BIRDCONSERVATION

The Magazine of American Bird Conservancy

Spring 2016

Solutions That Save Birds

So much of conservation centers on the identification of a problem, communicating it widely, and asking or demanding that others—government and industry—solve it. Entire organizations are built on this model. Personally, though, I have often thought the most interesting part of conservation is figuring out the solution and acting on it.

Consider the decline of Red Knots and other shorebirds. Loss of food along the traditional Atlantic Coast migration route is partly to blame. Red Knots eat the eggs of horseshoe crabs, and fishermen had discovered the value of these crabs for bait in whelk and eel traps. Fewer crabs means fewer crab eggs—and less food for shorebirds heading north. Without this sustenance, the birds never make it to their breeding grounds.

An obvious solution was to lobby, cajole, and fight government agencies to reduce their crab harvest quotas. Early on, however, the Ecological Research Development Group, a small Delaware organization, proposed a novel solution: Instead of fishermen placing a crab in each trap, why not use part of a crab in a predator-proof bag? In this way, a single crab could attract whelk and eels to multiple traps, greatly reducing the number of crabs needed. Simple genius: I wish I had thought of it.

ABC has something of a knack for simple solutions, too. When we learned that glass collisions kill millions of birds each year, we developed an inexpensive, translucent tape to place on windows. It works, but we didn't stop there: We partnered with other groups, including New York City Audubon, in conducting innovative, lifesaving research to determine which kinds of glass are best at deterring birds. (See the article on page 13.)

At ABC we strive for simple, elegant solutions that work for birds and people, and we aim to develop them for every major threat that affects birds.

And here is an obvious one: What to do when a bird species is down to just a few sites on Earth? The answer is to protect, improve, and expand those sites. ABC has now helped avoid extinction for many species by assisting our partners in developing a network of 70 reserves throughout the Americas. Our piece on page 4 about the recent expansion of the Brazilian reserve that protects important habitat for the Stresemann's Bristlefront and many other birds is a good example of this work.

Finally, there is wind energy. We all want renewable energy sources. However, the fast-spinning blades of wind turbines kill hundreds of thousands of birds every year. The solution is simple: Find out where birds move, and put turbines elsewhere. Unfortunately, in their rush to profit, many companies build turbines without knowing—or sometimes even without caring—how they affect birds. ABC board member Kimberly Kaufman, a conservation leader of the American heartland, where wind energy is on the rise, discusses this challenge on page 22.

At ABC we strive for simple, elegant solutions that work for birds and people, and we aim to develop them for every major threat that affects birds. If you have an idea for how to address a problem, please feel free to give me a ring. If it's a good one, we'll use it.

George H. Fenwick
President, ABC

Cover photo: Cape May Warbler by Glenn Bartley TOP: Red Knot by Bill Dalton

AMERICAN BIRD CONSERVANCY

ABC is the Western Hemisphere's bird conservation specialist—the only organization with a single and steadfast commitment to achieving conservation results for native wild birds and their habitats throughout the Americas.

Spring 2016

BIRDCONSERVATION

Getting Creative for Birds

Pin-tailed Manakin by Ciro Albano

DEPARTMENTS

TOP: Dickcissel by Dan Behm

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:

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Songbird Forest Reserve Expands Protection for Rare Brazilian Birds

The Brazilian conservation group Fundação Biodiversitas, with support from ABC, has secured a tract of vital Atlantic Forest habitat for the Stresemann's Bristlefront, listed as Critically Endangered by the International Union for the Conservation of Nature. (Turn to back cover for a photo of this rare species.)

The acquisition adds 766 acres to the Mata do Passarinho Reserve, bringing the total protected area to 2,352 acres. This expansion represents a major step toward the preservation of the many species that rely on this unique and threatened forest region. (See article on page 16.)

Because of deforestation, the reserve "is like an oasis in a desert," said Gláucia Drummond, Executive Director of Fundação Biodiversitas. Expanding the protected area is "one of the most promising and effective ways to save the Stresemann's Bristlefront from extinction" and to preserve the area's rich biological heritage, she said.

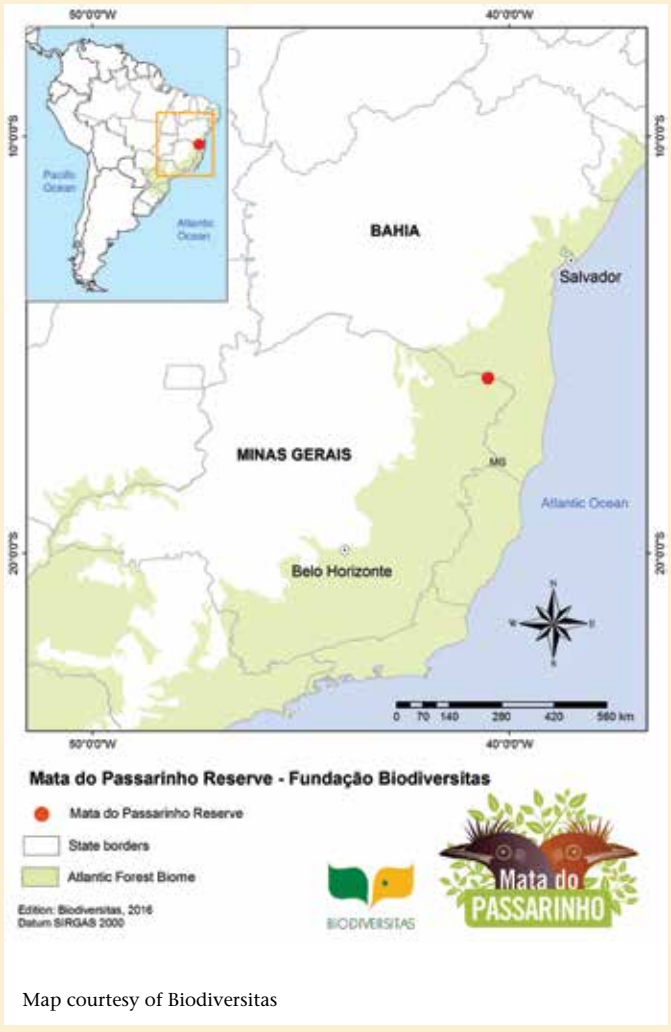
Mata do Passarinho is Portuguese for "Songbird Forest." Biodiversitas created this reserve in 2007 with ABC support.

An Alliance for Zero Extinction site, the reserve represents the last known home of the Stresemann's Bristlefront. With a population of fewer than 15 known individuals, the ground-nesting bird is one of the most endangered species on the planet.

More about ABC's bird reserve network: abcbirds.org/program/reserves/

This acquisition was made possible through the generous contributions of David and Patricia Davidson, David Harrison, George and Cathy Ledec, Michael Reid, Gulf Coast Bird Observatory Tropical Forest Forever Fund, Robert W. Wilson Charitable Trust, and IUCN National Committee of The Netherlands (IUCN NL). The project is also supported by the Global Environment Facility, the Mohamed bin Zayed Species Conservation Fund, the Hildegard and Hans Schaefer Foundation, and the United Nations Environment Program.

View of the Mata do Passarinho Reserve. Photo courtesy of Biodiversitas



Map courtesy of Biodiversitas

ABC Joins Lawsuit Challenging Regulation of Pesticides

ABC has joined with beekeepers, farmers, and public interest groups in filing a lawsuit alleging insufficient federal regulation of a dangerous class of pesticide that is deadly to birds, bees, and other wildlife.

The lawsuit, filed in January by Center for Food Safety on behalf of several beekeepers, farmers, and sustainable agriculture and conservation groups, challenges the Environmental Protection Agency's (EPA) inadequate regulation of the neonicotinoid insecticide seed coatings used on dozens of crops. EPA has allowed millions of pounds of coated seeds to be planted annually on more than 150 million acres nationwide.

The lawsuit alleges the agency has illegally allowed this to occur, without requiring the coated seeds to be registered under the Federal Insecticide, Fungicide, and Rodenticide Act; without enforceable labels on the seed bags; and without adequate assessments of the serious ongoing environmental harm.

"A single seed coated with a neonicotinoid insecticide is enough to kill a songbird," said ABC's Cynthia Palmer, Director of Pesticides Science and Regulation. "There is no justification for EPA to exempt these pesticide delivery devices from regulation. ABC urges the agency to evaluate the risks to birds, bees, butterflies, and other wildlife."

