BIRDCONSERVATION

The Magazine of American Bird Conservancy

WINTER 2017-2018

Bird Conservation:
It's Time to Scale Up

I write from row 31A of a flight from Washington, D.C. to Seattle. As we head west, I truly have a bird's eye view of the continent. What often strikes me on these flights is how the evidence of human activity is so widespread on the landscape below. It's strange to feel so small as an individual, while realizing how profoundly we humans have changed the surface of the planet below across vast areas.

At this moment, the plane is passing over a lake obviously created by a large dam; most everything else is farmed, with irrigation circles in the distance and what look like two giant solar arrays close by. As a conservationist, I can't help but consider the impact these features on the landscape have on birds.

What if we harnessed our power to reshape the landscape through agriculture, energy development, forestry, and ranching in a way designed to really scale up conservation for birds and wildlife?

We certainly have the ability to do this. It is already happening across significant acreage in parts of the United States and Latin America, through work supported by Farm Bill programs such as the Sage Grouse Initiative, Working Lands for Wildlife, and the Conservation Reserve Program, to name but a few. These programs provide landowner incentives for conservation, and are showing there's a sweet spot that benefits both birds and land managers.

At ABC we refer to landscapes crucial for birds as BirdScapes. We work with land managers to determine what needs to be done to maximize habitat value for birds, then we develop and implement conservation programs using incentives to help landowners put conservation plans into action.

We can turn around bird declines by bringing our collective efforts to the challenge.

In some cases, these habitat improvements for birds carry minimal cost — and can even have financial benefits for landowners. Tree farmers, for example, can manage land to benefit Golden-winged Warblers by creating a more dynamic forest, and then sell some of the timber to generate income. The USDA's Sage Grouse Initiative, meanwhile, helps landowners in western states make their land more suitable for the Greater Sage-Grouse through management activities that also improve forage for cattle.

We know we need to do more to reverse the declines in bird populations. ABC works throughout the hemisphere to achieve this goal, and this presents us with both challenges and opportunities. The challenges are well-known: Countering habitat loss and degradation, for example, and threats such as pesticides, feral cats, and poorly sited wind turbines.

Bringing our collective efforts to the challenge — and providing incentives to scale up conservation across the landscape — provides opportunities to turn around bird declines. And it's a process in which everyone can play a part.

Michael J. Parr, President
American Bird Conservancy

COVER: Greater Sage-Grouse by cjchiker, Shutterstock TOP: Greater Sage-Grouse by Pat Gaines

AMERICAN BIRD CONSERVANCY

ABC is dedicated to conserving birds and their habitats throughout the Americas. With an emphasis on achieving results and working in partnership, we take on the greatest problems facing birds today, innovating and building on rapid advancements in science to halt extinctions, protect habitats, eliminate threats, and build capacity for bird conservation.

A copy of the current financial statement and registration filed by the organization may be obtained by contacting: ABC, P.O. Box 249, The Plains, VA 20198. 540-253-5780, or by contacting the following state agencies:

Florida: Division of Consumer Services, toll-free number within the state: 800-435-7352.

Maryland: For the cost of copies and postage: Office of the Secretary of State, Statehouse, Annapolis, MD 21401.

New Jersey: Attorney General, State of New Jersey: 201-504-6259.

New York: Office of the Attorney General, Department of Law, Charities Bureau, 120 Broadway, New York, NY 10271.

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Virginia: State Division of Consumer Affairs, Dept. of Agriculture and Consumer Services, P.O. Box 1163, Richmond, VA 23209.

West Virginia: Secretary of State, State Capitol, Charleston, WV 25305.

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***Bird Conservation* is the magazine of ABC and is published four times yearly for members.**

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Winter 2017-2018

BIRDCONSERVATION

Brad Keitt, Program Director for Oceans and Islands at ABC, holding a Newell's Shearwater that was moved to a predator-free enclosure in Kilauea Point National Wildlife Refuge as part of an effort to create a new, safe nesting colony. Photo by Nick Holmes

DEPARTMENTS

TOP: Yellow-shouldered Blackbird. This endangered Puerto Rican species' habitat was decimated by Hurricane Maria. Photo by Mike Morel, USFWS

Destructive Hurricane Season Affects Caribbean Birds

Hurricanes Irma and Maria tore across the Caribbean and Florida in September, taking a terrible toll on people and wildlife. From survey reports, ABC staff have been able to gather a few updates on some birds of concern.

Puerto Rican Parrot by Pablo Torres, USFWS

Irma reportedly caused thousands of deaths of American Flamingos in the Cayo Coco Cays of Cuba. In Barbuda, our partner BirdsCaribbean reported that habitat destruction on the island was near-complete after that storm. Still, eight rare Barbuda Warblers were sighted on the island in late September. During a mid-October survey, BirdsCaribbean and partners counted more than 1,700 surviving Magnificent Frigatebirds in hard-hit Codrington Lagoon. No West Indian Whistling-Ducks were observed; however, additional surveys and conservation plans are in the works.

Both Irma and Maria brought significant damage to the island of Dominica and probably to the Black-capped Petrels that are believed to nest there. We also know via eBird reports that Black-capped Petrels were displaced by Irma and showed up far from their normal at-sea foraging grounds, with reports from inland Florida, Georgia, and Tennessee.

Barbuda Warbler by Justin Dutcher

Other rare birds of Dominica potentially impacted by Maria are Imperial Parrot (endangered) and Red-necked Parrot. As we went to press, no surviving Imperial Parrots had been reported, and only a few Red-necked Parrots had been observed.

Puerto Rico, meanwhile, was devastated by the storms. One bright spot on the wildlife front is the status of the rare Puerto Rican Parrot, which persists in two captive and two wild populations. Captive birds and at least a few wild parrots are known to have survived.

Another species found only in Puerto Rico, the Yellow-shouldered Blackbird, numbers only a few hundred individuals; the species' coastal habitats were hard-hit by Maria. The species' current status is unknown.

In the southeastern U.S., Audubon Florida reported that Irma destroyed all 44 nests of the endangered Snail Kite around Lake Okeechobe. With only 130 nests statewide, the birds were already having a bad year, and this setback puts them in a tough position for next breeding season. ABC's programs in the Gulf region were directly affected by the loss of fencing and signage to protect colonies of beach-nesting birds, including Least Terns and Black Skimmers.

For more information, or to help, visit **BirdsCaribbean.org**

Efforts in California and Congress Target Harmful Pesticides

On behalf of ABC, the environmental law organization Earthjustice has petitioned the California Fish and Game Commission to adopt a statewide prohibition on the use of neonicotinoid pesticides on the more than 1 million acres of wildlife habitat under its jurisdiction.

Neonics are a relatively new class of pesticides that are deadly to pollinators and other wildlife, including birds. Europe has enacted a moratorium on the use of neonics, and Canada has proposed a nationwide ban on the most widely used neonic, imidacloprid, given the risk it poses to birds, insects, small mammals, and other wildlife. In the U.S., many state legislatures and companies, including Home Depot and Walmart, are reining in the use of neonics. The U.S. Fish and Wildlife Service banned neonic use on National Wildlife Refuge lands last year.

In other pesticide news, several U.S. senators have introduced a bill to ban chlorpyrifos, a widely used pesticide that has been killing birds and poisoning the environment for the past half-century. The bill would prohibit all chlorpyrifos use by amending the federal law that oversees food safety. Chlorpyrifos is related to sarin nerve gas and is used in production of common crops such as strawberries, apples, citrus, and broccoli.

In addition to the pesticide's well-known threats to human health, ABC is concerned about chlorpyrifos' effects on birds, including declining species such as the Mountain Plover. A recent draft biological evaluation from the Environmental Protection Agency stated that chlorpyrifos is likely to adversely affect 97 percent of all endangered wildlife, including more than 100 bird species listed under the Endangered Species Act.

Mountain Plover by Jacob Spendelow

Ready to take action against pesticides? Urge your elected officials to support the **Saving America's Pollinators Act**, which suspends the registration of neonics, in the House of Representatives; and the **Protect Children, Farmers & Farmworkers from Nerve Agent Pesticides Act**, which bans chlorpyrifos, in the Senate.

'Poo-Poo Project' Reaches Milestone to Help Cavity-nesting Birds

The Teton Raptor Center has reached a milestone in its quest to protect cavity-nesting birds from entering vault toilets — the type of self-contained toilets found in many wilderness areas — through the ventilation pipes and becoming trapped. The Wyoming-based center has now installed more than 10,000 screens on vault toilets across all 50 states.

