

CITES and You

Like most treaties, CITES needs the support of the public to succeed. Both individuals and businesses can play a role in upholding its provisions by knowing

Most CITES-listed species are included in Appendix II, including American ginseng. (PHOTO BY GARY KAUFFMAN/USFS)

which species are protected and why, obtaining permits to export and import protected species, and reporting violations of CITES to the managing authorities—that's us, the Service!

In the age of the internet, it's easy to sell and ship anywhere in the world, making the wildlife trade increasingly complex, and the tools CITES provides to keep it in check more important than ever. □

BRIDGET MACDONALD, Office of Communications, Northeast Region

Contributing: DR. THOMAS LEUTERITZ, International Affairs, Headquarters



An Asian elephant walking in natural habitat. (PHOTO BY MEENAKSHI NAGENDRAN/USFWS)

Gorillas are on Appendix 1 of CITES, which provides the greatest level of protection. (PHOTO BY MEENAKSHI NAGENDRAN/USFWS)

A wildlife inspector examines a live coral specimen. (PHOTO BY USFWS)



*Turtles face unique challenges—
CITES can help.* | *By* BRIDGET MACDONALD

LEVELING THE PLAYING FIELD

You've probably heard the fable about the tortoise and the hare. But what about the one about the snapping turtle and the white-tailed deer? It's not a story about reaching the finishing line first. Rather, it's about reaching the starting line. And it's not a fable, it's biology. White-tailed deer can start to reproduce at age 1. A snapping turtle won't reach reproductive age until it's 17.

By the time the snapping turtle has its first clutch of eggs, the descendants of the original white-tailed deer could amount to as many as 629 more mature white-tailed deer.

Meanwhile, few, if any, of the snapping turtle's young will survive simply because they are so small. The eggs and hatchlings are bite-sized snacks for predators like foxes and skunks.

So who wins the race?

Uneven Playing Field

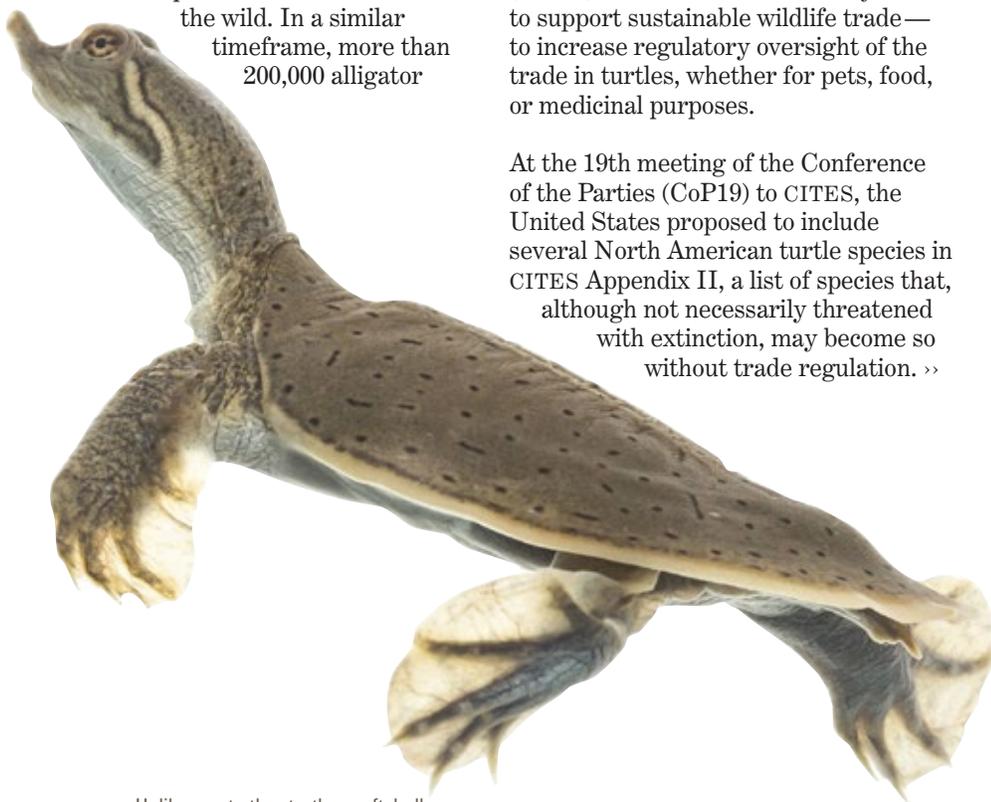
Usually, nature levels the reproductive playing field for wildlife that mature at different rates. White-tailed deer are significantly more productive than turtles, but they need to be in order to replace themselves in the population because they only live for four or five years.

In contrast, turtles and tortoises can live for a long time—many decades. Once they reach reproductive age, they can reproduce for the rest of their lives and, odds are, one or two of the hatchlings they produce over their lifetimes will survive to reproductive age as well.

The problem is that turtles' lives are often interrupted before they have the chance to replace themselves in their populations. On top of threats from habitat loss, cars

when crossing roads, and climate change, overcollection is a major problem for turtles. When people remove reproductive adult turtles from the wild at unsustainable rates, they remove future generations as well.

Between 2013 and 2019, nearly 1.5 million live musk turtles were exported from the United States, with the majority of specimens sourced from the wild. In a similar timeframe, more than 200,000 alligator



Unlike most other turtles, softshell turtles have flat, leathery shells that are flexible, rather than hard and rigid. Some compare their appearance to a pancake. (PHOTO BY SAM STUKEL/USFWS)

snapping turtles and more than 700,000 common snapping turtles were exported from the United States. Most of these turtles were destined for Southeast Asia and Europe. Can turtle populations keep pace with this demand?

Turtles don't need more challenges. They are already considered one of the most imperiled vertebrate groups in the world. The authors of a recent study published in *Nature* stated that most species of turtles "require urgent, targeted action to prevent extinctions."

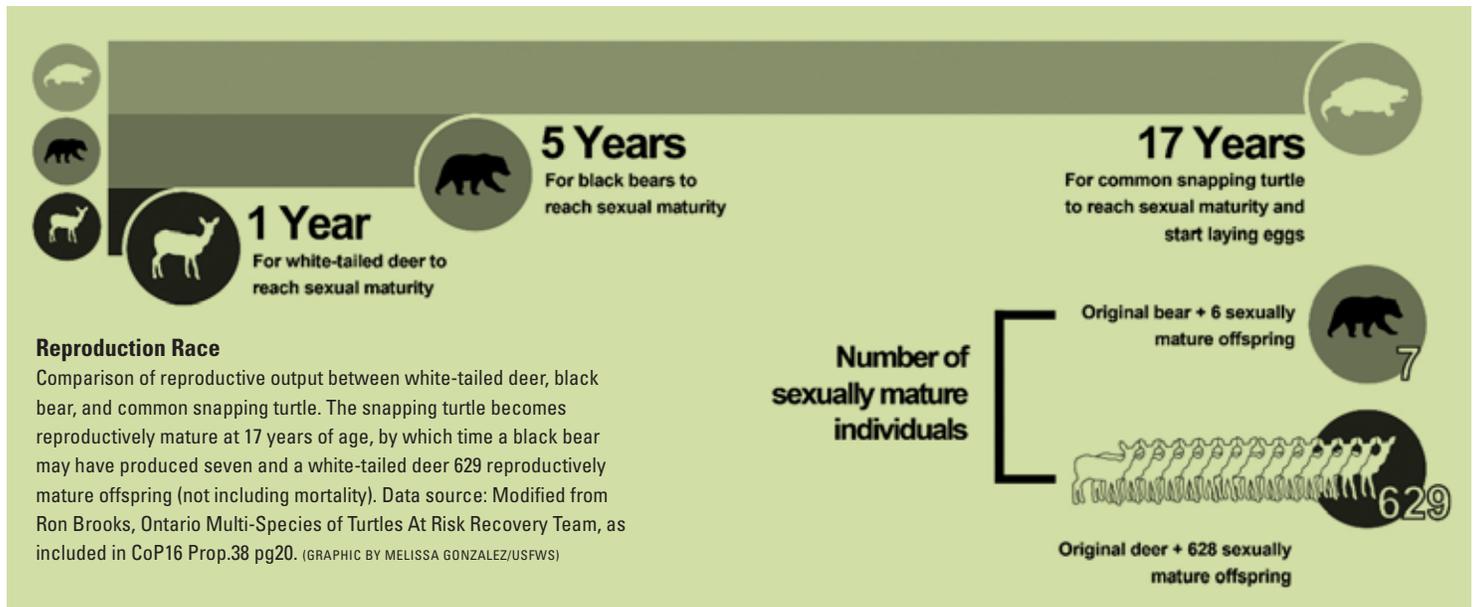
A Treaty That Can Help Turtles

One far-reaching action we can take to help is to use the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)—an international treaty created to support sustainable wildlife trade—to increase regulatory oversight of the trade in turtles, whether for pets, food, or medicinal purposes.

