BIRDCONSERVATION

The Magazine of American Bird Conservancy

Summer 2016

In Praise of the 'Hummingbird Effect'

"You wouldn't have thought that the evolution of pollen would alter the design of a hummingbird's wing. But that is the way change happens."

—Steven Johnson

How We Got to Now: Six Innovations that Made the Modern World

In his popular book, Steven Johnson coins the term "hummingbird effect" to make the point that innovation in one realm can trigger unpredictable and unexpected advancement in others. For example, the accidental discovery (probably in the Libyan desert) that silica dioxide, when melted, cooled to form glass, led to an extraordinary series of scientific advances: spectacles, microscopes and telescopes, and ultimately computer chips and fiber optic capable of carrying extraordinary volumes of digital data across great distances.

Johnson named this phenomenon after hummingbirds because he observed that the availability of sugar in flowers inspired hummingbirds' ability to extract it while remaining motionless in flight.

In nature, we call this evolution. Those attuned to it see it everywhere and constantly, but we are glad for the recognition given to one of our most distinctive families of birds. ABC members and friends cannot have escaped noticing our hummingbird logo. We chose it more than 20 years ago to symbolize the hummingbird family's Americas-wide distribution, the hummingbird's amazing ratio of energy output to size, and its nimble, colorful, and fearless nature. Just like the Nazca people of Peru, who marked their landscape 2,000 years ago with a gigantic hummingbird visible from space, we just love these sparkling, speedy spectacles.

ABC's record in protecting hummingbirds is similarly remarkable. We help to conserve endangered hummingbirds across the Western Hemisphere, such as the Juan Fernández Firecrown, found on a small island chain hundreds of miles offshore from Chile; the Marvelous Spatuletail, which lives only in the Andes of northern Peru; and the glittering, rare Honduran Emerald. In fact, our reserves—now numbering more than 70 across the Americas and the Caribbean—provide habitat for nearly 200 hummingbird species. That's more than half of all hummingbird species in the world.

Closer to home, we've helped to preserve a legacy for hummingbird lovers at the former Paton's Birder Haven in Arizona. Purchased by ABC with help from Victor Emanuel Nature Tours and Tucson Audubon Society, which now manages the site, the newly named Paton Center for Hummingbirds draws more hummingbird species than anyplace else in the United States.

We're proud to state that no other organization comes close to ABC's record of success for these beautiful birds. This issue of *Bird Conservation* is a testament to that success, whirring into the hummingbird world with articles covering the full range of hummingbirds' life history, some valuable ways that we humans engage with them, the threats they face—and the actions we need to conserve these mighty miniatures of the bird world.

So, please enjoy! As you read, keep in mind that although hummingbirds are often the protagonist of our story, they are hardly the only characters. We've discovered that saving a hummingbird sets off a succession of positive changes for birds, other wildlife, and ultimately people. That's ABC's own version of the "hummingbird effect."

George H. Fenwick
President, ABC

Cover photo: Green Violetear by Glass and Nature, Shutterstock
TOP: Juan Fernández Firecrown by Tom Shreve

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.

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Anna's Hummingbird chicks by Bill Holsten

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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.

Pennsylvania: Department of State, toll-free number within the state: 800-732-0999.

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

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Sustainable Bird Tourism Scales Up to Support Tropical Conservation

ABC and our partners are celebrating the 10th anniversary of the Latin American Bird Reserve Network, a successful model for sustainable bird tourism designed to prevent the extinction of some of the Americas' rarest bird species. The network, which includes more than 70 tropical reserves spanning close to 1 million acres, has attracted well over 25,000 visitors whose entrance and accommodation fees have helped to finance reserve management and protection.

The reserves were created and supported by ABC and more than 30 partner conservation organizations, as well as governments and local communities, in 15 countries throughout Latin America and the Caribbean.

"The presence of international visitors helps to build local pride in natural resources, especially for unique endemic or charismatic species," said David Agro, a member of the board of ABC's Ecuadorian partner, Fundación Jocotoco. "Birdwatchers are often at the leading edge of the tourism curve."

The Latin American Bird Reserve Network protects habitat for more than 2,000 bird species, more than 50 of which are listed as critically endangered or endangered under global IUCN Red List criteria. Several reserves also protect Alliance for Zero Extinction sites—locations that contain the entire global population of a species that would face extinction if the habitat were lost. In addition, more than 200 of the species recorded at the reserves are migratory birds that winter in the tropics but nest in North America.