Each year thousands of cavity-nesters become trapped and die in vertical open pipes such as mining claim stakes, ventilation pipes, dryer vents, fence posts, old irrigation pipes, and chimneys. (ABC has successfully advocated for the capping of open pipes on mine claims across the West.)

Elf Owls are a cavity-nesting species that will be helped by this project. Photo @Terry Sohl.

In 2010, the Teton Raptor Center installed 100 screens on the ventilation pipes of toilets in Grand Teton National Park and other natural areas. Three years later, the center created the Poo-Poo Project and developed its own 12-inch "Poo-Poo Screen" to prevent wildlife entrapment on a national scale.

For more information on the Poo-Poo Project, or to purchase and install a screen, visit **tetonraptorcenter.org**

Camera Captures Cat Attack on Endangered Hawaiian Gallinules

A pair of breeding Hawaiian Common Gallinules was killed while sitting on their nest in a national wildlife refuge last spring, making them among the latest documented victims of feral cat predation on the Hawaiian island of Kaua'i. With no adults left to tend the nest, the birds' remaining three eggs and two hatchlings did not survive. The incubating parents of two more nests were killed by the same feral cat in following weeks; six more eggs subsequently failed to hatch.

The incidents were captured on remote cameras installed by the U.S. Fish and Wildlife Service (FWS) in partnership with ABC. This predation on endangered birds represents a major setback for conservation efforts and is a reminder of the dangers invasive animals create for Hawai'i's native species.

The recent attacks are among the latest in a long line of killings of endangered Hawaiian birds by feral cats. Data collected by FWS employees have documented at least 252 suspected cat kills of Hawaiian Common Gallinule, Hawaiian Coot, Hawaiian Black-necked Stilt, Hawaiian Duck, and Pacific Golden-Plover in Hanalei National Wildlife Refuge between 2012 and 2014. Seabirds are similarly at risk, especially while in the nest. Feral cats were suspected in the deaths of 22 Laysan Albatross chicks during a 3-week period in 2015.

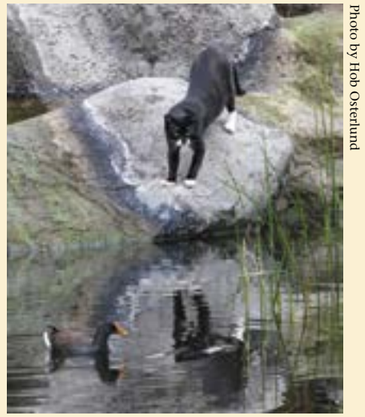


Photo by Hob Osterlund

Plan to Shrink National Monuments Jeopardizes Habitat for Threatened Birds

A review of National Monument designations by the U.S. Department of the Interior has produced recommendations that, if enacted, would reduce protection of important habitat for species listed under the Endangered Species Act. These recommendations would also threaten areas now being conserved for their historic, cultural, and overall environmental importance.

One of the targeted monuments is the 112,928-acre Cascade-Siskiyou National Monument in Oregon and California. Created in 2000 and expanded in 2017, Cascade-Siskiyou is the only monument created specifically to conserve biodiversity, including habitat for the federally listed Northern Spotted Owl. The monument also provides important habitat connectivity for the species by protecting a mountain ridge that connects populations in the Coast and Cascade ranges.

Great Gray Owl by Peter Krejzl, Shutterstock

The charismatic Great Gray Owl and many other species could also lose important habitat if the size of the monument is reduced. "The monument area, especially the expansion areas around Howard Prairie Lake and Grizzly Peak, is famous among West Coast birders as perhaps the easiest place to see this species," said Pepper Trail, the Conservation Chair of the Rogue Valley Audubon Society.

"Mountain meadow habitats around Hyatt and Howard Prairie Lakes used by Great Gray Owls for hunting are also important nesting areas for Sandhill Cranes and the sharply declining Oregon Vesper Sparrow," he said.

Historic Program to Recover Whooping Cranes Ends

A federal program to breed and reintroduce the Whooping Crane has ended after decades of pioneering efforts to recover the endangered species. The program, based at Patuxent Wildlife Research Center, in Laurel, Md., was established in 1966, when just 42 cranes survived. Today, roughly 500 Whooping Cranes exist in the wild. All belong to one of four flocks; three of those grew out of the Patuxent program.

Funding for the program dried up in September, and the 75 captive birds are being relocated to other facilities.

The program, widely considered to be a model of wildlife conservation, used some innovative techniques to raise and reintroduce the birds. Volunteers who cared for the birds would wear crane costumes to prevent chicks from becoming tame. And for a number of years, the cranes would migrate from Wisconsin to Louisiana following an ultralight aircraft — an aspect of the program that ended in 2015 when federal officials decided it wasn't effective.

The closure of the breeding and reintroduction program "is about budget cuts from above, and it is very sad to see," Mike Parr, President of ABC, told the *Washington Post*. "I would suggest this is a very poor example of a place that the federal government should try to save money."

A volunteer dressed as an adult crane feeds a Whooping Crane chick. Photo by Kathleen O'Malley, USGS

Groups Cite Inadequacies in Environmental Assessment for Proposed Lake Erie Wind Energy Project

Bird conservation groups are challenging an industry-supported environmental assessment of Lake Erie's first offshore wind project because of numerous inadequacies in both science and process. Ohio's Black Swamp Bird Observatory (BSBO) and ABC reject the assessment's claim that the planned Icebreaker wind energy facility would have little to no impact on birds and bats, citing the critical importance of Lake Erie to migratory birds such as the endangered Kirtland's Warbler.

The draft environmental assessment (EA), prepared by the U.S. Department of Energy and the Army Corps of Engineers, was based on several studies conducted by consultants to the Lake Erie Energy Development Corporation, or LEEDCo, the consortium developing the project.

"Based on our exhaustive review of the EA, we see no evidence to support the claim that the project poses little risk to birds and bats," said Kimberly Kaufman, BSBO's Executive Director. "In fact, having conducted more than 30 years of migratory bird research along Lake Erie, we believe the six-turbine Icebreaker project would pose a significant threat to wildlife — not to mention substantially increased impacts that would be triggered by the planned expansion of the project to more than 1,000 turbines."

The organizations have identified several major concerns. Among them are the proposed site's location approximately seven miles from the Lake Erie shoreline, in a Globally Important Bird Area. Five recent advanced radar studies by the U.S. Fish and Wildlife Service have recorded vast numbers of migratory birds and bats within five to 10 miles of the Great Lakes shorelines, including Lake Erie, many flying within the rotor-swept area of wind turbines.

In addition, the assessment ignores new data from Kirtland's Warblers fitted with radio transmitters, which show that the species uses the airspace of central Lake Erie almost exclusively for its fall migration. The site selected for the Icebreaker project turbines could put the entire world population of this rare species at risk.

BIRDS in BRIEF

Rare Hawaiian Seabirds Moved to Safe Enclosure

Conservationists have relocated 18 Newell's Shearwater and 20 Hawaiian Petrel chicks from their mountain burrows to a safe enclosure in Kilauea National Wildlife Refuge in recent months as part of an ongoing effort to establish a predator-free colony for the seabirds. Scientists hope the enclosed area, which is protected by a predator-proof fence, will become a productive breeding site for the endangered petrels and threatened shearwaters. The project was decades in the making before scientists began moving chicks in 2015. The effort is the result of a collaboration among many organizations, including ABC, Pacific Rim Conservation, Kaua'i Endangered Seabird Recovery Project, the U.S. Fish and Wildlife Service, and the National Fish and Wildlife Foundation. To date, 76 seabird chicks have been moved to the new site.

Megan Dalton of Pacific Rim Conservation moving a Hawaiian Petrel chick to a new burrow. Photo by Brad Keitt

For the full list of partners, and to watch a video about the seabirds' haven on the coast, visit **abcbirds.org/video-hawaiian-petrels-journey**

Population in Steep Decline, 'I'iwi Gains Federal Protection

The iconic 'I'iwi, once one of the most common forest birds in the Hawaiian Islands, will now be protected as a threatened species under the Endangered Species Act. The U.S. Fish and Wildlife Service determined that listing was warranted in September. Ninety percent of the 'I'iwi population is now confined to a narrow band of forest on East Maui and the windward slopes of the island of Hawai'i. The birds are virtually gone from the islands of Lana'i, O'ahu, Moloka'i, and from west Maui, while the population on Kaua'i is in steep decline. Non-native avian malaria, carried by invasive mosquitoes, is the primary driver in the decline of the 'I'iwi populations, and has already caused the extinction and decimation of dozens of other Hawaiian forest birds.