At the 19th meeting of the Conference of the Parties (CoP19) to CITES, the United States proposed to include several North American turtle species in CITES Appendix II, a list of species that, although not necessarily threatened with extinction, may become so without trade regulation. >>

(Previous page) An adult alligator snapping turtle in a drained pond at Natchitoches National Fish Hatchery.

(PHOTO BY LINDSEY ADAMS/USFW)



Continued from previous page.

All turtle proposals submitted by the United States were adopted by the Parties, and the new inclusions to CITES Appendix II went into effect February 23.

In the past, different states in the United States had conservation- and trade-managements strategies in place for the proposed species — alligator snapping turtle, common snapping turtle, three species of softshell turtles, five species of broad-headed map turtles, and four species of musk turtles — but the inconsistent approach made it easy for people to exploit the trade, putting turtles at risk of extinction.

The CITES Appendix II listing will complement existing management efforts by states, reducing the risk of overharvesting, and supporting sustainable trade in our native turtles.

What's at Stake

Turtles are among the natural treasures that make the United States special. We are home to a greater number of terrestrial and freshwater turtle species



than any other single country. Some species live only here, and many are already imperiled.

Musk turtles are native to the freshwaters of North America, ranging from southeastern Canada to southeastern Florida. (PHOTO BY LEAH / CC BY-NC-ND 2.0)

By taking action through implementation of the CITES Appendix II listing, we will ensure a sustainable future for our turtles, prevent losing individual species, and maintain the biodiversity they contribute to natural communities. □

BRIDGET MACDONALD, Office of Communications, Northeast Region



(Top) The five species of broad-headed map turtles are threatened by pollution in rivers, leading to the loss of their prey, habitat loss, and alteration, and overharvesting for the international pet trade. (PHOTO BY CRIS HAGEN/USGS)

(Bottom) A common snapping turtle in a tank at Gavins Point National Fish Hatchery and Aquarium in Yankton, South Dakota.

(PHOTO BY SAM STUKEL/USFWS)



Protections for Herps

At the recent CoP19, CITES Parties decided to increase protections for most herps (reptiles and amphibians) targeted in species proposals. Species include agamid lizards, two species of geckos, horned lizards, Puerto Rican boa, matamata turtles, many species of North American turtles, Asian and neotropical geoemydid turtles, as well as glass frogs, three crocodylian species, and the Lao wart newt. Herps represented half of all species in the 52 species proposals considered at this CoP. There were 239 herp species for which species proposals were adopted at CITES CoP19.

Unless they are moving animals across an international border, the average hobbyist or pet owner will notice little change from these listings. As a pet owner and consumer, you should make sure that you always purchase herps from a reputable seller/breeder/dealer. Ask questions, including: Where did the animals come from? Were the animals legally acquired? If the juveniles are obviously captive-bred, were the parents legally acquired? Be an educated consumer and help protect the herp species represented in the pet trade. Keep a record of your purchase with receipts in a permanent file so that you will be prepared to apply for permits in the future, if needed.

DR. THOMAS LEUTERITZ, herpetologist and Chief of the Branch of Conservation Science Policy, Division of Scientific Authority, Headquarters

GOLDEN

Celebrating 50 years of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)



Fifty years ago, on March 3, 1973, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was signed into existence — the only treaty to ensure that international trade in plants and animals does not threaten their survival in the wild. »

Originally an Appendix III listing, the giant panda was moved to Appendix I in 1984.
(PHOTO BY JOHN J. MOSESSO/USGS)

The signing marked the end of a historic three-week plenipotentiary conference held in Washington, DC, with delegates from 80 countries. The United States hosted the conference with support from the International Union for Conservation of Nature (IUCN) and was the first of 21 original signatory countries to sign the Convention. Today, CITES has been ratified by 183 countries and the European Union.

The launch of CITES, also referred to as the “Washington Convention” to honor its origins in the U.S. capital, followed more than a decade of international discussion on trade in rare and threatened wildlife species. In 1961, at a conference in Arusha, Tanzania, the late Dr. Lee Merriam Talbot convened wildlife officials from several African countries to discuss the threat of poaching and possible solutions to prevent species extinctions from trade. Two years later, at the IUCN General Assembly in Nairobi, Kenya, he proposed a convention on trade to tackle unsustainable demand for wildlife, laying the foundation to establish CITES. In addition to being a founding father of CITES, Dr. Talbot was an original author of the Endangered Species Act (ESA), which also turns 50 this year.

In 1969, Congress amended the Endangered Species Preservation Act of 1966 to provide protection to species at risk of “worldwide extinction” by prohibiting their importation and subsequent sale in the United States. It also recommended convening an international meeting to adopt a convention to conserve endangered species. This recommendation led to the 1973 meeting in Washington that gave rise to CITES. Later that year, the ESA, was signed into law. CITES took effect on July 1, 1975, after Canada became the 10th Party to ratify the Convention. In the United States, CITES is implemented through the ESA.

At the first meeting of the Conference of the Parties (CoP1) to CITES, held in Bern, Switzerland, in 1976, Parties laid the foundation of the treaty by establishing



the criteria for amending Appendix listings. Appendix I protects species threatened with extinction by restricting commercial trade. In 1973, the Aleutian cackling goose was one of the first species protected by the ESA in the United States, and in 1975, it was included in Appendix I of CITES. A multitude of recovery efforts, many led by the Service and its partners, helped the Alaskan population significantly increase in recent decades. For CoP19, the United States submitted a proposal to change its listing from Appendix I to Appendix II. The change was approved.

Appendix II contains species that are not necessarily threatened with extinction but need trade regulations to avoid detrimental impacts on the species in the wild. Among the original Appendix II listings were chimpanzees, grizzly bears, and bighorn sheep.

In 1983, China added the giant panda to Appendix III, which includes species for which a range country has asked other

The U.S. delegation to the CoP1, held in Bern, Switzerland in 1976, and CoP19 in Panama City, Panama, in 2022. (PHOTOS BY USFWS)

CITES Parties to help control international trade. CITES transferred the panda to Appendix I the next year.

Over the past 50 years, CITES has been critical in preventing species from going extinct because of unsustainable demand. □



ON THE WEB

[Learn more about CITES](#) success stories, hear from some of the individuals championing the Convention, and see what we're doing with partners to strengthen implementation of CITES around the world.

PLOVERS IN PERIL



A piping plover at Cape May National Wildlife Refuge in New Jersey.
(PHOTO BY DON FREIDAY/USFWS)

Piping plovers, those loveable, orange-legged shorebirds that hide in plain sight, are in trouble. Already protected as threatened or endangered, the sparrow-like birds face yet another threat: climate change. It's not enough that habitat loss, disturbance, predation, and coastal development shrink plover breeding and wintering grounds. Now they've got to deal with an increasingly angry Mother Nature. But good science, strong partnerships, and land conservation give the plucky plover a fighting chance. »

Communities help plover, endangered in Great Lakes

By MELISSA A. CLARK

Empire, Michigan—As azure waves lap at a sandy beach of Sleeping Bear Dunes National Lakeshore, Gaby and Goo rest for a minute looking out over the water. They have been coming here every year of their adult lives. But they aren't summer vacationers admiring Lake Michigan. Gaby and Goo are endangered piping plovers who nest on the very beaches that draw so many tourists.

Plover recovery efforts in the Great Lakes are only trending in the right direction. Credit is due to partnerships and community involvement.

With more than 10,000 miles of Great Lakes shoreline, you might think there is plenty of room for these little shore birds to thrive. But habitat degradation and loss pose major threats to piping plover recovery. Plovers need beaches without too much vegetation or disturbance—from people or predators. And the beaches are under siege from over-development, flooding, and fluctuating water levels. Climate change influences the dynamic between plovers and beaches even more.

Climate Change Impacts on Plovers

Historically, plovers were abundant enough that fluctuating water levels weren't a risk. By the mid-1980s, though, plover numbers nationwide had plummeted. Great Lakes piping plovers have been on the endangered species list since 1986, a year after the Atlantic Coast population was protected as threatened.

Recovery efforts for the Great Lakes population are working, but climate change increases the variability and severity of threats.

Plover nesting has always been impacted by rising and falling lake levels. More beach is available for nesting when water levels are low. But high-water levels and scouring by ice are necessary to keep beaches free from vegetation. Storms that temporarily raise water levels can inundate and destroy nest sites.

Plovers, though, have adapted to these fluctuations and stick to their preferred beaches even when conditions change.

The rise in severe and unpredictable storms that wash nests away impacts chick survival as exposure to cold and rainy weather leaves the young overly dependent on their parents for brooding. Of particular concern is the first few days of a chick's life when foraging for food is essential for its survival.