A 2013 study by ABC, "The Impact of the Nation's Most Widely Used Insecticides on Birds," found that neonicotinoids are toxic to birds and invertebrates, even in small quantities, and they persist in soils for months and even years. Because of this effect on invertebrates, use of neonics impacts not just seed-eating birds such as Bobolink but also insect-eating species including Common Nighthawk and Purple Martin.

The agency's actions surrounding neonicotinoid seed coatings "have led to intensifying and destructive consequences," said Peter Jenkins, attorney with Center for Food Safety. These include honeybee die-offs, as well as chronic effects to numerous species, nationwide water and soil contamination, and other environmental and economic harms, he said. "This lawsuit aims to hold EPA accountable to dramatically reduce this harm in the future."

More about our work on pesticides: abcbirds.org/program/pesticides/

Your extra gift will help prevent birds from hitting windows!

Ruby-throated Hummingbird by Kelly Nelson, Shutterstock

Collisions with glass kill hundreds of millions of birds each year. Migratory birds and familiar backyard birds such as Wood Thrush, Kentucky Warbler, and White-throated Sparrow are among the most threatened.

Simple solutions are available, but **ABC needs your support**.

Thanks to our new Bird-Smart Glass Program (birdsmartglass.org), we now have tested, effective solutions. But we need to do much more. Your extra gift today will help us spread the word about ABC-endorsed bird collision solutions and make sure they're used across the country.

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

Study Finds Northern Spotted Owl in Rapid Decline

The Northern Spotted Owl has been hit hard by the twin threats of habitat loss and competition from the Barred Owl, according to a study by federal scientists. Published in December in the journal *The Condor*, the research examined survey results from monitoring areas across the Pacific Northwest range of the Northern Spotted Owl.

Since monitoring began in 1985, Northern Spotted Owl populations have declined by as much as 77 percent in Washington, 68 percent in Oregon, and 55 percent in California, the study found. The scientists also found fewer owls in study areas in southern Oregon and northern California that previously had experienced little to no detectable population decline.

"This study confirms that immediate action is needed to reduce the impact of Barred Owls and to protect all remaining Spotted Owl habitat. It also points to the need to restore additional habitat by maintaining and expanding the successful reserve network of the Northwest Forest Plan," said Steve Holmer, Senior Policy Advisor with ABC. Established in 1994 by the Clinton Administration, the plan set up reserves and reduced logging on federal lands across much of the Northern Spotted Owl's range.

While habitat loss continues to threaten the Spotted Owl, new threats have emerged. Barred Owls, whose range has increased in recent years to coincide with the Northern Spotted Owl, can outcompete the Spotted Owl for food and territory. Much attention has turned to this threat, but Holmer stresses that adequate habitat is the only long-term solution.

"Science shows that Northern Spotted Owls and Barred Owls can coexist where there is enough high-quality habitat," he said. "A large amount of owl habitat will become available as the Northwest Forest Plan continues to restore the old-growth ecosystem."

"The monitoring reports confirm that the system of reserves has slowed the decline of the owl," Holmer continued. "But the study makes clear that this reserve system is not enough due to competition from Barred Owls. Urgent action is needed to address the Barred Owl threat and to protect all Spotted Owl habitat on federal land."

BirdBlitz in Ecuador Tallies 681 Bird Species in 2 Days

More than 800 species of birds occur in the 11 reserves run by Fundación Jocotoco of Ecuador—and across two busy days last month, birders managed to see 681 of them, an impressive increase from last year's 620 species.

This remarkable tally of the birds of Ecuador came during the foundation's second annual BirdBlitz. No other birding event in Ecuador covers so many incredibly diverse tropical habitats: wet Chocó rainforests of the northwest, dry Tumbesian forests of the south, and lush foothills of the Amazon.

Inspired by the popular BioBlitz events that have taken place across the United States, Jocotoco's BirdBlitz was developed as an exciting way to count birds throughout the reserve system while raising funds to support the organization's conservation programs.

Esmeraldas Woodstar by Murray Cooper

More than 100 of the species protected by the reserves are restricted-range or endemic, including the Jocotoco Antpitta, El Oro Parakeet, Pale-headed Brush-Finch, and Esmeraldas Woodstar.

Over two days, teams composed of staff, board members, and volunteers covered as much ground as possible. All 11 Jocotoco reserves had teams on the ground, and representatives from Ecuador's Environment Ministry participated at the Antisanilla and Tapichalaca reserves.

Every team tallied which species they saw and how many of each, and all of the counts were entered into eBird. Some groups of birds were particularly well represented. For example, the birders spotted 74 species of hummingbirds—17 more than last year.

New Reserve Creates Haven for Birds in Guatemala's Lowland Forests

Wood Thrush by Greg Lavaty

Wood Thrush, Kentucky Warbler, and many other neotropical migratory birds spend the winter in Central America, where ecosystems such as the Caribbean rainforests of Guatemala provide critical habitat for them. But that landscape, once a continuous swath of forest, has been increasingly fragmented by agriculture. Those losses have contributed to population declines among at least 19 species of migratory birds, including the Wood Thrush.

The Guatemalan conservation group FUNDAECO, working with ABC and the World Land Trust, has secured a key piece of this threatened habitat, acquiring roughly 1,672 acres for the Tapon Creek Nature Reserve from a local landowner. The purchase helps create a vital lowland habitat corridor that connects the existing protected areas Biotopo Cocon Machaca (15,360 acres) and Rio Sarstun (4,447 acres).

Originally, the country's conservation efforts focused primarily on rare, high-elevation cloud forest, said Jason Berry, ABC's International Conservation Program Officer. That approach made sense when lowland forests were plentiful. "But in a mountainous country like Guatemala, the lowland areas are the first to be deforested for agriculture," Berry said.

The Tapon Creek reserve and adjacent protected areas also conserve rare coastal dwarf mangroves, sea grasses in Cocoli Bay, and the King Fish reef, part of the Mesoamerican Barrier Reef System. This "ridge to reef" approach benefits not just birds but jaguars, West Indian manatees, and other species.

It will also benefit the area's human residents. FUNDAECO is working closely with neighboring communities to increase ecotourism, manage the reserve and surrounding areas, and secure title to their land.

The forests of the Tapon Creek Nature Reserve provide shelter for a wealth of neotropical migrant species, particularly warblers. Photo by Jason Berry, ABC

Coming Home

Conservationists try a daring approach to save the endangered Hawaiian Petrel

By Libby Sander

On a rugged ridgeline high in the mountains of Kaua'i, a helicopter touches down on a small platform. Three wildlife biologists climb out and begin hiking across steep slopes cloaked with ferns and wind-stunted trees.

The mountain forests in Hono O Nā Pali Natural Area Reserve are usually damp and obscured by a bank of clouds, but on this early November day, the sun is shining and the air is warm. The scientists marvel at the good weather.

After 15 minutes the team stops in front of a small hole gouged out of the mountainside. André Raine, coordinator of the Kaua'i Endangered Seabird Recovery Project, reaches into the burrow with one arm, feeling around for the plump Hawaiian Petrel chick he knows is inside. Gently guiding the young bird toward the opening—he doesn't want its delicate wing feathers to snag on a root—Raine slowly removes the chick.

Cradled in the biologist's hands, the chick regards the alien landscape around him. Gray and fluffy, with ungainly webbed feet, the bird's downy feathers rustle in the breeze. Raine pauses for only a moment before placing the bird in a plastic pet carrier.

The conservationists must work quickly. They are on this mountaintop to take endangered Hawaiian Petrel chicks away from an area where they are vulnerable to nonnative predators and establish the birds in a safe haven on the coast. Their task is risky. Each Hawaiian Petrel chick is important to a declining population. Should anything go wrong—a bird overheats, or dies because of stress or injury—it would only undermine the goal of this pioneering conservation effort.

Yet for the biologists, who've been working for years toward this moment, the hope outweighs the danger. If they succeed, it will be a significant new chapter in work to save Hawai'i's seabirds. Not just for this species, and not just on this island—but for seabirds across the state on the verge of extinction.