The best places in the world to see spectacular birds like Lear's Macaw, Banded Cotinga, and Marvelous Spatuletail are at lodges and reserves supported by ABC and managed by our partners, said ABC President George Fenwick. "Many of the species we are protecting have very restricted global ranges. One reserve financed by bird tourism can prevent a species' extinction."

ABC's Conservation Birding website helps birders find destinations within the reserve network, with routes and information on specific lodges, bird lists, and information on how to make reservations at destinations from Costa Rica and the Dominican Republic to Brazil and Peru.

Birdwatching has become a major economic driver, bringing in billions in annual revenues from bird-feeding and wildlife watching in the U.S. alone. "Our notion has been to capture some of those dollars for conservation," said Mike Parr, ABC's Chief Conservation Officer.

Over the last decade, ABC's network has brought substantial benefits not only to rare tropical birds but to other wildlife species and local communities as well. The program has helped reserves and partners slow climate change by protecting existing forests and planting millions of additional shrubs and trees in and around the reserves; protect watersheds to sustain agriculture and downstream fisheries; support more than 300 conservation-related jobs; and train and engage more than 7,000 people in reforestation, production and marketing of handicrafts, ecotourism, and renewable energy. (See page 13.)

ABC is grateful for the generous support of bird tourism in the Latin American Bird Reserve Network from numerous private foundations, individuals, conservation organizations, and government agencies.

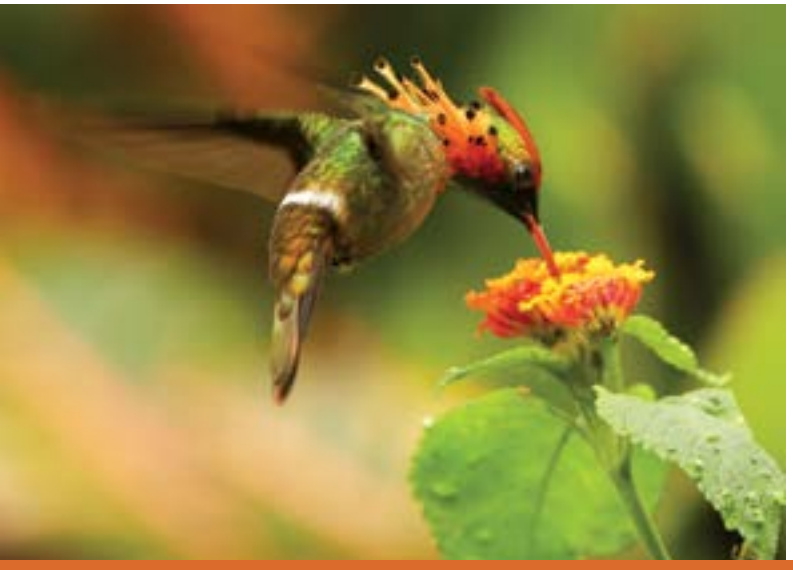
Lear's Macaws at the Canudos Reserve in Brazil, with visitor lodge visible in background. Photo by Ciro Albano

Help ABC set the "Hummingbird Effect" in Motion

Hummingbirds symbolize the fragility and evanescence of nature: a momentary flash of brilliance and verve, disappearing as suddenly as they arrive. At ABC, we are determined to not let hummingbirds—or any other species of bird—disappear forever. But many species are in decline and we need your help to bring them back!

Thanks to the generosity of the Leo Model Foundation and others, ABC is launching a three-dollar-to-one-dollar challenge match through June 30, 2016.

Your extra gift will help us take on the most important bird conservation issues, including ensuring endangered birds in the Western Hemisphere have protected habitat, preventing the extinction of declining Hawaiian birds, bringing back declining migratory birds, and finding solutions to birds hitting windows.



Can you please help us by donating today? Your gift will triple in value!

More than 20 years ago we chose our hummingbird logo to symbolize hummingbirds' Americas-wide distribution, amazing ratio of energy output to size, and fearless nature. And though we're proud of our hummingbird conservation—including 70-plus reserves across the Americas that provide habitat for more than half of all hummingbird species—our work benefits many other species as well. We're calling this the "hummingbird effect."

As an ABC member, you are a critical part of our work to bring back the birds. Here are two things to consider: ABC gets great results, and doing your part for birds is a lasting value.

Remember the three-to-one Hummingbird Effect challenge match lasts only through June 30, so please help us by making your extra gift today.

Donate online at **abcbirds.org/support-the-hummingbird-effect** or use the enclosed envelope.

