

SPECIAL FOCUS WILDLIFER WELLNESS

SCIENCE AT
THE TABLE

BEYOND
BURNOUT

FINDING
YOUR LIGHT

The Wildlife Professional

WINTER 2026

CULTURAL CARRYING CAPACITY

How cat tolerance
puts wildlife at risk



THE
WILDLIFE
SOCIETY

A photograph of a deer with large, dark antlers looking out from a wooden structure. The deer is wearing a white Lotek collar. In the foreground, there is a brown leather strap and a white Lotek device. The background is a blurred natural setting.

Some look for food. Others look for Lotek.

When a collar fits this well, even
the locals come back for a second look.

Photo not AI generated

Lotek
advancing wildlife science

Find out what they're looking for



The Wildlife Professional

WINTER 2026 / VOL. 20 / NO. 1

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The Wildlife Professional

The Wildlife Professional is the flagship publication of The Wildlife Society and a benefit of membership. The magazine presents timely research, news and analysis of trends in the wildlife profession.

ABOUT

Founded in 1936, The Wildlife Society is an international network of over 11,000 leaders in wildlife science, management and conservation who are dedicated to excellence in wildlife stewardship. Our mission is to empower wildlife professionals to advance conservation through science, community and professional excellence. For more information, visit us at wildlife.org.

BECOME A MEMBER

Membership is open to wildlife professionals, students and anyone who is interested in wildlife science, management and conservation. To learn about the benefits of TWS membership or to join, go to wildlife.org/join.

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All members are encouraged to submit ideas for articles to *The Wildlife Professional*. For more information, go to wildlife.org/publications.

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A domestic cat in Thailand with a common butterfly lizard (*Leiolepis belliana*) in its mouth.

Wich'yanan (Jay) Limparungpatthanakij

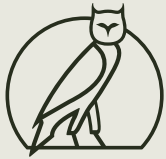
ERRATUM

In the September/October issue of *The Wildlife Professional*, we mistakenly identified an eastern gray squirrel (*Sciurus carolinensis*) as a western gray squirrel (*Sciurus griseus*) in the article "Wild Animal Welfare."

In the November/December issue, we incorrectly referred to a structure in Colorado as the largest wildlife overpass in North America when it is the largest wildlife overpass east of the Rocky Mountains, not the largest on the continent. We regret these errors.

The Wildlife Professional is published four times in print each year and mailed to your door. Members-only TWP digital features and special issues are published twice annually on our news feed at wildlife.org.

You can view each print issue of *The Wildlife Professional* dating back to our first magazine in 2007 by logging in to your member portal at wildlife.org and navigating to "Publications."



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A MESSAGE FROM OUR CEO

Change is constant—and imminent—in most aspects of our lives and that of the animals, habitats and ecosystems we study, manage and work to conserve. The same holds true for organizations like The Wildlife Society. As part of implementing our new strategic plan,

TWS staff and Council are assessing all angles of the organization.

We are looking for opportunities to simplify processes, launch new initiatives, deliver member benefits more efficiently and effectively and refresh our look, branding and delivery of science and

professional expertise to both members and broader audiences. You've now noticed our new look for *The Wildlife Professional*, but we are also in the process of revising and improving our website. The website will soon have a contemporary look and feel coupled with extraordinary search capabilities to help any visitor find the resources they need. We recently launched our new "Our Wild Lives" podcast, and after 90 years, we decided to give our logo a fresh but not so new look as well. In fact, TWS has long used the owl throughout our history. Our use of the owl from the current logo was a conscious decision that honors our past while generating a more contemporary and simplified look for the organization moving forward. Our legacy logo won't be phased out entirely and will still be used on TWS journals and books. We hope you enjoy these new changes at TWS as we strive to deliver our mission and strategic goals to build community, support our professionals, and exercise our external influence. —Ed Arnett ■



A NEW YEAR USHERS IN A NEW LOOK

Owls symbolize wisdom, transformation and mystery. The bird has also been a part of The Wildlife Society's history from when we first developed a logo. Zoom in and you'll find a hieroglyphic symbol of this iconic raptor.

Bringing the traditional into the new, TWS has created an owl logo you'll notice on the corner of our redesigned cover of *The Wildlife Professional*.

The logo is just one of the big changes TWS is adopting this year. *The Wildlife Professional* has undergone a rebranding that pulls together the same great conservation and management content with a modern, sleek design. You'll now receive the magazine four times each year as the seasons change, rather than the six times a year you may be used to. But you won't be losing out on quality content. We will be posting member-exclusive cover stories and other content behind a member paywall.

Those stories will be showcased on a brand-new, revamped website. Wildlife.org will soon feature our new color palette and offer a more accessible layout and improved navigation, making it easier than ever to connect with TWS. We hope you enjoy this refresh.

The well-being of our members—and wildlifers in general—is paramount to TWS. That's why our special focus for this issue prioritizes the mental health of wildlife professionals in a field constantly dealing with crisis. Our cover story in this newly designed issue addresses a problem that involves people as much as wildlife—feral cats. Staff writer Olivia Milloway takes us into the challenge of managing an invasive species that the public often has a soft spot for.

We hope this issue has helpful content for you, wherever you are in your career. We are The Wildlife Society. We still have the same mission and vision. But we also have a new, exciting look.

As always, I welcome and encourage your feedback and input on *The Wildlife Professional*. ■



Dana Kobilinsky

Managing Editor

She | Her | Hers

dkobilinsky@wildlife.org

GLASS HALF-FULL CONSERVATION

In my teenage years, my father and I were driving on a rural road into town from the ranch where we lived when our pickup truck broke down. Without cell phones in those days, we began walking the 10 miles toward town, hoping to find someone who would be gracious enough to help us tow the truck to the local mechanic. It was a beautiful day and I was enjoying the walk through the countryside, occasionally commenting on the blue sky or wildflowers along the rural road. My father, naturally more distressed being the provider, turned toward me and asked somewhat curiously, "Are you not worried?"

I wasn't scared. My father was with me, and he had always managed to see the family through sticky situations in the past with resourcefulness, resiliency, creativity, hope and agency. Call it a glass-half-full personality, but I figured this, too, would turn out fine.

That same perspective is important when it comes to wildlife conservation. Conservation has often been called a "crisis discipline," where scientists are constantly addressing urgent issues like biodiversity loss, habitat degradation, environmental pollution and marine decimation, for example. Although these challenges are real and merit serious contemplation, conservation psychologists are realizing that an unintended consequence of such a negative focus on environmental challenges is public disengagement. In contrast, when optimism is grounded in reality and coupled with personal or group agency, the public is inspired to action. Consequently, there has been a recent call for optimistic conservation messaging and telling of our conservation success.

A recent success in the history of The Wildlife Society is the long-awaited formation of a Mexico Chapter of TWS. This achievement will have a lasting effect on the conservation of natural resources and development of future wildlife professionals in North America. Mexico is a biodiversity hot spot, lying at the merging of temperate and tropical climates and the Nearctic and Neotropical zoogeographic regions. It ranks fifth in biodiversity among the world's 196 nations. Mexico also possesses high cultural diversity, with more than 290 spoken native

and Indigenous languages. Despite such rich natural and cultural diversity, wildlife conservation in Mexico has not enjoyed the same historical progression as other parts of North America. There is a need for more trained professionals, professional development and networking opportunities for wildlife students, faculty and biologists in Mexico. The recent establishment of the Mexico Chapter of TWS will be a tremendous platform to provide such key training and critical opportunities not only for Mexican wildlife biologists but also for other North American professionals interested in Mexican flora and fauna.

The formation of a Mexico Chapter of TWS has been a goal of the society for more than 40 years. Thanks to the dedication and commitment of many, the goal became a reality in 2025. Nine members of the Mexico Chapter of TWS recently attended the 32nd Annual Conference of TWS in Edmonton, Alberta. The chapter is organizing the third Annual Conference of Wildlife Conservation and Management in Mexico, scheduled for September 23-25, 2026.

The Mexico Chapter of TWS is just one of many reasons to look forward to the future with conservation optimism and celebrate our successes. I encourage you to become involved with our newest chapter and consider assisting, whether it is through lending your expertise in a conference workshop, becoming an engaged member of the Latin American and Caribbean Working Group, or simply sending a supportive and encouraging e-mail to the chapter officers.

Until next time. *Buen camino.* ■



Fidel Hernández, PhD, is a professor with the Caesar Kleberg Wildlife Research Institute and the Department of Range and Wildlife Management at Texas A&M University-Kingsville. He is a TWS Fellow and current president of The Wildlife Society. He previously served on TWS Council as the Southwest Section representative, as president of the Southwest Section, and as president of the Texas Chapter.

▼ The eastern massasauga is Michigan's only rattlesnake.

Eric Hileman



Inbreeding threatens Michigan rattlesnake survival

In southwestern Michigan, rattlesnakes are sleeping with their cousins—and it may put the species at risk.

"This was a surprise and made us rethink our assessments of the populations," said lead author Meaghan Clark, a post-doctoral researcher at the University of California, Santa Cruz.

In a [study](#) published recently in the *Proceedings of the National Academy of Sciences*, Clark and her colleagues analyzed the genomes of about 1,000 federally threatened eastern massasauga rattlesnakes (*Sistrurus catenatus*) cap-

tured during long-term mark-recapture surveys. They created a family tree for each of two genetically isolated populations and determined that snakes with higher levels of inbreeding are less likely to survive and reproduce.

High levels of inbreeding are likely due to the species' extremely limited home range. Magnifying the effects of these behaviors is habitat loss—the wetlands and fens massasaugas need to survive are few and far between. "They have been extraordinarily impacted by anthropogenic changes," Clark said.

Avalanches could lead to unsustainable mountain goat deaths

Despite evolving in snowy, rugged conditions, many mountain goats fall victim to avalanches, and increasingly unpredictable weather may be worsening the problem.

"Sometimes, these avalanche events can be so significant that it can take more than a generation for a population to recover," said TWS member Kevin White, a researcher at the University of Alaska Southeast and the University of Victoria.

In a [study](#) published recently in *Global Change Biology*, White led a team that examined the impact of avalanches on four goat populations in southeastern Alaska. Out of 421 collared mountain goats (*Oreamnos americanus*) they tracked from 2005 to 2022, 93 died from avalanches—more than a third of the total 258 deaths that the team investigated.

Years with more variable weather conditions often had more avalanches, leading to more deaths. One year, 22% of the total number of tracked animals died across the four sites, while in many other years, more than 15% died.

Mountain goat populations usually only grow by 1–4% annually, and it could take a population 11 years, or 1.5 mountain goat generations, to recover.

White said that if climate change continues to cause more variable conditions, avalanche-related deaths could increase in some areas.



▲ Mountain goats shelter beneath the fracture line of a mid-winter glide avalanche in Klukwan, Alaska.

Kevin White



▲ A healthy beaver pond along the Salinas River before the catastrophic floods of 2023 that destroyed all the dams in the area.

Brittany App/San Luis Obispo Beaver Brigade

Beaver dams help flood recovery

In the Salinas River watershed on California's Central Coast, beaver dams soften the blow of whiplash weather and make riverside areas more resilient.

"Beavers convey a multitude of ecosystem benefits as the weather becomes not only hotter but also more variable," said Seet Sistla, an ecologist at California Polytechnic State University in San Luis Obispo.

In a [study](#) published in the *Journal of Wildlife Management*, Sistla and graduate student Sophie Aubry tracked the recovery of areas with and without beaver (*Castor canadensis*) dams along the Salinas River via aerial imaging before and after a whiplash weather event—when one weather extreme is followed by the other—in 2022. Climate change has exacerbated whiplash weather, which can be damaging to both human infrastructure and the environment.

The researchers found that post-flooding, areas with beaver dams greened up faster compared to areas without beaver dams. These areas also stayed greener longer during droughts, providing refuge for wildlife in an otherwise desiccated landscape.

Sistla thinks beaver dams help for two reasons. They trap sediment during flooding events, allowing plants to sprout more quickly. Also, when foraging, beavers prune back tree branches to the stump. Though covered in layers of mud from the floods, these stumps still sprout back the next spring.

Beaver dams also provide benefits for downstream water treatment facilities and agriculture, and streams are critical habitat for many species. "Beavers are having a renaissance right now," she said. "People are starting to recognize their many benefits."

Rail species are divided on their taste for invasive ants

Small ants—even invasive ones—can play a big role in marsh bird diet.

In a recent [study](#) published in *Wildlife Society Bulletin*, researchers used fecal DNA metabarcoding to study the diet of yellow rails (*Coturnicops noveboracensis*), federally threatened eastern black rails (*Laterallus jamaicensis jamaicensis*) and sora (*Porzana carolina*) at two national wildlife refuges in Texas and North Carolina.

They found that arthropods dominated the diets and identified a total of five ant species in black and yellow rail feces. Yellow rails eat invasive red imported fire ants (*Solenopsis invicta*), a rail chick predator.



▼ A black rail holds an amphipod, an important food source identified in the study.

Chris Butler

But these invasives might be causing a problem for black rails, since they suppress other native species populations. "Their decline may not be driven by habitat loss alone, but also by shifting prey availability due to environmental change and invasive species," said lead author Chris Butler, a professor at Texas A&M University.

Wildlife underpasses require upkeep

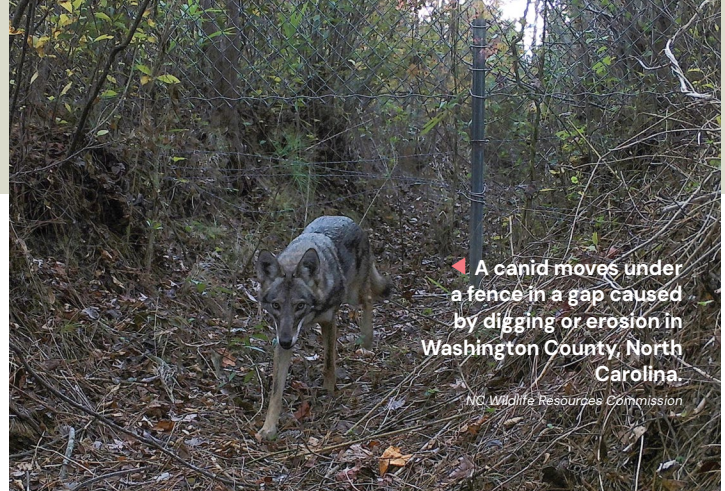
Underpasses can keep animals and drivers safe, but their features have to be maintained or wildlife won't use them.

The North Carolina Department of Transportation (NCDOT) installed three large underpasses along Highway 64 in the state's northeast in 2005 after widening the road from two to four lanes in those areas.

Species like black bears (*Ursus americanus*) initially used the underpasses, but biologists suspected that their effectiveness for keeping wildlife off the road recently deteriorated.

Starting in 2019, TWS member Rachael Urbanek, a professor of environmental sciences at the University of North Carolina Wilmington, and her colleagues set up trail cameras at the underpasses and along fences that block wildlife from crossing these four-lane stretches of highway and funnel wildlife toward underpasses.

In a [study](#) published in *Wildlife Society Bulletin*, they found that only half the bears caught on cameras used the underpasses.



The other half used gaps in the fences caused by erosion. Some 73% of white-tailed deer (*Odocoileus virginianus*) used the passages, but canids—which include federally endangered red wolves (*Canis rufus*) in this area—more often used gaps in the fences to cross the four-lane highway.

Urbanek said part of the problem is that the gaps in the fences reflect a gap in regulations as NCDOT has no mechanism to pay for upkeep. The agency estimated that it would cost about \$1.7 million as a one-time fix for the fences.

"You have to keep up with these things to make sure they're still working," Urbanek said.

Turtle crossings needed

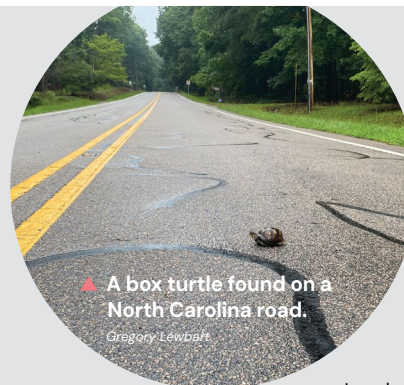
Turtle road deaths in North Carolina peak during breeding season, vary by species and cluster in hot spots.

Vehicle strikes are the leading cause of turtles admitted to the Turtle Rescue Team (TRT), a volunteer organization run by veterinary students at North Carolina State University's College of Veterinary Medicine that cares for injured turtles. As urbanization has increased, so has TRT's caseload, highlighting the need to understand when and where turtles are most at risk.

In a [study](#) published recently in the *Journal of Wildlife Management*, Gregory Lewbart, a coauthor of the study and founder of the TRT, and his colleagues

used collision data from the TRT to identify collision hot spots and factors linked to turtle mortality.

They found that eastern box turtles (*Terrapene carolina carolina*) were the most admitted species, and collisions peaked during breeding season in May and June. Researchers identified more collision hot spots for aquatic turtles than land turtles, highlighting how differences in life patterns influence interactions with road networks. One location overlapped for both, indicating a shared risk area that may require combined conservation



efforts. While road features didn't predict hot spots, the data revealed clear spatial and seasonal patterns.

Lewbart and his colleagues suggested using signs, fencing and wildlife crossings to reduce road strikes. They recommend year-round efforts for land turtles and seasonal efforts for aquatic species to reduce roadkill.

Lewbart emphasized the public's role in turtle conservation and boiled it down to driving advice. "Keep your eyes on the road, slow down and avoid turtles whenever possible," he said. ■

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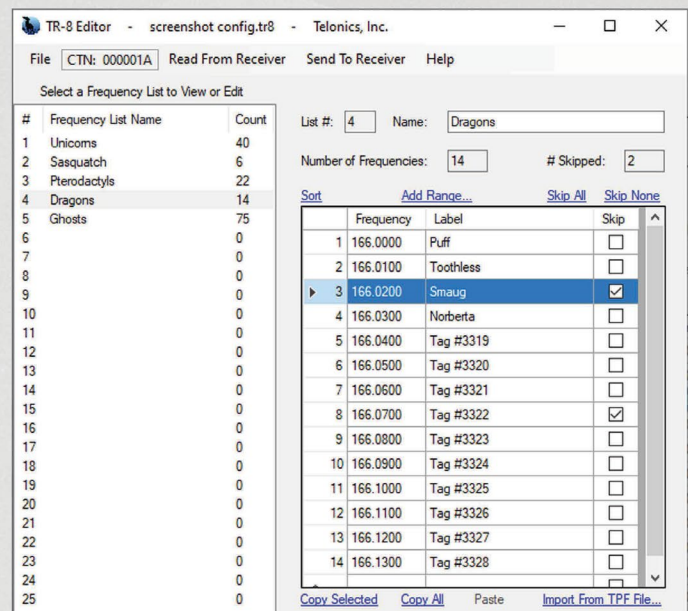
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WESTERN

Feds cancel planned rocket testing at Johnston Atoll

The federal government has pulled back on plans to create a rocket landing pad on Johnston Atoll, an island important for seabird nesting. “We are grateful that these birds will continue to have Johnston as a safe refuge to breed,” said Brad Keitt, oceans and islands director at American Bird Conservancy. Johnston Atoll is an unincorporated territory located about 1,400 miles southwest of Hawaii under the jurisdiction of the U.S. Air Force. While small, the atoll is home to seabird species, including the world’s largest colony of red-tailed tropicbirds (*Phaethon rubricauda*). The U.S. Air Force had announced its intention to prepare an environmental assessment for

rocket cargo testing and demonstration at Johnston in March 2025. However, after the American Bird Conservancy offered to work with SpaceX and the U.S. Air Force to find an alternate site for the rocket landing pads, the agency announced a suspension of its plans to develop Johnston Atoll in July 2025 via the Federal Register. “American Bird Conservancy is relieved to know that for the time being, Johnston Island is safe from the proposed idea of turning the National Wildlife Refuge into a rocket landing test site,” Keitt said. “Johnston, a small speck of land in a vast area of ocean, is one of the true bright spots for seabirds, where populations are actually increasing.”