A Daring Approach

The Hawaiian Petrel—known as 'Ua'u for its ethereal nighttime calls—was once Hawai'i's most abundant seabird. From mountain peaks to coastal cliffs, the birds congregated in large breeding colonies, arriving by night to dig burrows with their beaks and the claws of their webbed feet. Fishermen looked to the petrel as a

TOP: Hawaiian Petrel in flight by Cameron Rutt

sign of tuna foraging just beneath the ocean's surface. The guano of millions of petrels fertilized Hawai'i's forests with phosphorus and nitrogen from the sea.

Faithful to their nesting sites, the birds return to their burrows year after year—even if their chosen spots are vulnerable to predators or development. Cats, rats, and pigs eat the birds in their remote mountain burrows. Power lines and bright lights jeopardize the birds' frequent flights to and from the sea. In recent decades, the seabird's population has plummeted.

Yet if the petrels' nesting habits have made them susceptible to harm, they are also proving to be a valuable tool in engineering a comeback for the species. Using a technique borrowed from

conservationists in New Zealand, a nation whose native birds are similarly threatened by invasive species, a team of conservation groups and government agencies has worked since 2011 to create a new colony of Hawaiian Petrels in an area designed for them to thrive.

The collaborators—including Pacific Rim Conservation, the Kaua'i Endangered Seabird Recovery Project, the U.S. Fish and Wildlife Service, and ABC—are trying a daring and novel approach. They are moving chicks of an endangered seabird to a protected area in time for the fledglings to imprint on the new site, with the hope that the birds will return there to breed. The young petrels will be the founders of the only fully protected colony of federally listed seabirds anywhere in the Hawaiian Islands.

ABOVE: André Raine of the Kaua'i Endangered Seabird Recovery Project holds a Hawaiian Petrel chick after removing it from its mountain burrow. Photo by Mike McFarlin, Kaua'i Endangered Seabird Recovery Project. BELOW: Hawaiian Petrels breed high in Kaua'i's mountains, but their burrows are vulnerable to non-native predators. Photo by André Raine

Megan Vynne of the Kaua'i Endangered Seabird Recovery Project makes her way across the mountain ridge to the helicopter that will ferry the chicks to the coast. Photo by Lindsay Young, Pacific Rim Conservation

"A translocation like this is something people have talked about in Hawai'i for many years, for decades, really," says Eric VanderWerf, President of Pacific Rim Conservation. "But it hasn't happened until now."

With innovative techniques such as translocation, conservationists can work to check the losses that have earned Hawai'i a reputation as the bird extinction capital of the world, says ABC's George Wallace, Vice President of Oceans and Islands.

"It's quite a radical conservation intervention," he says. "But this is the kind of stuff we have to do. And if we don't, we are going to lose species."

Seven Acres of Safety

A small army of people began work on this project long before the helicopter ferried biologists to the mountains on that warm November day. The logistics amounted to an exhilarating but head-spinning plan, requiring 16 state and federal permits and 600 pages of detailed documentation.

With the help of the U.S. Fish and Wildlife Service, the partners selected an appropriate site at Kīlauea Point National Wildlife Refuge. Pacific Rim Conservation then oversaw the construction of a predator-proof fence around the site. Within the enclosure, Pacific Rim removed rats, mice, and other predators; installed 50 artificial burrows; and cleared invasive plants and restored native vegetation on a portion of the enclosed area to make the site hospitable to the seabirds. Meanwhile, over four years the Kaua'i Endangered Seabird Recovery Project worked to identify and monitor burrows high in the mountains from which chicks could be taken.

Known as Nihoku, the site at Kīlauea Point is roughly seven acres on a section of the refuge closed to the public. The fence keeps out all predators, even mice. A gradual slope toward the ocean cliffs below, and the site's orientation to the trade winds, will give the fledgling petrels a straight shot to the ocean.

Having the enclosure on a National Wildlife Refuge means that "we're going to have conservation in this area in perpetuity," says Michael Mitchell, Deputy Project Leader at Kīlauea Point. "Those birds are going to be here for many generations to come."

Down from the Mountain

Back on the mountaintop, six biologists working in two teams spend several hours going from burrow to burrow. The portly birds—aside from a few pecks at human hands—are mostly calm as they journey by helicopter to the coast.

With a petrel carrier on his lap, Raine watches the lush, green valley glide by below. He can hear some of the birds shuffling in their boxes. It's a peculiar experience for the fledglings, he thinks. Since hatching, they have known only the cool, dark interior of their underground burrows. Now they're on a voyage to a new home.

"I can't believe this has gone off without a hitch," he thinks to himself.

After landing at a small airport on the coast, the birds go straight to Nihoku by car. There, avian ecologist Robby Kohley and avian care specialist Marilou Knight, both with Pacific Rim, will care for the birds until they fledge. As soon as the birds arrive, Kohley measures and weighs them before placing each bird in its burrow.

With the birds safely ensconced in their new dwellings by early afternoon, the exhausted biologists head to a nearby coffee shop to refuel. Bringing the chicks in from the mountain—without incident—was a triumph, they feel. Proof that translocation can be done in Hawai'i.

Robby Kohley, an avian ecologist with Pacific Rim Conservation, measures a chick's wing before placing it in its new burrow. Photo by Lori Rodriguez, USFWS

"It's the start of a new era in seabird conservation," Lindsay Young, Executive Director of Pacific Rim, says later. "We've created a new home for a species that desperately needs it."

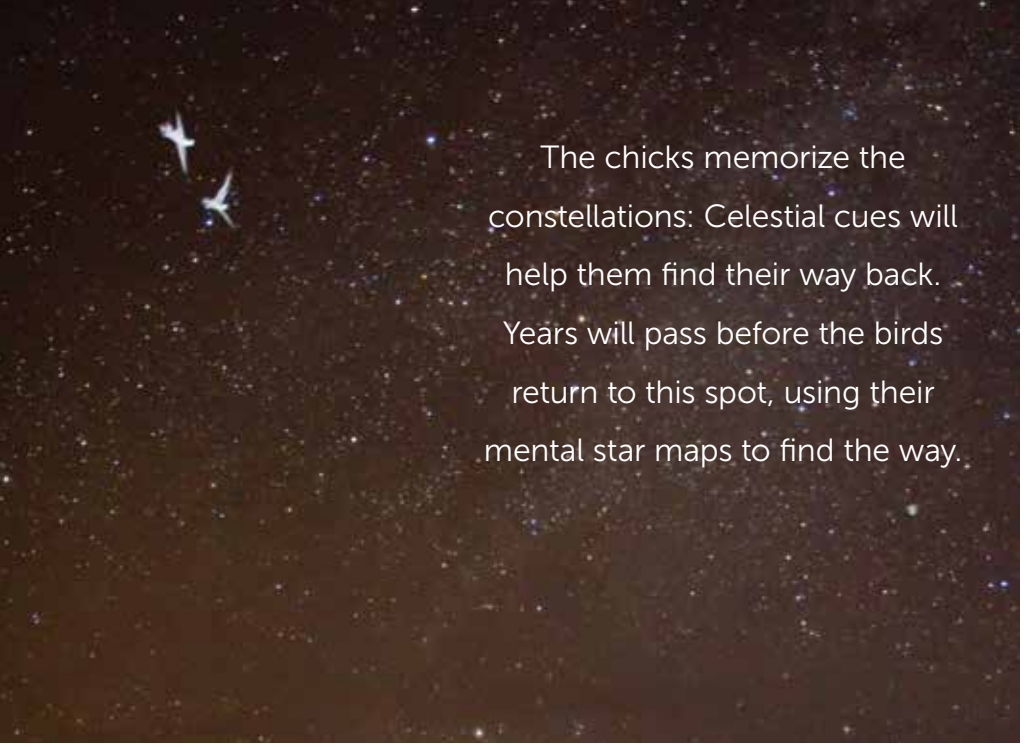
But the work is hardly over. Young, feeling the anxiety of sudden parenthood, sleeps little that night. When she awakes early the next morning, she hopes the birds are still alive.

'As Fast as the Wind Will Take Them'

Caring for the Hawaiian Petrel chicks becomes Kohley and Knight's round-the-clock job. They prepare food, record data, and clean—so much that Kohley starts referring to himself as a bird janitor.

Every day, Kohley and Knight feed the chicks a freshly made slurry of fish, squid, Pedialyte, and vitamin supplements. They watch the birds closely: The chicks are high-strung and feisty, and their behavior, weight, wing length, and appetite all provide a glimpse into their health and growth. (Only one chick struggles: Six days after the birds

A predator-proof fence makes the seven-acre enclosure at Nihoku safe for the petrels and other seabirds. Photo by Jessica Behnke



arrived, No. 5 dies of a bacterial infection apparently contracted before biologists moved her from her mountain burrow.)