'I'iwi by Warren Cooke

New Resource to Support Shorebird Conservation

The Commission for Environmental Cooperation, an intergovernmental collaboration among Canada, Mexico, and the United States, has launched an online resource to support the conservation of migratory shorebirds at key North American stopover sites, according to BirdWatching Daily. By providing detailed data, maps, and outreach tools, the new website facilitates information-sharing between communities that steward important sites along the migratory routes of Arctic shorebirds.

The site focuses on Semipalmated Sandpiper and Red Knot, two migratory bird species that breed in the Arctic and stop to rest at a select number of sites in Canada, Mexico, and the United States during their migration.

Visit the website for this new online resource: **nashorebirds.org**

Semipalmated Sandpiper by Erni, Shutterstock

ABC President Talks Birds on BirdCalls Radio

ABC President Mike Parr made two recent appearances on BirdCalls Radio to discuss a wide range of topics related to birds and bird conservation, including migration; bird tourism; habitat challenges in the east and west; and current policy threats involving Greater Sage-Grouse, the pesticide chlorpyrifos, and a proposed border wall between the U.S. and Mexico that would harm critical habitat in Santa Ana National Wildlife Refuge.

Have a listen:
birdcallsradio.com/episode-101-mike-parr

birdcallsradio.com/episode-103-mike-parr-abc-part-2

Marine Plastic a Major Threat to Seabirds

A report in the journal Environmental Pollution recently highlighted the threat marine plastic pollution poses to seabirds in the northeastern Atlantic region. Researchers found that nearly three-quarters of the 34 seabird species investigated have ingested plastic.

The paper's authors collated data from all known studies reporting instances of plastic ingestion and nest incorporation in seabirds around northern Europe, Scandinavia, Russia, Greenland, Svalbard, the Faroes, and Iceland.

"The production of plastic continues to rise, with millions of tons entering the oceans each year," said Nina O'Hanlon, a seabird ecologist at the Environmental Research Institute in Thurso, U.K., and one of the scientists who worked on the project.

"Seabirds can ingest plastic, become entangled in it, or incorporate it into their nests, causing impacts which may have negative consequences on reproduction and survival."

This news brief courtesy of *Birdwatching Daily*

Stomach contents of an albatross that died from plastic ingestion. Photo by Steven Siegel, Marine Photobank

Eastern Meadowlark by Betty Rizzotti

Farm Bill Works for Landowners and Birds

The federal Farm Bill is America's single largest source of conservation funding for private lands. For farmers, ranchers, and forest owners, the bill provides a safety net that helps keep working lands from being developed.

As the 2018 Farm Bill is debated for reauthorization in Congress, the State of the Birds Report 2017, released in August by the North American Bird Conservation Initiative, called attention to the benefits of investing in conservation on private lands. These lands make up nearly 70 percent of the land area in the contiguous United States.

The report found that for more than three decades, the Farm Bill has been an effective tool for wildlife conservation, sustaining essential habitat for more than 100 bird species.

Read the full report:
stateofthebirds.org/2017

Butterfly Group to Sue Over Border Wall Plan

The North American Butterfly Association has filed a notice of intent to sue the federal government over its proposal to build a wall along the U.S.-Mexico border. The organization says the border wall would harm the National Butterfly Center (NBC), its flagship project along the banks of the Rio Grande, as well as a vital wildlife conservation corridor in South Texas. NBC Executive Director Marianna Trevino Wright said that if the wall is built, the center would lose two-thirds of the land it has invested more than 15 years in restoring for butterflies and other native species.

Hook-billed Kite by Roger Ahlman

The area is also vitally important for many priority birds, including Hook-billed Kite, Elf Owl, Red-crowned Parrot, Red-billed Pigeon, and Tropical Parula, and ABC has been closely monitoring developments in the border wall proposal.

Tropical Parula by Greg Homel

HOME

Whether nesting, feeding, migrating, or wintering, birds depend on healthy landscapes to survive. But as habitat is degraded, it's getting harder for them to find these havens. Meanwhile, threats such as collisions with glass and wind turbines, deadly pesticides, and free-roaming cats compound the problem.

Thanks to supporters like you, ABC has a proven track record of protecting and restoring some of the most important and irreplaceable bird habitats, as well as tackling the most serious threats to birds. **Right now we have an unprecedented opportunity to do even more, thanks to our *Home is Where the Habitat Is* campaign.** Between now and December 31, we aim to raise $1 million for birds, and we need your help. Several generous supporters have already contributed $500,000 toward our goal.

Will you make an extra gift today to help us match them?

Boreal forest habitat. Art by Chris Vest

is where the habitat is.

Your donation will help ABC protect vital habitats, including:

- Grasslands from the Northern Great Plains to the Chihuahuan Desert in Mexico, which Baird's Sparrow and Long-billed Curlew call home;
- Latin American habitats, where we work with local communities to protect some of the rarest birds on Earth;
- In Hawai'i, where we are planting native trees for declining honeycreepers such as Palila, and creating new protected areas for Newell's Shearwater and Laysan Albatross; and
- Young forests in the Great Lakes and the Appalachians, where our work with partners is creating and managing thousands of acres of habitat for Golden-winged Warbler, American Woodcock, and other priority species.

Donate today to help us make sure that birds find healthy homes and habitat wherever they go. **Please don't delay: our *Home is Where the Habitat Is* campaign ends December 31.**

Please use the enclosed envelope to make an additional gift, or give online at **abcbirds.org**.

TOP: Hawaiian habitat. Art by Chris Vest

WHAT'S NEXT FOR GREATER SAGE-GROUSE?

Across the West, plans to save the grouse face an uncertain future

By Divya Abhat

Ty Checketts raises more than 700 Angus cattle on his 50,000-acre ranch in northeast Wyoming. But he also pays close attention to the dozens of Greater Sage-Grouse that live on his land. Checketts has affixed reflective markers to barbed-wire fences to deter sage-grouse from flying into them. He's preparing to install solar pumps in place of his windmills, which should protect grouse from predatory raptors that use the windmills as perch sites. And he moves his cattle around more, avoiding certain pastures when the birds are present.

"If we have a patch with a lot of sage-grouse on it, I don't put my cows there during lekking time," Checketts says, referring to the grouse's elaborate mating displays. That's when males form in groups, or leks, and strut for the females, fanning their spiky tails and inflating and deflating their throat sacs to produce a popping sound. Checketts considers himself a conservationist; he loves the grouse and the many species of sagebrush country. "Our main priority is cattle," he says. "But by taking care of the cattle and the rangeland, that helps all these species."

The Greater Sage-Grouse is the largest species of grouse in North America. This striking bird, which Lewis and Clark called the Cock of the Plains, relies on vast swaths of sagebrush habitat across the western United States. Without sagebrush, it simply can't survive. Because the birds use such a wide landscape for food and shelter, they're also considered an "umbrella" species: Healthy habitat for sage-grouse means a healthy landscape for mule deer, pronghorn, Sage Thrashers, and more than 350 other species.

But the sage-grouse is in trouble. Populations have plummeted from an estimated 16 million prior to European settlement to fewer than 300,000 today. The sagebrush ecosystem the bird depends on — expansive, treeless landscapes teeming with sagebrush, wildflowers, and native grasses — is considered one of the most imperiled in the U.S., covering only half of its former range. The bird's range has shrunk, too, from 14 western states to 11, largely due to energy development, crop conversion, habitat fragmentation, invasive species, and wildfires.

For more than a decade, conservationists have been pushing for greater protections for the bird's sagebrush home. Private landowners like Checketts are part of the solution. But their efforts alone won't be enough: Most of the grouse's remaining range is on vast tracts of public lands managed by the federal government and used for a variety of activities, including hiking, fishing, camping, and grazing of livestock.

"For the bird to rebound," says Steve Holmer, Vice President of Policy at ABC, "it needs healthy, contiguous habitat on these public lands. And that habitat should be enhanced by sustainable management

Greater Sage-Grouse by Noppadol Paothong

practices — much like the ones that private landowners use on tens of thousands of acres of private lands."