CENTRAL MOUNTAINS & PLAINS

Wyoming moves to designate pronghorn migration corridor

The Wyoming Game and Fish Commission voted to recommend formal designation of the entire Sublette Antelope Migration Corridor. This follows Wyoming Gov. Mark Gordon’s 2020 Executive Order on Migration, the first of its kind in the country to protect ungulate migration corridors. Pronghorn (*Antilocapra americana*) in Wyoming follow a seasonal migration pattern in search of food, leaving high-elevation summer ranges to overwinter in sagebrush habitats farther south. Fences, roads and

developments can block critical migration routes and negatively affect the overall population. Angi Bruce, director of the Wyoming Game and Fish Depart-

ment, said the designation will “ensure any new developments that require a state permit on public lands are done in a way that maintains the functionality

of the corridor.” She clarified that the new designation will not affect hunting seasons or habitat management. The recommendation came after a public comment period where hunters, wildlife advocates and retired biologists came out in opposition to a recommendation by Wyoming Game and Fish Department that less of the corridor be officially designated under the executive order.



SOUTHEAST

Landowners receive cash to conserve Florida panthers

Government agencies have launched a new initiative that pays private landowners to help conserve habitat for Florida panthers. Considered federally endangered, Florida panthers (*Puma concolor coryi*) are only found in southern Florida, often in big tracts of public land like Everglades National Park. Surrounding private lands present obstacles to the range expansion of the big cats. The National Fish and Wildlife Foundation, U.S. Fish and Wildlife Service, Fish and Wildlife Foundation of Florida and the Florida Fish and Wildlife Conservation Commission have launched the Florida Panther Payment for Ecosystem Services Pilot Program that offers per-acre payments to landowners who maintain or improve habitat con-



► Landowners can earn bonus payments by hosting trail cameras on their property as part of the Cameras for Panther Conservation, a program to monitor Florida panthers.

Carli Segelson/Florida Fish and Wildlife Conservation Commission

ditions critical to panther survival and movement across the landscape. After a competitive review process, the program selected 15 properties totaling approximately 40,635 acres for enrollment. Landowners received a total of \$519,012 in the program's first year, with payments continuing annually over a three-year

period. Landowners can also earn bonus payments by hosting trail cameras on their property as part of a program to monitor panthers. "This is a model for how we can secure lasting solutions for both wildlife and communities," said Andrew Walker, president and CEO of the Fish and Wildlife Foundation of Florida.

INTERNATIONAL

TikTok boosts wildlife trafficking in Togo

In the West African country of Togo, social media platforms like TikTok are accelerating the trade of bushmeat. Traders are using the app as a virtual marketplace and are now able to advertise wild meat to much larger audiences than traditional means like urban markets or roadside stands. A new [study](#) published in *Nature Conservation* found that users viewed 80 TikTok videos posted between November 2022 and April 2024 advertising wild meat more than 1.8 million times. Videos included more than 3,500 animals from at least 27 species, with users leaving

comments asking for specific species that weren't shown, including big cats and primates. "Social media platforms are transforming the scale and visibility of the wild meat trade, including for threatened and endangered species like the white-bellied pangolin (*Phataginus tricuspis*)," said co-author Delagnon Assou. "We're not just looking at a conservation issue, but also at growing risks for public health, law enforcement and online regulation." The study's authors recommend that social media platforms like TikTok remove illegal wildlife trade content and collaborate with



▼ A screenshot from a TikTok advertising wild meat in Lomé, the capital city of Togo.

Courtesy of Delagnon Assou

experts to launch in-app awareness campaigns to educate users about the hazards of wildlife trafficking.

INDIGENOUS LANDS

Finding an elusive mouse on the Fort Apache Indian Reservation

The White Mountain Apache Tribe has found New Mexico meadow jumping mice on its ancestral lands in eastern Arizona. Mikayla Sanchez, a sensitive species technician with the Tribe's Game and Fish Department,

partnered with TWS member Carol Chambers, a Northern Arizona University research scientist, to locate the federally endangered subspecies on the Fort Apache Indian Reservation where the Tribe resides. New Mexico

meadow jumping mice (*Zapus hudsonius luteus*), which are only found in Arizona and New Mexico, are sensitive to habitat change and have a short active season, low population numbers and minimal historic survey data, making them hard to monitor. So, Chambers created a noninvasive track detection method to identify jumping mice. Using this method, where mice leave their species-specific prints behind on plates, Sanchez developed a protocol tailored to her reservation and its vast

range of potential habitats to document the animals and estimate population densities. Ongoing efforts to survey locations where New Mexico meadow jumping mice have been detected or may potentially be located are underway. "I believe that everything has meaning and can belong simply because it belongs. This goes for something as seemingly insignificant as a rock on the ground to as significant as the ancestral White Mountain Apache people on our homelands," Sanchez said. "Anything that has persisted here in the White Mountains has the right to be here, and we, as stewards of the land, have a duty to help preserve the plants, animals, people and culture for future generations."

This article was submitted by Mikayla Sanchez, Sensitive Species Technician, White Mountain Apache Tribe, Game and Fish Department.



SOUTHWEST

Utah and Arizona welcome five new condors

Wildlife managers have added five new members to a struggling California condor population, providing some insurance against fires and an outbreak of highly pathogenic avian influenza. The disease killed 21 California condors (*Gymnogyps californianus*) in the Arizona-Utah flock in 2023, affecting eight breeding pairs. Wildlife managers then released 24 new condors into the population in 2024. In July 2025, the White Sage Fire tore through part of Arizona, prompting the Peregrine Fund to temporarily move birds out of its Condor Release and Management Facility at Vermillion Cliffs as a precaution. This new

release, one of several that occur throughout the year, included four females and one male that zoo staff hatched and raised at the Oregon Zoo and the San Diego Zoo Safari Park. "Condors have a slow reproductive cycle, maturing around six years of age and laying one egg every other year," said Erin Brown, lead reduction program coordinator with the Arizona Game and Fish Department (AGFD). "Adding females to the population will help drive this population toward recovery." These recently released birds represent a return to normalcy as the facility is back in operation, the AGFD said in a press release.



NORTHWEST

Court declares livestock grazing in Montana grizzly habitat illegal

A judge ruled that cattle grazing in grizzly habitat near Yellowstone National Park in Montana is illegal. The U.S. Forest Service (USFS) and the U.S. Fish and Wildlife Service had previously argued that livestock grazing in six allotments in the Absaroka-Beartooth Mountains in south-central Montana would not jeopardize grizzly bears (*Ursus arctos horribilis*), a species considered [threatened](#) under the U.S. Endangered Species Act. But federal judge Donald Molloy decided that the USFS



► Expanded livestock grazing in Montana near Yellowstone National Park is likely to increase conflict between humans and grizzlies, a federal court found.

Larry Lamsa

didn't fully analyze the effects of allowing more grazing in expanded seasons. The U.S. District Court for the District of Montana decided in favor of Western Watersheds Project and other plaintiffs who argued that expanded grazing in these areas would result in an increase of conflict between grizzlies, livestock and humans. Molloy wrote in his decision that the environmental assessment (EA)

prepared by the federal agencies lacked an examination of any problems that expanded grazing might cause for grizzlies. "By omitting the potential negative impact on grizzly bears, the EA implies that there are no negative consequences of earlier [cattle] stocking dates," the decision said. The court ordered the USFS to prepare a new analysis of any potential negative effects of cattle grazing on this land.

NORTH CENTRAL

Wisconsin warns public about forever chemicals in game species

Wisconsin is warning the public after ducks and deer have tested positive for forever chemicals. Polyfluoroalkyl substances (PFAS), a group of chemicals used in a wide range of products, persist in the environment for decades. These chemicals have long-term health effects in humans, potentially leading to increased cholesterol levels, decreased immune response and negative impacts on pregnant people and fertility. Testing conducted on mallards (*Anas platyrhynchos*) and wood ducks (*Aix sponsa*) in Green Bay revealed elevated levels of PFAS. In response, the Wisconsin Department of Natural Resources (WDNR) and the Wisconsin Department of Health Services have advised the public against eating mallards from lower Green Bay. They also advised that people may consume mallards and wood ducks from

the northern area, but only infrequently. Similar findings have prompted new consumption guidelines for white-tailed deer (*Odocoileus virginianus*) harvested within five miles of Stella, a town in the northeast of the state, after tissue samples revealed

high PFAS levels. These findings are part of a larger trend across the country and world, which are grappling with how to deal with this emerging pollutant. The WDNR urges hunters [to stay informed](#) and follow updated consumption advisories.



► Mallards fly near the Spring Trail Duck Pond in Madison, Wisconsin.

Richard Hurd

State of Wildlife

NORTHEAST

Largest algal bloom in 40 years strikes Hudson River

Late summer heat and still conditions caused an unusually large algal bloom in the Hudson River. In late August, staff at the New York State Department of Environmental Conservation (NYSDEC) noticed a large bloom of cyanobacteria, a micro-organism that often turns the water green, blue-green or brownish-green, had formed within the Hudson River. Cyanobacteria normally occur in water bodies in low amounts, but certain environmental conditions like heat or stagnant water can trigger larger blooms that may impact human and wildlife health. "Harmful algal blooms can

cause health effects in people and animals when water with blooms is touched or swallowed or when airborne droplets are inhaled," NYSDEC said in a statement. Algae cells can also stick to animal fur and become ingested when the animal cleans itself. While scientists are still researching the direct impact of harmful algal blooms on fish, NYSDEC said that excess algae of any kind can deplete the amount of

oxygen in the water and impact the health of aquatic species. Certain factors, like warmer temperatures, drought and runoff from agriculture and wastewater treatment plants, may trigger harmful algal blooms or make them worse. "In a watershed as large as that of the Hudson River, it is difficult to identify a specific source of nutrients driving harmful algal blooms," the NYSDEC said, noting that it's likely a mix of factors.



▲ A harmful algal bloom on Lake Erie in 2017.
NOAA Great Lakes Environmental
Research Laboratory

CANADA

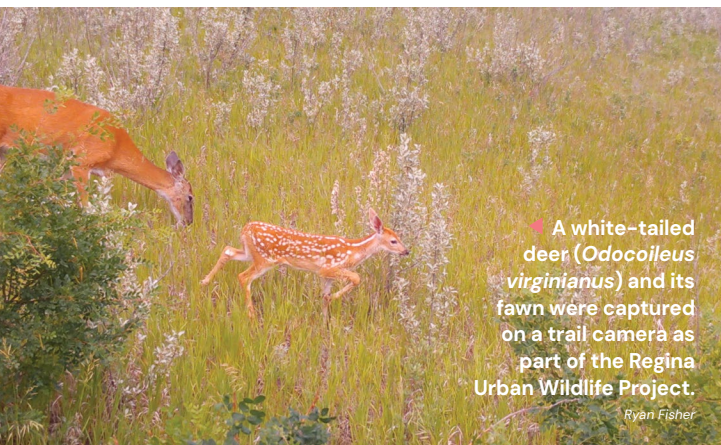
Regina urban wildlife can thrive in the right conditions

Wildlife often suffers as cities grow. But in Regina, Saskatchewan—a city situated on the northern Great Plains with an unusually high proportion of green space and home to one of North America's largest urban parks—the relationship between urbanization and biodiversity may buck

trends. The Regina Urban Wildlife Project, a collaboration between the Royal Saskatchewan Museum and the University of Regina, recently completed [baseline sampling](#) of wildlife from the city's urban core to surrounding rural areas. Staff monitored 28 sites year-round using trail cameras

and acoustic recorders to document 160 species, highlighting the important biodiversity hot spots in the city. Bird diversity was highest in areas with only around 20% of urban land, suggesting that areas with mixed use may support more bird species than either dense city centers or open countryside. "Tree

planting initiatives have also attracted tree-specialist species like fox squirrels (*Sciurus niger*), nuthatches and black-capped chickadees (*Parus atricapillus*) that likely would not have been present in the area if the city was not here," said Ryan Fisher, a curator of vertebrate zoology at the Royal Saskatchewan Museum who was part of the project. One surprising finding was the presence of free-roaming cats (*Felis catus*) at seven urban sites, including some far from residential areas, raising concerns about their possible impact on local wildlife. Those involved in the project will monitor changes in wildlife biodiversity every three to five years as Regina's urban footprint continues to develop, providing insight into how biodiversity changes in response to urbanization.



▲ A white-tailed deer (*Odocoileus virginianus*) and its fawn were captured on a trail camera as part of the Regina Urban Wildlife Project.

Ryan Fisher

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FROM PLEISTOCENE TO PROFESSOR

Valorie Titus' passion for fieldwork and wildlife has translated to teaching expertise

One of Valorie Titus' most visceral experiences with wildlife was shocking—but not because she was electrofishing to survey species at the time. While wading through the Bronx River surveying snapping turtles and other species, she bumped into a firearm magazine. One of her students nearby saw it as well, wondering whether they'd find a gun nearby. Soon enough, they found a Glock that was later connected with a shooting in New York City.

"Urban ecology is amazing," said Titus, who confesses she had the local precinct

of the New York Police Department on speed dial during her ecological work on the Bronx River.

Despite her gritty urban work in the Bronx, Titus grew up in a small town in upstate New York near Binghamton, where she hunted and fished with her mother, uncle and stepfather. She spent lots of time at her uncle's cabin in the Catskills, where the television only had a single channel, so she went outdoors to catch tadpoles and small fish.

Titus was always drawn to animals. She carried field guides with her and wanted to be a paleontologist and a zoologist when she grew up. "My two loves as a child were dinosaurs and wolves," she said. Her sister was more into collecting dolls—"My dinosaurs would attack her Barbies."

By high school, she liked science and had a great biology teacher, but sports were the main driver of her choice in college. She attended Cazenovia College, a small private college in New York state that recently closed due to financial challenges. "I jokingly say I majored in athletics and minored in science," she said.

Nonetheless, she had great mentors in wildlife ecology and decided to pursue graduate school. She had begun to yearn for something a little less routine after interning at the Rosamond Gifford Zoo in nearby Syracuse as a keeper during her junior year at Cazenovia.

Titus enrolled in Murray State University to study paleontology and dove into fieldwork before classes even started. She went on a dig in Kansas, unearthing small mammal fossils from the early Pleistocene. The work was hot but fun. "It really felt like [we were] in the middle of nowhere," Titus said.

FROM THE DEAD TO THE LIVING

She quickly found out that she lacked a vital characteristic for paleontology—a strong stomach. Looking through microscopes at tiny pocket gopher and mice fossils for



♥ Valorie Titus holds a snapping turtle she rescued off the pavement during a road herpetological survey.

—Scott VanGiesen

hours on end gave her motion sickness. She had a heart-to-heart with her advisor and decided to switch her focus toward working with living creatures instead.

The only professor at Murray with an opening was in the herpetology department—a professor working with copperheads (*Agkistrodon contortrix*). “I was a little nervous,” she said, but she quickly became hooked. She may have even gotten a little too confident, routinely wearing sandals during night surveys along the roadside looking for snakes. But the only time she came close to getting bitten—by a dead snake in the middle of the road whose muscles still had some twitch—was the day she wore boots. The copperhead only hit a bit of the rubber.

For her graduate project, she looked at copperhead roadkill at Land Between the Lakes National Recreation Area in Kentucky. “They were less likely to cross the busy roads but more likely to get hit on the busy roads,” she said.

At Murray, Titus also joined The Wildlife Society’s student chapter. She loved the camaraderie and the great professors, as well as going to talks. While enrolled, Murray also hosted TWS’ Southeastern Student Conclave—an experience that would inspire her future involvement with TWS.

As graduation neared, Titus began to miss her northeastern home. She enrolled in Binghamton University for her PhD and worked with TWS member Tim Green on eastern tiger salamanders (*Ambystoma tigrinum*) on Long Island. The species, listed by the New York State Department of Environmental Conservation, didn’t have a management



◀ Titus holds a northern slimy salamander (*Plethodon glutinosus*) with her three-year-old daughter several years ago.

Scott VanGiesen

plan yet. To fill in some gaps for the state agency on Long Island, Green helped her access several thousand acres of protected land around Brookhaven National Laboratory—a Department of Energy facility on Long Island whose main focus is on physics projects—where the species is abundant.

Using Brookhaven as a base, Titus conducted radiotelemetry work on salamanders and had undergraduate interns working with her. “It was overall one of the best professional experiences I ever had,” she said.

While he was her supervisor, Green was also TWS’ New York Chapter president. Titus became more involved in the chapter, becoming the communication chair and the editor of the chapter’s newsletter. She also became more involved in the larger organization. At the time, TWS member John McDonald was putting together a field course and needed instructors. Titus volunteered to teach herpetology, and later hunter’s safety, quickly discovering that her true calling in wildlife was teaching. She loved



▲ Titus holds a De Kay's brown snake (*Storeria dekayi*) she discovered in Francis Marion National Forest in South Carolina.

Erika Schwoyer

mentoring students and giving them better opportunities than she had.

FINDING HER CALLING

While finishing her PhD, Titus took a job at the Bronx Zoo working in the herpetology department. She conducted surveys in the Bronx River, where she tracked species like common snapping turtles (*Chelydra serpentina*) and nonnative red-eared sliders (*Trachemys scripta elegans*), as well as fish. "The diversity of fish we found even in the Bronx River at that point was pretty cool," she said.

But her surveys also turned up dead dogs, homeless men urinating into the river and the one time, a gun. Despite her experience with the snake bite, Titus still made mistakes when it came to dressing safely for fieldwork, admitting she probably should have worn waders more often in the Bronx River.