As the chicks get closer to fledging, the feeding becomes a balancing act. Kohley wants them light and hungry enough to fly away, but with enough fat reserves to carry them over until they find that first meal.

The chicks come out of their burrows at night to exercise their wings with frenzied flaps. They also memorize the constellations: Celestial cues will help them find their way back. Years will pass before the birds return to this spot, using their mental star maps to find the way.

Kohley is captivated by the birds. "They look a little goofy, but if you see them out at sea where they belong, it's like nothing else," he says. "They're just as fast as the wind will take them."

The Sea and the Stars

Ten days after the birds arrive, No. 2 and No. 4 are the first to go. "Our first two chicks fledged from Nihoku last night!" Young writes in an email to partner organizations.

By mid-December, all nine birds have fledged. They will live over the open Pacific Ocean for the next three to five years. Soaring on the winds for thousands of miles, and sleeping on the water, they will use keen eyesight and a sharp sense of smell to find squid and other favorite foods. If petrels can survive their first few years at sea, scientists speculate they have a good chance of living for 30 or even 40 years.

As the petrels travel across the ocean, the work at Nihoku goes on. The process to secure state and federal permits is already under way for another translocation this fall of up to 20 more Hawaiian Petrels and 10 Newell's Shearwaters. In time, the partners hope to move roughly 40 seabirds every year to the protected site, while also attracting new avian residents with recordings of seabird calls.

If all goes as planned, success will come on a spring night several years from now. A small, dark bird with a powerful homing instinct will remember the smell of Nihoku. Guided by the stars, the bird will return to this spot—a place it recognizes as home.

Watch a short film about the petrels' trip to a new home: **abcbirds.org/video-hawaiian-petrels-journey**

Thanks to our partners:

The translocation of 10 Hawaiian Petrel chicks in November involved years of planning and coordination from many organizations and agencies: Kaua'i Endangered Seabird Recovery Project, a Hawai'i Department of Land and Natural Resources' Division of Forestry and Wildlife (DOFAW) project administered by Pacific Cooperative Studies Unit, University of Hawaii; Pacific Rim Conservation; the U.S. Fish and Wildlife Service, Kilauea Point National Wildlife Refuge; and American Bird Conservancy. Kaua'i Island Utility Cooperative and DOFAW supported predator control within Hono O Na Pali Natural Area Reserve. The National Tropical Botanical Garden provided important assistance with vegetation restoration at the translocation site. The National Fish and Wildlife Foundation and ABC provided critical funding support.

Libby Sander is Senior Writer and Editor at ABC. As a journalist, she covered a variety of beats in Chicago and Washington, D.C., writing news stories and award-winning features for The New York Times, *the* Washington Post, *and* The Chronicle of Higher Education. *You can follow her on Twitter at @libsander.*

TOP: Hawaiian Petrels against the night sky. Photo by Jonathan Felis, USGS

Tunnel Vision

In the Bronx, researchers test new ways to prevent birds from hitting windows

By Gemma Radko

Early on a cloudy fall morning, I edge carefully down a steep, forested hillside along the Bronx River, following avian testing technician Emilio Tobon as he checks the mist nets he opened before sunrise.

The Bronx doesn't automatically come to mind when you think of forests, but this area, on the grounds of the Bronx Zoo, is thick with good-sized oak and hickory trees. The rock-studded hillside bottoms out along the river into flooded, flat areas choked with willow trees and underbrush.

I'm visiting this patch of urban wilderness to learn more about important research ABC and New York City Audubon are conducting. With birds captured in the mist nets, the two organizations are researching and testing ways to prevent birds from hitting windows.

As we follow muddy trails alongside the river, I hear Belted Kingfisher, Wood Thrush, and Gray Catbird calling. The mist nets set up alongside the river yield a good catch of birds: an Ovenbird, a Swainson's Thrush, and a Black-and-white Warbler. We quickly extract the birds from the nets, place them in soft cloth bags, and carry them back up the steep hillsides to the testing facility. Awaiting me there is Christine Sheppard, ABC's Bird Collisions Campaign Manager and my guide for the day.

TOP: The Bronx tunnel is built inside a shipping container, which lets researchers control the amount of light available during testing. Photo by Gemma Radko, ABC

The Threat of Glass

People learn about glass at an early age. Even though clear glass is invisible, there are architectural cues that tell us where to expect glass and how to steer around it. Birds don't learn this lesson.

Up to 1 billion birds die each year in the United States when they hit windows, making this threat one of the most costly to bird populations. Migratory and backyard birds are among the most common victims, including species such as White-throated Sparrow, Painted Bunting, and Ruby-throated Hummingbird.

In 2004, Austrian ornithologist Martin Rössler developed a research method to adapt glass so that birds avoid it. Rössler's "tunnel testing" provides a safe way to give birds in



flight a perceived choice between exiting a dark space by way of a plain piece of glass, or one with a pattern.

The patterns are combinations of elements of different sizes, shapes, color, spacing, and contrast, with different orientations and levels of opaqueness. If most birds fly towards the plain glass, which they perceive as an unobstructed flight path, the assumption is that the pattern creates a visible barrier that the birds will avoid.

"Birds see differently than we do," Sheppard tells me. "Their contrast sensitivity is not as good as ours, so there are patterns they may not see. The contrast, spacing, and size of a pattern all matter."

A New Approach

In 2008, Sheppard, then curator of birds at the Bronx Zoo, received a grant from the Association of Zoos and Aquariums to partner with New York City Audubon and the Carnegie Museum of Natural History in building a test tunnel at the museum's Powdermill Nature Reserve, in Pennsylvania. The program moved to ABC in 2009.

Powdermill's research has already confirmed several important findings. For instance, horizontal lines or other patterning on glass must be two or fewer inches apart to deter the majority of birds, and vertical lines must be four or fewer inches apart. These lines can be wavy, on an angle, or even broken into segments; they can be integral to glass or applied to the surface.

These dimensions work for small species, such as warblers, and for larger birds as well, because birds are able to assess the size of the gaps relative to their body size and adjust their flight behavior accordingly.

Down the Hatch

Back in the Bronx, I learn more about how this newer facility is helping to save birds. The tunnel, a 24-foot plywood box on legs constructed within a metal shipping container, was built by ABC and New York City Audubon in 2013 with funding from the National Fish and Wildlife Foundation. It doesn't look like much from the outside, but this tunnel is generating research that could save the lives of millions of birds.

Tobon bands and records the species, age, and sex of each captured bird. Then we place each bird in a small hatch at the entrance of the tunnel where it faces a long, dark passageway. At the far end are two lighted pieces of glass: one unmodified (the control) and the other with a pattern to be tested.

As each bird darts down the tunnel, we note which way it tries to exit—control or pattern—using a video camera to record the attempt. A strategically placed mist net prevents the birds from slamming into the glass. After recording each response, one of us opens a door at the far end of the tunnel, and the bird flies out.

In Search of Solutions

It's still early days at the Bronx tunnel, which aims to build on the research already accomplished at Powdermill. One significant advance: Since it's built in a shipping container, this tunnel can control the amount of light available during testing—a condition not always achievable at the free-standing Powdermill site.

The artificial light source in the Bronx tunnel can simulate two different levels of daylight: with or without ultraviolet. This will further standardize testing, helping to score different materials under varied lighting conditions. The same window can look different at different times of day, in different weather, and even on different sides of the same building.

Two lighted pieces of glass at the end of the test tunnel—one clear, one patterned—provide test subjects two avenues of "escape." Photo by Gemma Radko, ABC

Many migratory bird species collide with glass. Photos left to right: Black-and-white Warbler by Dennis W. Donohue, Shutterstock; Golden-winged Warbler by Laura Erickson; Swainson's Thrush by Double Brow Imagery, Shutterstock, White-throated Sparrow by Jacob Spendelow; Kentucky Warbler by Greg Lavaty, texastargetbirds.com

ABC has rated more than two dozen products—some of them tested in the Powdermill tunnel—as being effective in significantly reducing bird collisions with glass. Six of these products are consumer materials meant for homeowners, 22 are commercial products for architects and building managers, and one of the products is appropriate for both settings.