Tufted Coquette by Martin Mecnarowski, Shutterstock

Report Identifies 10 of the Worst-Sited Wind Energy Projects for Birds

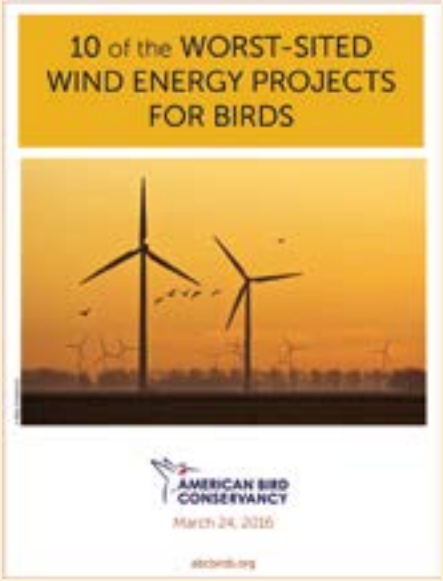
Hundreds of thousands of protected birds, including some endangered species, die each year when they collide with wind turbines and associated power lines. The number of turbines is set to grow significantly as wind energy projects continue to expand across the landscape, likely causing a major increase in this already serious problem.

Now, ABC has identified 10 of the worst-sited wind energy projects in the United States from the perspective of bird conservation. The projects are illustrative of a much broader problem and were selected to show a range of wind development-related threats to birds in various regions and habitats, said Mike Parr, ABC's Vice President and Chief Conservation Officer.

"ABC supports Bird-Smart wind, and it is not our intention to criticize the concept of renewable wind development in general or the developers of the specific projects included in the list," Parr said. "Rather, this list is intended to demonstrate that, under the present voluntary guidelines, there is an inadequate system of checks and balances to protect American native birds from poorly planned wind development on a large scale."

The listed projects—five already built or approved and five proposed—are located throughout the United States. Some of these projects have a long history of causing bird deaths. All illustrate the risks of poor siting and the limitations of current mitigation strategies.

"Alternative energy is not 'green' if it is killing hundreds or thousands or millions of birds annually," said Dr. Michael Hutchins, Director of ABC's Bird-Smart Wind Energy Campaign. "Our wildlife should not be collateral damage in our effort to combat climate change, nor does it have to be. Improved regulation and science leading to proper siting, effective mitigation, and compensation would go a long way to address this conflict."



See the report here.

Agency Helps Birds, Urges an End to Open Pipes

The Bureau of Land Management (BLM) has taken action to reduce a serious threat to birds by issuing a memorandum in late February to its field offices across the nation with guidance on how to eliminate the threat of open pipes on public lands.

Open pipes, such as uncapped PVC pipes used to mark mining claims, are death traps for hundreds of thousands of birds and other wildlife each year. Mountain Bluebird, Ash-throated Flycatcher and other cavity-nesting birds are frequent victims. Animals become trapped inside the pipes and, unable to escape, starve or die of dehydration. More than 3 million mining claims use these pipes as boundary markers.

The memorandum calls for BLM staff to identify all vertical pipes on BLM-managed lands and to cap, close, remove, or screen them to prevent wildlife from becoming trapped. In addition, all vertical pipes on future facilities must have permanent caps or screens to prevent harm to wildlife. Mine-claim holders are also being encouraged to voluntarily remove PVC pipes used as mine markers and to replace them with wildlife-safe markers.

In June, more than 100 groups led by ABC sent a joint letter to the BLM and the USDA Forest Service, asking the two agencies to accelerate efforts to address this longstanding threat to birds.

"This is a positive step in the right direction," said Steve Holmer, Senior Policy Advisor for ABC, which has long advocated for eliminating this threat on public lands. "The threat of open pipes can be easily prevented, and this action moves us closer to solving this problem."

Mountain Bluebird by Greg Homel

New Protection for Lewis's Woodpecker Habitat in Oregon

With help from ABC, Columbia Land Trust secured the final 115 acres of a key 418-acre wildlife corridor on Mill Creek Ridge in north-central Oregon. This acquisition protects a stronghold population of Lewis's Woodpecker, one of the highest-priority birds in North America and a national Watch List species.

This woodpecker is stunning and unmistakable, with its iridescent greenish-black back, head, and tail; silvery gray collar; dark-red face; and pinkish belly. The bird relies on the oak and ponderosa pine savannah found in the Mill Creek Ridge area. But habitat across its range has been greatly reduced, and some local populations have disappeared entirely.

Mill Creek Ridge. Photo by Columbia Land Trust

Lewis's Woodpecker by John D. White

The 8-mile-long Mill Creek Ridge shelters prime Lewis's Woodpecker habitat. It provides a critical undeveloped wildlife corridor between national forest lands to the south and Columbia River Gorge National Scenic Area to the north.