When her two-year position at the Bronx Zoo ended, Titus spent a year in Montana with the Wildlife Conservation Society studying bison (*Bison bison*). She also participated in TWS' Leadership Institute in 2012. After finally defending her PhD in 2013, she then landed a teaching job at Green Mountain College, where she started a TWS student chapter. She'd enjoyed her experience at the Southeastern Student Conclave while at Murray so much that the fledgling chapter soon hosted the Northeast Student Conclave.

Like her undergraduate Cazenovia College, Green Mountain also soon closed. Titus found a job at Keystone College in Pennsylvania, where she started a TWS student chapter. However, the COVID-19 pandemic and "delusions of grandeur" made her move into an administrative position as program director of wildlife management at Hocking College in Ohio. While she said the program was excellent, she preferred teaching to administration, and in 2023 she landed a job teaching at Paul Smith's College in the Adirondacks in New York state.

She got right back to work with TWS, reviving the Northeast Student Conclave in 2025, which hadn't happened for six years. Meanwhile, she is mentoring four graduate students who are studying hunting culture, vernal pools and monitoring black bears

(*Ursus americanus*) and canids in the Adirondacks with trail cameras. "If my only contribution to conservation is the quality of students I put out into the real world, then it's a pretty damn good contribution," she said.

Erika Schwoyer has known Titus since she was an undergraduate at Keystone. "She was so passionate about getting us involved in The Wildlife Society and getting us to go to conferences," Schwoyer said. "Professionally, she's just involved in so many things, and that just inspired me to be also involved in a lot more things."

Schwoyer followed Titus to Paul Smith's to conduct her master's in natural resources. "[Titus] definitely is somebody that I look up to a lot," she said.

At 46, Titus' career is really just getting started. She has a youthful energy—on a field trip with her herpetology class in Francis Marion National Forest in South Carolina in 2024, she challenged her students to find a greater siren (*Siren lacertina*), a highly elusive amphibian rarely seen in the area. "If you catch one, I'm going to get a tattoo of it," she told them, never expecting it to happen. But one turned up in a turtle trap the class set up in a swamp. The only reason she hasn't gotten the tattoo yet is she was looking for a depiction she liked enough to get permanently done. She's since found one that she plans to get on her ankle—"bottom dwellers," she explained. ■



Joshua Rapp Learn
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Cultural Carrying Capacity

HOW CAT TOLERANCE PUTS WILDLIFE AT RISK

By Olivia Milloway

Cats are as ingrained in human society as farming. When people first settled down in agrarian communities in the Fertile Crescent around 12,000 years ago, their trash piles attracted rodents. In slinked the Near Eastern wildcat (*F. silvestris lybica*) to take advantage of the new resource. The cats that were most tolerant of humans stuck around, eventually becoming the domestic cat (*Felis catus*).



▲ A feral cat pauses while walking along a fence line in South Australia.

Antoni Camozzato

Millennia later in Ancient Egypt, cats were so sacred that when one died, the entire household shaved their eyebrows in mourning and mummified the cat's body for burial. Cats are also revered in Islam and considered ritually clean—the prophet Muhammed himself was said to be a great lover of felines.

high among felids. When hunting alone, a lion's success rate is only around 15%.

Besides being efficient predators, they are also vectors of disease. Their feces can spread a parasite that causes toxoplasmosis, which can be dangerous and even deadly to both humans and wildlife. The

An often-cited study calls feral cats “likely the single greatest source of anthropogenic mortality for U.S. birds and mammals.”

Assisted by human migration and colonization, free-roaming domestic cats now live on six continents and more than 5% of the world's islands. Some of these animals are truly feral and incapable of domestication, living so deep in the wilderness that they've never seen a human. Others are pets whose owners let them out to roam freely. Still others are somewhere in between, like “community cats,” which caretakers feed in groups that can grow into large and unwieldy feral cat colonies.

Globally, free-roaming domestic cats have contributed to the extinction of at least 63 species. In the continental U.S. alone, they [kill](#) an estimated 2.4 billion birds and 12.3 billion small mammals each year—and that's not accounting for the millions to hundreds of millions of amphibians and reptiles killed annually. Cats have a 70% hunting [success](#) rate in open areas, which is exceptionally

parasite, *Toxoplasma gondii*, can only mature within a feline's gut, so feral cats that have invaded islands with no native felids have brought the protozoan with them and spread it to native wildlife. Scientists have reported fatal toxoplasmosis infections in manatees (*Trichechus manatus manatus*) in Puerto Rico and Hawaiian monk seals (*Monachus schauinslandi*) and nēnē (*Branta sandvicensis*) in Hawai'i, all of which are federally protected.

But it's not just wildlife—the parasite also has sublethal effects on other species, including humans. While most people infected with the parasite don't show any signs, some do get flu-like symptoms. During pregnancy, cases can become more serious and cause miscarriage or birth defects.

Following decades of scientific consensus establishing their effects on native wildlife,

domestic cats have made their way onto the International Union for Conservation of Nature's global list of [100 worst invasive species](#). An often-cited [study](#) from the Smithsonian Conservation Biology Institute and U.S. Fish and Wildlife Service called feral cats “likely the single greatest source of anthropogenic mortality for U.S. birds and mammals.” Given that we also share a 10,000-year history of cultural entanglement with the species, control measures often conflict with societal values. This forces wildlife managers to work with the entire cat community—both feline and human—in their effort to find solutions to ecological problems.

CONTROVERSY IN CALIFORNIA

Just outside San Francisco, the East Bay Regional Parks District (EBRPD) is an urban oasis for a menagerie of protected species. Its 55 acres of shoreline are home to Ridgway's rails (*Rallus obsoletus obsoletus*), California least terns (*Sterna antillarum browni*), western snowy plovers (*Anarhynchus nivosus nivosus*), black rails (*Laterallus jamaicensis*) and salt marsh harvest mice (*Reithrodontomys raviventris*). Despite improvements to their marshy habitat, these ground-nesting species still face a major threat from free-roaming cats.

The EBRPD used to shoot nuisance feral cats within the wetlands. But in the fall of 2020, the program received international backlash and lawsuits from organizations, including [Alley Cat Allies](#), which led to a suspension of all lethal removal within the parks.

The EBRPD's updated policy includes a multipronged approach of public education and nonlethal removal, said TWS



▲ A feral cat with a California ground squirrel (*Otospermophilus beecheyi*) in its mouth at Robert W. Crown Memorial State Beach in Alameda, California.

East Bay Regional Parks District



▲ A cat trapped at Dr. Aurelia Reinhardt Redwood Regional Park in the hills east of Oakland, California.

Courtesy of East Bay Regional Parks District



◀ After being trapped at Redwood Regional Park, Oakland Animal Services placed the cat in a “working cat home” in the Bay Area.

Courtesy of East Bay Regional Parks District



◀ A pair of coyotes, which are some of the main predators of outdoor cats, trot down a trail in Carquinez Strait Regional Shoreline.

Tyus Williams

member and EBRPD wildlife biologist Natalie Reeder.

A major part of their strategy is stopping community members from feeding feral cat colonies within the park. Worried that it's a life-or-death situation for the felines, well-meaning feral cat colony "caretakers" leave out mounds of food for the animals. However, feeding a feral cat colony only supplements its population, increasing the pressure on surrounding wildlife. Cats are surplus hunters, meaning that even well-fed cats will kill native wildlife.

While it's illegal to feed feral cats on park land, wildlife biologist and TWS member Tammy Lim said the policy has historically been hard to enforce. When staff took a "law enforcement" approach, Lim said, people hid their feeding stations and found ways to avoid detection. But through the relationship the EBRPD built with Oakland Animal Services, it has started to rebuild community trust and shift public understanding around feeding cats.

The second prong of the EBRPD's approach is nonlethal removal. They've partnered with local animal shelters to trap and remove cats from the park—in the summer, that's mostly kittens who can successfully be socialized and adopted. Unadoptable animals go to working cat placements, where they are left free to roam in yards or industrial sites with the

goal of reducing pests. Still, there's long-standing [skepticism](#) on whether or not cats meaningfully control rodents or just push them into hiding. Through this partnership, they've removed 229 cats since 2021.

TNR TROUBLES

Those who oppose killing feral cats or otherwise taking them off the landscape point toward the "vacuum effect," an idea that because cats are territorial, removing them from an area creates a void where even more cats come in. However, well-fed cats, like those at cat colonies, aren't territorial and there is no scientific evidence supporting the vacuum effect phenomenon. Yet, this misconception still drives widespread public support for trap-neuter-return (TNR) policies, where feral cats are desexed, vaccinated and returned to the landscape.

While TNR may seem like a good means of population control, it rarely ever works in practice. Studies [show](#) that anywhere from 71% to 94% of cats need to be fixed in order for the population to decline, assuming that no new cats enter the population, which is rarely the case.

TNR also does little to prevent disease spread. While cats are vaccinated against diseases like rabies, boosters are required at least every three years. Feral or free-roaming cats are the most [common](#)

vectors of rabies in domestic animals, with [exposures](#) often happening at cat colonies. There are no vaccines for toxoplasmosis or the myriad other parasites and pathogens that the animals carry.

One of the biggest issues of TNR, said Tyus Williams, a doctoral candidate, science communicator and feral cat researcher at the University of California, Berkeley, is cats' continued effect on wildlife. "At its core, TNR does not address the fundamental biology of domestic cats as surplus hunters," he said.

When negotiating with shelter partners, Lim made sure TNR would not be a part of the park's strategy and that the shelter would not release any TNR cats within half a mile of EBRPD parks. Any cats vaccinated, desexed and removed for working cat placements also cannot be relocated to within half a mile of their parks. "We do not agree that if we bring a cat back neutered, it will somehow benefit the ecosystem by keeping other cats out," Reeder said.

Local animal services divisions are under-resourced and many nonprofits rely on volunteers and donations to complete their work. Their trapping efforts are limited to shelter availability, and if there's no space, park staff will leave the cat on the landscape unless it's imminently threatening an endangered bird nest.

"Regardless of what we do, there are huge feral colonies really close to our parks," Reeder said. For now, the EBRPD is prioritizing harm reduction and building trust with the local cat community.

"It points to the fact that this is a true compromise," Lim said. Based on her

experience, she believes there's no other way to move forward. Without working together, wildlife managers and cat advocates will be at an impasse. "Working in an urban park district, what I've slowly come to realize is that it's sometimes more about people than it is about the wildlife," she said. "You cannot leave the people out."

HUMAN SHIELD EFFECT

Williams has photos of feral cats all across the East Bay. He's staked out 10 coastal wetlands undergoing restoration with camera traps to monitor the behavior of free-roaming cats. Williams studies how the characteristics of the East Bay's urban environments influence the ecology and behavior of feral cats within the EBRPD and

how these behavioral changes may magnify cats' impacts on the local ecosystem.

Initial [results](#) published in *Journal of Urban Ecology* show how the closeness of urbanization to shoreline habitats can influence when and how cats move through natural areas. There are more cats in areas bordering housing developments,

which Williams said was expected—some of these animals may be outdoor cats that sleep and eat at home. But housing proximity also affected when the cats moved through the wetlands. During nighttime and twilight, cats were more active in areas closer to houses and higher levels of vegetation, offering them protection from local predators active during that time

While trap-neuter-return may seem like a good means of population control, it rarely ever works in practice.

▼ Tyus Williams has placed camera traps within Bay Point Regional Shoreline's 150 acres to monitor feral cat activity.

Tyus Williams



and are likely to be skittish of humans, like coyotes (*Canis latrans*).

Williams said these free-roaming cats are insulated from top-down predator effects that help regulate wildlife communities. "They could wreak havoc at night, come back around humans in the morning and get fed, and chill under the patio while coyotes are roaming around," he said, even if the cat isn't owned by anyone. "We're offering them refuge, while simultaneously facilitating their hunting patterns."

Williams said that buffer zones around conservation areas may help keep cats from encroaching into natural spaces from residential areas. He also thinks that financial incentives like fines for allowing owned animals into parks could help encourage responsible pet ownership, although he noted that such fines can have disproportionate impacts on communities that are already economically overburdened. "Once that fine hits, I think they'd take Snuffles in immediately."

TEAMWORK IN TASMANIA

On the other side of the world, some Tasmanians have taken matters into their own hands. A nonprofit called Ten Lives Cat Shelter receives free-roaming pet cats that fed-up neighbors trap and turn in.

According to local law, the shelter is able to spay or neuter any stray cats they receive without owner consent. Owners also must pay a fee to retrieve their animal from the shelter. Alexandra Paton, an invasive species ecologist and Tasmanian resident, once saw a local Facebook post of a woman pleading with her neighbors to stop trapping her roaming cat and bringing



▼ A feral cat with a tiger snake (*Notechis scutatus*), a highly venomous southern Australian reptile, in its mouth.

Barry Brook and Jessie Buettel

it to the shelter because she couldn't pay the fines. The response of her neighbors: "Stop letting your cat out to roam free!"

Paton didn't start out in feral cat management. She was monitoring native wildlife in Tasmania via a network of 1,300 camera traps across the island. Sometimes, the species she was documenting showed up in the mouths of cats. She was concerned but fascinated by how much damage feral cats were causing, so she opted to study feral cats in Tasmania for her doctoral thesis. She then worked as a consultant monitoring feral cats for Australia's Invasive Species Council, which advocates for invasive species policy in the country.

Paton said that Tasmanians have lost their tolerance for outdoor cats in recent decades. She thinks part of this cultural change has to do with the visibility that social media provides of feral cats preying on beloved native species like ringtail possums (*Pseudocheirus peregrinus*) or forty-spotted pardalotes (*Pardalotus quadragintus*). Another part comes from the broad coalition of anti-feral cat

sentiment, both from Tasmanian residents who would identify as environmentalists and farmers and agricultural producers whose animals are exposed to toxoplasmosis, causing miscarriages in livestock like sheep. Across the country as a whole, cat-borne illnesses cost Australians an [estimated](#) \$6 billion in agricultural and human health losses annually.

"Tassie is a unique case—we are a little arc, and people here take so much pride in their environment, so there is a huge amount of will to protect native flora and fauna," Paton said. While the majority of the Tasmanian wilderness is inaccessible to humans because the land is so rugged and wild, it's not inaccessible to feral cats.

WAR ON CATS

Compared to the U.S., the Australian government has taken a vastly different approach. In 2015, they declared war on feral cats. And then again in 2023.

During the first war, the government said they would eliminate 2 million cats within five years, but Paton said there was no plan for where they would take the 2 million animals from or how they would

▼ First Nations rangers use
Felixers in Anangu Pitjantjatjara
Yankunytjatjara Lands to control
cats and red foxes around
endangered warru, or black-
flanked rock-wallaby (*Petrogale
lateralis*) populations. John Read



monitor feral cat populations. “Feral cats are a far-roaming, low-density predator and hard to monitor,” she said. There is also large variation in the number of cats across the country, as they dramatically increase with desert rains and plummet during times of drought. “It was an arbitrary number across the whole of our country,” she said. Less than 2% of Australia remains cat-free.

Paton said the statement was more about optics than well-planned wildlife management. “Going out and saying you’re going

to kill a bunch of cats makes you seem like you have an environmental focus,” she said.

John Read, director of [Thylation](#), a not-for-profit conservation technology company in Australia, agreed. “I believe the government’s ‘War on Cats’ was politically framed—with good intentions—to raise the profile of the issue,” he said, “but that bounties are unlikely to be successful or sustainable.”

Announced in 2023, the second war, officially called the Feral Cat Abatement Plan, included a massive increase in monitoring

with a new emphasis on island eradication. Paton said that islands are one of the main places the government should prioritize removal efforts, creating cat-free strongholds for native animals. “Put your resources toward eradicating cats where it counts,” she said.

Success in these areas comes with sophisticated “special ops tactics,” Paton said. Some of Australia’s innovative cat control methods include shooting them via thermal drones or hunting via thermal scopes at night. Managers also

drop poisoned baits that contain 1080, a naturally-derived toxin found in Western Australian plants that many native animals have co-evolved with and shown some resistance to. When used narrowly on targeted areas and combined with other strategies like exclusion fencing and domestic cat containment laws, these strategies can be effective in certain areas.

However, on larger islands like Tasmania, where the terrain is too rugged for hunting and the forest is too thick for aerial control, many of these strategies aren't as effective. "We can't do anything about the feral cats living in the bush until we have a paradigm shift with our technology," Paton said, "so don't waste your money on that right now."

Yet, high-tech hope is already on the horizon. In 2015, Read created the Felixer, a device that uses artificial intelligence to detect cats as they walk by. It then sprays sticky cat-specific poison onto

their fur, which the cat will ingest later while licking itself clean.

Another method under development by Read and Katherine Moseby, his partner and collaborator, works like a "Trojan horse." A small, inert 1080 capsule is placed under the skin of a native animal that's being reintroduced into the wild. The poison is only activated once it's in the stomach of a predator, like a feral cat. Moseby designed the "population-protecting implant" when feral cats kept preying on newly released western quolls (*Dasyurus geoffroii*).

People whose job it is to take care of natural resources and protect public health are up against political headwinds that arise from propaganda ecosystems.

While neither tool is enough to solve Australia's feral cat problem, they can help. In the meantime, Paton and Read both said that wildlife managers should focus on increasing the resilience of local wildlife through habitat recovery and rewilding.

Island eradication, novel technologies and strengthening native wildlife mean nothing without "putting a lid on the situation" via feral cat containment laws, Paton said. In urban areas, the density of cats is much higher than in the bush because of readily available human food and shelter, making the impact 40 to 60 times higher on local wildlife. Pushing for legislation that makes it illegal for owners to let their cats outside can help urban wildlife. "You can reduce the impact on native wildlife close to home, and that's also a win," Paton said. Although such policies are already in place in some areas—especially islands—Paton said cat containment laws are still too controversial in many areas to rally broad political traction. But she believes the tide is turning.

PREDATORY JOURNALS AND DEATH THREATS

Australia has not rid itself of cats by any means, but it has made more progress than the U.S. Hawai'i County in Hawai'i [passed](#) a bill banning the feeding of feral



animals on public lands, including cats, but many states still don't have any legislation around feral cats at all. Others do, which makes management extremely challenging. In states like New York, feral cats are classified as companion animals, not wildlife, so it's illegal and considered animal cruelty for wildlife control professionals to trap and kill nuisance feral cats except in very narrow circumstances.

Meanwhile, Travis Longcore, a TWS member and researcher at the University of California, Los Angeles, has received death threats for his feral cat research and advocacy. He blames this hate on misinformation campaigns at the local level and, more recently, predatory journals. These journals take advantage of open-access fee structures by charging researchers to publish their work without going through the standard peer-review process. "You have this building up of 'literature' that lacks the disciplinary quality that couldn't be published in a journal that was associated with, say, a professional society that had real editors or a real review process," he said, "while they have the appearance of going through the standard review process."