After several hours of helping at the tunnel, I realize how the work happening here is groundbreaking for birds. ABC and researchers around the world need to keep pursuing all possible avenues of research—including this tunnel protocol—to develop sophisticated and permanent solutions.

To learn more, visit **abcbirds.org/program/glass-collisions/**

Gemma Radko is ABC's Communications and Media Manager, with over 25 years of graphic design, writing, and editing experience. Gemma is a member of both the Montgomery and Frederick chapters of the Maryland Ornithological Society, an avid birder, and teacher of introductory ornithology classes.

How to Make Your Windows Bird-Friendly

Jim Monsma's home in Hyattsville, Md., was a dangerous place for birds. Two south-facing windows produced dramatic reflections of a neighbor's partly wooded lot and the sky beyond. Every other month, a bird crashed into one of the windows and died.

So four years ago, Monsma, an ABC member who works as a wildlife rehabilitator, decided to modify the windows. He cut semi-clear contact paper into 1-inch squares and affixed them to the outside of the window, arranged in a 3-inch grid.

The change has been dramatic. "We haven't had a single fatality that we know of since they were treated," he says. "And we never hear collisions, which used to be all too common."

Researchers estimate most homes in the United States kill at least a few birds every year, amounting to roughly a half-billion birds killed annually. But there are simple steps homeowners can take to alert birds to windows—and make houses and yards safer for birds.

ABC now recommends six Bird-Smart products for homeowners to make windows safe for birds. The materials fit every style, budget, and climate, and have documented evidence proving their effectiveness, either through controlled tests or field studies. The following products are rated as "highly effective" in preventing birds from hitting windows:

- **ABC Bird Tape:** Easy to install, long-lasting and affordable, ABC BirdTape is highly effective when installed as recommended. This translucent tape allows light in, but partially obscures views.
- **Acopian BirdSavers:** These "Zen Curtains" are easy to install and long lasting.
- **Collidescape:** This window film creates a solid appearance from the outside, but allows views from the inside and can reduce glare and cooling costs while protecting birds.

AMERICAN BIRD CONSERVANCY
TESTED EFFECTIVE

The list of recommended materials will continue to grow as manufacturers of glass, window films, and external screening systems create new products or document the effectiveness of existing ones.

See more: **birdsmartglass.org**

Birds of

Brazil's Songbird Forest

The Atlantic Forest stretches for 1,500 square miles along the coast of Brazil, a wondrous and rich ecosystem teeming with a vast array of plants and animals. Many of these exist nowhere else in the world. But intense development in the region has had a devastating impact. Today, the once-mighty Atlantic Forest is about 8 percent of its original extent. In some places, it is almost completely gone.

With help from ABC, the Brazilian conservation organization Fundação Biodiversitas has increased the size of a protected area that conserves a key part of this unique and threatened forest region. Home to the Critically Endangered Stresemann's Bristlefront and many other birds, the Mata do Passarinho Reserve—the "Songbird Forest"—now exceeds 2,352 acres.

Rare as it is, the Stresemann's Bristlefront (shown on the back cover) isn't the only bird that benefits from this protected area. In the following pages, we highlight a few of the more than 240 bird species that biologists and birders have documented in the Songbird Forest. Nearly all of these birds live only in the Atlantic Forest, and for many of them, destruction of habitat has caused major population declines.

Bare-throated Bellbird

The male Bare-throated Bellbird is one of the loudest birds in the world. Sounding off with metallic, two-toned notes, males call from a perch high in the forest canopy during courtship or while defending territory.

Aside from its piercing calls, this striking bellbird is rather inconspicuous. It eats fruit and plays an important role in the ecology of the Atlantic Forest by dispersing seeds. This species appears to be migratory in at least some regions, including southeast Brazil, although this behavior apparently varies among populations.

Along with habitat loss, the pet bird trade has led the International Union for the Conservation of Nature (IUCN) to designate the Bare-throated Bellbird Vulnerable to extinction.

Photo by Rudimar Narciso Cipriani

Black-headed Berryeater

True to its name, the Black-headed Berryeater eats mostly fruit; in fact, the birds' frenzied feeding at fruiting trees is one of the best ways to spot this species. Like other members of the cotinga family, it plays an important ecological role by dispersing fruit seeds.

The Black-headed Berryeater's voice—a single note followed by a descending whistle, repeated at regular intervals—is another reliable way to locate this rare bird.

It is closely related to the Hooded Berryeater, another Atlantic Forest endemic, but favors higher elevations and is more threatened. The IUCN has classified the Black-headed Berryeater as Vulnerable because of its small and fragmented population.

Photo by Ciro Albano

Striated Softtail

This vulnerable endemic is a member of the Ovenbird family—a large family of birds found only in the tropics of Mexico and Central and South America. (The familiar migratory Ovenbird that breeds in North America is a wood-warbler unrelated to this group.)

The Striated Softtail tends to forage alone or in pairs, usually in the lower and middle levels of humid forest, where it searches for insects in tangled vines. The birds are more likely to be seen in forests where dense vine-tangles are present.

For safety and the chance to capture more prey, occasionally the bird joins mixed-species flocks of other insect-eating birds, including woodcreepers, antshrikes, and antbirds.

Photo by Ciro Albano

Saffron Toucanet

This colorful bird is known in Portuguese as *Araçari-banana*, or "Banana Toucanet." Despite its distinctive plumage, the toucanet tends to remain relatively inconspicuous as it forages through the tree canopy in pairs or small family groups. It has a variety of vocalizations, ranging from loud notes to rattle-like and purring calls.

Like other toucans, these birds eat fruit, but will also feed on small animals and the eggs of other birds. They usually nest in abandoned woodpecker holes or other tree cavities.

Habitat loss and hunting threaten the bird's survival, and its beauty can be its undoing: Saffron Toucanets are often captured illegally for the cage-bird trade.

Photo by Glenn Bartley

Banded Cotinga

The male Banded Cotinga is a stunning bird decked out in shimmering shades of blue and purple. The female is a much more inconspicuous brown.

Unfortunately, little is known about the life history of the seven birds in the genus *Cotinga*, which also includes the Lovely and Spangled Cotingas. Although many are strikingly colored, they are shy, unobtrusive birds that dwell high in the forest canopy. There they feed mainly on fruit, perhaps supplemented by seeds and insects.

Like other colorful birds, Banded Cotingas are often trapped for the cage-bird trade, which along with deforestation is one of the main causes of their steep decline. It has been designated as Endangered by the IUCN.

Photo by Ciro Albano

Fork-tailed Pygmy-Tyrant

This tiny, distinctively patterned flycatcher skulks in the undergrowth of forest borders, especially where there are dense thickets of bamboo and vines. It can survive in degraded forest, but even so, the species is rare, likely numbering fewer than 10,000 individuals.

Like other flycatchers, it feeds on insects, including small caterpillars and katydids plucked from leaves during the birds' short, active flights. With a high-pitched, staccato voice, the bird's call is usually repeated in a series of threes. Scientists have not yet discovered other aspects of the bird's behavior and breeding biology.

The Fork-tailed Pygmy-Tyrant is suspected to be declining rapidly, in line with rates of habitat loss within its range. It is another Atlantic Forest endemic that the IUCN has classified as Vulnerable due to extensive, ongoing habitat loss.

Photo by Ciro Albano

Hook-billed Hermit

Hermits are hummingbirds, numbering 30 to 40 species, whose range extends from southern Mexico to northern Argentina. The Hook-billed Hermit is among the rarest. With as few as 200 to 300 remaining in the heavily degraded Atlantic Forest, the species is classified as Endangered by IUCN.

The Hook-billed favors humid forest interiors along waterways, particularly streams bordered by the brightly colored flowers of *Heliconia* plants, which it plays an important role in pollinating. (The shape of some *Heliconia* flowers limits pollination to a subset of hummingbirds in the region.)

Deforestation and fragmentation caused by roads and human settlement have scattered the Hook-billed Hermit's populations and led to dangerous declines.

Photo by José Almir Jacomelli Jr.

Pin-tailed Manakin

Manakins derive their name from the Middle Dutch *mannekijn*, which translates to "little man." The Pin-tailed Manakin, found only in the Atlantic Forest, is considered one of the most beautiful. While the male's flashy green, red, and black plumage stands out, the birds are difficult to spot, in part because of their unusually quiet vocalizations.