Plans in Jeopardy

The Greater Sage-Grouse's population hit an all-time low in the 1990s. That's when conservation groups began pushing to have the bird listed under the Endangered Species Act. States began mobilizing, too, to try to conserve the grouse without a listing. When a species is protected by federal law, a variety of restrictions on land-use practices typically follow, raising fears of hurting local rural economies. A collaboration was born: Over the past several years, federal agencies, conservationists, private landowners, and energy industry representatives rolled up their sleeves to develop conservation plans that would protect the bird and its habitat while still allowing certain land-use practices to continue.

"The plans for federal lands in each state required a lengthy development period and a great deal of compromise. We will need to measure their effectiveness over time and with adequate monitoring," says Mike Parr, President of ABC. "The plans all have the same core concept, which is avoiding development in areas that are important for grouse."

In 2015, the Department of the Interior announced it would not list the Greater Sage-Grouse under the Endangered Species Act. The key to the grouse's future, former Interior Secretary Sally Jewell said, would be the federal conservation plans. "The epic conservation effort will benefit westerners and hundreds of species that call this iconic landscape home, while giving states, businesses and communities the certainty they need to plan for sustainable economic development," Jewell said at the time.

The department also promised that future development would be fully mitigated and that the most important grouse habitats would be protected from potential mining. And if grouse populations continued to decline, the plans would be strengthened.

In early October, the new Interior Secretary, Ryan Zinke, announced major changes to sage-grouse management on federal land that would allow for increased energy extraction.

But now, under a new administration, conservationists say those promises have been abandoned, and the future of the federal plans is uncertain. In early October, the new Interior Secretary, Ryan Zinke, announced major changes to sage-grouse management on federal land that would allow for increased energy extraction.

Conservationists fear some of these changes could be devastating for the species. Plans targeting habitat protection for the grouse on public lands were put in place just two years ago, ABC's Holmer says. Weakening the plans puts the grouse at grave risk of further population declines — and threatens the future of an entire region, he says. "With the future of sage-grouse at risk, we need to make sure the success we've observed on private lands is what we strive for on public lands."

Sportsmen, business owners, Western elected officials, and conservationists all invested years of work and substantial resources into developing the existing plans, Holmer continues. "Now, we're all speaking with a common message: Give the grouse management plans a chance to work."

Price of Conservation

Wyoming is home to more than a third of the entire sage-grouse population. Conservation policies there have tried to focus on managing important areas for sage-grouse to prevent the bird's numbers from dropping further. With energy development, for instance, the state allows an average of only one well pad for every 640 acres in areas that contain large populations of grouse — a limit that's believed to help curb population declines.

The state is also grappling with the spread of cheatgrass. This invasive weed has taken over millions of acres of sagebrush steppe habitat in the Great Basin and tends to increase the frequency and intensity of wildfires. Because sagebrush doesn't

RIGHT: Greater Sage-Grouse and fracking rig. Photo by Gerrit Vyn

Birds of the Sagebrush Country

Meet a few of the birds that, like Greater Sage-Grouse, depend on this unique habitat to survive.

Photo by Tim Zurowski, Shutterstock

Sagebrush Sparrow This medium-sized sparrow is found mostly on the ground or hidden in shrubs. Research published in the Journal of Wildlife Management showed that Sagebrush Sparrows and Brewer's Sparrows declined significantly in Wyoming's Upper Green Basin as the number of natural gas wells in the area increased, suggesting that the region's songbirds could also be affected by increased energy development.

Photo by Greg Lavaty

Brewer's Sparrow The smallest North American sparrow, the Brewer's Sparrow is considered an especially sensitive species. Reports show that the bird has been steadily declining over the last few decades despite once being among the most abundant birds in the large area known as the Intermountain West, which stretches from Washington to Colorado.

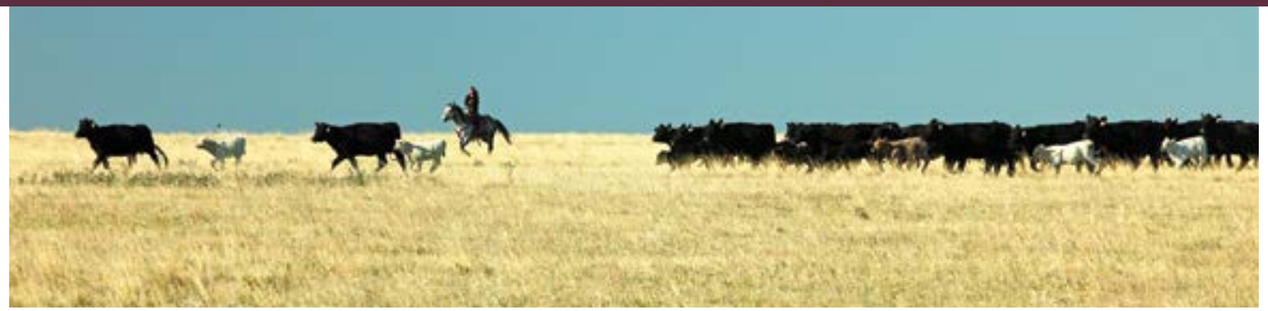
Much like the sage grouse, fragmentation and loss of sagebrush habitat is a key threat to this bird. Research shows that these sparrows are more abundant near large sage-grouse leks, suggesting that conservation of breeding habitat for sage-grouse could also benefit this sparrow.

typically burn so frequently and takes decades to recover from these intense fires, weeds quickly take over the land. The grouse can't access the nutritious plants and grasses it needs to survive. Wyoming has responded to this threat by mapping out areas affected by cheatgrass, spraying herbicides, and re-seeding the affected areas with native plants.

Farther north, particularly in Montana and the Dakotas, sage-grouse are losing habitat to wheat fields. Large belts of land in the region are also used for ranching. Many ranchers have been responsive to calls to help the grouse. Peter Garrett, whose 80,000-acre ranch near Casper, Wyo., is home to one of the largest populations of grouse in the area, says he used to get nervous when talk of listing the sage-grouse first surfaced 20 years ago. But in the decades since, he has been part of a local working group that identifies and implements sustainable land-use practices. Over the years, Garrett has sprayed cheatgrass, installed fences, and rotates his cattle from pasture to pasture. He now believes the conservation projects have helped his business.

Jewell Reed is another landowner who feels the same way. She raises cattle and sheep on her 20,000-acre ranch in Wyoming, about 80 miles from the South Dakota border.

"It is conserving our livelihood," she says of the sustainable land-use practices. "If we're on this land and we deplete it and don't put anything back, after a while there's nothing there to feed our livestock, which is our business. After all, that's where our money comes from — eventually it's in the grass. So if we don't take care of the land, it won't take care of us."



Conservation measures can come at a price, however. Although many ranchers are good stewards of the land, they often can't afford these conservation measures on their own. State and federal agencies have a number of funding opportunities in place for sage-grouse and sagebrush conservation and management. Garrett, for instance, has relied on the Wyoming Game and Fish Department for financial incentives; Checketts partners with the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS).

NRCS' Sage Grouse Initiative (SGI) is the most prominent collaborative effort to protect sage-grouse and manage its habitat. Started in 2010, it involves an array of players, including federal and state agencies, conservation groups, and private landowners. NRCS will spend roughly $760 million on the initiative through 2018. States have contributed as well, spending about $60 million in 2016 on sage-grouse management and conservation.

Since its inception, the SGI has worked with almost 1,500 ranchers across the 11 western states in the grouse's range, says Thad Heater, Coordinator for the Sage Grouse Initiative. "We've put 5.6 million acres of voluntary conservation on the landscape with these ranchers and partners," he says.

SGI also served as a foundation for another key partnership with landowners, NRCS's Working Lands for Wildlife — a $33 million collaboration among NRCS, the U.S. Fish and Wildlife Service, farmers, ranchers, and forest landowners across the country. This voluntary wildlife conservation initiative, started in 2012, helps landowners implement sustainable agricultural practices that also benefit wildlife.

One Bird, Many Plans

Many of these conservation incentive programs for private landowners are financed through the federal Farm Bill, and should be unaffected by the recent announcements from the Interior Department. But it's unclear what the agency's review will mean for the grouse on public lands. Many are uneasy about what they've learned so far.

"We're concerned about the Secretary's interest and emphasis on sage-grouse numbers as opposed to managing habitat," says Tom Christiansen, Sage Grouse Program Coordinator with the Wyoming Game and Fish Department. "We're not interested in seeing a wholesale change or starting the process over again."