A publishing company that Longcore said is "pretty widely recognized as predatory," has published several studies claiming benefits of TNR. One paper claimed TNR reduced the spread of toxoplasmosis, but it was authored by a cat advocate and professor of public administration, neither of whom have degrees in disease ecology.

"We're in a post-science age," Longcore said. "People whose job it is to take care of natural resources and protect public

health are up against political headwinds that arise from propaganda ecosystems." When the credibility of experts is undermined, Longcore said it makes it challenging for wildlife managers to do their jobs. While reputable organizations like the American Bird Conservancy have education campaigns like [Cats Indoors](#), they're met with groups like Alley Cat Allies calling the reports "[junk science](#)" and sharing resources on "[defending cats against misinformation](#)."

However, there are some unlikely allies in the fight against feral cat misinformation. People for the Ethical Treatment of Animals (PETA) is anti-TNR. In their calculation, it causes the unneeded death of native wildlife and condemns feral cats to short, brutal lives, with many sources reporting the average lifespan of an indoor cat to be 12-15 years, while for an outdoor cat, it's only two to five years. They also [encourage](#) people not to feed feral cat colonies and are [critical](#) of some of the main peddlers of pro-TNR misinformation.

THE GRIEF OF INVASIVE SPECIES CONTROL

Paton herself had an outdoor cat growing up—Megs, short for Megatron—that she got when she was 12 years old. Once she learned the damage that cats cause to local ecosystems, she brought Megs inside. They underwent the rehabilitation process together, and Paton said Megs was miserable at the beginning—she hated her litter box and had several escape attempts. But she gave Megs plenty of toys and enrichment inside and trusted the process. "It was hard, but she's super happy now, and it's helpful to share with people that I know it can be done," Paton said.

Unfortunately, getting others to follow Paton's lead is difficult and many cats remain outdoors. Much of the culture war and misunderstandings surrounding feral cat management come down to a question of animal welfare—an issue that some wildlife managers ignore to their own peril. Longcore has considered this moral calculus: "Something's going to die in this equation—no one has clean hands. If you leave [cats] out there, they're going to kill animals that probably shouldn't be killed. If you bring them into a shelter, there's a risk of euthanasia. But this is the real world that we operate in."

Williams, too, doesn't delight in the idea of killing invasive species: "It shouldn't be easy. If you're finding it uncomfortable and difficult, it's because it is difficult." Williams came to study feral cats because of his love for all felids and thinks it's important not to look away from the discomfort of invasive species management. "The curse we bear is recognizing that the grief that comes from cat euthanasia is a consequence of our doing," he said.

For Williams, a critical part of invasive species management is ensuring that protocols reduce unneeded animal suffering and are as humane as possible. But that doesn't outweigh the duty he feels to help rebalance native ecosystems. "Our job as human beings is to prioritize being stewards to the native wildlife around us first and foremost, even if it comes at a price." ■



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SPECIAL FOCUS WILDLIFER WELLNESS

BEYOND BURNOUT

What wildlife professionals are really asking for

By Michelle Doerr

▲ **The wildlife field is at risk of losing its people. Capacity building, connection and care could help people feel more encouraged and supported in their work.**

Lukáš Vaňátko on Unsplash

Starting in 2020, I began writing for *The Wildlife Professional* about topics including wellness, burnout, eco-emotions and trauma. In my 2021 article, I emphasized what individuals can do to manage burnout—a condition that occurs when chronic workplace stress is not successfully managed. What I didn't realize back then was how deeply rooted this issue is in our entire field.

Since that article, I've been speaking with, leading workshops for and gathering real-time data from hundreds of wildlife professionals across the country—and even some internationally. I keep hearing that the issue goes beyond burnout.

To deepen my understanding about what specific burdens or challenges wildlifers face, I conducted a national survey that I called “Voices from the Field.” Sixty-one professionals in conservation and environmental fields responded, and their voices were clear: we aren’t just exhausted. The field is at risk of losing our people, our purpose and our future impact if we don’t all act.

The results of my research show that the remedy is not just about more self-care for wildlife professionals or holding ourselves fully accountable. Instead, it calls for deeper capacity building, connection and care integrated into how we work.

IT’S NOT JUST STRESS—IT’S SYSTEMIC

Burnout is just the tip of the iceberg. Beneath the surface lurk issues, including unspoken anxiety and grief, broken feedback loops leaving people to figure out when they have done well or where they could improve and a culture where people feel unseen, unsupported and pushed beyond their limits.

In the survey, 58% of wildlife professionals reported that they feel overwhelmed or stretched too thin, 57% said they are burned out or emotionally drained, and only 20% said they were motivated and

energized. In open responses, professionals reported, “I’m growing distant at work, unsure if I’m burnt out or losing passion,” and, “There’s no time to think. Everything feels urgent and important, all the time.”

These responses are not anomalies; they’re becoming the new normal. Often, we overlook the deeper emotional toll behind symptoms beyond burnout. Chronic undercare—a constant lack of support, clarity or meaningful feedback—significantly contributes. I recently asked a live audience of wildlife professionals how they had been feeling at work lately, and 31% reported experiencing chronic undercare and structural fatigue, or exhaustion from repeatedly navigating broken systems. Around 17% of the audience reported feeling eco-emotions—grief and anxiety over the planetary crisis.

Other factors influencing emotional strain include moral distress or cognitive dissonance, purpose strain and imposter syndrome. I call the latter ‘imposter systems’ because most of the work involving people—such as conflict management, cooperative language, strategic planning, meeting facilitation and more—is not part of our formal training. Moral distress happens when you know the right thing to do but can’t act on it. Cognitive dissonance is the emotional discomfort caused by holding conflicting values and actions. I experienced this while working with urban deer, having entered the field to help wildlife but spending most of my career issuing permits to kill them. Purpose strain occurs when you join the field to make a difference but become bogged down by bureaucracy, overwhelmed by workload or disconnected from the work that once motivated you.

► **Despite hard conditions, wildlifers can persevere. It requires building capacity—our collective ability to perform well, think clearly and sustain impact.**

Zoshua Colah on Unsplash





A CASE IN PRACTICE

When Sam Jonas from the Wisconsin Department of Natural Resources invited me to lead a “Wellness in Highly Public Teams” workshop in 2024, he was still fairly new to his supervisor role. His goals were to foster camaraderie, create space for vulnerability and help his team connect on a human level despite the stress of public-facing, high-pressure work.

A key exercise involved participants writing about a difficult work situation using emotion words alongside their story. As they shared, the atmosphere shifted, fear began to fade and camaraderie grew stronger. Perhaps for the first time, team members could openly express emotions without fear of judgment. In another exercise, the team created agreements for how to behave with each other—an exercise they could also apply with stakeholders.

The ripple effects have lasted well beyond the session:

- Monthly meetings now include team members sharing personal highlights and challenges, normalizing honesty and mutual support.
- All staff committees now operate with explicit updated charters that guide purpose, vision, behavior and collaboration.
- Committees reviewed their charters and developed annual work plans based on shared ownership, not just individual chairs.
- Most staff now answer the question, “Do you feel like you have a best friend at work?” (as in someone to share your highs and lows with trust) with a “yes.”

Although no formal policies were put in place, wellness and team building became top priorities in daily routines. Staff describe feeling valued and supported, with clearer norms for how they interact with each other and external stakeholders.

“The workshop we conducted led by Michelle was wonderful. The way the team bonded and opened up helped create the foundation of our culture to speak wellness into our daily work lives. My staff regularly pick up the phone or send a quick email asking for support from one another when working through things. This is a small thing—but has a huge impact.”

This case illustrates that when teams create space for honest dialogue, emotional expression and collective agreements, wellness shifts from a one-time workshop to an embedded cultural practice.

Burnout symptoms often hide various contributing factors, many of which we can change if we use the right language. For instance, what some call burnout may not be burnout at all. Rather, it’s likely a combination of cognitive dissonance, imposter systems and a host of other systems-oriented factors that aren’t burnout at all. The good news is our respondents not only told us what they were experiencing but also what they needed to perform their best.

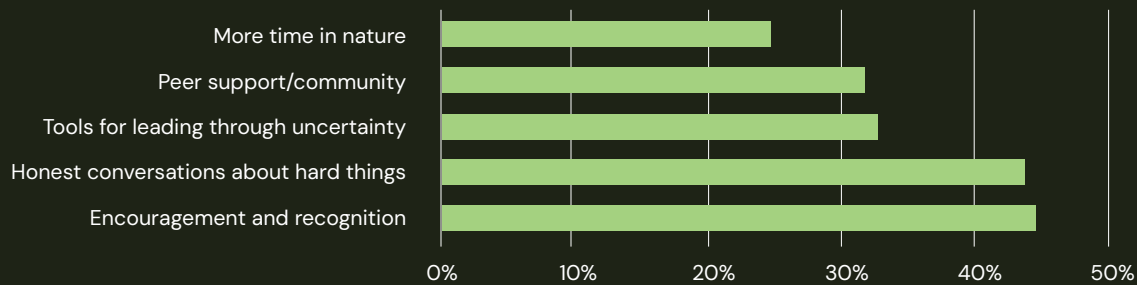
WHAT THE FIELD SAYS IT NEEDS

We asked in the survey what would help people feel more encouraged and supported in their current work.

Forty-six percent said they want “encouragement and recognition.” These aren’t ego requests, but instead about others seeing and appreciating them at work. When people’s contributions go unnoticed or unacknowledged, morale drops. The good news is that recognition doesn’t need to be elaborate. It could just be a quick shoutout at a team meeting or a supervisor saying, “I see the effort you put in, and it really matters to our team.” These small moments can have a big impact. Award systems often only honor a few people in the organization, so we need simple ways to make everyone feel valued.

Forty-four percent reported they want “honest conversations about burnout or grief.” They want to identify the underlying problems and are no longer willing to bear responsibility alone. One participant said, “There is a lack of acknowledgment for the struggles we are all facing, and expectations are skyrocketing.” Another said, “There’s no support when traumatic cases occur. It leads to more frustration and isolation.”

WHAT WOULD HELP YOU FEEL MORE ENCOURAGED OR SUPPORTED IN YOUR CURRENT WORK?



They pointed out that the topics they would most benefit from discussing are navigating burnout, grief or eco-anxiety (33%); developing emotional resilience in high-stress environments (33%); and establishing work-life boundaries (31%). Managers can help with this by beginning team or one-on-one meetings with questions like, “What’s draining your energy right now, and what’s feeding it?” or “What’s one thing that’s making work harder than it needs to be?” When we normalize naming struggles and the emotions that come with them, we change the culture from silence to solidarity. The work environment is improved by this kind of honesty.

Thirty-seven percent said they would benefit from “giving and receiving feedback that supports growth.” People aren’t asking for more performance reviews or vague praise. They want feedback that helps them improve, delivered in a way that fosters trust and clarity. One participant emphasized needing “guidance and mentorship from direct supervisors.”

However, not all feedback is useful. As “The Feedback Fallacy” ([Buckingham & Goodall, 2019](#)) highlights, about half of all feedback focuses more on the giver than on the receiver. When feedback is poorly structured, rushed or biased, it can feel more

like criticism than support. There are some ways to provide useful feedback. For example, you can ask, “What’s one thing that would help you feel more confident in this role?” Let the person name their needs before assuming what they need to fix. Try language that’s forward-focused, such as “What worked, what was hard and what’s next?” Start by investing in the relationship rather than focusing on the review. Feedback is more effectively received from someone you know who genuinely wants you to succeed. Don’t give developmental feedback when someone is overwhelmed, demoralized or nearing burnout. You can’t coach someone out of collapse. Make it a two-way street by asking, “What’s making this job harder than it needs to be?” or “What’s one thing I could shift as your supervisor?”

Thirty-one percent reported wanting peer support or community. One participant said, “I don’t think any of us working in conservation are okay right now. The future looks so bleak.” A benefit I’ve noticed during conversations or workshops is that people often share with me how much they appreciate not feeling alone in their struggles. They are thankful that I provide a safe space for them to share their thoughts and feelings while beginning to connect with others.

In a recent leadership program for early-career professionals that I co-facilitated, we introduced the idea that support is a leadership requirement. Interestingly, these participants demonstrated an inability or fear of asking for support. If leaders are afraid to ask for support, employees will likely model that behavior. We aimed to change that perspective within the program and all leadership programs should include this element.

What else helps? Consider peer support through triads or buddy systems, make check-ins a regular part of staff meetings and have a board up on the wall—live or virtual—that answers the question, “What does support look like for you?”

TRUE LEADERSHIP

From a leadership perspective, the survey highlighted several key points. When asked which areas need the most attention or support, 41% mentioned “navigating conflict or differences in values,” 36% highlighted “leadership development at all levels,” and also emphasized “team cohesion and communication.” Additionally, when asked what would help them feel supported, 33% cited “tools for leading through uncertainty.”

MOVING FROM COPING TO CAPACITY BUILDING

COPING/SELF-CARE

Take a personal day when overwhelmed

Go outside to decompress after hours

Do breathing exercises to calm down

Try to stay positive and push through

Say no to another task

Journal or vent to a friend

Make your own list of priorities

Meditate to find calm amid chaos

Schedule a wellness break

Remind yourself that work matters

CAPACITY BUILDING

Design fair workload distribution across teams

Build time in nature into the workweek

Create space for grief and meaning in the workplace

Receive encouraging, constructive feedback

Set boundaries that are respected and modeled

Engage in peer connection and structured support

Get clear, co-created team priorities

Co-create culture agreements that prevent chaos

Have supervisors who support rest and pacing

Feel truly seen and recognized by leadership

The survey clearly showed that leadership programs and training are not enough. They often overlook the real challenges professionals face: uncertainty, emotional labor, value conflicts and broken trust. Many existing programs still focus on outdated authority models or technical skills, while what's truly needed now is the ability to manage complexity, deal with discomfort, embrace emotions and build connections across differences.

So, what does leadership that supports thriving look like? It emphasizes honesty, trust and curiosity as foundational elements. It fosters emotional literacy and cultural self-awareness, and manages relationships, values and energy.

If we want people to lead through uncertainty, they need more than just tools. They need permission to pause and communities of practice that foster vulnerability, dialogue and growth. True leadership development begins by asking not only what we want leaders to know, but also who we need them to be.

BURNOUT IS A MESSAGE— ARE WE LISTENING?

Conservation work won't get easier. Climate impacts are accelerating. Staffing continues to be limited. Public pressure is increasing.

The future of conservation leadership and well-being at all levels depends on a bold shift toward building capacity—our collective ability to perform well, think clearly and sustain impact. Capacity isn't just about time; it also involves energy, focus, boundaries, connection and clarity of purpose. It includes how we design roles, set priorities, manage expectations, develop workflows and create feedback loops. Building capacity remains strategically important.

We need to shift upstream. When people say they are burning out, it indicates that the system requires more resources and repairs.

We can no longer just blame it on self-care. Burnout forces us to look beneath the surface to find what really drains our capacity. It's time to design our wildlife culture around what people—and wildlife—truly need.

The people who responded to the "Voices from the Field" survey, like many I have met in workshops, coaching sessions and

speaking engagements, aren't asking for quick fixes. They're seeking a new way of working that doesn't leave them exhausted, isolated or unseen. They want to stay in this field and do meaningful work. However, they need systems that support them.

If we want conservation to thrive, we must treat human capacity as a foundation. That means listening to voices in the field, designing for energy and fostering cultures that embody the values we aim to protect. We can do better. And with courage, care and clarity, we will. ■

To read the full report, please contact
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Michelle Doerr, MS, is a wildlife biologist with a master's in wildlife management from the University of Missouri. She worked for the Minnesota Department of Natural Resources in several capacities dealing with human-wildlife interactions and then in outdoor recreation for nearly 14 years. She started Anavah Consulting LLC to work with individuals, groups, companies and organizations interested in better human-human, human-wildlife and human-landscape connections. She has been working on conservation mental health and culture for more than six years.



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SPECIAL FOCUS WILDLIFER WELLNESS

PREPARING TOMORROW'S WILDLIFE PROFESSIONALS

Building resilience beyond technical skills

By Michelle Doerr

▲ Le Moyne students during a Texas ornithology field trip.

Jason Luscler

It was 1993, and I had just graduated from the University of Missouri with my master's degree in wildlife management. I was eagerly stepping into my first job as a wildlife technician. I was managing urban deer populations in a suburb of Minneapolis, where we were set to kill 300 deer annually for three years to control the population.

Another part of my position was conducting a community attitude survey on deer. Animal rights groups in the city didn't want a single deer killed, but the deer population was causing an increase in vehicle collisions and damage to the landscape. I soon realized I

was woefully unprepared for the intensity of public backlash I was about to receive. The science was solid and management plans were well-reasoned, yet I faced confrontational public meetings and watched colleagues face death threats. I even served as a witness in a trial over damage caused by animal rights activists. These instances made me question my choice of work.

This wasn't my first time dealing with the public as a wildlife biologist. For my graduate research, I studied another urban deer management zone in Minnesota. When I presented my final report, local animal

rights activists tried to stop me from submitting it. But even with this small taste of conflict, I felt that I could have been better prepared had my graduate program opened conversations about the extensive people and emotional management parts of the job. Universities have long been the foundation for preparing students to enter the field of wildlife conservation. Students leave with an impressive array of technical skills: the ability to collect, analyze and interpret ecological data; the knowledge to manage wildlife populations; an understanding of new wildlife management software and the expertise to apply sci-

entific principles to real-world scenarios. However, a glaring gap still remains when it comes to the challenges conservationists face beyond the technical.

THE GAP IN UNIVERSITY TRAINING

Conservation professionals regularly navigate challenges far beyond what textbooks can teach them. One of those challenges

▼ **This table offers suggestions for how professors can foster mental well-being in their classrooms.**

Michelle Doerr

BRINGING WELL-BEING INTO THE CONSERVATION CLASSROOM

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CHECK-IN POLLS Start class with a quick poll to gauge student mood. Acknowledge low points and offer support like flexibility or resources.

PAUSE FOR THE HARD STUFF Pause when topics stir emotions. Let students share feelings, then shift focus to actionable steps to maintain momentum.

GROUNDING EXERCISES Begin or end with grounding—deep breaths, nature imagery, or sensory focus—to help students reset and stay present.

REFLECTIONS ON REAL LIFE Ask: "What does this mean for my future job?" or, "How can I manage overwhelm?" Tie learning to personal growth and career goals.

CONNECT TO PURPOSE Share stories of conservation successes to inspire hope and show the real-world impact of their work.

GIVE STUDENTS A VOICE Invite feedback: "What would help you succeed?" Act on their needs and ensure open-door policies are truly supportive.

CELEBRATE WINS Acknowledge progress to foster positivity—whether it's completing a tough project or contributing a thoughtful idea.