After learning that Mill Creek Ridge was zoned for high-end development because of its dramatic views, Columbia Land Trust conserved 303 acres of the ridge across multiple properties between 2006 and 2015. But one large intervening parcel still divided the protected areas. In late February, the Land Trust acquired that key 115-acre parcel, completing the long-term goal of connecting the ridgeline and slopes on both sides.

The acquisition was made possible with support from the Oregon Watershed Enhancement Board, a generous donation from local landowners, as well as ABC funding through the Neotropical Migratory Bird Conservation Act.

Colombian Reserve Secures More Habitat for Rare Tanager

More than 250 bird species will benefit from a recent expansion of the Tanagers Reserve in Colombia, a country that has more bird species than any other nation. Among the species documented at the reserve are the Gold-ringed Tanager, an endangered bird with a global population estimated to number as few as 600 adults and known to inhabit only five locations worldwide. The reserve takes its name from two endemic tanager species found there, the Gold-ringed and the Black-and-gold.

Gold-ringed Tanager by Fundación ProAves

The expansion was made possible through a purchase of 906 acres of land located on the Pacific slope of the Andes. Several organizations—World Land Trust, ABC, Fundación ProAves (our Colombian partner that owns and manages the property), Weeden Foundation, and Quick Response Biodiversity Fund—worked together to acquire the land. The expansion adds to the contiguous area under protection and will allow ProAves to protect additional unclaimed forested properties nearby.

This area contains one of the highest concentrations of range-restricted species in the world. No fewer than 60 endemic species depend on the region's wet forests. In addition to the rare tanagers, other globally threatened species recorded at the Tanagers Reserve are the Chocó Vireo, Cloudforest Pygmy-owl, and Giant Antpitta. Many beautiful hummingbirds, such as the Velvet-purple Coronet and Empress Brilliant, also find shelter at the reserve. It's also important for migratory birds such as Golden-winged Warbler.

Velvet-purple Coronet by Glenn Bartley

New Grant to Bring Back the Forest Birds

The Sustainable Forestry Initiative (SFI) has provided ABC with a grant to work with SFI program participants—landowners, land managers, and forest products companies, to name a few—to develop bird conservation strategies at a large scale. The $150,000, two-year grant will focus on the Klamath Mountains region of Oregon and the pine and bottomland forests of the Southeast.

ABC will work with forestry and technical partners to consider the value of current management practices for birds resulting from the application of SFI Standards; identify management practices that benefit birds; develop recommendations to increase value of habitats for specific species; and guide other private forest managers and landowners on the conservation value of managing forests sustainably. (See story on page 22.)

"When working forests are managed sustainably, they can provide favorable or improved habitat conditions that support healthy bird populations. Forest products companies that are certified to the SFI Standards already work on sustainable management of their forests and the forests from which they source with an eye toward biodiversity," said EJ Williams, ABC's Vice President for North American Birds and Habitats. The goal of the project is to better understand bird habitats resulting from sustainable management and identify opportunities for additional improvements that can make a positive impact on declining forest birds.

"We want to keep as much forest in forest as we can, whether managed for conservation or wood products, because the alternatives are usually something hostile, like pavement," Williams said. "If a forest has value, it won't be turned into something that's a lot less productive for birds and wildlife."

ABC Lawsuit Charges New York with Violating Endangered Species Act

ABC has filed a federal lawsuit against the New York Office of Parks, Recreation, and Historic Preservation (Parks Office) over the continued presence of feral cat colonies at Jones Beach State Park. The colonies exist in close proximity to the nesting sites of Piping Plovers, a species listed as threatened in the Atlantic Coast region under the Endangered Species Act (ESA). New York State's own Endangered Species Act lists the species as endangered.

In a 2015 letter to ABC, the Parks Office acknowledged the presence of feral cats at Jones Beach and agreed that "our goal should be the removal of feral cats within New York State Parks." Yet no significant action has been taken.

ABC's complaint seeks an injunction to require that the Parks Office remove the feral cats from Jones Beach and follows a Notice of Intent to Sue submitted on December 1, 2015.

"We regret that legal action is our only recourse," said Mike Parr, ABC's Chief Conservation Officer. "We would far prefer to settle this out of court."

"The mere presence of cats has been shown to have significant adverse effects on breeding birds. Even when cats do not directly kill wildlife, they disrupt nesting and feeding behaviors."