It's not just sage-grouse that could potentially suffer as a result of these changes; other birds that rely on a healthy sage habitat would lose out, too. And it's too soon to modify the 2015 plans, says Emily Jo Williams, ABC's Vice President of Migratory Birds and Habitats. "It took many years to work through and get those plans in place and the certainty they provided is now at risk."

For now, it's a waiting game. Federal officials are seeking public comments on changes to the grouse plans; an environmental impact assessment will then follow. It will be years before any changes take root. And conservationists say they anticipate lengthy legal challenges to any rollbacks of the federal plans. ABC's Holmer sees this as a critical moment for the grouse — and the region.

"The Greater Sage-Grouse is an amazing bird, but this is about more than saving a single species," he says. "It's about maintaining our public lands for future generations and ensuring there will still be wide open spaces. It's about knowing that if we work together to accomplish a shared vision — as hundreds have done to prevent the Greater Sage-Grouse from disappearing — our collective voice will be heard. And it's about trusting that any plan we've developed together is given the chance to prove its worth."

Divya Abhat is a freelance writer based in the Washington, D.C. area. She has written about wildlife, the environment, and scientific research and discovery for the Atlantic, Smithsonian magazine, and NPR, among other outlets.

TOP: Cattle roundup by Todd Classy, Shutterstock

Photo by Mike Parr

Sage Thrasher This species is considered at risk largely due to loss of or damage to its breeding habitat caused by oil and gas development, agriculture, and the spread of invasive plants.

A recent study by researchers at the University of Wyoming showed that gas fields in western Wyoming tend to attract rodents, which prey on the nests of Sage Thrashers and other sagebrush-obligate birds, resulting in population declines.

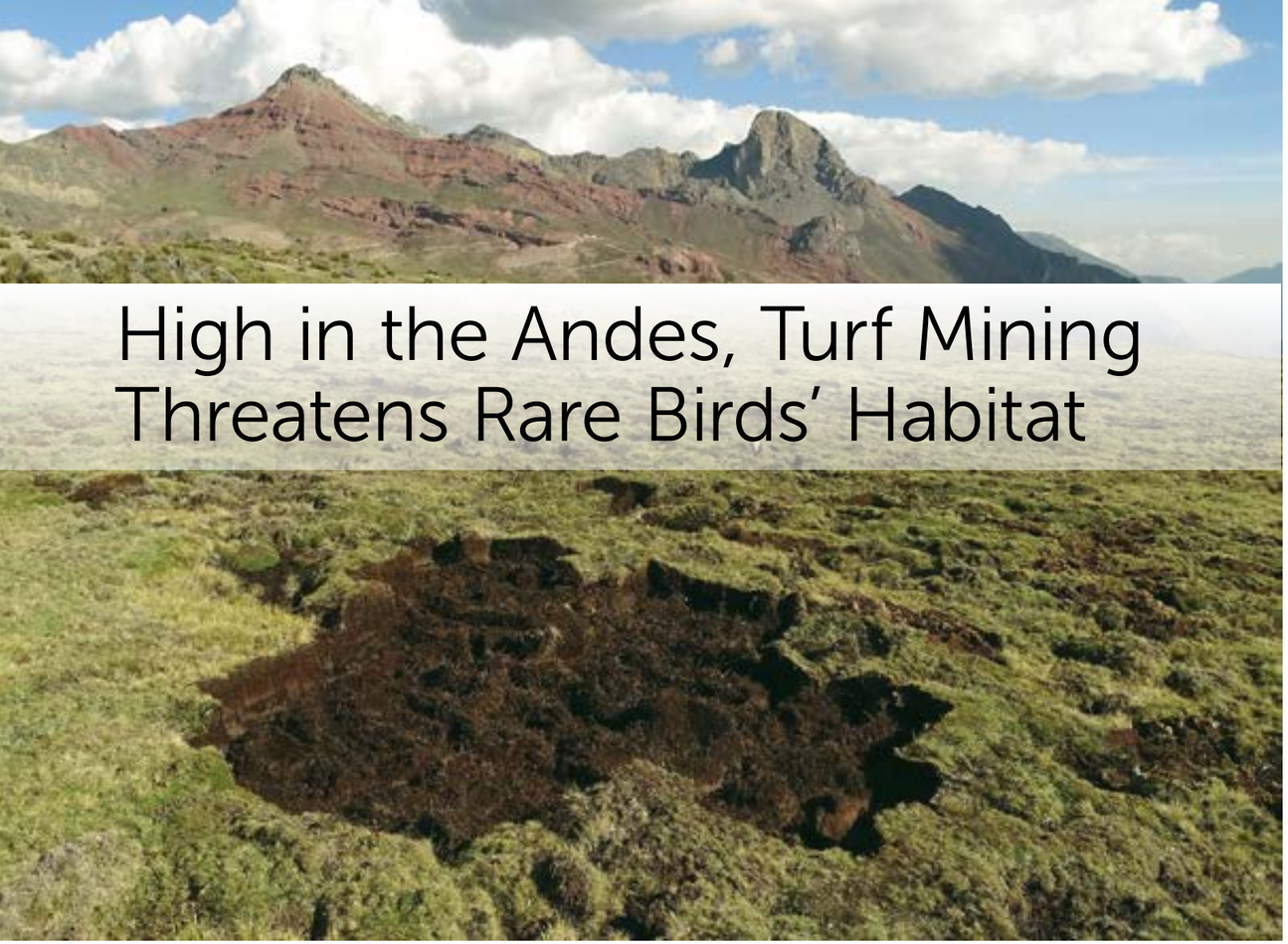
Photo by Glenn Tepke

Gray Flycatcher This small bird typically occurs in open areas, particularly in the Great Basin. Considered a sensitive species in Washington State by the U.S. Forest Service and Bureau of Land Management, it relies on sagebrush plains and benefits from maintenance not only of sagebrush but also of juniper and pinyon pines that serve as nesting and feeding habitat.

Photo by flightr1, Shutterstock

Ferruginous Hawk The largest of North American hawks, this species is found in open areas of the West, including arid grasslands, sagebrush steppe, and pinyon-juniper woodlands.

This hawk preys on Greater Sage-Grouse, so also suffers from loss or degradation of sagebrush habitat.



High in the Andes, Turf Mining Threatens Rare Birds' Habitat

By Philip Tanimoto

Of the more than 10,000 species of birds on the planet, less than a quarter of 1 percent are considered critically endangered. These species are often restricted to unique and rare habitats that are susceptible to human disturbance. One such species, the White-bellied Cinclodes, makes its home high in the Peruvian Andes, in sensitive wetlands known as *bofedales*.

Now numbering as few as 200 individuals, this boldly colored species looks much like a striking chestnut-and-white mockingbird. The high-elevation wetlands that are its home are highly vulnerable, as I discovered on a recent trip to Peru with colleagues from the environmental nonprofit group ECOAN, an ABC partner. Turf miners are carving up this unique ecosystem and carting it off.

To understand what's at stake, it helps to know more about this unique habitat. *Bofedales* comprise an ecosystem so stark and sensitive that the effects of peat mining could last for hundreds or even thousands of years. Of the 13 cinclodes species, all found in South America, the White-bellied occurs at by far the highest elevations — between 14,400 and 18,000 feet.

At those elevations, scattered at the base of rocky crags and peaks, snowmelt is channeled through isolated valleys, enabling the establishment of what are known as "cushion bogs." These treeless ecological communities are made up of native grasses and moss-like plants called *Distichia muscoides*, actually a type of rush, that lives in green colonies of millions of individuals yet reaches only half an inch tall.

These colonies endure nightly freezes virtually all year round, burial by snow, prolonged saturation, and intense UV radiation. They form lens-shaped pads, up to several feet across, often separated from each other by crystalline rivulets of alpine snowmelt. The pads form an irregular, expansive carpet of brilliant lime-green mixed with high-elevation grasses in a treeless wonderland, all set before the backdrop of the snow-capped Andes.

A Mining Target

No other bird is tied so exclusively to the *bofedales* as the White-bellied Cinclodes. In evolutionary time, by capitalizing on these habitats, this species was able to survive better in this sparse setting than by competing with the many species that dominate more productive habitats.

For most of the time since the end of the last ice age, the cushion bogs have grown unimpeded, allowing a slow, steady build-up of peat formed by the dead layer of roots that refuse to decay in the cold, wet *bofedal*. Today, that peat is the target of illegal miners who chop out great blocks and haul it away in trucks.