NORMALIZE WELL-BEING CONVERSATIONS Discuss mental health and resilience openly, sharing personal insights or field stories to destigmatize challenges.

DIVERSIFY AND SIMPLIFY Use varied teaching methods to engage all learners. Regularly review your curriculum with a lens of accessibility and well-being.

BUILD IN FLEXIBILITY Offer adaptable deadlines or alternative assignments to ease anxiety and support students' complex lives.

ENCOURAGE CREATIVITY AND PLAY Incorporate art, brainstorming or storytelling to spark innovation and counter stress.

INCORPORATE PEER SUPPORT Facilitate group discussions or mentorships to build community and shared strategies for success.

BRING IN NATURE Take the class outdoors when possible to reconnect with purpose and find grounding in nature.

SEEK FEEDBACK REGULARLY Check in about what's working and adjust throughout the semester, showing you value their input.

TRAIN YOURSELF Get training in trauma-informed teaching, Mental Health First Aid or student engagement to better support your class.

lies in the fact that public hostility or apathy can overshadow conservationists' passion for protecting wildlife. This worry was exemplified during a webinar with student members of The Wildlife Society, where one participant asked, "How do you maintain optimism in the face of constant criticism and public misunderstanding?"

Today's digital landscape allows public grievances to escalate quickly and spread widely. Agency employees often find themselves at the mercy of online comment sections, social media outrage, cancel culture, the spread of misinformation and even threats, with little support or training to handle these situations. Public meetings also carry issues. Without behavior agreements—or rules of conduct—public attacks happen at will and with little protection for staff.

Another webinar participant raised concerns about the fear of organizational backlash when prioritizing mental health. "What if you work for an organization that punishes employees for setting boundaries or speaking up?" the student asked. This sentiment reflects a broader systemic challenge: students are entering a field where the stakes are high, but protections and support are often inadequate. For example, I asked graduate students during a recent presentation what they were feeling at the time, and the highest reported item was chronic undercare.

One way wildlifers may feel unsupported is due to the isolation they face when conducting fieldwork or remote work. While working in nature may sound idyllic, the reality can be lonely. Fieldwork often involves long hours in remote locations, and with the rise of remote work, young

professionals increasingly face challenges in maintaining a sense of connection and community.

Uncertainty and stress are additional challenges. Conservation professionals must constantly navigate an uncertain future due to climate change, biodiversity loss and evolving social and political landscapes. This uncertainty can lead to chronic stress, compassion fatigue and burnout. At the same presentation mentioned above, 85% of the same group (121 wildlife professional respondents) said they were experiencing burnout before they had even officially entered the workforce.

Finally, wildlife professionals need to balance professional expectations with their personal well-being. From managing stakeholder relationships to navigating bureaucratic systems, early-career conservationists are under immense pressure, often at the expense of their mental and emotional health.

Many conservationists feel unprepared to face the realities of their chosen field and worry about their capacity to sustain their well-being in such demanding conditions. This growing concern highlights an urgent need to address the disconnect between academic preparation and the realities of the profession. Universities have an opportunity to address this head-on by preparing students not only for technical challenges but also for the interpersonal and emotional realities of conservation work.

ADAPTIVE CAPACITY BUILDING

The ability to navigate uncertain environments, build resilience and respond creatively to challenges is called "adaptive

capacity-building." These are all essential skills for today's wildlife professionals, yet are often overlooked in traditional conservation curricula.

During the previously discussed webinar, students voiced concerns that highlighted this gap. They asked, "Do you have recommendations to alleviate burnout?" and, "How can I set boundaries in a field that expects overwork?" These practical and urgent questions point to the need for early education about managing emotional stress and maintaining a work-life balance.

Universities have an opportunity to prepare students for these realities by focusing on five different areas. Resilience training can equip students with tools to manage stress, process emotions, and recover from setbacks. Practices like mindfulness, grounding techniques and capacity building should be introduced as integral to professional success.

Conflict navigation can help students deal with contentious situations with confidence, from handling angry stakeholders to mediating internal team disputes. In addition, teachers should help students understand both their own beliefs and those of others to find the heart of conflicts.

Students should build effective communication skills to foster trust and understanding with the public, policymakers and interdisciplinary teams. Helping students to develop networks of support that extend beyond their immediate friendships and workplaces can help create a sense of belonging within the broader conservation community.

Finally, mental health awareness is crucial. Providing students with strategies to

► **Students birding at Le Moyne College.**

Jason Lusnier

maintain well-being will help normalize discussions around mental health and emotional inclusion in the face of the field's unique pressures. Every professor should start with Mental Health First Aid training. A course is available at the [National Council for Mental Wellbeing](#).

By helping students develop these tools, universities can empower them to handle the challenges they'll inevitably face in the workforce. The future of conservation depends on professionals who are not only knowledgeable but also resilient, emotionally inclusive and equipped to adapt to an ever-changing world.

RECOMMENDATIONS FOR UNIVERSITIES

So how do professors teach these skills and bridge the gap between academic preparation and professional realities? Universities must adopt a more holistic approach to conservation education.

First, professors can integrate practical scenarios into curricula. Simulations and case studies can reflect the emotional and social complexities of real-world conservation work and prepare students for what lies ahead. These can include mock public meetings, where students present controversial management plans and respond to public criticism. Role-playing stakeholder engagement is another option, where professors train students to build rapport and manage conflicts with diverse groups. In addition, crisis simulations can teach decision-making under uncertainty through scenarios like sudden policy changes or ecological disasters.



To remedy the feelings of isolation in field-work or remote settings, professors can help students foster a sense of community by encouraging peer support networks or organizing mentorship programs as part of the curriculum. Collaborative research or management projects can encourage teamwork, building connections and shared experiences. Small coaching circles allow students and early-career professionals to ask for guidance on case studies.

Universities should also make student well-being a central focus of their programs.

They can incorporate wellness into coursework, whether that's modules on capacity building, self-care, stress management or work-life balance. In addition, they should provide access to counseling services and wellness workshops as well as including discussions of emotions as part of all work. Faculty and staff should lead by example, demonstrating the importance of prioritizing well-being in their own lives.

Collaborating with agencies, non-profits and other organizations can provide students hands-on experience

CASE STUDY: LE MOYNE COLLEGE

In the fall, Jason Luscier, a professor at Le Moyne College, began integrating wellness practices to address the emotional strain of studying biodiversity loss. This teaching required a shift from, "I have to cover all this content," to, "I can balance heavy content with student wellness for better learning." The goal was to create space where students could better engage with wellness content without being judged.

During the most recent semester, wellness ambassador Jennifer Caruana opened and closed select sessions for his field ornithology class. In their first session, students participated in an "anxiety/gratitude purge," where they expressed concerns, stated gratitude then re-centered in a grounding activity.

WELLNESS IN THE FIELD

On their field trip to Texas, wellness check-ins became a core part of the student experience. These check-ins created space for emotional reflection and group bonding amidst the intensity of real-world conservation work. One student reflected, "This helped me to feel much more hopeful about the future... Getting to experience conservation first-hand with a positive outlook really made my experience wonderful. Without the wellness component, I likely would not have felt so motivated, as conservation work can easily feel saddening."

A post-trip survey revealed the impact of incorporating wellness:

85% of students agreed that hearing their peers' reflections during wellness check-ins increased their sense of connection to the group.

85% felt the wellness activities helped them reflect more meaningfully on wildlife and conservation work.

Nearly all students said it was important to include well-being and reflection in future conservation programs.

The results were powerful. Students felt seen and heard, leading to higher engagement. By addressing the emotional needs of his students, Luscier created a more connected and resilient classroom environment. These students are also equipped with wellness tools they can take into their conservation careers.

in managing both technical and adaptive challenges. What's more, internship and fieldwork opportunities can expose students to the realities of conservation work under the guidance of seasoned professionals willing to speak with empathy and compassion. In workshops and guest

lectures, practitioners can share their experiences and insights on navigating public criticism, isolation and uncertainty.

Finally, it's essential to prepare students for the uncertainty that defines the conservation profession. By framing resilience as a

skill that must be developed and honed, universities can empower students to face challenges with confidence and creativity.

RIISING TO THE CHALLENGE

As the challenges facing wildlife conservation grow more complex, so must our efforts to prepare the next generation of professionals. In my self-care workshop for graduate students, 13% of participants felt hopeless about their field, 60% were in the mid-range and only 27% were hopeful before even starting their careers.

It is no longer enough to equip students with technical expertise; we must also provide them with tools to navigate the social, emotional and adaptive realities of the field. Universities have a unique opportunity—and responsibility—to rise to this challenge by fostering resilience, building community and addressing well-being alongside traditional coursework.

Reflecting on those early days facing an inflamed public, I realize how different those moments could have felt if my own training had included the very tools I now recommend. Preparing tomorrow's wildlife professionals isn't just a single course or degree. "Wellness is a lifelong journey and we all have a part in everyone thriving in this field. ■



Michelle Doerr, MS, is a wildlife biologist with a master's in wildlife management from the University of Missouri. She worked for the Minnesota Department of Natural Resources in several capacities

dealing with human-wildlife interactions and then in outdoor recreation for nearly 14 years. She started Anavah Consulting LLC to work with individuals, groups, companies and organizations interested in better human-human, human-wildlife and human-landscape connections. She has been working on conservation mental health and culture for more than six years.



SPECIAL FOCUS WILDLIFER WELLNESS

RE-HUMANIZING THE WORKPLACE

How leaders and peers can combat fear in the workplace

By Michelle Doerr and Alexandra Pitts

▲ **The Groundwork Hudson Valley
Green Team works on restoration in
Wallkill River National Wildlife Refuge.**

Anna Bisson/USFWS

To understand the effects of uncertainty on wildlifers, we recently spoke with personal connections, colleagues posting on LinkedIn and students in wildlife programs. One response struck us the most: “One day, we were just gone. No goodbyes and no recognition. It’s like we didn’t matter.”

Shortly after President Trump’s second inauguration, the administration began a large-scale termination of probationary employees. In addition, executive orders called to freeze funding for thousands of federal programs. This was just the first round of cuts. Additional layoffs are ongoing as of November 2025.



▲ **A Maine waterfowl banding crew. Teams who support each other lead to a thriving workplace.**

Kurt Ongman/University of Maine

The effects aren't temporary, nor are they constrained solely to the teams that have been affected. Impacts have been leaking through to state agencies, nonprofits and the land itself.

In discussions with the federal colleagues to whom we reached out, clear patterns emerged. Those who took early resignation still carefully monitor their words. Those whom the Department of Government Efficiency removed have had to mentally recover from perceived or unfounded allegations of performance issues as they seek new jobs in a challenging market. Some who stayed but had their programs

cut have lost work they enjoyed and excelled at, sometimes being placed in less suited roles that they are less motivated about. Years of service went unrecognized.

These chaotic removals, arbitrary punishments and surveillance atmospheres—where speaking openly is unsafe—lead to emotional disengagement. We lose passion and motivation, and fear dominates how we operate. We know because we've worked in fearful environments ourselves. We have been unsure of what we can and can't do. We have felt like we are always waiting for a blow to hit.

Across agencies, wildlife professionals describe working in a "climate of fear," where people are looking over their shoulders and wondering who they can trust. Between the loss of programs and people, they are questioning if their work matters at all.

Whenever a new administration takes office, policy changes are inevitable. Yet, this current transition has been especially cruel to employees. As reported in an article on wildlife.org titled: "[Has Trump admin affected ecological research and management?](#)" a recent survey underscores how widespread these experiences have been. The survey mentions disruptions to research, censorship pressures and loss of institutional expertise as federal policies reshaped people's work. The article and survey also provide a picture of professionals grieving the loss of trust, knowledge and meaning in their work.

The lingering effects of fear, grief and disillusionment can and should be addressed by courageous, trauma-informed leaders in the field. Wounds and trauma linger within people and can become embedded in the system ([Doerr, 2023](#)). We might call this a culture of fear, which can ripple

into well-being, workplaces and even the ability to protect wildlife.

SIGNS OF A FEAR-BASED CULTURE

Fear puts us in survival mode. Grief reminds us of what's been lost. Disillusionment dulls the passion that drew many of us to the field.

Silence during meetings, as well as people's caution when speaking or using chat during video meetings, may seem like fear on the surface. But these actions also hide a deep sense of grief, which can turn into disillusionment. Those who retained their jobs mourn the loss of colleagues and the cutting of programs built over decades, in addition to worrying about the potential loss of public land and habitat. Hopelessness creeps in, too. People may fail to support each other and lose faith in leadership.

Amy Edmondson, an expert in psychological safety, explains that in fear-driven workplaces, employees become silent to reduce the risk of punishment for challenging leaders. When people don't feel safe at work, they withdraw to protect themselves. Gallup surveys consistently show that when employees distrust leadership, [disengagement increases](#), creativity drops and turnover rises.

These dynamics show up in other ways. Silence becomes the norm. Blame and punishment replace learning, because mistakes feel career-ending rather than like growth opportunities. People check out emotionally, engagement dwindles, communication fails and misinformation spreads.

Sometimes, silence and hesitation are mistaken for laziness or poor attitude.

In reality, they are often adaptations to unsafe cultures. Recognizing these signs is a crucial first step toward re-humanizing workplaces.

WHAT WE CAN DO—EVEN IN UNSAFE CLIMATES

While the scope of this fear-based culture is undoubtedly systemic and currently politically motivated, we must also ask: How do people survive within systems they cannot immediately change? When formal protections are taken away and language becomes dangerous, the response isn't solely political—it's deeply personal and relational. The practices below are not solutions to mass layoffs or federal-level cruelty. They are not remedies for corrupt institutions. Instead, they are acts of internal resistance—small but powerful ways individuals can reclaim their dignity, protect their nervous systems and support one another through disconnection and harm. They are the seeds of a different culture, quietly growing in the cracks of fear.

At the organizational level, this involves disrupting patterns of silence, punishment and invisibility with micropractices that reconnect people (Table 1). These actions don't need new policies or large budgets; they simply shift everyday interactions toward safety and trust.

On personal levels, both supervisors and peers have roles to play. Leaders must exemplify transparency, vulnerability and recognition, while peers can foster safe spaces, normalize feelings and remind each other of shared purposes. Together, these practices restore a sense of belonging and meaning in places where fear previously took hold.

Leadership and culture can transform.

After Hurricane Hugo devastated Charleston, South Carolina, in 1989, Mayor Joe Riley chose not to hide. Instead, he demonstrated courage and compassion. He boarded up City Hall publicly so residents knew they should take the storm seriously. He set clear recovery goals and celebrated each milestone so the community could see progress. He openly acknowledged the outside help arriving so people knew they were not alone.

Choices like these are simple. However, in a system not built for care, it can seem hard to implement. Remember, we are all human. Riley's example reminds us that re-humanization often starts with small actions: demonstrating preparedness, boosting morale, speaking honestly and showing care.

Healing our culture is part of protecting wildlife. Every small act of kindness—whether a word of thanks, recognizing impact or choosing to check in and stand with others—is also conservation work. It is all of our responsibilities to support the people around us so we can all be better for the wildlife we protect. ■

[Follow this link for more tips on Re-humanizing the Workplace.](#)



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SPECIAL FOCUS WILDLIFER WELLNESS

IMPOSTER SYSTEMS

Why conservationists might feel like they don't belong

By Michelle Doerr

▲ **Speaker Thomas Rashad Easley speaks with students who are part of the Doris Duke Conservation Scholars Program Collaborative.**

Michelle Doerr

In the fall of 2023, I co-led a wellness webinar for the Student Development Working Group of The Wildlife Society. During and after the workshop, students could submit questions. Two questions stood out to me: “How do you maintain optimism in the face of constant criticism and misunderstanding?” and, “How do you deal with imposter syndrome as a new professional?”

Seasoned professionals worn out by heavy workloads didn’t pose these questions. Rather, they came from undergraduate and graduate students getting ready to join the workforce, already questioning whether they had what it takes to belong.

As I later read the book “Untapped Leadership: Harnessing the Power of Underrepresented Leaders,” by Jenny Vazquez-Newsum, I came across the term “imposter systems,” resurfacing the memory of that workshop and these students’ questions. Curious about the origins of the term, I found the work of educator Tine Zekis, who uses the phrase to describe the cultural and structural forces that deepen doubt, especially for those on the margins. As I thought about the term and reflected on my career and those I’ve coached, I realized the problem is not just inside us; more often, it is built into the system around us.

FROM SYNDROME TO SYSTEMS

The imposter phenomenon, as it was first called, was first linked to high-achieving women who experience an inner disbelief in their abilities despite impressive accomplishments and academic success (Clance & Imes, 1978). More recently, the term has changed to “imposter syndrome” and is often framed as a personal flaw: “I doubt myself,” “I’m not good enough,” and “I’m waiting to be found out.” Those who are facing imposter syndrome may chalk their success up to luck. They fear being “found out” even when they’re qualified and compare themselves to others constantly, or set impossibly high standards for themselves.

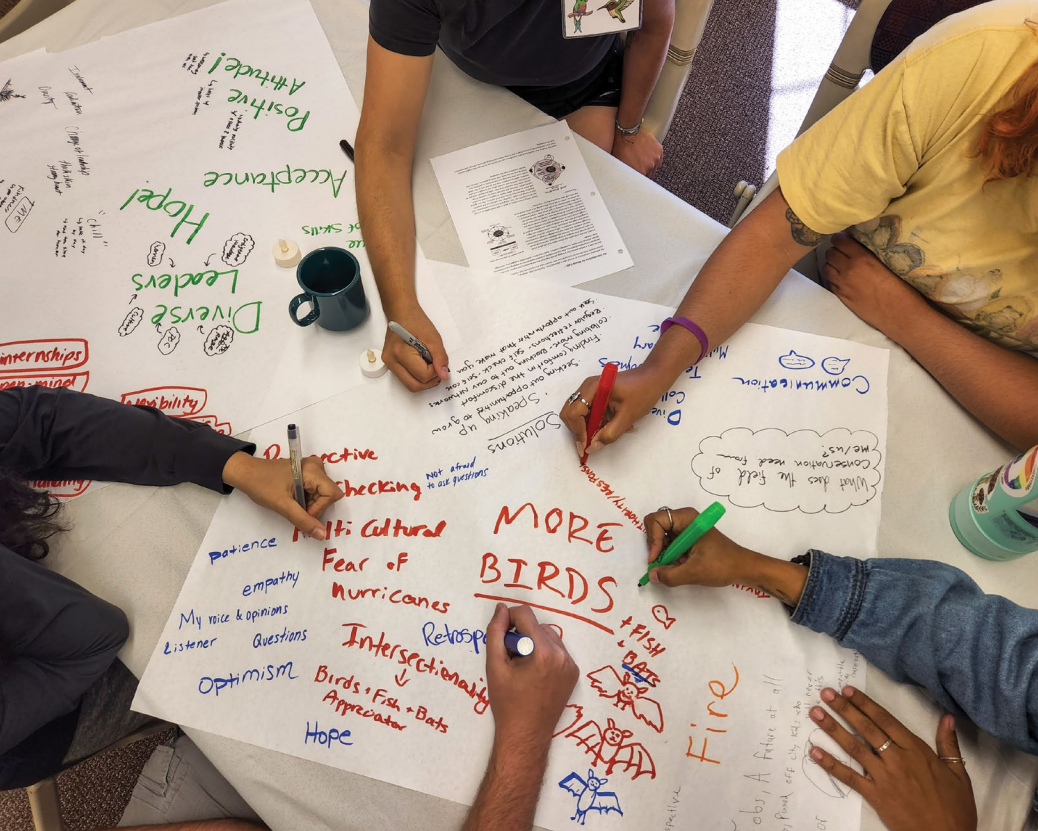
These feelings are real, but they don’t tell the whole story.