Like most manakins, the Pin-tailed is sexually dimorphic, with the colorful male far outshining the dull, greenish female. Both sexes have elongated, pointed central tail feathers for which the species is named.

Male manakins are known for their elaborate group courtship displays. These often take place on gathering grounds called leks, where females visit to select a mate.

Photo by Ciro Albano

Maroon-faced Parakeet

These small parrots favor the canopy of humid forests, but they can also be found along edges and in clearings with scattered trees. The birds are surprisingly inconspicuous unless they are in flight or uttering their high-pitched, yelping calls. Otherwise, they are well camouflaged by their mottled plumage.

Also known as the White-eared Parakeet, this bird is closely related to the Venezuelan, Grey-breasted, and Pfrimer's Parakeets, which were formerly considered subspecies of this species.

Like other parrots, Maroon-faced Parakeets nest in tree cavities excavated by other species such as woodpeckers. Outside of the breeding season, they are gregarious, usually seen in groups of 15 to 20 birds.

Photo by Ciro Albano

Three-toed Jacamar

Beginning birders sometimes mistake jacamars for hummingbirds. In fact, jacamars are most closely related to puffbirds, another tropical family extending from Mexico through South America.

The Three-toed Jacamar, found in drier areas of the Atlantic Forest, is unusual with its three forward-facing toes and one back-facing toe. Other jacamars have two toes facing forward, two facing back.

This species eats flying insects, expertly snapping up butterflies, dragonflies, and wasps with its long, thin bill. The birds nest in burrows, which the females usually dig in an earthen bank. Although capable of surviving in some degraded habitat, this species is experiencing a major decline, and is considered Vulnerable by the IUCN.

Photo by Nick Athanas

Editor's Note: You can help protect the birds of the Songbird Forest with an extra gift to ABC. Your contribution will provide much-needed support to help restore and manage this spectacular reserve. To make a gift, contact ABC's Holly Robertson at hrobertson@abcbirds.org.

On the Edge of a Great Lake, a Passionate Voice for Birds

By Libby Sander

Kimberly Kaufman first became involved with Ohio's Black Swamp Bird Observatory (BSBO) as a passerine research technician, banding songbirds at the Observatory's main research station. She transitioned to education director in 2005, where she answered a call—personal and professional—to get people excited about birds. In 2009, Kaufman became the Observatory's executive director.

In addition to coordinating one of the country's most successful young birder programs, the Observatory organizes and hosts The Biggest Week in American Birding, a 10-day event timed to coincide with the peak of songbird migration in northwest Ohio.

Kaufman, who is married to the birder, author, and conservationist Kenn Kaufman, says her expansive knowledge of birds and bird conservation is "completely self-taught."

"I don't have a college degree, but it hasn't held me back," says Kaufman, who recently joined ABC's Board of Directors. "This Observatory and I have grown up together, and the opportunities it's granted me are huge."

Libby Sander: How did you become interested in birds?

Kimberly Kaufman: I grew up on this small farm in the middle of Ohio and spent nearly every waking moment outside. But I didn't really connect with birds until my late 20s. I was at an appointment, and outside the office they had a bird feeder. On every perch there was a beautiful American Goldfinch, all males in blazing summer plumage. I had never seen a goldfinch. I was stunned to discover that these glorious birds—so common in Ohio—could have escaped my attention all my life. That moment changed the course of my life, and I was consumed by an intense curiosity about the natural world.

LS: How did The Biggest Week begin?

KK: When the Observatory headquarters moved to Magee Marsh Wildlife Area, the leadership recognized an opportunity to promote this sensational birding destination to the world birding market, and leverage the resulting economic impact of birding tourism to build support for habitat conservation. To achieve our goals, we devised a conservation business plan that capitalized on the Observatory's strengths. The Biggest Week was a major element of the plan.

We knew the business community would play a major role in our success, so in 2008, we developed our Birds and Business Alliance program. Today, more than 70 local businesses are participating. With all the other elements of our plan in place, in 2010 we launched The Biggest Week in American Birding. The event rapidly grew into the largest birding festival in the country.

LS: Why is the Great Lakes region so critical to birds?

KK: All three of the major migratory routes birds follow during spring migration intersect over northwest Ohio. When the birds get here, they confront the daunting expanse of Lake Erie. When you're a songbird that weighs less than an ounce—and you don't swim!—you need to rest and refuel before these long crossings. With so much lakefront habitat sacrificed to development, large concentrations of migratory birds gather in these remaining patches of wooded habitat to fuel up before crossing the lake.

These remnants of stopover habitat are the essential connection between the wintering grounds and the breeding grounds. Any loss of this habitat could have an impact on the global population of Kirtland's Warbler, Golden-winged Warbler, Wood Thrush, and other birds.

LS: What are the challenges for bird conservation in this region?

KK: Wind energy is an intense issue for us right now. With the need for alternative energy on nearly everyone's mind, there seems to be a mad rush to install as many turbines as quickly as possible. The wind industry doesn't understand the complexities of bird behavior,

Photo of Kimberly Kaufman by Delores Cole

yet it's making decisions about whether turbines will impact birds.

BSBO has more than 30 years of data documenting the volume of birds that pass through this region during spring and fall migration. The entire Western Basin of Lake Erie has been designated as a Globally Important Bird Area. We've brought tremendous economic development to the region through our efforts to market the sensational birding here, and a whole host of environmental agencies and organizations are on record stating that this area is not suitable for wind energy development. Yet we still can't keep turbines out. We need industry regulations—fighting these projects one at a time isn't enough.

LS: Are there specific wind projects in Ohio that concern you?

KK: There are. With a proposed build-out of 1,700 turbines, the LEEDCo "Icebreaker" project would install six wind turbines in the open waters of Lake Erie, right smack in the middle of a Globally Important Bird Area. BSBO partnered with ABC to submit a letter of concern about this project to the Ohio Power Siting Board, and we have evaluated—and found many flaws in—the company's assessment of the turbines' environmental impact.

We're also concerned about Ohio's largest wind energy facility, the Blue Creek Wind Farm, owned and operated by Iberdrola Renewables. Located in the flattest, emptiest landscape in all of Ohio, we've been keenly interested in the number of birds being killed at this facility. In 2013, BSBO filed a request for the facility's post-construction mortality data under the Freedom of Information Act.

LS: What did you learn?

KK: The company refuses to turn over the data, citing trade secrets. In a closed-door meeting, the company did provide a list of birds killed over a two-year period, but refused to allow us to see the study methodology. The raw data was shocking. Even in this barren landscape, where we would have expected bird morality to be low, the turbines are still killing an alarming number of birds. Forty-one species were killed at the facility in 2012 and 2013. A disturbing percentage were migrating birds such as Golden-winged Warbler, Philadelphia Vireo, and Golden-crowned Kinglet.

LS: These are sobering matters for anyone who loves birds. So where is your favorite place to go birding and recharge?

KK: Believe it or not, our own yard. Our little three-acre patch is an oasis in the middle of agricultural fields, and we're restoring much of it to native grasses and scrub-shrub. Watching the birds respond to the changes is powerful motivation for me to conserve and restore habitat on a larger scale.

Visit the Responsible Wind Energy page on BSBO's website: bsbo.org/responsible-wind-energy

Tundra Swans and wind turbine. Photo by Brian Lasenby, Shutterstock

The Birds and the Butterflies

A new effort aims to restore native prairie for Northern Bobwhites and monarch butterflies

By Jennifer Howard

The grasslands of Texas and Oklahoma should be alive with native birds: Painted Buntings, Eastern Meadowlarks, Scissor-tailed Flycatchers, Loggerhead Shrikes, Dickcissels, and many others, including Northern Bobwhite, an iconic species in the region. But poor land-management practices such as overgrazing and fire suppression have turned much of the prairie into subpar habitat for the birds and other creatures, including the monarch butterfly, that depend on it.

When their habitat suffers, native bird and butterfly populations decline. The number of Northern Bobwhites has dropped by as much as 57 percent in the last 10 years in the Oaks and Prairies ecoregion. The figures aren't encouraging for other bird species. Eastern Meadowlarks have declined by as much as 48 percent, Scissor-tailed Flycatchers by 18 percent, and Loggerhead Shrikes by 51 percent in the last decade, for instance. The U.S. Fish and Wildlife Service (FWS), meanwhile, is evaluating whether the monarch butterfly's migratory populations should be considered for protection under the Endangered Species Act.