"These plovers are tough," says Jillian Farkas, piping plover coordinator for the Great Lakes. "They are resilient birds that can withstand some variability, but climate change can throw them some unpredictable curveballs."

Conservation efforts, including habitat protection, nest monitoring, predator management, and, as a last resort, raising the birds in captivity, have all helped stabilize the plover population. The birds are once again nesting on all five Great Lakes.

Farkas cautions, though, that a wait-and-see approach is needed to determine how the birds will respond to climate change.

"We've seen chicks hatch four days earlier compared to hatch dates 20 years ago, but it's unclear if this is the result of climate change and warmer springs," she says. "As the population rebounds, plovers are nesting on beaches where they haven't been seen for more than half a century. As we monitor the nesting pairs, we will see if their historic nesting beaches will continue to be re-established."

Beach Use Impacts on Plovers

Climate change is also a wildcard when it comes to the dynamic between plovers and people. Rising lake levels and >>



A sign marks important nesting habitat for the endangered piping plover. (PHOTO BY TIM PATRONSKI/USFWS)

Continued from previous page.

fiercer storms may lead communities to build more beach infrastructure — break walls, for example — which reduces plover habitat. Great Lakes plover populations have been slowly increasing thanks in part to habitat conservation. But it's likely these efforts will need to continue in perpetuity.

Hotter summers and warmer springs are expected to increase the number of Great Lakes beachgoers, which means more pressure on piping plovers. The plover lifecycle aligns with popular vacation times: Plovers hit the beach looking for a nest site during spring break; chicks hatch around Memorial Day; and they fledge near Independence Day.

Great Lakes recovery efforts have already succeeded in engaging local communities in plover conservation. Sleeping Bear Dunes — Gaby and Goo's home — is a prime example. Towering dunes and crystal-clear water are the first things visitors notice. They must scour the sand, though, to find the well-camouflaged piping plovers. Signs at the trailheads alert beachgoers to plover habitat. Additional measures, like closing beaches to dogs and using chick enclosures, also protect the birds. Many people don't realize that dogs cause nest abandonment, decreased foraging time, and even death for all ages of piping plovers.

Since 2016, volunteers in the Bark Ranger Ambassador program have helped visitors avoid important habitat and share the shore with wildlife. Volunteers, and their dogs, serve as ambassadors who model good beach behavior: At pop-up booths, or on the beach, the volunteers educate visitors about proper pet behavior. They also hand out park maps and dog leashes.

“Community engagement works,” Farkas says. “Plover survival is higher when communities are involved and invested in conservation. But what we do in the Great



(Top) Rising seas can endanger piping plover chicks. (PHOTO BY JOEL TRICK/USFWS) (Above) Plovers tend to return to the same beaches to nest even when conditions change. (PHOTO BY JOEL TRICK/USFWS) (Right) Great Lakes piping plovers have been on the endangered species list since 1986. (PHOTO BY JIM HUGGINS/USFWS)

Lakes is only one piece of the plover conservation puzzle, since the birds head to wintering habitat in the South for as many as eight months of the year.”

MELISSA A. CLARK, Office of Communications, Midwest Region

? HOW TO HELP

Everyone can play a role in plover conservation. Do your part by giving plovers space, keeping dogs on leashes, and supporting conservation efforts that ensure beaches remain dynamic ecosystems.

Piping plovers struggle for survival amid a marauding Mother Nature

By DAN CHAPMAN

Beaufort, South Carolina—All seems fall-like idyllic on Harbor Island with pastel-colored homes edging the dunes and beachgoers marveling at the army of seabirds and shorebirds on a nearby sandbar. Even the alligator ambling along the sidewalk adds to the tropical feel of Lowcountry living.

Looks, though, deceive, especially if you're one of the rare piping plovers running out of beachfront room to roost. Climate change and its sinister handmaiden—sea level rise—threaten the migratory birds' habitat. And the beaches of South Carolina, more so than the sandy shores of New York, Massachusetts, Michigan and beyond where plovers breed, sit in the crosshairs of an increasingly hot, and angry, Mother Nature.

Most plovers spend more time along the Atlantic beaches of the Carolinas, Georgia, and Florida than anywhere else in the United States. And, overall, they're in relatively better shape along the Atlantic Coast, federally protected as threatened, while plovers across the Great Lakes region have the more dire designation of endangered.

Yet the twiggy, melodic, sand-colored birds of the South are generally not recovering as well as they do up north. The Audubon Society predicts that plovers will lose 30% of their non-breeding range—i.e., the southeastern coastline—by 2080. “Climatic suitability,” or the lack thereof, will push the birds farther north during the fall and winter seasons, Audubon says.

And the South Atlantic Bight, the shallow, curving coastline between Cape Hatteras, North Carolina, and Cape Canaveral, Florida, will experience a “substantial increase” in erosion by 2030 due to sea level rise. While beaches naturally migrate and provide new habitat for plovers, their movement increasingly bumps up against hard, immovable structures like beach homes and parking lots.

Melissa Chaplin, a beach biologist with the Service in South Carolina, helped research a study published in 2018 that shows plovers fare considerably worse—and are more likely to die—in areas disturbed by humanity.

“There is less available habitat and the habitat they have is already disturbed,” Chaplin says during a stroll along Harbor Island. “And climate change just exacerbates the threats they face from storms, infrastructure, and rising seas.”

Climate Change Crosshairs

Chaplin was prowling the beaches 25 miles below Charleston in search of plovers as fall began. The birds had begun returning from breeding grounds up north, and

Chaplin, with binoculars, spotting scope, and GPS at the ready, set about counting them. Plovers are renowned for their “site fidelity,” or allegiance to certain beaches or barrier islands. They'll return to the same sparsely vegetated spot each winter to get their fill of worms, larvae, and crustaceans. Harbor Island and Hunting Island State Park across the Johnson Creek inlet are prime bird-watching zones for Chaplin. She was not disappointed.

“Awesome. I've got 44 piping plovers today,” she says while observing a large flock of plovers (piping, Wilson's, semipalmated), terns (royal, black, least), sanderlings, and assorted gulls. “At least five are from the Great Lakes. There's a New York bird. And there's a Canadian bird. The Canadians will be so excited. This is great.”

Chaplin zeroed in on the colorful bands on some of the plovers' legs to determine where the birds migrated from. Orange-flagged birds come from the Great Lakes. Canadian birds sport white or black bands. Most birds, though, hail from up the Atlantic Coast. The 2022 wintering season was off to a good start. Plovers need a good year. >>



A house succumbs to the ever-rising Atlantic Ocean.
(PHOTO BY DAN CHAPMAN/USFWS)

Continued from previous page.

Of the three piping plover populations—Atlantic Coast, Northern Great Plains, and Great Lakes—the easternmost birds are most plentiful. The Service and other conservation groups peg the Atlantic population at more than 4,000 mature, or breeding, individuals. In all, roughly 8,000 mature birds fly the skies from Canada to the Caribbean. Their numbers, though stabilizing overall, have dwindled significantly in the last half century due largely to development along oceans and lakes. Climate change only makes matters worse.

South Carolina sits in the crosshairs of the warming world. With nearly 3,000 miles of tidal coastline—along the barrier islands, marshes, and sinewy streams that feed the Atlantic—the Palmetto State suffers the brunt of sea level rise. The waters off its coast have risen 10 inches since 1950 and fuel flooding up and down the coast. Charleston, for example, experienced, on average, two days of tidal flooding per year during the 1970s, according to the National Oceanic and Atmospheric Administration. By mid-century, it's expecting 180 days of flooding. The Atlantic is now rising an inch every two years.

Warmer weather also supercharges storms and inundates coastal communities. Higher temps cause the Atlantic to evaporate, which shoots moisture into the sky and over land worsening hurricanes, downpours, and flooding.

Evidence of the coast's losing battle against Mother Nature abounds. Boneyard forests, where dead oaks have succumbed to rising salty waters, are visible from Hunting Island. Half of the state park's camp sites have gone under due to sea level rise, flooding, and storms. Groundwater levels under the plovers' winter roosts continue to climb. Chaplin says she frequently hits water if she digs down two feet.

At high tide, only about 20 feet of Harbor



A juvenile piping plover gambols along the Atlantic shoreline. (PHOTO BY DIANA ROBINSON/CREATIVE COMMONS)

Island beach remains, and there is no beach in the middle of the island when the tide comes fully in. A handful of homes have succumbed to the rising seas and storms since Hurricane Matthew roared by in 2016. Today, water encircles a half-dozen houses that are abandoned, condemned, or wobbling on concrete pilings. One big storm and more houses will tumble into the sea.