Bofedales are protected by Peruvian law. They are formally recognized as fragile ecosystems where mining, mining exploration, and roads are prohibited. But the laws are not enforced.

Together with my ECOAN colleagues, I recently visited the *bofedal* near Ticlio Pass, a few hours east of Lima, off the main highway toward Huancayo. We were pretty sure we would find the White-bellied Cinclodes here, because it has long been a reliable site for this species.

We did not expect what else we found. Just across the valley, on the adjacent hillside, there was a large dump truck filled high with rectangular, foot-thick chunks of the ancient turf. A crew of laborers carried a steady stream of turf blocks on their backs, up a steep wooden ramp to the top of the truck, where they piled them ever higher.

No other bird is tied so exclusively to the *bofedales* as the White-bellied Cincolodes, a critically endangered species found only in Peru.

Pushed to the Edge

I raised my camera to document this illegal activity and was spotted by the men, who quickly dropped their work and hiked angrily over to me. "*No saca fotos*" ("Don't take photos"), they demanded.

I explained that my friends and I were there to watch the local birds. One man exclaimed that there were no birds in the area and that we should go elsewhere to look for birds. It was clear they knew their activity was illegal and were afraid of being outed. These robbers had no claim to either the land or its resources.

To calm the situation, I said, "*Hola amigos*," extended my hand, and remarked on the difficulty of their work. "*Que duro es tu trabajo!*" ("Your work is so tough!") To my surprise, they shook my hand in greeting. Satisfied that my ECOAN colleagues and I posed no threat, they returned to loading the big truck with turf, and I continued capturing their work on camera.

In the distance, at the edge of the mined-out section

OPPOSITE PAGE: Ancient turf dug up by miners. Photo by Philip Tanimoto
ABOVE: White-bellied Cinclodes by Fabio Olmos. RIGHT: Illegal turf mining in progress. Photo by Philip Tanimoto

Birds of the cushion bog, from top: White-bellied Cinclodes by Luke Seitz; Diademed Sandpiper-Plover; Gray-breasted Seedsnipe; Andean Geese; Andean Lapwing by Glenn Bartley

of *bofedal*, we saw three White-bellied Cinclodes — perhaps well over 1 percent of the global population — trying to survive, as the majority of their turf had already been hauled out. These birds, whose feeding strategy focuses on small arthropods that use the green plants, had been pushed to the edges of the mud to forage.

A Fragile Ecosystem in Peril

As a bird conservation specialist, my hackles were way up. I asked my colleagues how this blatant theft of habitat for a critically endangered species could be happening without restriction. I learned that these chunks of turf are used as a growing medium for houseplants, at nurseries in Peru's massive capital city of more than 10 million residents.

My colleagues pointed to the need for community involvement to prevent this kind of illegal exploitation on community lands. There was no chain across the access road, no sign declaring the turf off-limits to miners. To make matters worse, *bofedales* are often grazed by cows, whose hooves break apart the *Distichia* pads, leaving muddy holes.

Luckily, there are ways to address these threats: Mining companies are often amenable to collaborating on conservation projects, and llamas and alpacas — whose soft feet won't tear up the cushion bogs the way cows' hooves do — can be an alternative source of income generation.

In addition, Peru has a great, unused resource that could substitute for the use of peat as a planting medium: coconut fiber. ABC is investigating the potential for establishing a coconut fiber industry where none now exists. In the coming years, ABC also plans to work closely with ECOAN to promote law enforcement, increase community vigilance, and take preventive measures to keep illegal peat miners out of community land.

If successful, ABC's and ECOAN's effort will benefit more than just the White-bellied Cinclodes. The beautiful Andean Goose, Gray-breasted Seedsnipe, Andean Snipe, White-fronted Ground-Tyrant, Andean Lapwing, Diademed Sandpiper-Plover, and a suite of other species, also use these cushion bogs.

Witnessing the destruction of the *bofedal* at Ticlio was a pivotal moment for me. The White-bellied Cinclodes is emblematic of the fragile beauty of the *bofedales*. But if we don't curtail illegal peat mining, the White-bellied Cinclodes will disappear.

Philip Tanimoto has been engaged in conservation science projects domestically and abroad since the 1980s. He has a special interest in the conservation of tropical montane cloud forest and, since 2007, has spearheaded forest conservation at Cerro Amay, Guatemala. At ABC, Philip works with Latin American and Caribbean partners to protect some of the rarest birds in the Western Hemisphere.

TOP: Graphic by Briana Hunter, Shutterstock

Beloved and Deadly, Cats are the 'Lion in the Living Room'

By Jennifer Howard

What is it about cats? They purr and cuddle up to us on our laps. But they also hunt birds and small mammals to the brink of extinction. Whether house cats are turning entire ecosystems upside down or starring in misguided attempts at rat control, one thing is consistently true: Cats rarely do what we expect of them.

In her book The Lion in the Living Room: How House Cats Tamed Us and Took Over the World, *author Abigail Tucker, a correspondent for Smithsonian magazine, explores the fascinating history of these "global overlords" from prehistoric times to the age of Instagram. Tucker recently answered a few questions from ABC about her book, which is now out in paperback.*

Jennifer Howard: What role did your cat, Cheetoh, play in the development of this book?

Abigail Tucker: Cheetoh, my furry orange muse, made me see these familiar pets as formidable life forms. At his peak, Cheetoh weighed more than 20 pounds. His size forced me to see how much house cats look and even act like big cats, and so I started to wonder: why are there nearly a billion

Cheetohs strolling the planet today when so many wild cats, like tigers and jaguars, are dying out?

Cheetoh's personality was even more astonishing than his actual size. His brazen bossiness helped me understand that the key to the domestic cat's staggering global success has much to do with the way they've adapted to human company over the millennia.

JH: Cats are such a familiar part of our lives that many people don't realize they are an invasive species. Where did cats come from, and how did they spread to so many places?

AT: House cats hail from the Near East, where a little over 10,000 years ago their wildcat ancestors sidled up to our firesides and slipped into our mud huts, helping themselves to our meat scraps. As early as 9,000 B.C., humans started toting cats along on sea voyages. So we ended up ferrying them everywhere. And once they reached a far-flung destination, cats were perfectly capable of jumping ship and fending for themselves, invading new ecosystems.

Most invasive species are simple organisms like jellyfish or blackberry bushes. Cats, though, are charismatic hypercarnivores that exist at the tippy-top of the food chain. It's rare that an animal with such finicky eating habits would be able to survive in alien environments, and that humans would intentionally chauffeur the invading critter around.

JH: We're in thrall to house cats as pets. Domesticated or not, they're also super-predators. What makes cats so good at hunting?

AT: All three dozen species of feline are standout hunters, from sand cats to clouded leopards, and house cats are no different. With their otherworldly hearing and eyesight and fabulous athleticism, they are quintessential stalk-and-ambush predators. Of course, house cats are especially formidable because they eat such a broad diet, including more than a thousand species, from grasshoppers to wallabies. Some of their wild cousins, on the other hand, focus on only one type of prey animal.

But I think a more complete answer lies in this tricky idea of domestication. Whether or not they technically live in houses, all house cats are domesticated animals. This applies to the stray cats of urban alleyways, the feral cats of Madagascar's interior forests, and plump and coddled specimens like Cheetoh. Some house cats are friendly, and some are feral and fierce, but all are domesticated.

Cat by Artmim, Shutterstock

JH: What does it mean, exactly, for a cat to be domesticated?

AT: It means their bodies and brains have gone through a permanent metamorphosis in human company. House cats have smaller brains than their wild counterparts, and the shrinkage seems to be in the part of the brain associated with fear. This inherited boldness helps cats, as hunters, perform in stressful environments — our cities and suburbs. Disturbances that discourage other predators don't necessarily bother house cats.

But there's a twist. Although house cats have these smaller brains, they lack other physical hallmarks of domestication that you see in most domesticated animals — like floppy ears, curly tails, and smaller teeth. Despite their personality changes, on the outside house cats don't look much different from wild cats. Scientists think that cats have only been domesticated to a degree, and that the process is still ongoing. This unusual semi-domesticated status may be another boon for cats as hunters. As cuddly as they can act, they seemingly haven't lost their wild hunting instincts to the extent that dogs and other household animals have.

JH: You mention in your book that cats cause "hyperpredation." What is that, and what does it do to native ecosystems?