"Everybody needs prairie. There's a lot of overlap between the habitats these critters use."

Wendy Caldwell, Monarch Joint Venture

Eastern Meadowlark by Gualberto Becerra, Shutterstock

"The issue is the same for all of them, which is the loss of native habitat," says Jim Giocomo. He is ABC's coordinator for the Oaks and Prairies Joint Venture (OPJV), a coalition of state and federal agencies and nonprofit groups that have joined forces to support bird-conservation efforts in Texas and Oklahoma. The partnership includes the Oklahoma Department of Wildlife Conservation, the Texas Parks and Wildlife Department, the U.S. Fish & Wildlife Service, the U.S. Department of Agriculture's Natural Resources Conservation Service, ABC, and others.

With the help of local landowners and biologists, a new OPJV program, the Grassland Restoration Incentive Program (GRIP), aims to stem or reverse the decline of native-prairie habitat and help bring back the quail and other species. Through the program, ABC and other Joint Venture partners are working to improve or restore more than 40,000 acres of habitat in Texas and now Oklahoma.

TOP: Northern Bobwhite by Lakeview Images, Shutterstock

The monarch butterfly cannot successfully reproduce without milkweed. Photo by Rob Routledge, Sault College, Bugwood.org

The GRIP program "basically pays landowners to do good things with grassland," Giocomo says. Those "good things" include the use of prescribed burning, proper grazing and fencing, brush clearing, and planting native species instead of exotics such as Bermuda grass.

GRIP began in late 2013; it's so new that conservationists don't have enough data yet to know how well it's working. Over time, though, they'll try to answer that question as they track populations of bobwhite and other species through the Breeding Bird Survey and other assessments.

Milkweed and Monarchs

What benefits the birds helps other creatures as well. A robust prairie ecosystem supports not just native grasses but an array of forbs, broadleafed flowering plants that bees and other pollinators feed on. Monarch butterflies lay their eggs only on native species of milkweed; when they hatch, the larvae feast on the milkweed and absorb toxins from the plants, which makes them unappetizing to potential predators. That protective advantage remains in place when they become adults.

Science supports the GRIP approach. When native bluestem, Indiangrass, and other tall native bunch grasses aren't plentiful, the animals that rely on them for food and shelter feel the effects. Bobwhites need thick clumps of grass for nesting sites and a healthy plant community where they can forage for seeds and insects.

"Everybody needs prairie," says Wendy Caldwell, Program Coordinator of the Monarch Joint Venture, which works to protect the monarch migration across the continental United States. Several of the partners in that program focus not just on monarchs but on grassland birds and other species as well. "There's a lot of overlap between the habitats that these critters use," she says. "When we're restoring habitat for

monarchs, that's essentially prairie restoration."

Like many of the birds whose habitat they share, monarchs are in trouble. Researchers estimate the strength of the North American migratory monarch population by estimating how many individuals overwinter in Mexico. In 1996, close to 1 billion butterflies made it there. In 2013, that figure dropped to an estimated 35 million.

Several factors have contributed to the butterflies' plight, Caldwell says, but damage to the prairie ecosystem is a big culprit. Milkweed that used to grow alongside and within row-crop fields has been displaced by more intensive farming of the land. Herbicide-tolerant crops drive habitat loss "because those herbicides are eliminating milkweed and other nectar sources."

"The availability of nectar-producing forbs is a big issue," says Benjamin Hutchins, an invertebrate biologist with the Texas Parks and

Loggerhead Shrike by Terry Ross, Wikimedia Commons

Wildlife Department (TPWD). The state recently put in place a Monarch Conservation Plan he helped develop. "Overgrazing, planting with non-native or invasive species, urbanization—all of these have resulted in a pretty substantial reduction of what was historically grassland prairie." In the Blackland Prairie ecoregion of north-central Texas, for instance, less than 1 percent of the native prairie remains.

That's where the prairie restoration work supported by the GRIP program comes in. It collaborates with landowners on a voluntary basis, giving them financial incentives and expert advice to help them manage their land in ways that encourage healthy grassland habitats. Any of the Joint Venture partner organizations can submit specific project proposals, which are reviewed by local teams of biologists and land managers.

The Ax, the Plow, and the Match

Jon Hayes, a conservation delivery specialist with the TPWD, covers the southern portion of the Joint Venture's focus area. He works closely with local wildlife biologists and

Prescribed burning is one of the most cost-effective habitat management tools in grassland ecosystems. Here a Texas Parks and Wildlife Department burn crew member lights a fire during a prescribed burn operation. Photo by Jon Hayes

landowners who participate in GRIP. Much of his job revolves around "strategies we can put in the toolkit of the local biologist that's working with the landowners," he says.

When he describes the GRIP approach, Hayes invokes a well-known observation made by the conservationist Aldo Leopold that the tools that harm the land can be used to repair it: "the ax, the match, the cow, the plow, and the gun." GRIP focuses on the ax, the match, the cow, and the plow. For instance, Hayes says, "we get folks to chop down woody invasives" that don't provide good habitat for grassland birds.

Prescribed burns also keep grasslands open for both birds and native plants—but setting fires can be a tough sell. "Fire's an integral part of maintaining grasslands in the West," Hayes says. "But it's something people are often hesitant to do." GRIP provides training and encouragement.

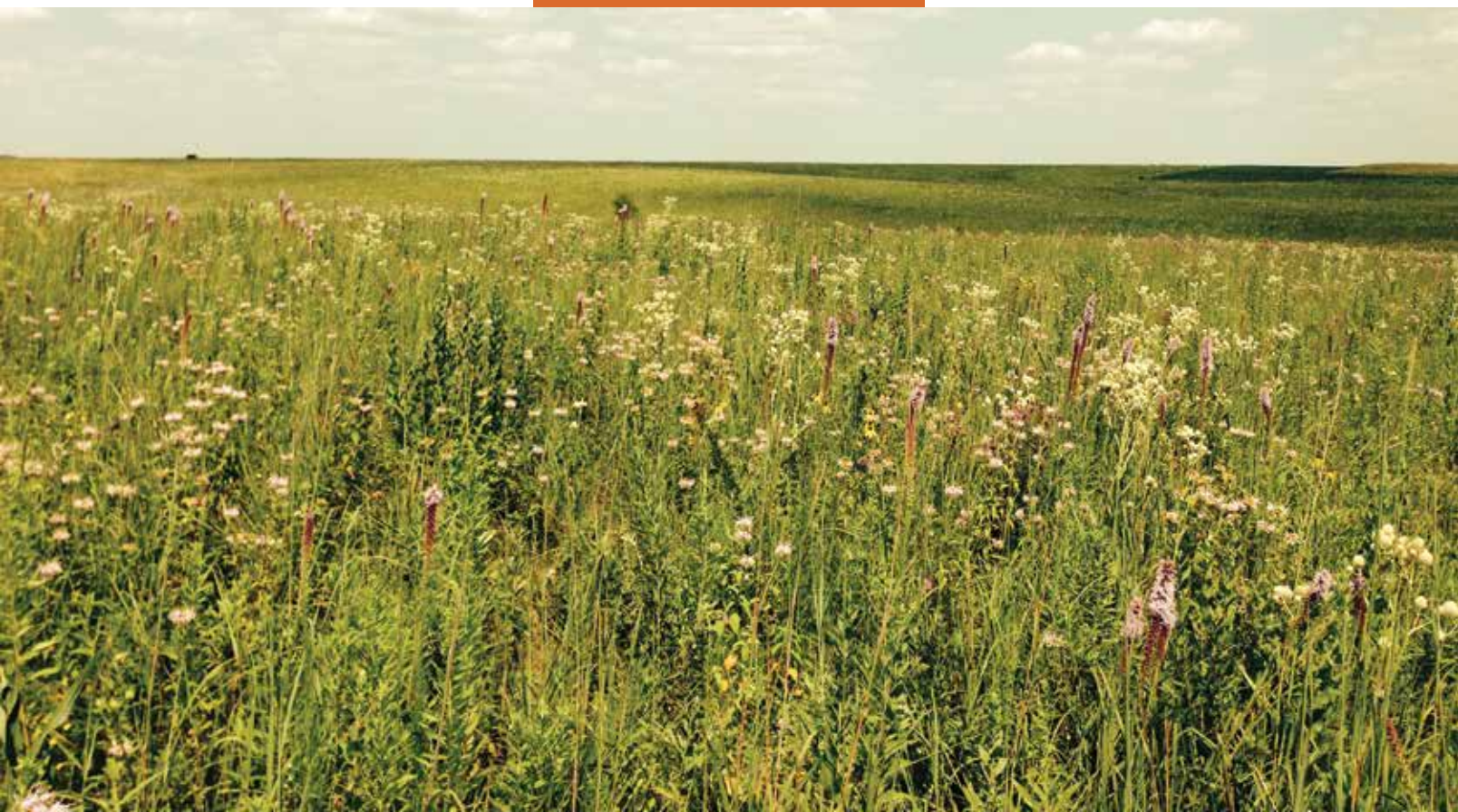
When he describes the GRIP approach, Hayes invokes a well-known observation made by the conservationist Aldo Leopold that the tools that harm the land can be used to repair it: "the ax, the match, the cow, the plow, and the gun."