'So Much Stress'

Harbor Island sits near the middle of the South Atlantic Bight, the long, gradual bend in the coastline that, from space, looks like a large bay. More than 1,200 miles of the bight, or 43%, are projected to suffer serious erosion by 2030, according to a recent study in the *Journal of Wildlife Management*.

It gets worse for the piping plover: Two-thirds of its most popular winter habitat will get smacked by sea level rise.

"The biggest impact from climate change, so far, is on the birds' habitats," Chaplin says. "There will always be a beach; these islands are always moving and they roll back on each other. But there's very limited availability for the coast to move now. Half of South Carolina's islands are



Melissa Chaplin, an endangered species biologist, counts plovers on Harbor Island. (PHOTO BY DAN CHAPMAN/USFWS)

already developed. It definitely further limits plovers' population."

Bigger storms fueled by warmer air and ocean temperatures push waves higher up the beach and over the dunes, a phenomenon known as over-wash. That's less of a problem for plovers in Virginia, New Jersey, and other coastlines up north with their back bays and room for beaches to grow. In South Carolina, though, beaches migrate smack dab into million-dollar homes, roads, and parking lots.

Chaplin and colleagues reported in 2018 that piping plovers "in disturbed sites" weighed 7% less than those in less disturbed sites.

And the birds, overall, were more likely to die. Plovers' average life expectancy: 5 years. "But the birds we banded in South Carolina disappeared within two or three years," says Chaplin, who has been studying plovers since 2005. "The habitat that's already disturbed probably ensures an early exit for them. And the conditions are getting worse. They're under so much stress they may be aging quicker than before." □

DAN CHAPMAN, Office of Communications, Southeast Region

Climate change doesn't spell doom for the resilient bird

By OLIVIA GIEGER

Long Beach Island, New Jersey — While we often see climate change in black and white, its effects on piping plovers must be seen in shades of gray—a fitting approach for a small, grayish bird whose sandy feathers often blend into its beach background.

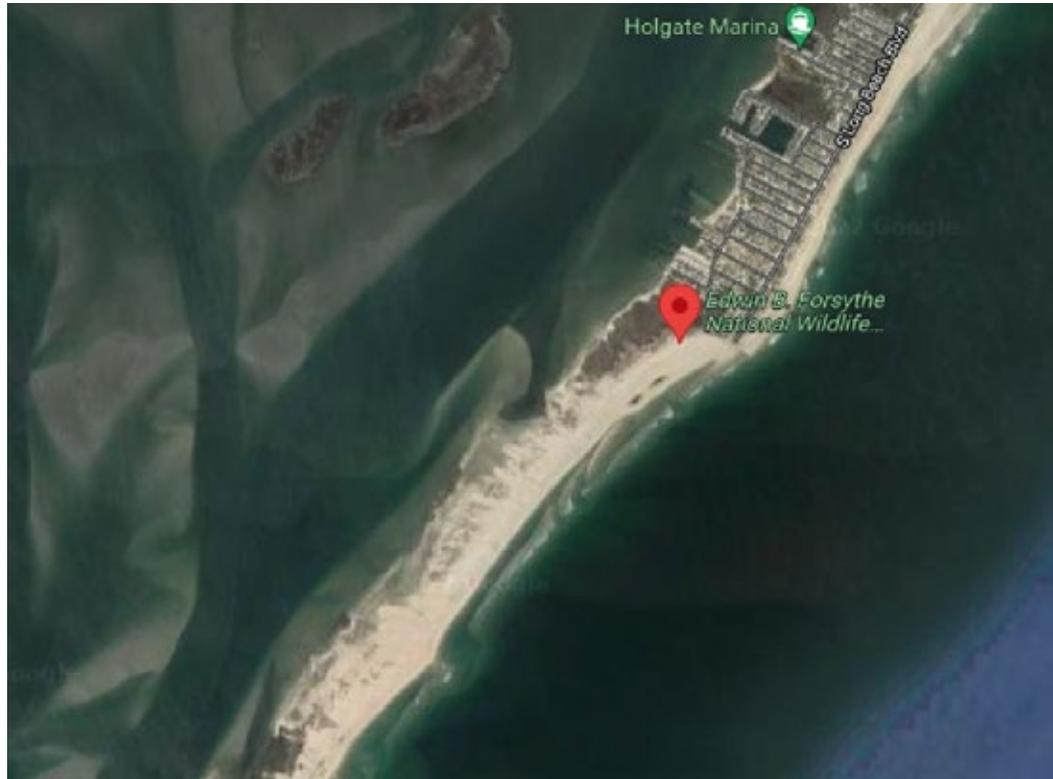
Scientists look to sea level rise and the increase of intense, more frequent, and unseasonable storms as the biggest threats to the plover.

Still, piping plovers prefer beach habitat shaped by ecological disturbances, as storms and tides push sand across the beach and vegetation sparsely grows. A changing climate doesn't spell doom for this resilient bird.

The Value of Disruption

Sara Zeigler, a landscape ecologist and research geographer with the U.S. Geological Service (USGS), co-authored a study that scrutinized storm impact on plover habitat. The deadly and devastating Hurricane Sandy, for example, created a lot of habitat for plovers, which led to higher population numbers and productivity.

At the Holgate Wilderness area, part of Edwin B. Forsythe National Wildlife Refuge in New Jersey, managers saw firsthand Sandy's impact on plover habitat. Virginia Rettig, the refuge manager, described how the super storm pushed sand across the barrier island ("over-wash"), which wiped out the



shrubby vegetation and created open foraging grounds on the calmer, landward side.

Yet storms aren't necessarily a blessing. They introduce a new set of problems for the bird.

"Whether climate change benefits or hurts piping plovers will depend a lot on the human response to that change," Zeigler says.

The Threat of Changing Storms

As storms are becoming more intense and unpredictable, they're hitting coastal landscapes that are already moving and eroding due to rising sea levels. In most places, that's typically met with humanity's desire to gird shorelines, build seawalls, and prevent movement.

Historically, hurricanes and nor'easters hit north Atlantic beaches in the late summer and winter, burying vegetation and over-washing beaches. The plovers' nesting

Long Beach Island's shoreline drastically shifts when left to follow the tidal regime, as it has been at Edwin B. Forsythe National Wildlife Refuge. (PHOTO BY USFWS)

season on the Atlantic Coast runs from early April through mid-August, when the birds migrate to the Caribbean, the Gulf of Mexico, and the south Atlantic Coast.

With climate change, conditions are pushing the system in unexpected ways. The timing of storms, for example. While the system thrives on disturbance, climate change is changing the baseline.

Maureen Durkin, plover coordinator for the Rhode Island National Wildlife Refuge Complex, understands how attempts to stabilize sea level rise and storm surges affect beaches. She describes the impact of shoreline armoring—jetties, seawalls, and other structures—on the cycles of erosion, deposition, and beach migration. >>

Continued from previous page.

“Think of houses with seawalls and rocks, but totally no beach,” she says.

Zeigler underscores this dramatic shift by pulling up an aerial map of New Jersey’s Long Beach Island. It’s crowded with houses, a grid system of streets, and a strictly linear shoreline—until you reach the undeveloped wildness of Forsythe Refuge at one end of the island. The shoreline has retreated from the rest of the island’s armored and narrow beach. When water comes in, Forsythe’s beaches are not so much losing ground as they are moving it.

“It’s a very tough balance because certainly there’s a lot of very legitimate concern about human structures and coastal communities, but at the same time, trying to force a dynamic system to be static results in a lot of issues for species that evolved under dynamic regimes,” Durkin says.

Working with Nature to Protect Plovers

But balancing human and plover habitats isn’t easy.

“We can have both—we do have both,” Rettig says.

Restorations that prioritize nature-based solutions over hard infrastructure, like seawalls, are an excellent way to preserve and protect plover habitat, experts say. The massive post-Sandy restoration at Prime Hook National Wildlife Refuge in Delaware included a specifically designed landscape that works with the dynamic shifts of climate change. The coastal refuge went from a plover-less refuge to one with 17 nesting pairs and 26 fledged chicks this season.



Even without restoration efforts, the birds find ways to rebound amid changing environments. Durkin described a particularly quirky pair of birds in Rhode Island who nested inside a bluff. A storm had eroded most of the beach leaving behind a steep drop-off. They fledged two chicks anyway.

“They really do surprise you sometimes,” Durkin says.

But the lengths that plovers will go to find suitable nesting habitats underscore the importance of protecting quiet, dynamic beaches.

Piping plovers are protected as threatened on the Atlantic Coast. (PHOTO BY DAN GRAOVAC)

“There is no end to protecting habitat for these birds,” Rettig says. “The places we have for them are the only places.” □

OLIVIA GIEGER, Office of Communications, Northeast Region

MUSEUM OBJECTS COME TO LIFE

In this series we highlight the “Treasures of the Service” from the museum collections of both the U.S. Fish & Wildlife Service Museum and Archives and the Service’s National Fish and Aquatic Conservation Archives. We feature submissions from Steve Flory, curator of the U.S. Fish & Wildlife Service Museum and Archives, and April Gregory, curator of the National Fish and Aquatic Conservation Archives.