AT: Hyperpredation sometimes happens when the number of predators in an environment is out of whack. Often, when ecosystems have large house cat populations, it's because humans have also introduced an invasive prey source for them. We create a similar situation when we feed pet cats canned food and then let them go out hunting. Cat populations don't reflect local prey populations. They reflect local can-opener populations.

JH: Are species ever at risk of extinction from cat predation?

AT: Absolutely. Cats can do tremendous damage, especially to island ecosystems, where they may contribute to or cause the extinctions of small mammals, birds, and reptiles. Carnivorous predators like house cats are rare on islands. Prey animals there may exhibit "island tameness" and lack defense strategies or even fear itself. Some scientists say that across the entire continent of Australia, feral house cats are more threatening to local mammals than habitat loss, which is staggering to contemplate. Hawai'i — home to lots of rare, slow-breeding birds — suffers from similar problems. The effects on the American mainland are still being studied.

JH: What are your impressions of *Toxoplasma gondii*? Is it really a health concern?

AT: Cats have infected an estimated one in three people worldwide, and perhaps 10 percent of Americans, with a single-celled brain-dwelling parasite called *Toxoplasma gondii*. The neurological impacts of this parasite are still being understood. In most healthy adults the feline-transmitted infection goes dormant after about a month. But a minority of people apparently have difficulty battling the disease from the beginning, and in these unlucky patients the infection has been associated with a whole

Feral cat and kittens on O'ahu by Chris Farmer

Cats can do tremendous damage, especially to island ecosystems, where they may contribute to or cause the extinctions of small mammals, birds, and reptiles.

cornucopia of health conditions, from schizophrenia to road rage.

Most people don't understand how the disease spreads. Obstetricians warn pregnant women not to scoop kitty litter boxes, for instance, because toxoplasmosis (which can be spread by direct contact with cat poop) is especially threatening to unborn babies. But indoor-only cats rarely carry the disease — it's outdoor cats eating wild prey that are typically the culprits. What's more, humans are also exposed to toxoplasmosis from eating unwashed vegetables (cats poop a lot in gardens) or rare meat at dinner.

JH: Where do you see our relationship with cats going in the coming decades?

AT: House cat populations are exploding — rising at the rate of a million cats per year in some countries. Although cats have wreaked havoc in some parts of the world, my appreciation for these animals, and their ability to survive in all circumstances, has only increased as I've learned more about them. In a sense, I find it totally refreshing that humans are entangled in an interspecies relationship that we can't quite make sense of, and where we aren't necessarily in control. Humans are accustomed to using animals, especially domesticated animals, for cold, self-interested purposes, and for once that's not the case here. We increasingly see cats as furry family members or Instagram stars. But it's vital to remember that these are flesh-and-blood beings with an astounding and unique natural history — and that there are real-world consequences for their presence.

Jennifer Howard is Director of Public Relations at ABC. She was a writer and reporter with The Chronicle of Higher Education *for 10 years and before that was a contributing editor and columnist with* The Washington Post. *Follow Jen on Twitter at @JenHoward.*

CONTROLLED BURN

Fire can be destructive, but when used carefully, it creates habitat for many declining bird species

By Rebecca Heisman

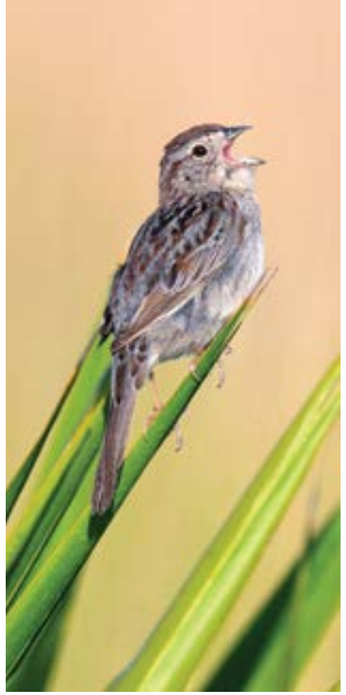
In a stand of tall, slender pines somewhere in Florida, a fire is burning.

Set widely apart from one other, the trees have scaly, reddish bark and round tufts of needles as long as your hand. The fire doesn't touch the crowns of the trees — instead, it burns slowly along the ground, crackling as it blackens shrubs and trees. Over everything hangs a haze of smoke.

This is no natural disaster. It's a calculated act by land managers to rejuvenate a longleaf pine forest, home to vulnerable birds such as the Bachman's Sparrow and the federally endangered Red-cockaded Woodpecker, and other animals unique to this landscape, such as the gopher tortoise and indigo snake. Without regular fires to maintain the habitat they need, these species and others would disappear.

After decades of warnings from Smokey Bear, it's unsurprising that many people view fire as a destructive force. Last summer, news reports were filled with harrowing images of flaming hillsides as massive wildfires blanketed the Pacific Northwest in smoke; two months later, nearly two dozen people died as fires swept across more than 36,000 acres in northern California.

But though fire burns, it also revitalizes. And the fire burning this longleaf pine forest — set carefully in optimal conditions and monitored closely for safety — mimics the natural burns that historically kept trees and shrubs from growing too thick. The technique, known as prescribed fire, is a valuable tool in many efforts to conserve important habitat for declining birds. What used to happen naturally now requires a human helping hand.



'Like Taking Water from a Wetland'

Sparked by lightning, or sometimes by Native Americans who preferred open ground for hunting and cultivation, fire historically has played a role in nearly all of North America's ecosystems. The details varied from one place to another. Prairies saw fires every year or two that burned standing dry grass to the ground, promoting a new cycle of growth. Mature forests in wetter parts of the continent burned only every century or two. The adaptations of plants in these communities were closely attuned to their local fire patterns. Longleaf pines, for instance, need fire to clear the ground of leaf litter so they can reproduce. If their seeds land in a layer of debris, they won't germinate.

Fire was especially crucial in maintaining the availability of what ecologists call early successional habitat, which many birds depend on for foraging or nesting. After a disturbance such as a fire sweeps through a plant community, the series of stages it goes through as it returns to its former state are known as succession. In an ecosystem where fire is frequent, this short-lived, disturbance-dependent habitat will always be available somewhere, and the birds that specialize on it will always find a home. But when fire is removed from a system, these communities eventually disappear: grasslands become fields, then young forest, then mature forest, and the birds are forced to go elsewhere.

Removing fire from these systems is exactly what we've done. In the late 1800s and early 1900s, drought and the slash piles left behind in logged forests fueled massive wildfires that killed thousands of people and destroyed towns and cities from the Northwest to Maine. This spurred large-scale, coordinated efforts by the U.S.

In an ecosystem where fire is frequent, short-lived, disturbance-dependent habitat will always be available somewhere, and the birds that specialize on it will always find a home.

PREVIOUS PAGE: Prescribed fire. Photo by yelantsevv, Shutterstock

ABOVE LEFT: Bachman's Sparrow by Jacob Spendelow. ABOVE RIGHT: Red-cockaded Woodpecker by feathercollector, Shutterstock

A controlled burn in progress. Photo by yelantsevv, Shutterstock

Forest Service to suppress fires on public lands, guided by a 1926 federal policy of putting them out before they reached 10 acres in size. For decades, prescribed burning was banned on public lands across much of the country, though private landowners continued to practice it in areas used for farming, grazing, and logging.

Across much of the eastern United States, the result of this suppression was dramatic. Within decades, thick canopies of trees stood over forest floors that were cool, damp, shady — and much less likely to burn. Pine and oak woodlands gave way to hardwoods such as maple and birch, which thrive when disturbance is low and fires rare.

"Taking fire out of these systems is like taking water away from a wetland," says Rob Holbrook, Assistant Coordinator for the East Gulf Coastal Plain Joint Venture (EGCJV), a partnership among state and federal agencies and nonprofits, including ABC, that's working on bird conservation in the Southeast. As woodland and savanna habitat have grown scarce, so have the birds that depend on it. In this area, it's the Bachman's Sparrows and Red-cockaded Woodpeckers; further west, in the central hardwoods region of Missouri, Arkansas, and east to Tennessee and Kentucky, this change in habitat has hurt Prairie Warblers, Northern Bobwhite, and Red-headed Woodpeckers.

But as land managers and conservationists like Holbrook look for ways to strategically return fire to the landscape, these ecosystems are recovering once again. Red-cockaded Woodpecker populations, for example, have recently been increasing at a rate of 4 to 5 percent per year. As fire management techniques are updated, the outlook for many threatened bird species is beginning to brighten.