Imposter systems are environments that reinforce these internal beliefs and doubts. When feedback flows only one way, when leaders don’t admit mistakes or show

▼ **Rena Borkhataria, the director of the Doris Duke Conservation Scholars Program Collaborative, addresses students. Working with these students revealed that those from marginalized communities often feel invisible or unheard.**

Michelle Doerr





◀ Participants from the Doris Duke Conservation Scholars Program Collaborative engage in a World Café activity around the topic of belonging in conservation.

Michelle Doerr

vulnerability and when training focuses on technical skills but ignores the human side of conservation, it's no wonder professionals feel unprepared for many of their required tasks.

You may be facing imposter systems if leaders provide feedback that's mostly criticism with little encouragement, or they don't model vulnerability or admit mistakes. In addition, supervisors may prioritize overwork and perfection over the well-being of staff, train staff technically but not for people-centered work or discourage conversations about doubt or struggle.

EVIDENCE FROM THE FIELD

Much of conservationists' imposter feelings are simply because we receive technical wildlife training but most of the actual work is dealing with people. Much of the time, we have little training in the latter.

Early in my career, I had almost no formal training in the human side of conservation. I learned a bit about conflict

navigation while working on my thesis, which focused on urban deer issues. Later, I received media and court training as part of a legal case involving a community for which I helped develop a deer management program, but only because the case required it. None of this was provided systematically.

Looking back, I realize how much stronger my confidence and contribution could have been if I had received structured training in facilitation, nonviolent communication and negotiation. Like many others, I was left to learn these skills reactively, often under public scrutiny. That doesn't just cause stress, but also fosters a culture where doubt and imposter feelings thrive.

At a 2024 workshop I led with a conservation team from the Wisconsin Department of Natural Resources, I asked participants what people-centered training they had received, since they were all working on high-profile issues. Most had been trained in at least one training topic, but very few

in more than two. While 71% had conflict resolution training, few had training in active listening (36%), facilitation (29%) and negotiation (7%). Not a single participant had training in nonviolent communication nor the full range of training needed for public-facing conservation work.

Despite strong technical backgrounds, few participants felt fully equipped for the emotional and relational demands of their roles. When asked how to move away from imposter syndrome and address imposter systems, participants emphasized communicating concerns openly, reframing the story they tell themselves, acknowledging limits, finding common ground, building relationships, celebrating wins and creating agreements.

The participants' closing reflections were telling: through using words like "community," "optimistic," "energized" and "inspired," they indicated that when systemic needs are named and addressed, individuals feel less alone and more capable of thriving in conservation.

Students echoed the sentiments of being unprepared for the realities of high-stakes, emotionally charged work. In the student workshop mentioned earlier, participants asked how to set boundaries without punishment, how to handle fear that their work won't be valued and how to manage stress in their very first jobs. These aren't questions of competence, but rather signals that the system doesn't provide the preparation or support people need to thrive in this field.

During my work with the Doris Duke Conservation Scholars Program Collaborative, the inequalities became even clearer. Students from marginalized communities often feel invisible or unheard, and in some cases face neglect or harassment. These stories align with broader research showing that the imposter phenomenon disproportionately affects women, people of color and first-generation students (Cokley et al., 2013; Peteet et al., 2015). Recent research also highlights that neurodivergent professionals frequently experience imposter feelings within systems designed around neurotypical expectations, which can amplify self-doubt and exclusion (Brown & Morley, 2025). As Tine Zekis reminds us, imposter systems are not evenly distributed and hit hardest on the margins (Zekis, 2021). In wildlife and conservation, these inequalities are made worse by rigid hierarchies and field cultures that often fail to foster true belonging and inclusion.

MOVING BEYOND SELF-DOUBT

What helps wildlife professionals shift from thinking they have imposter syndrome to knowing there's more of a systems problem that needs addressing?

A conservation professional I once coached kept blaming herself for not performing well on her team. She was convinced her struggle was entirely her fault. However, in earlier conversations, she agreed that her workplace offered none of the three basic human needs that psychologist Alfred Adler identified: safety, belonging and significance or feeling valued (Adler, 1964). I finally told her, "If you can tell me how anyone can thrive in a workplace where safety, belonging and significance don't exist, I'll let you keep those beliefs about yourself." She paused, then smiled in recognition. It wasn't her. It was the system.

When systems support reframing, encouragement, emotional inclusion, vulnerability, imperfection and creating agreements, people leave feeling recharged, much like they did in the Wisconsin workshop. When they don't, individuals are left carrying doubt on their own shoulders.

Conservation professionals often enter the field with extensive technical preparation but little training in the human skills their work requires. There is a pressing need for comprehensive instruction in conflict resolution, nonviolent and nonscientific communication, negotiation and facilitation—the very abilities needed to navigate public controversy and build trust. Likewise, once professionals move into leadership, there is a significant lack of training on how to coach, create feedback loops, foster psychological safety, set priorities and manage workloads compassionately. These gaps not only leave individuals unprepared but also perpetuate systems where confidence, connection and thriving are the exception rather than the norm.

A CALL TO ACTION

If students and early-career professionals are voicing imposter feelings before their careers even begin, we cannot treat this as an individual weakness. Even seasoned professionals express these feelings regularly during my workshops. Wildlife and conservation are too urgent—and the stakes are too high—to let imposter systems drive people out of the field. We simply can't afford to lose anyone.

There are a few things we can implement right now. First, we need to cultivate two-way feedback cultures where encouragement balances critique and individuals can discern what their responsibility is and is not. We need to equip students and professionals with real-world people skills alongside technical wildlife training. This may be a big ask, but if curriculums aren't currently serving students, we need to reevaluate them. We need to create spaces for reflection and vulnerability to emerge so that doubt can be expressed and normalized. Supervisors should be trained to foster psychological safety, trauma-informed support and adaptive leadership.

When we make these shifts, the profession changes from one where individuals ask, "Do I belong here?" to one where the system itself answers back: "Yes. You are needed and part of this community." ■



Michelle Doerr, MS, is a wildlife biologist with a master's in wildlife management from the University of Missouri. She worked for the Minnesota Department of Natural Resources in several capacities dealing with human-wildlife interactions and then in outdoor recreation for nearly 14 years. She started Anavah Consulting LLC to work with individuals, groups, companies and organizations interested in better human-human, human-wildlife and human-landscape connections. She has been working on conservation mental health and culture for more than six years.



SPECIAL FOCUS WILDLIFER WELLNESS

FINDING YOUR LIGHT

Some setbacks in your career can launch you forward

By Thomas Keller

▲ Following a devastating setback within our professional lives, we often feel alone and lost, swallowed up by despair. Having a light when we're surrounded by darkness allows us to make our way through the grieving process and eventually find our way out of the chasm.

John D. Chengler/Bat Conservation and Management, Inc.

I had never experienced true darkness until I sat several hundred feet underground in the Askon Hollow Cave in Pennsylvania conducting a hibernacula survey. I had gone into the cave ahead of the survey to unlock the gate and ensure the passage was clear for my colleagues. I wandered past old graffiti of people's names and dates scrawled onto the wall using ash from torches. As I walked farther into the cave, my headlamp light began dimming. I needed to switch out the batteries, so I stopped to fish out fresh double A's.

I had the batteries ready in one hand and the headlamp in the other, planning to replace them quickly just by feel. But as soon as I switched off my light, the darkness was palpable. It was like a thick, black wool blanket had been draped over my face. It wasn't just the lack of sight but the lack of sound. I was in a dry part of the cave, and no sound emanated from the blackness surrounding me. On one hand, I was fascinated with the sense of darkness, while on the other, my imagination began to spin yarns of what could be around me.

We seldom experience such physical darkness. Unfortunately, however, some-

times many of us in the wildlife profession experience this in the emotional or psychological sense. Over the past year, I've had friends throughout a variety of federal, state and local wildlife agencies experience job loss, budget cuts and forced relocation. Other friends within the NGO or consultant side of the profession have been laid off, transferred or seen a significant reduction in hours. With the general public's continual erosion of trust in government, science and expertise, many of us have experienced dark times recently.

If you've been in the field for any length of time, you've almost certainly experienced

▼ **Lindsey Erdman (left) and Cynthia Adams (right) orient their position within a Pennsylvania cave system while conducting bat hibernacula surveys. It is critically important to understand that when difficult setbacks come in our careers, we are never alone. We are often surrounded by colleagues that have been there before. Finding help from mentors or professional mental health experts is a great way to map our way out of the darkness and back into the light.**

John D. Chenger/batmanagement.com



setbacks in your career. If you're just heading onto the proverbial trail, welcome, friend. You've picked a fantastic profession, but just know that occasional storms will come. And that's okay. It's the difficult times that are needed to help us grow—if we choose. Without the challenging hurdles, we would never know great victories. Without failures and defeat, we would never learn resilience, determination and persistence. Problems are never comfortable and none of us would choose them, but they are inevitable and we have a choice in how we respond. Walking through the darkness gives us greater appreciation for the light and often allows us to see what things shine the brightest and therefore are most important to us.

MY FIRST BIG SETBACK

Most challenging times don't bring true darkness—cloudy skies with spitting rain, maybe. A grant opportunity falls through, a manuscript is rejected or we bury a truck up to its axles and have to call for help. Occasionally, though, a much tougher challenge comes along. These are like massive storms that touch down on our hearts and lay waste to everything growing there. Sometimes, it can be like a hurricane beating us down day after day, with seemingly no hope of blowing away. Other times, it's like a microburst—a massive force slamming down from above and leaving us heaped on the ground. No matter how it comes, we're left with the same feeling of hopelessness, frustration and often despair.

The first time this happened to me, I was a relatively young biologist working within one of Pennsylvania's six regions. I had

worked five years outside of the Pennsylvania Game Commission as a wildlife technician for a federal agency to finally build up enough experience and land my dream job: wildlife biologist for my home state's wildlife agency. Since the position's term was limited to three years, I did some homework first to figure out what exactly that meant.

Many colleagues told me that as long as I worked hard and did my best, the agency would continually renew my position. No term employee had ever not been renewed unless they were a poor performer or did something egregious. What no one could have anticipated in the next three years was a precipitous decline in finances for the agency. With that, it was decided that all term positions would be terminated, including mine. My supervisor fought hard to keep me, but in the end, as my last day drew near, I received word that I wouldn't be returning. This isn't unlike today's situation with many federal agencies letting go of newer employees or those within their probation period. They're likely hard workers and deserve to stay, but oftentimes such policies are out of our control.

I'll never forget the feeling as I sat in my chair after receiving that phone call. It was as if someone had literally reached into my chest and ripped out my heart. First came the shock that I had seemingly lost not only my career, but also my identity. That was quickly followed by sadness and anger, which mixed together feed bitterness. For me, the light had blinked out, and I sat in a quiet, dark cave of loneliness and despair.

STAGES OF GRIEF

When events like this occur, how can we possibly make it through? People will have many nice words: "Hang in there. It will get better." "It wasn't meant to be. Something even greater will come along." "You'll see that this will make you even stronger." Of course, the people saying these phrases are all well-intentioned, and the sayings may even have some truth to them. But they're not generally helpful in the moment.

Sometimes, we find ourselves in the darkness because of a poor decision on our part. It could be a mistake we've made or some outside force that is completely unrelated and out of our hands. Either way, the end result is often a sense of loss leading to grief. In order to make it through the storm, we have to pass through a myriad of stages, and there's really no shortcut if we want to make it to the other side in one piece, albeit with some scars.

The first stage is both shock and a denial. We may think to ourselves, "I can't believe I'm losing this job; this cannot be happening." Pain and guilt quickly follow once reality sets in. We may think, "This job is who I am. I've worked my entire life to get here. How could this have happened, and what could I have done differently to prevent this?"

Soon, pain turns to anger, and sometimes we even negotiate about the situation in our heads. Our thoughts may include, "This agency is awful; they don't know what they're doing. If they'd just give me a chance, I'd show them that I'm a valuable asset. I'd work even harder."



Once some of the anger relents, we move into depression, feeling extremely lonely, oftentimes withdrawing from colleagues, friends and family. We may feel, "Nobody understands this. I'll never find another job. I can't make it through this pain."

With enough time and reflection, we begin to see light through the darkness and move past much of the worst anger and pain. "This was such a hard experience that hurt so bad, but I think I can find my way back into the wildlife management field." With this light, we begin a period of reconstruction and rebuilding, trying to pick up the pieces and push ahead. "As I begin looking for another position, what did I learn from this past heartbreak, how can I avoid that in the future and how can

I begin to apply for another job with these lessons in mind?"

Finally, we accept that this is our new reality, and we begin to feel a sense of hope for the future. "I have a heart for the wildlife resource, I have a skill set to make a difference and I'm ready to get back into the field and do great things," we think.

GIVING IT TIME

For me, the most difficult aspect of this process is time. Having been through this several times within my career, I understand the grieving process. But each time, I've wanted to move through it with a Disney FastPass (now Lightning Lane). Unfortunately, that's not how it works. I've found that there's no cheating the

▲ At the terminus of Askon Hollow Cave in southwest Pennsylvania, biologists (left to right) John Chengler, Cal Butchkoski, Greg Turner, Tom Keller and Charlie Eichelberger take a quick break for a group photo after a hibernacula survey. When we feel we've reached rock bottom during the midst of a setback, friends like these can be the light in the darkness to help us crawl our way back to the surface, working together and lifting each other up.

Tom Keller

process. It's also important to understand that oftentimes we may jump back and forth from stage to stage. One day, we may feel like we've made it over the hump toward reconstruction, and the following day we're back in anger or depression. Despite the fact that it can take some time to move through these stages, there are a few things that can sometimes hold us back like a hand grasping our ankle. One of these that has impacted me greatly is bitterness.

Bitterness doesn't usually come if we've made a mistake or error, but often when we feel like we've been treated unfairly. It is a feeling of resentment that pulls from anger and disappointment. When people talk about bitterness, it's often referred to as a root that grows deeper into the soil of our inner selves the longer we feel these feelings or think these thoughts. Some of us may have come across the saying, "Bitterness is like a poison that we drink, hoping the other person will die." When we hold on to resentment, we may feel righteous and justified to feel that way, but in reality, we're only hurting ourselves. We're the only ones feeling the pain, and the person or persons who have hurt us aren't losing any sleep whatsoever over the matter, largely because they haven't given it a second thought.

There is really only one antidote to bitterness and resentment, and that is forgiveness. Forgiveness is deciding to let go of the anger, resentment and bitterness with intentionality. It does not mean you forget what happened, that you defend the actions of the perpetrator or that you have to repair that relationship if it was broken. It simply means that you no longer hold this person or group respon-

sible. When you are able to work through this, it can bring peace back to your life and provide a host of benefits, including freedom from anxiety, hostility, depression and overall better mental health. This step is about you, not them.

Lastly, another important aspect of finding light in the midst of darkness is growing your identity. This is a great challenge for many of us. We have hearts that beat for the wildlife resource, and we often accept relatively low-paying jobs in sometimes challenging environments to contribute to a greater good or a higher calling. We're proud of the work we do, and with all of this in mind, our identity quickly becomes wrapped up solely in our work and position. The danger comes when a devastating event at work crushes our entire selves. When we find identity in a variety of other aspects in life, we tend to be able to weather storms more effectively.

I have struggled mightily with this throughout my entire career. Slowly, after many dark and difficult storms, I have done better at finding identity in other things. I am not only a wildlife professional, but I am also a husband, a father, a farmer, a hunter, a fisherman, a trapper and an overall wildlife enthusiast and conservationist while off the clock. Often, dark times during that reflective stage help us reprioritize what is most important within our lives. Over my 18 years as a wildlife professional, I can recall four distinct life-altering career challenges that brought me to my knees and plunged me into darkness. Each time, I've had to slowly make my way through the grief, stand back up and take those first difficult steps forward. Like most ardu-

ous things in life, often we don't think we have the ability to get through it, but after we make it out the other side we realize we're much more capable than we thought. And each time we become stronger, grittier, and more resilient than the last. We also become more aware of what is real in our lives and what truly matters. The latest major setback was the most difficult, but also the most revealing when it came to my light. After a devastating blow at work, I returned home to my wife of 23 years and my 15-year-old daughter, both with tears streaming down their faces, sharing my pain but with outstretched arms to hold me in my grief. Despite long hours away from them and missed family opportunities in favor of trying to accomplish something for conservation, they were there all along, and especially at the end when no one else was. When it all comes crashing down, who or what is still standing beside you? It's often not an employer. When I face setbacks, I'm reminded what really matters in my life—my family. They are my light in the darkness.

EVERYONE HAS A DIFFERENT LIGHT

Finding your light may not be as clear as it was for me. Your light might be family like mine. It could be a good friend or group of friends. It could be a pet. It could be spiritual beliefs, a colleague, a hobby or pastime, volunteer opportunities or some other activity. Whatever your light may be, keep it powered and keep it bright. Feed time and energy into your light so that whenever the darkness comes, you're as ready for it as you can be. If you see someone else sitting in the darkness, come alongside them and sit with them. You don't have to pretend you

know what they're going through. You just have to be there for them. Sometimes just letting someone know you're there for them is more powerful than trying to find the right words.