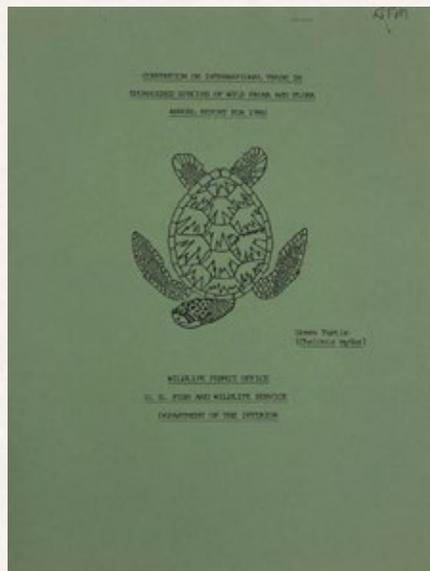


Penobscot Eníkahkwak (Fish Spear)

Penobscot artist Jason Pardilla was commissioned to make this traditional eníkahkwak (pronounced: enny gawk’) for the National Conservation Training Center in 2022. Pardilla created the eníkahkwak according to Penobscot traditional ways; the 10-foot-long shaft is black spruce, the trident is ash, and the lashing material is black spruce root. Pardilla collected all of these materials on Penobscot Nation lands in Maine. The spearpoint is the only exception — Pardilla used a modern material that resembles bone rather than fashioning it from a swordfish’s rostral bone (the fish’s “spear”) as the ancestors did. Pardilla’s eníkahkwak will be

featured in *Welcome to Turtle Island*, the initial exhibit that visitors will encounter at the U.S. Fish & Wildlife Service Museum and Archives. (STEVE FLORAY)

(PHOTO BY RYAN HAGERTY/USFWS)



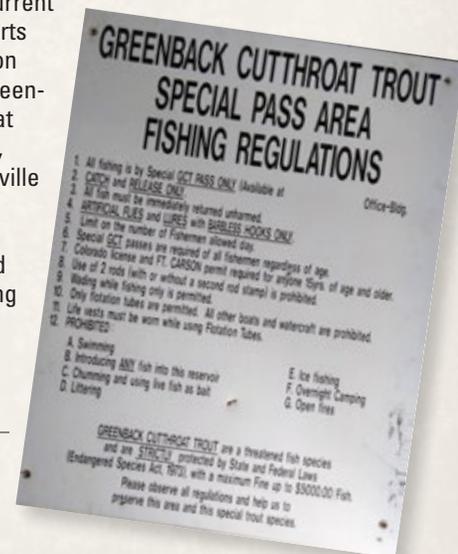
Reporting on CITES

Nestled away in an acid-free folder in an acid-free box is a document titled “Convention of International Trade in Endangered Species of Wild Fauna and Flora, Annual Report 1980, Wildlife Permit Office, U.S. Fish and Wildlife Service, Department of Interior.” A drawing of a green sea turtle by Jean Boudreau is on the cover. The beginning of the report explains that Article VIII of CITES says that each party shall prepare periodic reports on its implementation of the present Convention with a summary of the number and types of permits granted, countries with which trade occurred, and the number and types of specimens or species in question. In 2016, we and NOAA Fisheries issued a final rule to list 11 distinct population segments (DPSs) of the green sea turtle under the Endangered Species Act. Based on the best available scientific and commercial data, and after considering comments on the proposed rule, we determined that three DPSs are endangered and eight DPSs are threatened. This rule superseded the 1978 final listing rule for all green sea turtles as threatened. The species remains on the CITES Appendix I throughout its range. (APRIL GREGORY)

Catch and Release Only

This 1980s sign is from the Colorado Fish and Wildlife Conservation Office. It is a 3-by-4 foot metal sign that was displayed outside on the grounds of Fort Carson U.S. Army post. The Colorado office stocked greenback cutthroat trout on the base, but because they are protected as threatened (then and now), they are catch and release only. This sign spells out all of the regulations that anglers were to follow if they wanted to fish — special permits and passes were needed, as well as specific fishing lures, hooks, and other equipment that would not harm the greenback cutthroats. The greenback cutthroat trout has only one genetically pure self-sustaining population in the wild remaining. Current recovery efforts are focused on raising the greenback cutthroat in hatcheries, such as Leadville National Fish Hatchery in Colorado, and re-establishing populations within their native range.

(APRIL GREGORY)





First Shot

A Hunting Mentorship Program

By MARCIA PRADINES

A month ago, I had never met Tasha. And now there we were in a blind together, staring down an old logging road in the woods as first light gradually peeked through the dark canopy. Inside I was just as excited as if it were my own first hunt. But it wasn't. It was Tasha's.

The night before, she asked me if it was normal to feel so anxious, and I said yes. For me, the excitement and anxiety often mesh together, especially before opening day, even now 20-some years into hunting. I still get that excited for my first hunt of the year or during the rut when I see conditions have come together for a potentially great hunt the next day. I accept it and do not let it stop me.

I told her: "Wait until you see your first deer in the scope. That's why we practiced the breathing routine before and during the shot at the range. You will need it!"

Tasha and I met through First Shot, a mentored hunt program at Blackwater National Wildlife Refuge in Maryland for adults who didn't have the network to help them learn to hunt.

When Blackwater, the Maryland Department of Natural Resources, and the National Wild Turkey Federation started First Shot in 2018, we knew we didn't want it to be just a guided hunt or a one-day event. We wanted it to be a program that served as a stepping stone, helping adults of varying backgrounds, experiences, and ages gain the confidence and competence to hunt on their own one day. We wanted the mentors to form a relationship with the mentee, but I had no idea what impact it would have on everyone taking part.

As the refuge manager at Blackwater, and an "adult-onset hunter," I wanted to create a program with our partners that would help fill a void in the world of R3 (Recruitment, Retention, and Reactivation). I was "recruited" to hunting by my ex-husband and a Becoming an Outdoorswoman event. I lapsed after the divorce and was "reactivated" when I began my position at Blackwater, thanks to two friends who were also "huntresses." They understood my challenges and concerns and helped me through each one, from learning to use a climber to getting a deer out by myself.

How could we facilitate that here at the refuge, where we had a strong base of 5,000-plus hunters and ample opportunity?

When I met Russ Leith with the Maryland chapter of the Turkey Federation, we put our heads together to start something centered around turkey hunting, which had become my favorite pursuit. We contacted Chris Markin, Maryland Department of Natural Resources' R3 coordinator, and wild turkey biologist Bob Long, who eventually became my husband (and best hunting partner ever).

That first hunt for turkeys was a success, but we realized we had more opportunity to engage new hunters by expanding to deer in the fall. Turkeys are fun but can be more challenging in our area, especially for new hunters. Since inception, over 100



Marcia and Tasha on their first hunt together.

mentees participated in the turkey, deer, or both hunts, with some mentees now serving as mentors themselves, and others helping teach the workshop. Evaluations show over 80% continue to hunt.

The program also gave me an avenue to connect with our refuge hunters. I reached out to a few names that I heard avidly hunt the refuge. As word of the program spread, others reached out to volunteer. I never would have had the opportunity to get to know them otherwise. They are generous with their time, and patient and supportive of their mentees.

All the background and statistics — number of harvests, the number of mentor/mentee pairs — show the program's success, but they do not tell the stories of the impact upon the individuals, mentee and mentor alike. Hunting has connected us. I could have told folks early on that it would, but even now I continue to be pleasantly surprised by the wonderful people I get to meet and the relationships we form.

A few weeks ago, I ran into one of the mentors from 2018, who was eating lunch at the local general store, Woolford's, with his mentee and mentee's family. They come down to hunt together every year, and such continuing relationships >>



Continued from previous page.

inspire me. We never intended nor expected for that kind of thing to happen, but it did. I also love to hear of past mentees taking their spouses, kids, and friends out hunting for the first time. This concept works: Help people learn to hunt themselves, and they will spread it with others.

Our fifth deer hunt concluded in early November. I find it hard to adequately describe the outcome of the program. How hunting helped one couple of mentees avoid divorce. Or the father who found a new way to spend precious time with his young son despite a busy career. The single mother who harvested a deer and can now bring home venison to her daughter. The mentee who had always wanted to hunt as a young girl, but her culture and family dismissed the possibility. Or the former vegetarian who wanted to eat only meat she harvested herself. Hunting, which was previously out of reach, has provided fulfillment and enjoyment in many forms.