Grant Sizemore, Director of Invasive Species Programs, ABC

Many of us at ABC have and appreciate (indoor) cats as pets. However, free-roaming and feral cats are unfortunately a major risk to birds such as Piping Plovers. In a 2009 review of Piping Plovers, the U.S. Fish and Wildlife Service identified feral cats as a threat in the species' Atlantic Coast range, which includes Jones Beach. The State has long accommodated multiple feral cat colonies at Jones Beach in spite of the known risks to Piping Plovers. The Parks Office has allowed structures to be built to house the cats, and it permits local residents to feed them routinely.

"Feeding feral cats does not eliminate their instinct to hunt," said Grant Sizemore, ABC's Director of Invasive Species Programs. "The mere presence of cats has been shown to have significant adverse effects on breeding birds. Even when cats do not directly kill wildlife, they disrupt nesting and feeding behaviors."

Learn more about cats and birds:
abcbirds.org/cats

TOP: Part of the Jones Beach cat colony. Photo by Kathy Baca. BOTTOM: Piping Plover and chick © Stubblefield Photography

JEWELS of the Americas

By Libby Sander

Imagine a Rufous Hummingbird traveling more than 3,000 miles on his annual spring migration from Mexico to British Columbia. Armed with a prodigious mental map of every place he's ever found food, the tiny bird heads to a familiar spot in California where he remembers a field full of flowers. He arrives only to find a big-box store and a giant parking lot. No flowers, no nectar. But the hummingbird has no time to waste; he spends the majority of his waking life gathering food to survive. So he flies on.

Ross Hawkins tells this story to illustrate the impressive—but occasionally harrowing—intensity of a hummingbird's existence. If they don't consume

Rufous Hummingbird by Scott Bechtel

Hummingbirds excite us with their vigor and spunk. But what makes them so special?

enough calories in a day from nectar and small insects, they can suffer, says Hawkins, who is the founder and executive director of The Hummingbird Society. It's a high-stakes hunt for food that most humans never experience. "My wife says, 'Did you forget to get what I sent you to the grocery store for?'" Hawkins says. "A hummingbird can't do that."

The Americas are home to 365 species of hummingbirds. Of these, the International Union for Conservation of Nature lists 28 species, or roughly 8 percent, as endangered or critically endangered. For most of these declining hummingbirds, loss of habitat is the leading threat to their survival. None of the species that occur in the United States and Canada are threatened with extinction. But all of the hummingbirds that are currently endangered have very small ranges in Mexico and Central and South America.

Among them are the Short-crested Coquette, a wild-haired hummer that lives only along one road in the Sierra Madre del Sur in Mexico; the Glittering Starfrontlet, dark with a metallic sheen, and found only in two tiny forest fragments in northwest Colombia; and the Chilean Woodstar, a tiny, iridescent hummer that is perhaps Chile's most threatened bird.

The critically endangered Black-breasted Puffleg is another. Fewer than 300 individuals survive in the hummingbird's home on the slopes of Volcán Pichincha in Ecuador. In 2001, our Ecuadorian partner Fundación Jocotoco started what is now a 2,900-acre reserve of high-altitude forest to protect the puffleg, which migrates up and down the slopes of the volcano according to the season.

Little Woodstar by Peter Hawrylyshyn

"It's easy to rally support for creatures that bring so much beauty and joy into our lives, but hummingbirds are far more than just pretty faces," says Sheri Williamson, the author of *A Field Guide to Hummingbirds of North America* (Peterson Field Guide Series). Many hummingbird-pollinated wildflowers, for instance, are pioneer species that colonize disturbed areas after fires and landslides, helping to protect and stabilize fragile soils while a new generation of shrubs and trees gains a foothold. "Hummingbirds have positive impacts far out of proportion to their size," she says.

Mechanical Wonders

Hummingbird names are perhaps the first hint of something special. Colorful, outlandish words christen the tiny birds, as though whoever named them wanted descriptions as eye-popping as their subjects. There are sicklebills and pufflegs, woodnymphs and fairies, sunbeams and sunangels, and enough rubies, sapphires, and emeralds to make a jeweler jealous.

The critically endangered Black-breasted Puffleg is only found in one small area of Ecuador. Photo by Murray Cooper

Many are minuscule: Cuba's Bee Hummingbird, which weighs about the same as a large paper clip, is the world's smallest bird. Then there are the incredible mechanics of their small bodies. Hummingbirds fly forward, backward, up, down, and sideways—dexterous flight patterns unlike those of any other bird. This nimble flight and ability to hover in place has even attracted the attention of the Defense Advanced Research Projects Agency, also known as DARPA, which has funded the development of remote-controlled aircraft, or drones, modeled after hummingbirds.

Downy they are not. Yet some hummingbirds have nearly as many feathers as birds several times their size. Most hummingbirds, especially coquettes, flash about with outrageous ornamentation or glittering colors that appear to change from different angles of view.