If you're going through the darkness, don't feel you have to do it alone. No one understands what you're going through better than a colleague within this field. You are never alone in your feelings. Get some help, whether that be professional or from others who have been there before you. I have several core mentors who have walked the path ahead many years before me that I often turn to first when I encounter a challenging situation. Professional counseling can often be the best way to help sort out the challenges we're facing day to day. I fought against the stigma of getting professional help for

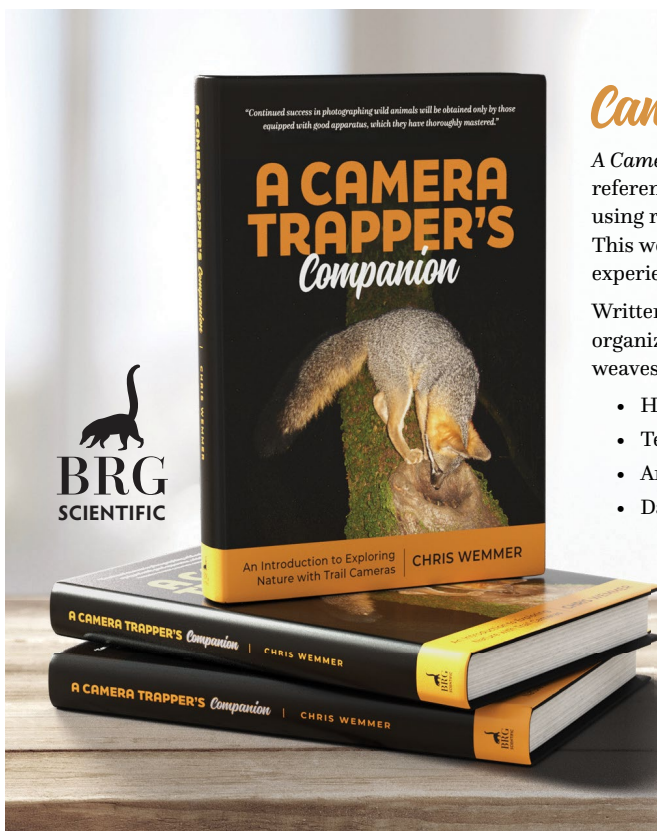
many years, but when I finally did, it made a world of difference. Many employers offer free or reduced counseling services as part of existing health benefits, so be sure and speak with your healthcare representatives to find out what your options are. We're a tight group of professionals with a heart that beats as one for the wildlife resource. We must work together and take care of each other. A healthy, well-balanced professional is an effective tool for wildlife conservation.

Back in Askon Hollow, I fumbled with the batteries, finally clicking in a fresh pair and slipping the used ones into my pocket. I closed the clasp on the headlamp and reattached it to my helmet. As I pushed the button, a beam of brilliant light pierced through the black, and all of the apparitions and fears of my imagina-

tion were extinguished. I ensured the light was attached securely to my helmet and worked my way out of the cave. The closer I got to the entrance, the more natural light shined in. Before long I was squinting as I stepped out into the frozen world of Pennsylvania in January. Back out into the light and on solid ground, I took the first step forward, and each step became easier than the last. ■



Tom Keller, CWB, serves as the furbearer biologist for the Pennsylvania Game Commission. He earned his bachelor's from The Pennsylvania State University in Wildlife and Fisheries Management and his master's from Green Mountain College in Environmental Science and Conservation Biology. He has worked for both federal and state wildlife agencies in a variety of biologist and supervisory roles. With 18 years of experience in the profession, he is continually reminded of just how much he doesn't actually know. He lives with the two lights of his life on a small farm in southcentral Pennsylvania and holds them close when things begin to turn dark.



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SCIENCE AT THE TABLE

Interfacing science and policy to advance conservation

By James L. Cummins and Camille Green

▲ Wildlife Biologist Rob Ballinger of Wildlife Mississippi describes water management in a Wetland Reserve Easement to former U.S. Senate Agriculture Chair Debbie Stabenow, D-Mich.

Courtesy of Wildlife Mississippi

The intersection of science and policy represents one of the most critical frontiers in modern conservation. As conservation problems become more complicated, it is more important than ever for scientists and policymakers to talk to each other and work together. Yet despite this necessity, there remains a significant disconnect between these two worlds—gaps that threaten our ability to address pressing natural resource concerns.

As science policy scholar Greg van der Vink aptly noted, “Our greatest threat may not be the scientific illiteracy of the public, but the political illiteracy of scientists.” This observation cuts

to the heart of a fundamental challenge in conservation today: scientists often struggle to translate their technical knowledge into actionable policy, while policymakers may lack the scientific understanding necessary to craft effective conservation legislation.

Conservation in North America faces unprecedented challenges. With projections suggesting human populations could reach as many as 40 million in Canada, 450 million in the United States and 150 million in Mexico by 2050, pressure on wildlife resources will intensify.

Also concerning is the steady decline in the percentage of federal funding allocated to natural resources. Function 300 of the federal budget, which covers conservation, land, water, recreation and pollution control, has dramatically decreased from nearly 4% during the Reagan administration to less than 1% today. This stark reduction underscores the diminishing priority placed on natural

resource conservation and the increase in priority of other programs at the national level.

Historically, biologists have not been significantly involved in decision-making processes. Politicians respond to people, while biologists focus on science. Yet we live in a democracy where power resides with citizens who collectively own wildlife resources in trust. This fundamental disconnect has hindered effective conservation policy development. As a result, wildlife professionals need to be more versed in policy and willing to come to the table to make positive changes for conservation. Doing so requires bridging the gap between scientific expertise and public engagement, ensuring that science-based recommendations reach both policymakers and the communities they serve. The benefit is more informed decision-making that balances ecological needs with societal values.

UNDERSTANDING THE SCIENCE-POLICY DIVIDE

People often use the terms “policy” and “politics” interchangeably, but they represent distinct concepts. Policy consists of established rules and principles guiding cooperative behavior within organizations or societies—it is the framework for action. Politics encompasses the activities involved in decision-making that affect resource distribution, the process through which these frameworks are negotiated and implemented.

While biologists have developed a sophisticated understanding of ecosystems, their influence on policy decisions and their

▼ **Wildlife Mississippi Executive Director James Cummins and a staff member of the American Forest Foundation discuss a proposed forest conservation easement program with U.S. Senator Roger Wicker, R-Miss.**

Courtesy of Wildlife Mississippi





understanding of how policy works remain limited. These disconnects stem from differences in approach and communication. Many biologists conceive of policy as a linear process, while legislation rarely emerges from scientific consensus alone. Biologists are often too focused on speaking only to other scientists rather than to the people who ultimately own our nation's fish and wildlife—the shareholders. When the public doesn't understand what we do or why it matters, they begin to question our relevance. When they feel excluded from conversations about resources they own in trust, skepticism grows.

For meaningful progress in conservation, scientists must learn to engage effectively with both policy and the political process. As Plato warned, "One of the penalties for refusing to participate in politics is that you end up being governed by your inferiors." This adage remains relevant for today's professionals who might prefer

fieldwork to political engagement but cannot afford to remain isolated from decision-making forums.

MAKING CONSERVATION RELEVANT TO SOCIETY

The key to changing policy to benefit wildlife lies in communicating conservation's relevance to everyday concerns. Conservationists must articulate how responsible resource management tangibly benefits communities by supporting economic development, preserving property values, creating jobs, promoting public health and enhancing quality of life. For example, research published in *Environmental Science & Technology* (2021) demonstrated that urban tree cover reduces heat-related mortality by up to 40% in vulnerable populations, and the U.S. outdoor recreation economy generates \$788 billion annually and supports 5.2 million jobs, according to the Bureau of Economic Analysis.

▲ **Camille Green participated in the Demmer Scholars Program, which provides graduate and undergraduate students with exposure to and experience in policymaking as it relates to natural resources.**

Courtesy of the Office of Rep. Bruce Westerman, R-Ark.

The conservation community faces a critical challenge: maintaining society's connection to the natural world and fostering appreciation for it. Americans broadly value outdoor experiences and conservation concerns continue to resonate with the public.

Consider forest management as an example: when properly communicated, sustainable forestry practices can be understood not solely as ecological interventions but as multifaceted approaches that simultaneously support wildlife habitat, recreational opportunities, carbon sequestration, clean drinking water resources and

sustainable timber production. This comprehensive framing makes conservation directly relevant to diverse stakeholders and ensures environmental considerations remain central when resource decisions are made. The Manomet Center for Conservation Sciences' biomass sustainability research provides a compelling illustration of this win-win approach.

Political operative Clarke Reed observed, "Enlightened self-interest is the greatest of all human motivations." By helping people recognize how conservation serves their interests, conservation advocates can build broader coalitions of support and influence policy more effectively.

BRIDGING THE GAP: EDUCATION AND TRAINING

The disconnect between scientific knowledge and policy implementation begins with education. Traditional wildlife degree programs emphasize biological principles, ecological theory and field methodologies but often neglect policy processes, political engagement and mass communications. While understanding ecosystem dynamics remains essential, biologists must give equal attention to the mechanisms through which this knowledge translates into conservation policy.

Progressive educational initiatives like the Demmer Scholars Program at Michigan State University and Mississippi State University demonstrate how this integration can work effectively, providing students with hands-on experience in Washington, D.C., where critical conservation decisions are made. Similar programs should be expanded nationwide.

Effective conservation education must extend beyond biological case studies to encompass social sciences, economics, communications, leadership, crisis management and administrative skills. Today's wildlife professionals need familiarity with sectors, including energy, agriculture, forestry and mining, to effectively balance environmental protection with economic development.

As Aldo Leopold observed, "One of the penalties of an ecological education is that one lives alone in a world of wounds." Without broader engagement skills, conservation professionals risk isolation. Leopold continued, "An ecologist must either harden his shell and make believe that the consequences of science are none of his business, or he must be the doctor who sees the marks of death in a community that believes itself well and does not want to be told otherwise." Today's conservation challenges demand the latter approach—scientists who recognize problems and possess the policy acumen to address them.

EFFECTIVE COMMUNICATION AND NETWORKING

Perhaps the most significant barrier between science and policy lies in communication. Scientists traditionally communicate through technical papers, specialized terminology and cautious qualifications that acknowledge data limitations. While these practices ensure academic rigor, they often render findings inaccessible to policymakers and the public.

Scientists need to improve their ability to connect with "lay people" by using accessible language. This requires tell-

ing compelling stories that illustrate scientific principles through relatable examples, such as the reintroduction of wolves into Yellowstone and its effect on the landscape for wildlife. By connecting conservation to human experiences, values and concerns, these narratives make abstract ecological concepts concrete and personally meaningful.

Networking represents another critical skill for conservation professionals. Connecting with other wildlife specialists facilitates knowledge exchange, sparks innovation and builds partnerships that strengthen conservation initiatives. Equally important is networking beyond the scientific community, such as engaging with policymakers, industry leaders and the public to build understanding and support.

Get to know elected officials and their staff. If they like to hunt, take them hunting. What are their needs? Politicians help you because they have needs; for the most part, they are not that worried about your needs. Figure out how what you want helps them achieve a need. This strategic approach transforms conservation advocacy from an adversarial stance to a collaborative process that advances mutual interests.

COLLABORATIVE APPROACHES

Wildlife Mississippi, a nonprofit that works to conserve habitat in the state, exemplifies successful collaborative conservation through its Conservation Finance Center.

By working with approximately 36,000 farms covering over 10 million acres in Mississippi, this initiative identifies properties where conservation aligns with

economic interests. Marginal farmlands with poor drainage or frequent flooding—economically inefficient for crop production—often possess optimal characteristics for wetland restoration. Through programs like the Wetlands Reserve Easement, farmers receive payments for retiring these challenging parcels from production, simultaneously enhancing wildlife habitat and strengthening farm profitability.

This approach has restored and protected over one million acres of wetlands in the Lower Mississippi Alluvial Valley at a cost of approximately \$4 billion in today's dollars. This investment has resulted in over \$3 billion in savings for the taxpayer by avoiding crop insurance, disaster assistance and commodity payments. Such initiatives demonstrate how conservation can proceed through incentive-based strategies rather than regulatory mandates, building broader constituencies of support and increased government efficiency.

Similar collaborative models have created programs, including the wildlife component of the Environmental Quality Incentives Program, the Emergency Forest Restoration Program and the Partners for Fish and Wildlife Program. These successes illustrate the critical pathway through which scientific understanding informs policy design when conservationists engage effectively with legislative processes.

THE PATH FORWARD

Despite past achievements, conservation funding faces mounting challenges. As national debt concerns intensify, conservation programs frequently bear

disproportionate budget cuts. While fiscal responsibility requires scrutinizing all government expenditures, conservation initiatives should be evaluated based on their comprehensive return on investment, including economic benefits from ecosystem services.

A thriving economy is not sustainable if it undermines conservation, just as effective conservation is more likely to endure if it makes economic sense. Conservation cannot simply preserve our environment but must accommodate the needs of communities who live and work there—the voters who elect our policy officials.

Sustainable funding requires innovation in conservation finance and tax policy. The field has seen no major funding innovations in approximately 35 years, creating an urgent need for creative approaches that expand and diversify revenue sources. Future conservation leaders must develop these financial mechanisms while building broader coalitions of support.

Strategic engagement with elected officials remains essential. Conservation advocates should identify politicians' priorities and demonstrate how their initiatives advance these goals. Political support increases when national legislation is made locally relevant by showing how broader policy benefits specific constituencies.

Effective advocacy also requires pragmatism. Senator Trent Lott, the former majority leader of the U.S. Senate, would often say, "Remember, 80% of something is better than 100% of nothing." Incremental advances, while imperfect, create foundations for future improvements.

BRIDGING THE DIVIDE

The future of conservation depends on effectively bridging the divide between scientific knowledge and policy implementation. As environmental challenges grow increasingly complex, neither scientists nor policymakers can afford to operate in isolation. Instead, successful conservation requires professionals who understand ecological principles, policy mechanisms, economic considerations and communication strategies.

The conservation programs we enjoy today resulted from deliberate efforts by previous generations who recognized both the value of natural resources and the necessity of political engagement to create and preserve them.

By developing policy literacy alongside scientific expertise, today's conservation leaders can translate ecological understanding into effective conservation actions. This integrated approach represents our best hope for addressing pressing challenges such as climate change, habitat loss and biodiversity decline, while creating sustainable conservation systems that future generations can depend upon. ■



James L. Cummins is the executive director of Wildlife Mississippi. He received his Bachelor of Science from Mississippi State University in fisheries management and his Master of Science from Virginia Tech in fisheries science. In the late 1980s, he worked in the U.S. Senate for Senator Thad Cochran, R-Miss. He co-edited the textbook, "North American Wildlife Policy and Law."



Camille Green, AWWB, is the conservation policy coordinator of Wildlife Mississippi. She received her Bachelor of Science degree in wildlife, fisheries and aquaculture and a Bachelor of Arts in political science, both from Mississippi State University. She is the former executive director of the Mississippi College Republicans.



ANNUAL REPORT_{FY}25

TWS HIGHLIGHTS JULY 1, 2024 - JUNE 30, 2025



18%

increase in readership with 691,280 full-text views across 220 countries in 2024.

1,746

attendees at our 31st Annual Conference in Baltimore, Maryland

10,906

members including wildlife professionals, students, retirees and others

\$250,000+

in TWS programs supporting wildlife professionals thanks to our partners in conservation

Over the next five years and beyond, TWS will maintain, enhance or expand its performance and leadership in each mission priority area:

Building Community – engage and evolve an inclusive community of diverse wildlife professionals to conserve wildlife and their habitats

Supporting Professionals – enhance support and provide resources to ensure professionals effectively influence the future of wildlife conservation

Exercising External Influence – be an effective voice and a trusted resource for wildlife science, conservation and management

WHO WE ARE

200+ CHAPTERS & SECTIONS

We support wildlife professionals and their work of conservation in over 50 states, provinces and territories across North America and beyond with 155 student chapters, 56 chapters, 32 working groups and eight sections.

2,000+ WILDLIFE CERTIFICATIONS

We have provided over 2,000 Associate Wildlife Biologist® and Certified Wildlife Biologist® certifications to strengthen professionalism in the field. More than 30 members are Qualified Airport Wildlife Biologists.®

NEARLY 11,000 MEMBERS

Our members include wildlife professionals, students, early-career professionals and retirees. We have members across North America and abroad working for federal, state and provincial agencies, universities, nonprofits, private companies and more!

660,000+ PUBLICATION READS

We publish three scientific journals: *The Journal of Wildlife Management*, *Wildlife Society Bulletin* and *Wildlife Monographs*. Additionally, we publish *The Wildlife Professional*, a popular magazine for members.

MEMBERSHIP

10,906 members

Membership renewal rate of **73%**

VISION

A world where wildlife and people thrive in resilient ecosystems.

MISSION

Empower wildlife professionals to advance conservation through science, community and professional excellence.



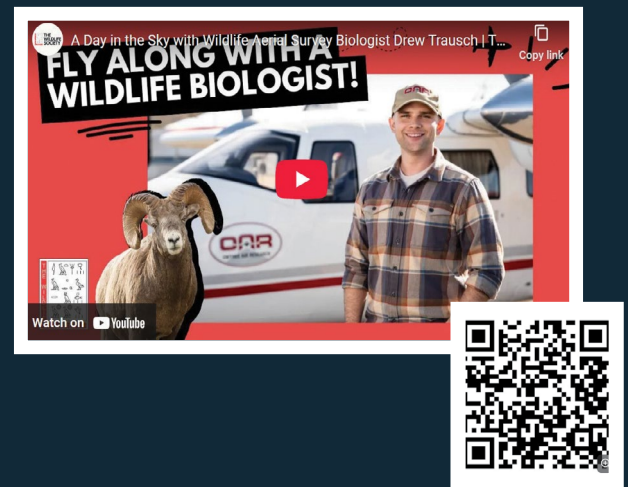
SOCIAL MEDIA INFLUENCE

199,049 total followers across all platforms.

TWS content was shown more than **13.5 million** times across all social media platforms and generated over 1.5 million interactions.

27,259 total follower growth across platforms (15.9% increase).

Published **422** web articles, including 45 based on content from TWS' journals and 25 Wildlife Vocalizations features.