As a mentor, I, too, have learned from each mentee and have grown myself. I recall how I doubted my own ability to serve as a mentor. I nervously did so only because we needed female mentors. I felt that it was important for mentees to see themselves in some of the mentors and hear how we overcame our own challenges and doubts. Every mentor is different in multiple ways, many of which are not visible differences. My husband grew up hunting. I did not. He is a father who has helped his sons learn to hunt. I have not, but I have been supported by women as I learned to hunt who knew and know how that felt and what I needed. We each bring different perspectives to the table.

By overcoming my own lack of confidence, I gained the confidence I needed. I was able to relate to their uncertainty, which, in turn, helped them feel it was OK, and work through it. By helping five other women with their first successful hunts through First Shot, I also became a better hunter.

Every time you step into the woods you have the chance to learn something.

First Shot Mentees enjoying a cool day in the forest.

Teaching others helps you become more receptive to learning yourself, and you never know what will happen or what you will encounter. In the end, it's not the number of deer harvested, or the number of mentees, but the relationships we each take away.

As I reflect on Tasha's hunt, and others over the years, I realize I have gained just as much as the mentees, if not more. As we sat in the blind waiting and watching, she remarked how the sound of the wind through the leaves and the colors of the trees were calming, even meditative. She shared that when the deer appeared, despite being so nervous and excited before and after, she was surprised that she went into an almost out-of-body experience and calmly harvested her first deer.

I will cherish these moments, and I will fondly remember the genuine, warm embrace after she laid hands on her deer and realized she had indeed become a hunter. □

transitions

Midwest Region



After 44 years of dedicated federal service, Midwest Regional Director **Charlie Wooley**

announced his retirement. In late December 2022, Wooley stepped away from his regional leadership role in Bloomington, Minnesota.

With a long history of working in the Great Lakes ecosystem, Wooley has devoted his career to supporting strong and sustainable fisheries, with a focus on clean water for wildlife and people. Named Midwest Regional Director in 2019, he has been honored with many awards throughout his career. Most recently, this includes the George Bird Grinnell Memorial Award for Distinguished Service to Natural Resource Conservation by the Wildlife Management Institute in 2022. This award is the highest individual honor in natural resource management.

Upon graduating from the University of Wisconsin-Stevens Point, Wooley got his start as a fisheries biologist in a career that took him to Alaska, Maryland's Chesapeake Bay, and Florida before he settled in the Upper Midwest. As his time in the field deepened, Wooley established a reputation as a collaborator and devoted advocate of conservation

partnerships. The agency Director named Wooley one of 10 Unusually Outstanding Employees in the Service in both 1989 and 1992, as many took note of his ability to bring people together to solve practical challenges.

Wooley served as a program analyst in Washington, DC, where he worked with the President's Domestic Policy Council Interagency Task Force on Wetlands and the Merchant Marine Fisheries Committee for the House of Representatives.

Wooley returned to the field in a managing role, as the field supervisor for the East Lansing Ecological Services Field Office in Michigan. Building a program and a team from the ground up over the course of almost a decade, Wooley worked with others to manage a variety of sensitive species and habitats in Michigan and the Great Lakes.

Since 1996, Wooley has served as the Department of the Interior's trustee to the Great Lakes Fishery Trust. Wooley also served as senior executive representative for the agency on the Invasive Carp Regional Coordinating Committee, the Great Lakes Restoration Initiative, and the Executive Council advising Tribal fisheries management for U.S. vs. Michigan (Treaty of 1836).

Continuing his career in the Midwest Region, Wooley joined the regional directorate team as the Assistant Regional Director for Ecological Services and oversaw endangered species, contaminants, and wetland protection programs, as well as various Great Lakes and Mississippi River activities.

In 2004, Wooley began serving as Deputy Regional Director where he assisted the Regional Director in formulating, developing, and leading programs, policy, and procedures to carry out the Service mission in the eight states of the Midwest Region and across all the agency programs in the region.

Over the course of his career, Wooley brokered agreements with diverse, and sometimes even divisive groups, establishing effective partnerships across a huge geography. In December 2018, Wooley was appointed by the president to serve a six-year term as the federal commissioner representing the United States on the Great Lakes Fishery Commission.

A strong field biologist in his own right, Wooley authored 15 technical papers on the biology and life history of the striped bass, sturgeon, and ecosystem restoration. In 2001, he was honored with the Department of the Interior's Meritorious Service Award and in 2012, with its Distinguished Service Award, Interior's highest award.

Wooley has led a federal workforce of more than 1,000 dedicated civil servants across America's heartland with reason, compassion, and vision. Remembered for his warmth, Wooley leaves the agency a respected leader. We thank him for his commitment to the Great Lakes and the wider conservation mission of the agency and for tireless advocacy for wildlife and people. □

Pacific Region



Hugh Morrison has been selected to serve as Regional Director of the Pacific Region of the

Service. Morrison had been the acting Regional Director since May 2022. In this role, Morrison will administer conservation efforts spanning one ocean, four states and multiple territories, and time zones.

"I am honored to have the opportunity to serve the dedicated employees of the U.S. Fish and Wildlife Service and Tribes and partners as we work to conserve natural resources and wildlife from Guam to the Great Basin," Morrison says. "We have a tremendous diversity of species and ecosystems in the Pacific Region, and we will continue to work together to conserve the wildlife and places that so many people enjoy and rely upon."

In addition to Hawaii, Idaho, Oregon, and Washington, the region includes the territories of American Samoa, Guam, and the Northern Mariana Islands, and the islands and waters located within Papahānaumokuākea Marine National Monument, Rose Atoll Marine National Monument, and the Pacific Remote Islands Marine National Monument.

Morrison has more than 20 years of experience working for the Service in various roles since beginning his career as a Presidential Management »

Continued from previous page.

Fellow in 1997. He most recently served as Deputy Regional Director in the Pacific Region. Before starting that job in 2020, Morrison worked in Headquarters and with multiple other regions. During a hiatus from the Service from 2016 to 2019, Morrison worked for a nonprofit coalition of members from the outdoor recreation industry, recreation nonprofits, and conservation groups focused on conservation and inclusive outdoor recreation. He was also a regular volunteer and consultant for the Coalition of Oregon Land Trusts.

“Throughout his career, Hugh has been a leader and proponent of collaborative conservation and consensus building across the Service’s programs and regions, as well as with our partners,” says Director Martha Williams. “He is also passionate about employee well-being and development and finding novel ways to deliver the Service’s conservation mission.”

In his capacity as Regional Director, Morrison oversees the day-to-day operations and strategic direction of the Service in the Pacific Region, including collaboration with Tribes and state agencies, building partnerships with conservation partners, and providing executive direction to the region’s leadership team. He is also a recognized leader in the agency’s efforts to promote Diversity, Equity, Inclusion, and Accessibility in the workplace.

Morrison is from Eugene, Oregon. He earned bachelor’s degrees in political science and environmental studies, as well as a

master’s degree in public administration, environment and natural resource management, from the University of Washington. □



Kessina Lee is our new Oregon state supervisor. With over 12 years in conservation, Lee

is new to the Service and brings with her a wealth of experience conducting scientific research and coordinating with Tribal, federal, state, and local partners.

“We are extremely fortunate to have recruited Kessina Lee to our Oregon project leader position. Her past experience in conservation and policy along with her passion for the people side of our work make her uniquely qualified for this position,” says Kate Norman, Assistant Regional Director for Ecological Services in our Pacific Region.

Since 2018, Lee served as the regional director for the Washington Department of Fish and Wildlife. Before the Washington Department of Fish and Wildlife, Lee served as the statewide aquaculture specialist for the Washington Department of Ecology where she focused on ensuring compliance with the Clean Water Act.

Lee is a California native and grew up in rural eastern Arizona but has called the Pacific Northwest home for more than 30 years. “I feel like the Pacific Northwest—especially

the Pacific Ocean—is in my DNA. My childhood was spent exploring beaches and I have raised my own kids in this ecosystem. I feel so fortunate that I have been able to dedicate my life to protecting this place,” says Lee.

With both a bachelor’s and a master’s degree in biology from Portland State University, Lee went on to obtain a geospatial information system mapping certificate in order to research marine mammal strandings and causes of mortality.

After several years spent in the necropsy and skeletal articulation labs, Lee went to work on the policy aspects of marine ecosystems as an Oregon Sea Grant policy fellow staffing the Coastal Caucus in the Oregon Legislature. This position led Lee to an opportunity to work on ocean policy issues for Gov. Kate Brown.

Lee is looking forward to returning to Oregon with her new position as state supervisor.

“I consider Oregon my home and I am excited to be here again with a statewide team, across the varied landscapes and issues here,” says Lee. “As an Oregonian, I know there are long-standing issues related to species recovery and habitat loss, and the effects of climate change are exacerbating those issues. My goal is to create new partnerships and strategies for climate resilience in habitats and populations.”