The program also supports the removal of exotic grasses, imported from Asia and Africa to feed livestock. "They tend to take over," Hayes says. He adds that exotics like Bermuda grass also require a lot of fertilizer and water to make good fodder. Good conservation practices make sense from a ranching perspective, too. Native grasses "tend to be more drought-resistant than the other grasses," he says. "They're higher in nutrients, and replace more biomass."

GRIP helps landowners replace exotics with native grasses where it's feasible to do so. The program defrays the costs of plowing and planting native seed mixes and, when necessary, applying herbicides. Local or regional seed companies can custom-mix seed blends to suit particular locales,

ABOVE: Along with milkweed, monarch butterflies need a variety of nectaring sources available to them throughout the year.

BELOW: Prairie grasses and flowering plants flourish following a prescribed burn. Photos by Jon Hayes



increasing the chances that what's planted will thrive. "That's costly, and it's not something that landowners are readily going to do on their own," Hayes says. "We have to make the case to them that there's an economic benefit there, there's a forage benefit there, and there are tremendous wildlife benefits."

A Love of the Land

Many landowners GRIP works with don't need a whole lot of convincing to adopt more wildlife-friendly practices. They may be conservation-minded to begin with—or they've noticed that they're not seeing once-familiar birds as often as they used to.

"They may not recognize that Scissor-tailed Flycatchers are on the decline, but they do recognize that bobwhite are," says Kenneth Gee, a conservation delivery specialist with OPJV. He covers the northern part of its range. "You use the species that's of most interest to get the point across and get your program implemented."

Conservation can be contagious. As landowners become more familiar with those species, "they do get excited to see Painted Buntings or Grasshopper Sparrows or meadowlarks."

Beyond money, GRIP provides crucial know-how. "We're here to educate. We're here to give advice," says Matt Reidy, a wildlife biologist with TPWD who's been working with GRIP since it began. "It takes time to build relationships."

For instance, he works with a small group of ranches—about 18,000 acres in all—whose owners started talking a few years ago about how they could jointly improve quail habitat on their land. "Quail management provides an umbrella for so many other species, including monarch butterflies, including grassland birds," Reidy says. Conservation can be contagious. As landowners become more familiar with those species, "they do get excited to see Painted Buntings or Grasshopper Sparrows or meadowlarks."

Sometimes a light touch—or light grazing—works best. "For years and

TOP: Scissor-tailed Flycatchers by Ken Slade

years, wildlife biologists were saying 'Get the cows off, get the cows off,'" Reidy says. Now they recognize that "in a lot of ways, grazing is a wonderful tool." Historically, these prairies were home to large numbers of bison as well as deer. Cows can be a healthy part of the landscape as long as they're not allowed to overgraze it. On the other hand, "you can get too thick with grass," Reidy says. "To be a successful cowman and take care of the land, you've got to be flexible."

An approach that works one year—a year when there's been ample rain, for instance, and the plants are thriving—might not work when drought strikes. The GRIP approach takes that into account, equipping people with the knowledge to adapt what they do as conditions change.

"Land management is not simple, at least not down here," Reidy says. "You have to try to teach the landowners the skills to evaluate the landscape and say, 'What should I do next?'"

Knowing how to make the right call can make a world of difference—not just to bobwhites but to monarchs and the myriad other species that count on healthy prairie ecosystems in order to survive and thrive.

Learn more about the Oaks and Prairies Joint Venture: **opjv.org**.

Monarch caterpillars only eat milkweed plants, and monarch butterflies need milkweed to lay their eggs. Photo by Steven Katovich, USDA Forest Service, Bugwood.org

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. *She writes nonfiction for* The Times Literary Supplement *and the* Boston Review *and her fiction work has been published by* Virginia Quarterly Review *and others. Follow Jen on Twitter at @JenHoward.*

In areas that were historically savannahs—grasslands with scattered trees—GRIP can help landowners remove understory vegetation to ensure those ecosystems can meet the needs of the wildlife that resides there. Photo by Jon Hayes

Fighting Pesticides' Deadly Impact on Birds

By Cynthia Palmer

For all their prowess, birds are no match for the lethal ingredients used in many pesticides. Neonicotinoids, for instance, are the most widely used insecticides on the planet. It's nearly impossible for farmers to buy seeds for staple crops such as corn that are not coated with a neonicotinoid. For birds and other wildlife, these insecticides are fatal.

Here at ABC, we've been keeping a close watch on neonicotinoids and the threat they pose to animals. Through scientific research, legal action, and collaboration with like-minded organizations, we are working to protect birds—and people—from these dangerous and pervasive chemicals.

Research has helped us understand the severity of the problem. In a 2013 study, ABC found that neonicotinoids are toxic to birds and invertebrates, even in small quantities. And last year, we tested 66 food samples from the cafeterias of the U.S. Congress for neonicotinoids. We found the chemicals in more than 90 percent of food tested—illustrating how ubiquitous they are in our food supply.

Neonicotinoids are in many of our waterways, too, and kill the aquatic invertebrates on which insect-eating birds depend. ABC is now researching the impact of these diminished food supplies on aerial insectivore birds such as the Common Nighthawk and the Willow Flycatcher.

ABC is now researching the impact of these diminished food supplies on aerial insectivore birds such as the Common Nighthawk and the Willow Flycatcher.

Common Nighthawk by Greg Lavaty

The U.S. Environmental Protection Agency regulates pesticide use through a complex system of registration, based largely on industry data, followed by reviews every 15 years. Yet much of the damage occurs beneath the radar of state and federal regulations: Millions of pounds of neonicotinoids used as seed coatings, for instance, are exempted from registration, so they are used without labels or enforcement.

Legal action is one way to make the regulatory process safer for birds. Last month, ABC joined with beekeepers, farmers, and other public interest groups in bringing a federal lawsuit against the EPA alleging insufficient regulation of neonicotinoid seed coatings. (See related story, page 5.) If we prevail, the government will have to regulate these pesticides as it does any other.

Another step to protect birds is to improve the way government collects data on dead or sick birds. This valuable information helps federal regulators assess the impact of pesticides in the field. Yet under existing regulations, the reporting thresholds for wildlife are too high to be useful: Deaths among a "flocking species," for instance, must be reported only if 200 or more birds are affected.

Regulatory exemptions and feeble reporting requirements keep the government in the dark about the effects of pesticides on wildlife. Through critical research and efforts to change federal policy, including—when necessary—litigation, ABC is determined to fight the most dangerous pesticides and establish robust protections for birds and for people.

ABC's Birds and Pesticides Program is made possible by the generous support of the Turner Foundation, the Wallace Genetic Foundation, the Ceres Trust, the Cornell Douglas Foundation, and the Sarah K. de Coizart Article TENTH Perpetual Charitable Trust.

Cynthia Palmer is Director of Pesticides Science and Regulation at ABC. Her work has dealt with chemical contamination, pest control, agriculture and food safety issues, worker health and safety, air and water pollution, climate and energy policy, and tobacco policy. Cynthia received her A.B., J.D., and M.P.H. from Harvard University, concentrating in environmental and occupational health sciences and law.

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One of the world's rarest species, Stresemann's Bristlefront is benefiting from an ABC-supported acquisition of additional habitat in Brazil.
Photo by Ciro Albano