JULY 1, 2024 - JUNE 30, 2025

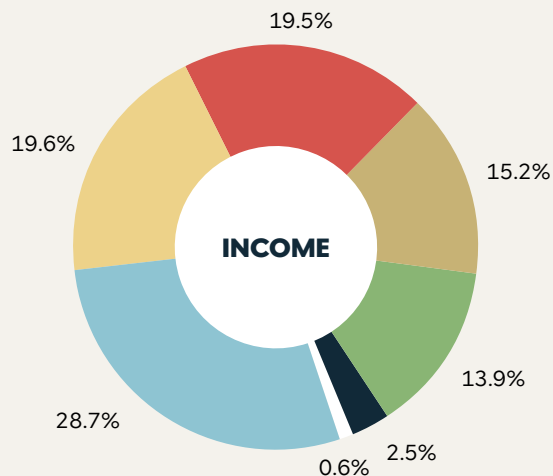
FY25 PROFIT AND LOSS

Total income	\$3,588,815
Total expenses	\$3,255,019
Net income	\$363,796

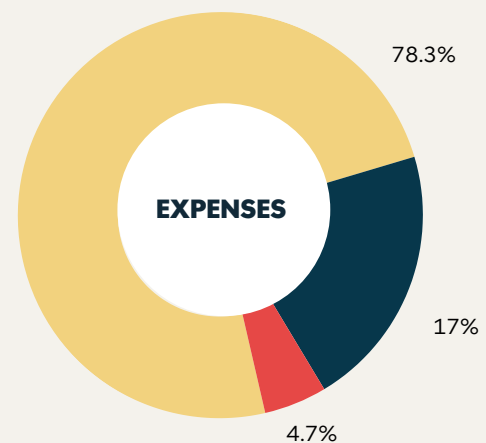
**includes both restricted + unrestricted funding*

FY25 STATEMENT OF FINANCIAL POSITION

Total assets	\$6,045,155
Total liabilities	\$1,032,798
Net assets	\$5,012,357
Total liabilities and net assets	\$6,045,155



Conference	1,029,987
Membership Dues	703,278
Royalties	700,181
Contributions	545,194
Investments	497,703
Publications	91,500
Other	20,972
Total	3,588,815



Program	2,547,933
Management and General	553,179
Fundraising	153,907
Total	3,255,019

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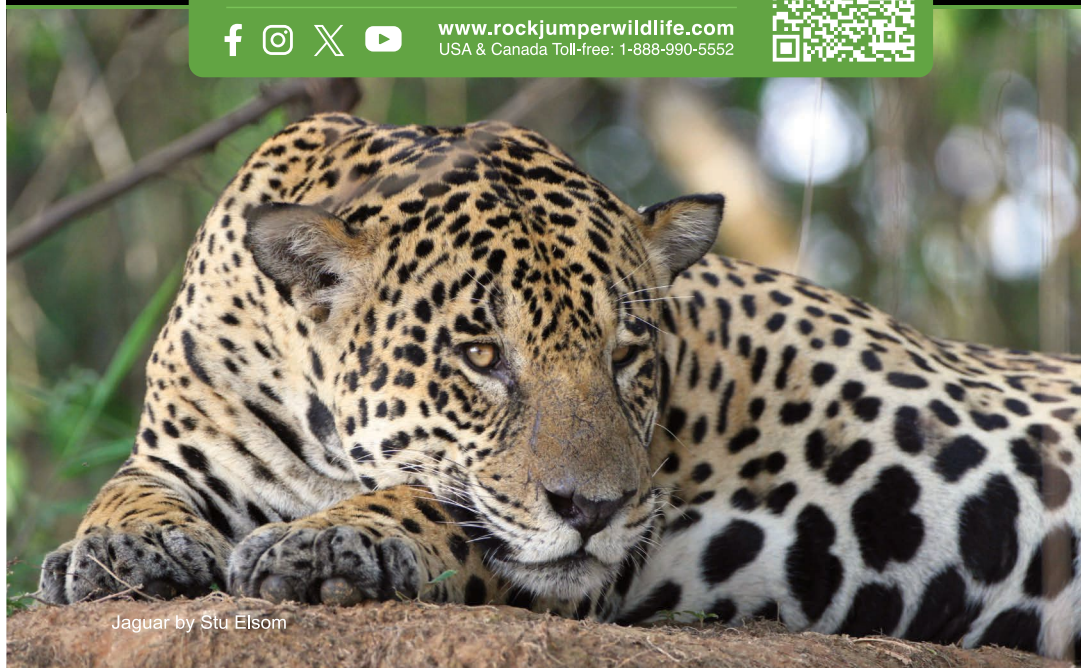


Toco Toucan by David Hoddinott

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Golden-collared Macaw by Bobby Wilcox



Jaguar by Stu Elsom

STEWARDSHIP THROUGH UNCERTAINTY

Advocating for conservation professionals and wildlife on America's public lands

On Sept. 11, 2025, the Bureau of Land Management [proposed to rescind](#) the Conservation and Landscape Health Rule that was finalized in May 2024. The [rule](#) established a “policy for the BLM to build and maintain the resilience of ecosystems on public lands in three primary ways: (1) protecting the most intact, functioning landscapes; (2) restoring degraded habitat and ecosystems; and (3) using science and data as the foundation for management decisions across all plans and programs.” It codified conservation tools available to the BLM within the multi-use framework of the [Federal Land Policy and Management Act of 1976](#) (FLPMA) and facilitated the designation and protection of areas of critical environmental concern (ACECs) on BLM lands.

In the proposal to rescind the Landscape Health Rule, the BLM identified conservation as a “non-use” incompatible with statutory multiple-use mandates. This assertion concerns those who dedicate their careers to managing wildlife on public lands. The hundreds of millions of acres of public lands the BLM manages are not static landscapes. They are living systems that management decisions help shape. The Landscape Health Rule was designed to make those decisions more consistent. During the development of the Landscape Health Rule, TWS commended this approach and urged clarity around terms such as “intact landscapes” and “protection,” recognizing that these definitions would directly influence habitat conservation and species persistence.

The rule acknowledged what wildlife professionals have long understood: ecological integrity is essential to fulfilling multiple-use mandates.

Wildlife professionals know that conservation is not the absence of activity on a landscape—it is work. It encompasses field surveys and habitat assessments, prescribed burns and restoration projects, population monitoring and adaptive management. It is the daily, hands-on practice of trained professionals applying science to sustain wildlife and the ecosystems that support them. To call this “non-use” diminishes both the wildlife that depend on these lands and the professionals whose expertise keeps those lands healthy. As a result, the BLM’s proposal raises deeper questions: does our nation still recognize conservation as an active public service, and does it value the people who perform it?

A CHANGING CONTEXT FOR CONSERVATION

Today’s public lands policies operate in an environment of polarization and diminishing public trust. Where stewardship once served as common ground, many now increasingly portray it as competing with economic use. The framing of conservation as “non-use” illustrates this troubling shift from stewardship as action to stewardship as absence.

This misperception also erodes recognition of the wildlife profession itself. The public sees the products of conservation—healthy herds, abundant wildlife

and ample opportunities to access wildlife and their habitats—but rarely the professionals and science behind those outcomes. As political rhetoric overshadows ecological reality, the profession risks invisibility in the very spaces it sustains.

TWS AS A VOICE FOR SCIENCE AND STEWARDSHIP

Since its founding, The Wildlife Society has championed wildlife management as both a science and a profession. In our 2023 comments on the Landscape Health Rule, we supported the rule’s emphasis on ecosystem resilience, rare and unique wildlife habitats and science-based land health standards. We also emphasized that effective implementation requires a well-supported workforce with the resources and training to carry it out.

That message remains urgent. TWS continues to advocate for science-based management programs and resources to support a well-trained, dedicated workforce of wildlife professionals across federal agencies. Our members serve as the bridge between ecological research and practical management—turning data into decisions that sustain wildlife and the public lands on which they depend.

BUILDING RESILIENCE FOR THE PROFESSION

Wildlife professionals are facing a convergence of challenges. Ecological threats, such as climate change, habitat fragmentation and increasing human demands on public lands, are compounded by structural pressures on agencies and

workforce capacity. TWS participated in a recent [national survey effort](#) focused on documenting effects on ecological science resulting from changes to federal policies and administrative priorities. Roughly 85% of participants reported that recent federal policies have generated “uncertainty about the future,” and 79% indicated that those policies have increased “stress and anxiety.” Nearly half of the respondents reported funding freezes (48%), cuts to the federal workforce (46%) and job uncertainty (46%).

When workforce capacity is reduced, training opportunities for future wildlife professionals are lost, institutional knowledge is eroded, and monitoring programs that span decades become vulnerable. The survey underscores the seriousness of the early-career bottleneck: more than 70%

of respondents reported negative or very negative impacts on their career prospects. If professionals are under-resourced, over-stretched or omitted from policy decisions, then wildlife management suffers.

TWS’ response must go beyond advocacy. We must also bolster professional resilience through workforce development, mentoring and public recognition of the wildlife profession. We will also continue to advocate for robust, sustained sources of funding for wildlife conservation and structures that allow managers to do the work, not simply react to disruption.

MAKING WILDLIFE PROFESSIONALS VISIBLE

If the public does not see the people behind wildlife conservation, it falls to us to make that work visible again. Every habitat assessment, monitoring plan or

policy comment that a TWS member authors demonstrates that conservation is not passive—it is deliberate, measurable and effective—and it’s shaped by people who care deeply about the resources they serve. If you haven’t already, go listen to an episode of TWS’ new podcast, “[Our Wild Lives](#).” TWS members and their work continue to inspire me, and I hope to find ways to integrate the power of storytelling into our advocacy efforts.

Defending wildlife means defending the profession that serves it to ensure that, through change and uncertainty, the voice of wildlife stewardship endures. ■



Kelly O'Connor, MS,
MEMBER is the conservation policy manager for The Wildlife Society.



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APPLE AIRTAGS KEEP TABS ON URBAN HAWKS

Apple AirTags aren't just handy for keeping track of your luggage or keys. According to a [study](#) published in Wildlife Society Bulletin, they are also a cost-effective method for estimating the home range of Harris's hawks.

An AirTag is a disc-shaped tracking device about the size of a quarter. When it comes within 15 meters of an iPhone or other Apple device, it forwards its location data via Bluetooth connection. The Apple device will then relay the location information to the AirTag's owner via the iCloud network.

"If you own an iPhone, you're a technician and now tracking for us," said TWS member Andrew Gregory, an assistant professor at the University of North Texas and coauthor of the paper. In the U.S., nearly 60% of smartphone users have iPhones, providing many potential technicians.

Traditional home range tracking technology, like very high frequency (VHF) trackers, cost around \$200. But each AirTag runs around \$30, and they are easy to use. Brooke Poplin, now a doctoral student at the University of Florida, needed a low-cost solution to track the home range of the Harris's hawk (*Parabuteo unicinctus*) around the Rio Grande Valley for her master's thesis. So, she designed AirTag "backpacks" using super-strong ribbon, electrical

shrink wrap tubes and liquid epoxy that sat close to the hawk's body.

The team tracked nine Harris's hawks with VHF transmitters and six with AirTags over the span of 12 weeks. Poplin could only get out to the field sites to track the VHF birds about once every three days, but could check the Find-My app that tracks AirTags four times a day to record the most recent location data. Although the hawks weren't always near people, they often perched on power lines by busy roadsides or in backyards, where iPhone users might be passing by.

In comparing the two methods, AirTags had a few advantages over traditional VHF tracking. The cost per usable data point was also much lower: for AirTags, it was less than \$1 and for VHF tracking, it was over \$69. The quality of the data for determining home ranges and habitat selection was also high. "We found there was not any bias in AirTag home ranges compared to VHF," Gregory said. "But when using AirTags, location and species matter." This means that AirTags are not yet suitable for migration studies or species that aren't as gregarious and human-tolerant as Harris's hawks.

That's the next hurdle the team is working to overcome: potential bias in tracking data when animals leave areas
(continued on page 68)



▲ Brooke Poplin poses with the tracker she designed, which weighs about 15 grams.

Brooke Poplin



▲ The super-strong Spectra® ribbon crisscrossed over and under the hawks' wings, so it doesn't interfere with flight feathers.

Brooke Poplin

Happy 90th Birthday

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Happy 90th TWS!



The Wildlife Management Institute sincerely wishes The Wildlife Society a **Happy 90th Birthday!** From your inception at WMI's 1936 North American Wildlife Conference (above) to your work with WMI in shaping conservation's future, we are grateful for TWS's partnership and look forward to the next 90 years together!



Field Notes



▲ Technician Hunter Green (left) and Brooke Poplin (right) install an AirTag tracker on a Harris's hawk.

Brooke Poplin

(continued from page 66)

with iPhones. But for less than \$65, they can build an AirTag node out of an old iPhone, a cheap monthly data plan and a solar panel to place in a natural area to help fill gaps in their study site, which is much cheaper than other technologies.

Five of the birds stopped communicating their locations, two of which gave a low battery signal before going dark. Three others were juvenile birds in their “exploration” phase, so Poplin said they likely dispersed out of urban areas.

AirTags have a supposed battery life of a year, but Poplin still has a hawk from the study on her iPhone one year and nine months later. ■

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Happy Birthday to You!

The Ecological Society of America sends its congratulations to our friend in biology, conservation & resource management, The Wildlife Society, on 90 great years. Here's to many more working together on our shared missions to advance our sciences to understand life on earth.





Dragomir Vujnovic

TWS member Dragomir Vujnovic died in July 2025. Vujnovic was the quintessential wildlife biologist who was fascinated with all things living. He immortalized the plants and animals around him in his amazing photographs. He perhaps thought that they could live on forever in print, to keep them from disappearing from the forests and prairie he worked tirelessly to protect.

Vujnovic moved to Alberta from Yugoslavia in the fragile time before war broke out, leaving behind ethnic tensions so he could live a free and full life—and he did. Bringing his skills as a biologist working in parks, he devoted his new life to Alberta wildlife. A man of infinite patience and keen

observation, his wildlife photography skills were eclipsed only by his vast wealth of naturalist knowledge. Those who had the honor of working with him on research projects always learned so much. He labored tirelessly to protect wildlife in a province with rates of landscape change eclipsed only by the Amazon rainforest. He never lost hope, and he carried many colleagues when they faltered.

But more than his skills, he was endlessly optimistic, even as he fought several battles for his life. His smile brightened every room, and his laughter dispelled every gloom. He was a man of great compassion, insight and kindness.

David Lee Trauger

Longtime TWS member David L. Trauger, a distinguished wildlife research biologist, administrator and educator, died Sept. 20, 2025. He was 83.

Born on June 16, 1942, Trauger developed an early interest in natural resources. As an undergraduate student, he found seasonal employment on federal wildlife refuges in Iowa and Missouri, developed important personnel contacts and began collecting data on breeding blue-winged teal for publication.

Trauger received a bachelor's degree in 1964, a master's in 1967 and a PhD in 1971,

all in biological sciences from Iowa State University. His dissertation featured the breeding biology of lesser scaup in the Northwest Territories, Canada. The study measured the reproductive success of known aged-marked females, which pioneered newly developed aging and marking techniques and was groundbreaking research.

Trauger joined the U.S. Fish and Wildlife Service in 1972 as a wildlife research biologist at the Northern Prairie Wildlife



Research Center in Jamestown, North Dakota. His first assignment was to assess productivity concerns of canvasbacks breeding in the Prairie Parklands of Canada. He also initiated migration studies of canvasbacks to determine major stopover areas and potential causal

factors threatening large concentrations staging on the Upper Mississippi River. In July 1975, Trauger was promoted to assistant director at the Center and began his administrative career supervising a preeminent staff of scientists,

technicians, and support groups overseeing countless international migratory bird research projects.

In June 1979, he was appointed as chief of the Division of Wildlife Research in Washington, D.C. In this position, he oversaw all federal research being conducted in facilities throughout the 50 states, including marine mammals in Alaska and endangered birds in Hawaii. In June 1983, he transferred to the Patuxent Wildlife Research Center, where he served as center director until 1987 when he was assigned to the position of deputy center director. During 1996 and 1997, he oversaw the center's transition to the National Biological Service and

participated in the reorganization of the National Biological Service into the U.S. Geological Survey. While at Patuxent, he taught graduate-level courses at George Mason University in Virginia, as an adjunct professor.

On June 31, 2001, David retired after 32 years of federal employment, and on July 1, accepted the position as director of the Natural Resources Program of the Northern Virginia campus of Virginia Polytechnic Institute and State University, where he served for more than five years. Trauger was most proud of his efforts to guide the next generation of conservation leaders.

Over his more than 50-year career in conservation, Trauger served as a research biologist, directed wildlife research centers, mentored graduate students, authored more than 80 publications and received numerous awards. He excelled in his visionary and communicative skills to address complex ecological and managerial natural resource issues. His legacy as a passionate conservationist will live on due to his tireless dedication and commitment to protecting the natural world that surrounds us. ■

Members who wish to submit a tribute should send it to editor@wildlife.org.

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#WCS30PRO

Proline™ Alley Cat Bobcat and Feral Cat Lure



#WCSTJAC #E00011

Neighborhood Cats TNR Drop Trap



#TLTDT1

Proline™ Clawdus Feral Cat Lure



#WCSTJCL #WCSTJCR

Vet-Pro™ Gloves



Full Line of Wildlife Capture and Handling Equipment

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Gotcha!

Want to share your photo here?

Send it to editor@wildlife.org.

ANDREA CAMPANELLA

Wildlife photographer Andrea Campanella captured this photo of a great horned owl (*Bubo virginianus*) while on a trip in Fray Jorge National Park in Chile. Campanella decided to check a remote research station where she used to live and work from 1993 to 1996. She was heartbroken to find that people had abandoned the area but happy to see the usual resident owls persisting undisturbed.



EVERYTHING YOU NEED FOR YOUR TRACKING WORK.

Moose, Deer and Elk Tracking



G5 IRIDIUM GPS SERIES

The G5 and G5M Iridium GPS models offer a range of weights and battery life to accommodate varying needs. The G5 and G5M Series collars are dependable, field-proven GPS collars that utilize the most capable satellite communication technology available; Iridium. An integrated VHF transmitter allows you to track the animal in the field. Your collars' GPS location data is uploaded to ATS' managed Iridium website (atsidaq.net) according to the schedule you choose.

M4200 EXPANDABLE VHF COLLAR

ATS has been a pioneer in VHF animal tracking since 1960. Our M4200 expandable breakaway units are popular for tracking young, growing animals such as fawns. The M4200 series ranges from 68g-340g and has varying battery life options to suit your needs. These also have an option for "Neolink" which means the fawn collar will communicate with the mother's collar.



M3900 MAMMAL VAGINAL IMPLANT

The M3900 vaginal implants are perfect for expecting mothers. These can be implanted into Moose, Elk, and Deer. When they birth, and the temperature changes, the M3900 units will double the pulse which tells the researcher the mother has given birth. These units' range in size and weight, depending on the species they will be used on. They can also be equipped with the "Neolink" option to communicate with the mothers collar.



 **(763) 444-9267**
www.atstrack.com





DEAD RECKONING NOW AVAILABLE

TRACK WITH PRECISION LIKE NEVER BEFORE

Investing in rugged, dependable GPS collar hardware is only the beginning... now you can see the full story of movement. Dead reckoning uses direction, speed, and motion data to estimate a smooth, continuous track between GPS points.

Extend battery life and reduce field visits by estimating positions between GPS fixes, collars can record less often without sacrificing detail, giving you more data for longer deployments.

Continuous tracking—even off the grid. Whether it's dense forest or remote backcountry, dead reckoning keeps working when GPS signals fade. You'll get uninterrupted tracking and fewer data gaps.

Go beyond locations and understand how and why animals move. Dead reckoning helps identify subtle patterns that standard GPS alone can miss, offering you a richer behavioral understanding.

OUR WORK IN ACTION:
WILDLIFE GPS TRACKING DEVICES
INVENTA APP & DATA MANAGEMENT