As a lifelong conservationist, it is no surprise that even when Lee isn’t on the clock, she is outdoors. Avid gardeners, Lee and her

husband like to spend their free time cultivating the many fruit trees in their backyard orchard, riding bikes, and going on adventures with her 1-year-old German shorthaired pointer, Archie. □



Lisa Ellis has been named our Idaho state supervisor. With over 20 years in conservation, Ellis has

worked for the Service at the field, regional, and national levels.

“We are lucky to have such an outstanding conservation leader join our team. This is a big job and I know she will bring creativity and excellence to support the team at the Idaho Fish and Wildlife Office,” says Kate Norman, Assistant Regional Director for Ecological Services in our Pacific Region.

In January, Ellis celebrated both her 15-year anniversary with the Service and her new position in the Pacific Region. She most recently served as the branch chief of recovery and conservation in planning in the Service’s Headquarters. In that role, Ellis oversaw recovery and habitat conservation planning under the Endangered Species Act and facilitated partnerships with the Department of Defense. Ellis has an impressive record of experience in natural resource management at every level of the Service. Prior to her role in Headquarters, she served in our Atlanta Regional Office »

Continued from previous page.

as the deputy division chief of restoration and recovery, and as wildlife biologist in both our Sacramento Regional Office and Sacramento Field Office.

A Wisconsin native, Ellis received her Bachelor's of Science in zoology and conservation biology from the University of Wisconsin, and her Master's of Science in biology from Illinois State University. Before starting her career with the Service, Ellis worked for the Arizona Game and Fish Department as the state coordinator for the southwestern willow flycatcher and at the University of Arizona as a researcher working with burrowing owls.

"It is no coincidence that my career path began with bird biology," says Ellis. "Both of my parents were science teachers and many of my happiest childhood memories were outdoors learning about the natural world – especially lessons from my dad about birds!"

Ellis' earliest memories are of a sense of awe at the natural world during a family vacation to Yellowstone to see Old Faithful, and she says she's looking forward to "getting back out West." While she is eager to explore the many hiking and camping opportunities Idaho offers, she's most excited to do on-the-ground conservation with partners in the field.

"I can't wait to really get to know Idaho—the place, the people, the wildlife—and to strengthen our conservation mission through partnership for future generations," she says.

Mountain-Prairie Region



Laura Jenkins has been named the Assistant Regional Director for the Office of Communi-

cations in our Mountain-Prairie Region, headquartered in Colorado. Jenkins joins us from the U.S. Environmental Protection Agency Region 8 (Denver) where she served as a media officer in the Office of the Regional Administrator. She also served as the acting Region 8 chief of staff and the lead region coordinator for the Office of the EPA Administrator and the Office of International and Tribal Affairs, serving as a liaison between EPA's 10 regional offices and their national counterparts in EPA Headquarters.

Jenkins came to EPA Region 8 from the EPA Office of Water in Washington, DC, where she served as the team lead for outreach and communications. She was also instrumental in launching and coordinating the Water Government Coordinating Council and the Water Sector Coordinating Council, which brought government agencies and private sector organizations together to advance security within the water sector. Previously, Jenkins served as the principal policy adviser in the EPA Administrator's Office of Homeland Security, acting as lead policy analyst on food and agriculture and overseeing components of EPA's National Security Information program.

Jenkins and her husband, John, have four adult children who joined the family from Kazakhstan and two teenage sons who joined their family through foster care. She's a strong foster care and adoption advocate, and was honored with a congressional medal by the Congressional Coalition on Adoption for her work finding families for older orphaned and abandoned children. She is also a recipient of EPA's Unsung Heroes award for her adoption advocacy. □

Alaska Region



Tobi Slaughter has taken over as the Assistant Regional Director for the Office of

Communications in the Alaska Region.

Slaughter has close to 25 years of federal service and previously worked in the U.S. General Services Administration Headquarters in Washington, DC, where she specialized in a broad range of communications and outreach that supported and informed the development and implementation of agencywide policies and initiatives.

Her last role at GSA was deputy director of outreach within the Technology Transformation Service. Prior to that she served as a performance improvement specialist with GSA's Public Building Service, where she focused on collaborative communications and employee

engagement. However, the bulk of her 15 years at GSA were spent with the Office of Strategic Communication where Slaughter was a jack-of-all-trades, including: speechwriter, speech coach, lead press officer, agency spokesperson, client communication lead, audiovisual production specialist, official agency photographer, and liaison to the Office of Congressional and Intergovernmental Affairs.

In addition to an extensive knowledge of public affairs, she also has experience in broadcast operations, social media strategies, graphic design and the use of crowdsourcing and collaboration tools. She has been an adviser to GSA's SES cadre and was entrusted with international collaboration, community outreach, change management, crisis communications strategy, agency-wide training formulation, team building, and the revitalization of a key Diversity, Equity, Inclusion, and Accessibility Affinity Group.

Before GSA, Slaughter spent about a decade with the Department of Defense as a public affairs officer, Army staff writer, photojournalist, assistant editor, and worked in the division of Host Nation Relations in Japan. Some of that time was spent on active duty in the Army as a multimedia specialist, newspaper stringer, and Armed Forces network broadcaster.

Outside of work, Slaughter has been recognized for her efforts in the youth mentoring space. Slaughter is a proud Native American with two adult children, four grandchildren, a husband, two Yorkie fur babies, and two aquatic turtles. □

honors

Headquarters



New Mexico State University's College of Agriculture, Consumer, and Environmental Sciences named **Craig Springer** (seen with family at New Mexico State University) a 2022 Outstanding Alum of the Year. The event took place during homecoming in October, an annual affair that recognizes the work of former students and their contributions to the college and community. Springer earned a B.S. in fisheries science from New Mexico State in 1991.

Over the span of three decades, his byline has appeared on nearly 450 stories in 170 titles, in genres from airlines to agriculture on the subjects of conservation, nature, hunting, fishing, and history. Quick Reference Publishing produced his popular sport fish guides, 31 titles covering nearly the entire United States. The self-described "verbivore" has co-authored two books and most recently contributed to and edited the award-winning *America's Bountiful Waters: 150 Years of Fisheries Conservation and the U.S. Fish & Wildlife Service*. In 2022, Springer also received the USFWS History Award, which

recognizes significant contributions made to the preservation of the history of the Service. The 29-year veteran fish biologist works in the Wildlife and Sport Fish Restoration Program's Branch of Communications, Analysis, and Partnerships. Springer has contributed to *Fish & Wildlife News* since 1998. □

Servicewide



During a reception at the 19th Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in Panama City, Panama, Special Agents **Paul Montuori** and **Ryan Bessey** with the Service's Office of Law Enforcement and senior trial attorney Ryan Connors with the Department of Justice were each awarded a Clark R. Bavin Wildlife Law Enforcement Award, presented annually to courageous individuals who have gone beyond the call of duty in their commitment to combating wildlife crime. (Seen, Service Director Martha Williams, center, accepted the award on behalf of Montuori. Senior wildlife inspectors Rhyann Tompkins and Jennifer Irving accepted on behalf of Bessey and Connors.)

The award is presented by the Animal Welfare Institute, in coordination with the Species Survival Network.

Bessey and Connors were nominated for a Clark R. Bavin Award as a team by the Collaborative to Combat the Illegal Trade in Turtles—a multi-agency partnership based in the United States—for their combined efforts to dismantle a North American turtle smuggling operation. The investigation, Operation Common Denominator, resulted in the arrest and successful prosecution of U.S. and Chinese nationals who trafficked thousands of CITES-listed turtle species, resulting in prison time and substantial fines.

In addition to their dedication to bringing turtle traffickers to justice, Bessey and Connors have demonstrated a commitment to sharing knowledge with other law enforcement officials through presentations, workshops, and trainings to help increase the successful investigation and prosecution of those who exploit vulnerable wildlife for personal gain. Their ongoing collaboration demonstrates how teamwork is essential in combatting wildlife crime.

Montuori was recognized with a Clark R. Bavin Award for a diversity of successful wildlife criminal investigations throughout his career. His efforts to combat wildlife crime have led to the arrest and successful prosecutions of individuals and organizations engaged in the illicit trafficking of orangutans, elephants, pangolins, hornbills, reptiles, scorpions, tarantulas, sharks, and other wildlife parts and products protected by CITES and the Endangered Species Act.

Montuori has also collaborated with defense attorneys, prosecutors, and members of

academia to promote opportunities for offenders to repair the harm caused by their actions, which can have a positive impact on affected communities and offenders. He goes above and beyond by fostering new conservation partnerships within his community as well.

The award was named in honor of the Clark R. Bavin, a pioneer in wildlife law enforcement for the Service. His far-sightedness and willingness to use novel yet complex sting operations to catch wildlife smugglers was ahead of its time and a model for today's wildlife crime fighters. □

Pacific Region

Ann Gannam, the regional fish nutritionist at Abernathy Fish Technology Center, is the first woman inducted into the Northwest Fish Culture Conference Hall of Fame in its over 70-year-long history. Also inducted in 2022: now-retired Service member and bio-science technician **Chuck Hamstreet** and **Doug Olson**, a retired fish biologist.