Most hummingbirds, especially coquettes, flash about with outrageous ornamentation or glittering colors that appear to change from different angles of view.

Yet the lack of down is one reason hummingbirds, whose internal temperature is around 104 or 105 degrees Farenheit, must work hard to stay warm. So it's no surprise that the greatest diversity of species occur in the tropics. Even there, some hummingbirds live above the snow line of the Andes. (An ABC scientist once saw an Andean Hillstar above 17,000 feet in Bolivia.) Hummingbirds cope with cold temperatures at night by slipping into torpor to lower their body temperature along with their heart and breathing rates, helping to conserve energy.

Amazing Migrations

However limited some hummingbirds' ranges are, many do migrate. Most stay in one place or travel short distances, perhaps moving up and down in elevation as flowering plants bloom. Most hummingbird species that occur in the United States travel farther; those that don't are found in resident populations in the warm Southwest.

Their superb spatial memory powers them along, whether they're traveling a few miles or a few thousand. Other birds are known for this too, but hummingbirds do it especially well. They follow a route and forage systematically, sometimes returning season after season to very specific, individual plants.

"Migrating hummingbirds do some things that remind me of migrating shorebirds," says George Wallace, ABC's Vice President of Oceans and Islands. In August, alpine meadows in the Rockies will be swarming with hundreds of hummingbirds, he says, all going after the nectar. "These stopover sites are probably very important—the same way a site such as Delaware Bay is important to migratory shorebirds."

Only recently have scientists begun to trace with precision their impressive migratory paths. A new study of Ruby-throated Hummingbirds, published this year in *The Auk: Ornithological Advances*, has shown that the birds are capable of traveling an average of 1,400 miles between refueling stops as they migrate between eastern North America and Central America.

Researchers captured 2,200 or so Ruby-throated Hummingbirds at Bon Secour Wildlife Refuge near Mobile, Ala., which were heading south toward their wintering grounds. By analyzing the birds' fat reserves over the course of five consecutive autumns, the researchers determined the tiny birds were capable of traveling roughly 1,200 miles in a single flight.

It's an impressive distance for a bird about the weight of a dime—but perhaps not altogether surprising. We've long marveled at hummingbirds' grit. This is just one more bit of proof.

ABOVE: Festive Coquette by Greg Homel

In Latin America, **It Takes a Village** to **Save a Hummingbird**

Conservation takes root as South American communities help hummingbirds

By Jennifer Howard

Peru and the **Marvelous Spatuletail**

During its flashy courtship display, the Marvelous Spatuletail flies with the panache of a rock star. "Like the bird equivalent of Prince," says Daniel Lebbin, ABC's Vice President of International Programs. "It's the most spectacular hummingbird in the world." It's also one of the rarest. The species lives only in a small area in the Rio Utcubamba Valley in the Andes of northern Peru. There, at the Huembo Reserve, visitors can see it in dazzling aerial action.

Expanded in 2013, Huembo now totals just over 100 acres. "We're not going to save the bird there alone," Lebbin says. "But Huembo has been a great way to engage surrounding communities to improve habitat over larger areas."

Birders have long come to the area where Huembo Reserve is now in hopes of spotting the Marvelous Spatuletail, but there was no conservation here until 2005, when ABC and the environmental group Asociación Ecosistemas Andinos (ECOAN) helped establish the reserve, the first protected area for the birds.

It was a starting point. Constantino Aucca, President of ECOAN, recalls how it took two years of conversations, workshops, community projects, and reforestation programs to persuade the local community that ECOAN and ABC would be good partners. "When the people were convinced that we were serious and trustworthy, they gave us the opportunity to show them how effective we are," he says.

Huembo was once highly degraded, burned annually for pastureland. But efforts to restore the land, including the planting of many trees and flowering bushes—made possible by ECOAN, ABC, donors, and residents working together—have turned the situation around. More than 1 million trees have been planted on upward of 1,200 acres in the reserve and surrounding areas to restore forest and connect remnant forest patches.

"One bird changed our lives," Aucca says.

Local residents knew of the spatuletail but did not realize how rare it was. Now local schoolchildren do a dance inspired by the bird, and it appears as a symbol on taxis, in cafes, even as the emblem of a local political party.

The reserve has become a living demonstration of sustainable uses for the land. Conservation agreements with local landowners encourage sustainable forestry, which benefits not just the spatuletail but migratory birds such as the Swainson's Thrush and Canada Warbler.

ECOAN and ABC are now collaborating with two other communities nearby to create new Private Conservation Areas, potentially protecting 148,000 acres.