From Blackened to Green

The fragmented nature of some habitats in the eastern half of North America means that even if fires do start naturally, they can't spread very far. Nor would we want them to — despite the growing realization that overzealous fire suppression has damaged ecosystems, letting fires burn wildly and threaten homes and infrastructure is no one's idea of good management policy.

Instead, today's land managers follow a specific plan to create a fire under carefully controlled conditions to achieve a specific management goal. To ensure safety, foresters wait until weather conditions — wind speed and direction, temperature, and humidity — are just right to both keep the fire from spreading and keep the smoke from drifting toward populated areas. If a site doesn't already have features such as streams and roads that can be used as fire breaks, foresters may create some with bulldozers or other equipment. Then, they ignite the downwind end of the area to be burned so the flames can be carefully controlled. Regardless of size — prescribed fires can be anywhere from a few to several thousand acres — most burns are completed within a single day.

Depending on the time of year and the specific characteristics of the site being burned, a habitat can go from blackened to green in an amazingly short time. "It's really quick. Within two or three days you'll see things starting to green up," Holbrook says of the longleaf pine restoration. "Say you burn in early summer; by the end of the summer, to the untrained eye, you wouldn't know that a fire had been through there."

From 2013 to 2016, the amount of land in longleaf pine ecosystems under prescribed fire management increased by 50 percent, to over 1.6 million acres. And the birds have noticed. "At our

Despite the growing realization that overzealous fire suppression has damaged ecosystems, letting fires burn wildly and threaten homes and infrastructure is no one's idea of good management policy.

Regenerating pine forest. Photo by Virgil Davis, USDA Forest Service, Bugwood.org

Apalachicola Bluffs and Ravines Preserve in Florida, we've gone from almost never hearing quail or Bachman's Sparrows to having them coming out of our ears" since biennial prescribed burns began in the 1990s, says David Printiss, North Florida Manager for The Nature Conservancy.

One of the biggest challenges with prescribed fire is that the process is never finished. Because fires need to happen every three to five years in many places to maintain early successional habitat and the bird species that require it, managers can never walk away.

"You can't start a program and then quit," says Larry Heggemann, Delivery Coordinator for the Central Hardwoods Joint Venture.

This joint venture is another collaborative conservation effort that promotes the use of prescribed burns to create habitat for imperiled land birds, in this case in the woodlands and glades of states including Arkansas, Illinois, Kentucky, and Missouri. "It's not like you start, and then when you get it in condition, you're done," Heggemann says. "You have to keep it going."

But for the birds, it's worth it. "For birds like Northern Bobwhite and Wild Turkey that spend most of their life on the ground, they've got to be able to get around, especially when the chicks leave the nest. Without fire, often what happens is the groundcover gets so dense that the birds can't walk around," says Holbrook, of the EGCJV. Red-cockaded Woodpeckers don't live on the ground, but their foraging and nesting requirements are precise, involving pulling loose plates of bark from large pine trees to get at the insects underneath. "If the understory of hardwoods gets too dense, then it's going to be poor habitat for the woodpeckers," Holbrook says. "Fire keeps the pine as the dominant tree species and keeps the oaks and other hardwoods suppressed."

Creating a Mosaic

Fire isn't always good news for birds, of course. When it gets out of control and enters habitats where it doesn't belong, it can become a serious threat.

Turkey hen and poult by Kristen Nicholas

LEFT: Black-masked Finch by Daniel Alarcon, Asociación Armonía. ABOVE: Tractor creating a fire break at Barba Azul Reserve in Bolivia. Photo by Tjalle Boorsma

Barba Azul, an ABC-supported nature reserve in Bolivia run by the conservation organization Asociación Armonía, protects an expanse of seasonally flooded savanna and grassland. Interspersed throughout are small islands of forest that provide crucial habitat for the critically endangered Blue-throated Macaw. Left to its own devices, this habitat would naturally burn roughly every 15 to 20 years during the rainy season, when wet conditions would keep lightning-generated fires from spreading too far or burning too hot.

But cattle ranchers who use the lands surrounding the reserve for grazing now set fires every year to promote the growth of fresh, young grass for their cattle. Although some ranchers do their best to time burns for, say, the approach of a rainstorm that will keep fires under control, this is hard to predict. In recent years, fires have spread into the reserve, damaging roosting and foraging habitat for macaws. In 2015, 80 percent of the savanna habitat in one area of the reserve burned.

In 2016, ABC was one of several organizations that helped the reserve purchase a tractor to dig fire breaks, which has helped turn the situation around. And even here, land managers still see the potential of fire as a conservation tool.

"Fire is part of this ecosystem," says reserve manager Tjalle Boorsma. "We try to block it completely now to stop fires that go out of control from our neighboring ranches, but we would like to implement it in the reserve at some point."

Around 10 percent of the habitat would have burned naturally each year, Boorsma says. Using prescribed fire on a small portion of the reserve's savanna habitat annually, he predicts, could help birds such as Streamer-tailed Tyrant and the vulnerable Black-masked Finch, both of which depend on savanna to survive. "What you'd get is a mosaic of different age classes of savanna, and you'd have a wide range of biodiversity using that landscape."

Thousands of miles away, back in the U.S., a prescribed burn has done its job. The fire in Florida's longleaf pine forest has burned itself out. Within a few days, young grasses and wildflowers will shoot up through the blackened ground, and by the end of the season, the area will be green once more, beckoning woodpeckers, turkeys, and bobwhite. Growth is continuous, though, and within a few years the vegetation will be thick. Once again, it will be time to burn.

Rebecca Heisman is an environmental educator-turned-science writer and communicator who has also written for Audubon, Sierra, and the Cornell Lab of Ornithology. She lives in Walla Walla, Wash.

Island Birds, Unique and Vulnerable, Need Our Help

By Brad Keitt

An undisturbed seabird island is one of nature's amazing spectacles. Early in my career, I spent time on Laysan Island in the Northwest Hawaiian Islands, where hundreds of thousands of albatross danced in courtship through the day, and thousands of Bonin Petrels returned to the island at sunset. But Laysan taught me something else about island birds: They are fragile. Less than a century ago Laysan was almost devoid of seabirds, and three species found only on Laysan — the island's Millerbird, Honeycreeper, and Rail — went extinct.

Almost 90 percent of all recorded bird extinctions in the last 500 years have occurred on islands. Why? Because most island birds have evolved without mammalian predators. As a result, island species are naïve to non-native, terrestrial predators, and their populations are quickly devastated by introduced mammals such as domestic cats and rats. Island birds are simply ill-equipped to evade these unexpected neighbors: Think of the flightless Dodo from the island of Mauritius. Or the Laysan Finches that would, full of curiosity, land on my hat as I tried to count them.

Most seabirds breed on islands, and these insular habitats have changed them, too. Seabirds lay fewer eggs than land birds and spend more time rearing their chicks. They can do this because, for millions of years, they didn't have to worry about terrestrial predators. But living life in the slow lane also means seabird populations take longer to recover from losses. They are among the most threatened of all bird groups, and land-based threats continue to lead to declines.

Dodo painting by Frederick William Frohawk

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But there's hope; Laysan Island also taught me that. Once the harvesting and sale of albatross feathers and eggs was stopped, and invasive rabbits were removed, the remaining birds rebounded. And today, thanks to ABC and partners, the Millerbird is thriving once again on Laysan, with translocated birds from Nihoa filling the void left by the disappearance of the closely related Laysan Millerbird subspecies.

It is this resilience that inspires ABC to collaborate with our partners to protect threatened island birds and their habitats across the Americas. In Hawai'i, we are controlling predators and restoring habitat to protect rare land birds such as Palila and Maui Parrotbill, and using these same methods to protect seabirds such as Hawaiian Petrels and Laysan Albatross. In the Juan Fernández Islands in Chile, we are working with partners to remove invasive predators and increase support for the conservation of threatened Pink-footed Shearwaters. In the Galápagos Islands, we are investigating new nesting areas for the Galápagos Petrel and developing innovative ways to protect this critically endangered species.

History tells us that islands are the epicenters of extinction. Yet we also have the tools and the knowledge to save island species and make them beacons of conservation success. The sight of seabirds blanketing the entire island of Laysan may be an exception to the norm — but it doesn't have to be.

ABC's efforts to protect seabirds are made possible by the generous support of Lynn and Stuart White, the National Fish and Wildlife Foundation, the David and Lucile Packard Foundation, the Disney Conservation Fund, and the Martin Foundation.

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