For more than three decades, **Gannam** (above, seen receiving the Hall of Fame honor from the Service's Roger Root) has led fish nutrition research studies and our Fish Feed Quality Control »

Continued from previous page.

Program, the only program of its kind, which monitors the quality of fish feed used at national fish hatcheries. Gannam works closely with hatchery managers and fish health professionals from the Service, Tribes, states, and other federal agencies to ensure that quality fish are reared and released from hatcheries. Her work has been instrumental in identifying feed quality problems in real time, getting to resolution with feed manufacturers, avoiding potentially catastrophic losses in hatchery production programs, and providing an incalculable financial savings.

"It's been my great privilege to have known and worked with Dr. Gannam since 1998," says Judy Gordon, the Assistant Regional Director for the Fish and Aquatic Conservation Program in the Pacific Region. "Her quiet determination to use the latest science to provide the best nutrition for the species we rear is not only a huge credit to her strong work ethic but also makes her one of the unsung heroes of the Service, the Pacific Region, and the Fish and Aquatic Conservation Program."

In addition to her work managing the fish feed program, Gannam is a distinguished researcher. She has developed diets and rearing protocols for both newly captive and Endangered Species Act-protected aquatic species such as Klamath suckers, Pacific lamprey, bloaters, and Western pearlshell mussels.

"Dr. Gannam is an exemplary scientist whose knowledge and experience are highly valued and often sought by a wide range of managers, conservationists, and experts," says Roger Root, acting center director at Abernathy Fish Technology Center. "Her expertise in nutrition and readiness to collaborate with varied partners have made her a trusted resource for fish culturists and hatchery managers for over 30 years. We are extremely proud she is being recognized for her many contributions to fish culture in the Pacific Northwest and beyond."



Hamstreet (above, seen on the Entiat River with Chinook salmon carcasses collected for sampling) served as both a fish culturist and technician assisting in the raising of millions of fish and implementing countless hatchery evaluation projects over his 42 years of public service.

Beginning in 1975 at the Olympia Fisheries Resource Office, Hamstreet took on numerous temporary appointments that gained him a broad suite of valuable technical skills. In 1979, he became a permanent employee who supervised tagging operations around the region. He led surveys, skippered various watercraft in both freshwater and marine settings, and

coordinated hatchery sampling at the Olympic Peninsula hatcheries. Hamstreet's work was heavily focused toward on-the-ground Tribal support and assistance, which often led to working in novel and remote locations with a variety of staff and agencies. Hamstreet's vast technical toolkit and his ability to get along with others and identify where he could have the greatest impact in a team furthered his reputation as the right person for difficult assignments.

Hamstreet continued his career journey to Leavenworth, Washington, first at Leavenworth National Fish Hatchery, then at the Mid-Columbia Fish and Wildlife Conservation Office as lead technician for all office programs from 1994 until his retirement in 2018. He was recognized as the Service's Fish Culturist of the Year in 1990 for his many contributions to improving culture conditions at the hatchery.

"Chuck's work represents the foundational core of fisheries and the very best of the vast majority of hardworking staff that do most of the heavy lifting that keep our hatcheries operating and fisheries science moving forward. Chuck held to the same values throughout his entire career, specifically that public service and the public's interest is paramount, kindness and respect for others is not optional but expected, that results matter, and that perseverance and hard work is rewarded. When life throws hurdles your way, you just put your head down and keep moving, and in Chuck's own words: 'Do it for the cause, not the applause,'" say Bill Gale, project leader

at the Mid-Columbia Fish and Wildlife Conservation Office, and Matt Cooper, fish biologist at Leavenworth National Fish Hatchery and Hamstreet's former supervisor.



Olson (above, seen with Dr. Ann Gannam at the Northwest Fish Culture Conference Hall of Fame induction) devoted over 30 years of his career to assisting and assessing hatchery programs in the Columbia River Basin, working for the Confederated Tribes of the Umatilla Indian Reservation and then for the Service.

Throughout his career, Olson was a strong advocate for hatchery programs, acknowledging their shortcomings but recognizing the benefits that well-managed hatchery programs provide toward conservation, harvest, and Tribal Trust goals. Olson was dedicated to working closely with hatchery, Tribal, and our Fish Health staff at Warm Springs National Fish Hatchery in central Oregon to develop and maintain a hatchery program that provided harvest benefits and protected wild fish populations on reservation waters. He also helped develop robust hatchery-evaluation programs at the five Columbia River Gorge National Fish Hatcheries. »

Continued from previous page.

The work by Olson, his team, and staff from the hatcheries resulted in multiple peer-reviewed publications, disseminating information from the applied hatchery science studies to programs throughout the region and country. Olson also took on a variety of additional roles that contributed to the advancement of hatchery programs in the Pacific Northwest.

“We are delighted that Doug Olson is receiving this well-deserved honor. Doug was a valuable member of the Columbia River Fish and Wildlife Conservation Office for three decades,” say Janine Castro, project leader, and Christina Wang, deputy project leader at the Columbia River Fish and Wildlife Conservation Office in Vancouver, Washington. “His significant contributions to the hatchery programs and the enduring relationships he formed with our Tribal partners in the Columbia Basin will persist well into the future. Doug embodied his final words to his colleagues on his retirement, ‘Be smart, be analytical, be thoughtful, but manage from the heart.’ That he did!” □

in memoriam

Pacific Region



Those who work for the National Wildlife Refuge System are caretakers of America’s nature—the wild places and species that have defined our nation since its inception. **Bill Barrett** was one of those caretakers. For six years, he helped protect and conserve the special places and wildlife of Conboy National Wildlife Refuge near Glenwood in central Washington. Barrett died this fall, and the impact he made at the refuge and those he worked with will always be remembered.

“Bill really enjoyed his job, and his dedication showed through on a daily basis. Although Bill completed many important habitat projects in the field, his legacy with us is just as much about who he was as a person,” says refuge manager Trevor Sheffels. “I will always remember Bill as a kind-hearted man, a hard worker, and someone who was first to step in without complaint when someone else needed a hand.”

Depending on the day, Barrett could be found using his expertise to help wildlife in many ways: mowing wetlands to open habitat for migrating waterfowl and the endangered Oregon spotted frog, using an excavator to clean plant-choked ditches, and removing encroaching pine from greater sandhill crane breeding areas. It takes a team of people to care for a national wildlife refuge—a refuge manager, biologists, park rangers, and maintenance workers. Barrett was the maintenance worker and heavy equipment operator at Conboy Lake.

A haven for rare plants, the refuge also supports a rich and diverse community of wildlife. The refuge provides a safe home for thriving populations of migrating waterfowl, songbirds, elk, and rare species like the Oregon spotted frog and the only breeding population of greater Sandhill cranes in Washington.

“Bill was absolutely crucial in helping the refuge to meet its mission,” says Sheffels. Barrett was responsible for implementing many of the annual work plan activities like prepping fire lines for prescribed fire. At the refuge, water plays a critical role in making sure wildlife have the habitat and food they need. Barrett maintained water control structures so that water could be efficiently delivered and retained in priority wetland management units.

“Bill was the person behind the scenes who made sure everyone else could do their jobs. When windstorms knocked down trees over access roads, Bill was quickly on-site to get the road opened back up,” says Sheffels. “When an overnight snow storm hit, he was out at first light the next morning plowing the entry road to make sure staff and visitors could get into the refuge.”

The passion and dedication of Service employees makes a difference for wildlife. It also makes a difference for those they work with and the communities they serve.

Bill Barrett will be greatly missed by his colleagues. □

parting shot



Malacologists in Training

Biologist Andy Ford and field supervisor Dan Elbert of the Tennessee Ecological Services Field Office visited a local school in December with a show and tell about freshwater mussels' life cycles, complementing the kids' STEM curriculum. Students learned about ecosystem services and the unrivaled diversity of freshwater mussels in Tennessee. Ford (pictured) brought shells of many protected species to showcase their looks and weird names, challenged students to identify them with the aid of posters, and discussed their cultural importance in the button and pearl industries.

(PHOTO BY USFWS)

Fish & Wildlife News

Editor: Matthew Trott
Assistant Editor: Jennifer Deschanel
Art director: Jane Pellicciotto, Allegro Design

Submit articles and photographs to:

U.S. Fish and Wildlife Service
OC-Division of Marketing Communications
MS: OC
5275 Leesburg Pike
Falls Church, VA 22041-3803
703/358-2512
Fax: 703/358 1930
E-mail: matthew_trott@fws.gov

Submission deadline:

Spring 2023: by April 10