TOP: Spatuletail dancers by Daniel J. Lebbin
BELOW: Marvelous Spatuletail by Glenn Bartley

Ecuador and the Esmeraldas Woodstar

Further north, along the coast of Ecuador, another small reserve for an even smaller hummingbird is also having an outsized impact. Residents of the coastal community of Las Tunas call the tiny Esmeraldas Woodstar *Estrellita*, Spanish for "little star." Only 2.5 inches long, the bird breeds at lower elevations, moving to higher ground at other times of year.

Part of the hummingbird's upland range falls within a national protected area. But the woodstar prefers lowland streamside habitat for breeding and nesting. That habitat has been especially vulnerable to deforestation and agricultural clearing, and fewer than 1,000 birds remain.

In 2014, together with the Las Tunas community, ABC and our Ecuadorian partner Fundación Jocotoco created a 38-acre reserve at Ayampe. Although the reserve is small, "it's an important site for the Esmeraldas Woodstar's courtship and nesting," says Francisco Sornoza, Jocotoco's Conservation Director.

The conservation agreement doesn't just focus on protecting the hummingbirds. It also emphasizes improving the quality of life for the Las Tunas community. For instance, people in the area depend on water from the Rio Ayampe, but deforestation puts that vital water source at risk. To combat that threat, Jocotoco, ABC, and the community have planted more than 15,000 trees, many of them native *pechiche* trees.

The conservation agreement doesn't just focus on protecting the hummingbirds. It also emphasizes improving the quality of life for the Las Tunas community.

The pechiche "has millions of small violet flowers and is the preferred food of the Esmeraldas Woodstar," Sornoza says. It's also the occasion for a lively annual festival in spring, when the tree's fruit ripens. A local staple, the fruit features in sweets and jellies.

Community involvement in conservation doesn't end with tree-planting. The children of Las Tunas have collected more than 1.3 million cast-off plastic bottles that washed up along the beaches. "As a result, the community of Las Tunas is one of the cleanest sections of coastal Ecuador, and the children have received many awards," Sornoza says.

All that activity has attracted the attention of the Ecuadorian government, which has declared the place a protected tourism area. Residents now speak of the Esmeraldas Woodstar as "their" hummingbird, Sornoza says.

The secret to this successful partnership? "Action, passion, and sincerity of mission," he says. "The communities are truly defenders of the environment."

TOP LEFT: Esmeraldas Woodstar by Francisco Sornoza.
TOP RIGHT: Children of the Sea group in action by Byron Delgado

Honduras and the Honduran Emerald

In Honduras, protecting another rare hummingbird also depends both on creating reserves and on working with individual landowners. The tiny, jewel-toned Honduran Emerald—the country's only endemic bird species—wasn't seen for almost 40 years, from 1950 to 1988. It relies on dry tropical forests that have been heavily affected by cattle ranching.

> Our work with communities helps birds and builds a local culture of conservation.

Last year, the Honduran environmental group La Asociación de Investigación para el Desarrollo Ecológico y Socio Económico (ASIDE) and ABC advocated for the Honduran Forestry Department to create the El Ciruelo Wildlife Refuge, 147 acres of hummingbird habitat in the Agalta Valley. ABC and ASIDE have also been working with ranchers individually to set up a Payment for Ecosystem Services program to compensate them for maintaining and improving forests on their land.

ABC also coordinated with a team of researchers to learn more about the little-studied Honduran Emerald. The team included Fabiola Rodriguez, a graduate student in biology at Indiana University of Pennsylvania. The team found 17 nests and discovered that the bird fed on 26 species of plants in the valley, with a special affinity for a certain cactus flower.

Rodriguez's team conducted much of their work on private lands. Mindful that outreach is too often neglected, she says, "we definitely shared what we were learning as we went." That effort led to many conversations about the Emerald and to individual actions that benefit the species. For instance, one landowner intended to remove a large cactus but changed his mind after learning how much the hummingbird likes cactus flowers.

In Honduras, Ecuador, Peru, and elsewhere, ABC and our partners are working to conserve hummingbirds and other species by working with communities and local people in ways that both benefit birds and improve people's livelihoods. "Often starting small with a pilot tree nursery or initial reserve, our partners win the trust of local people who expand our conservation efforts over broader landscapes," Lebbin says. "This helps more birds and ultimately builds a local culture of conservation."

TOP LEFT: Honduran Emerald by Robert Hyman

TOP RIGHT: Honduran Emerald researchers in the field, July 2015. Left to right: Fabiola Rodriguez, Dr. Jeff Larkin, Dorian Escoto, and Saby Cruz. Photo by John Tschirky

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.*

When it catches the light, the throat of the **Rainbow-bearded Thornbill** glitters with color. Like other thornbills, this species' bill is short for a hummingbird, used not just for consuming nectar but also for catching prey. The birds flick insects into the air and catch them in their mouths! The population of this Andean species is declining overall but is considered rare to fairly common depending on the site.

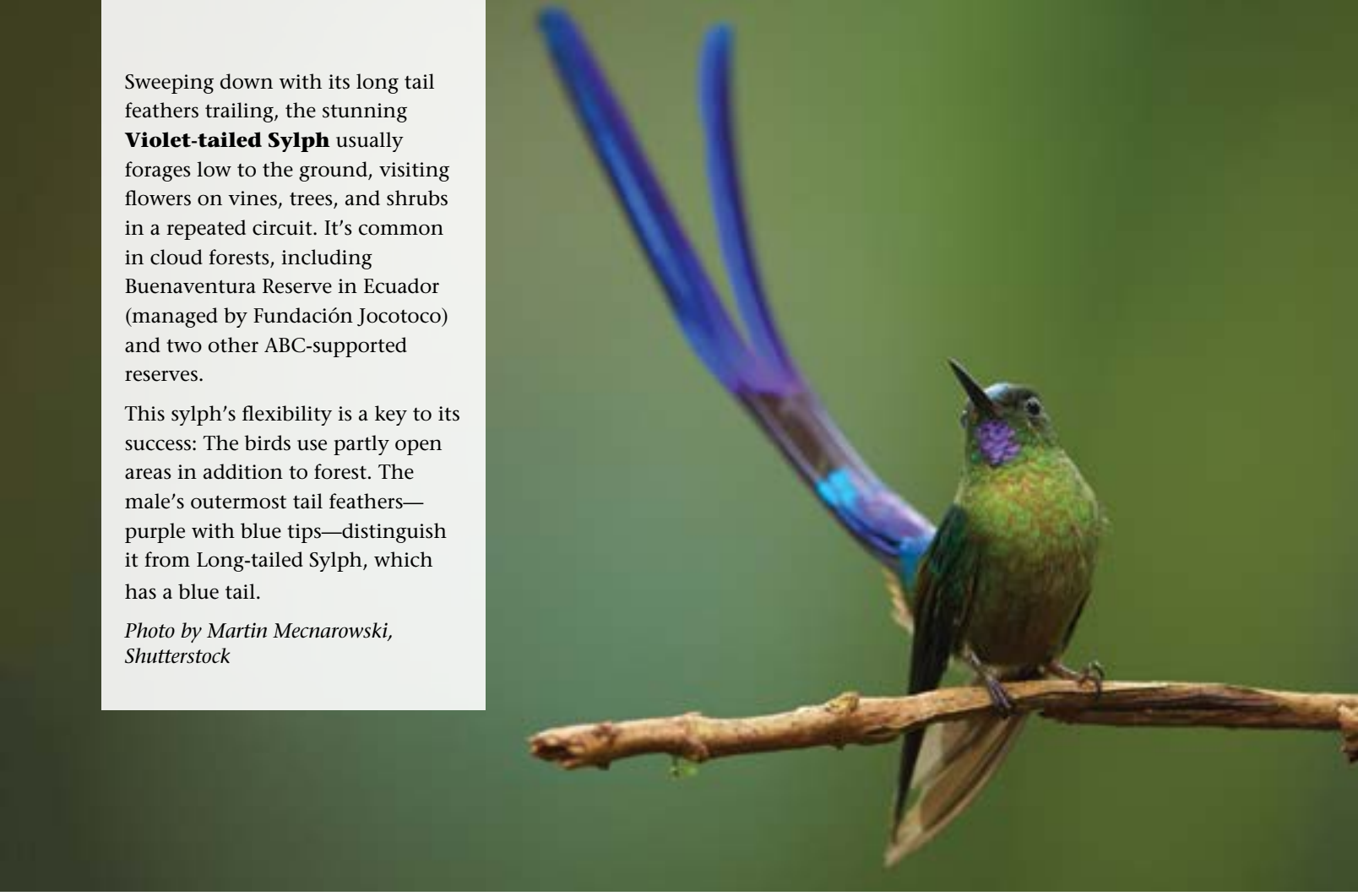
Within ABC's reserve network, the birds can be seen at Yanacocha and Tapichalaca reserves in Ecuador (managed by ABC partner Fundación Jocotoco) and several other locations.

Photo by Glenn Bartley

Bird Reserves & Hummingbirds

Meet some of the stunning species found in ABC's reserve network

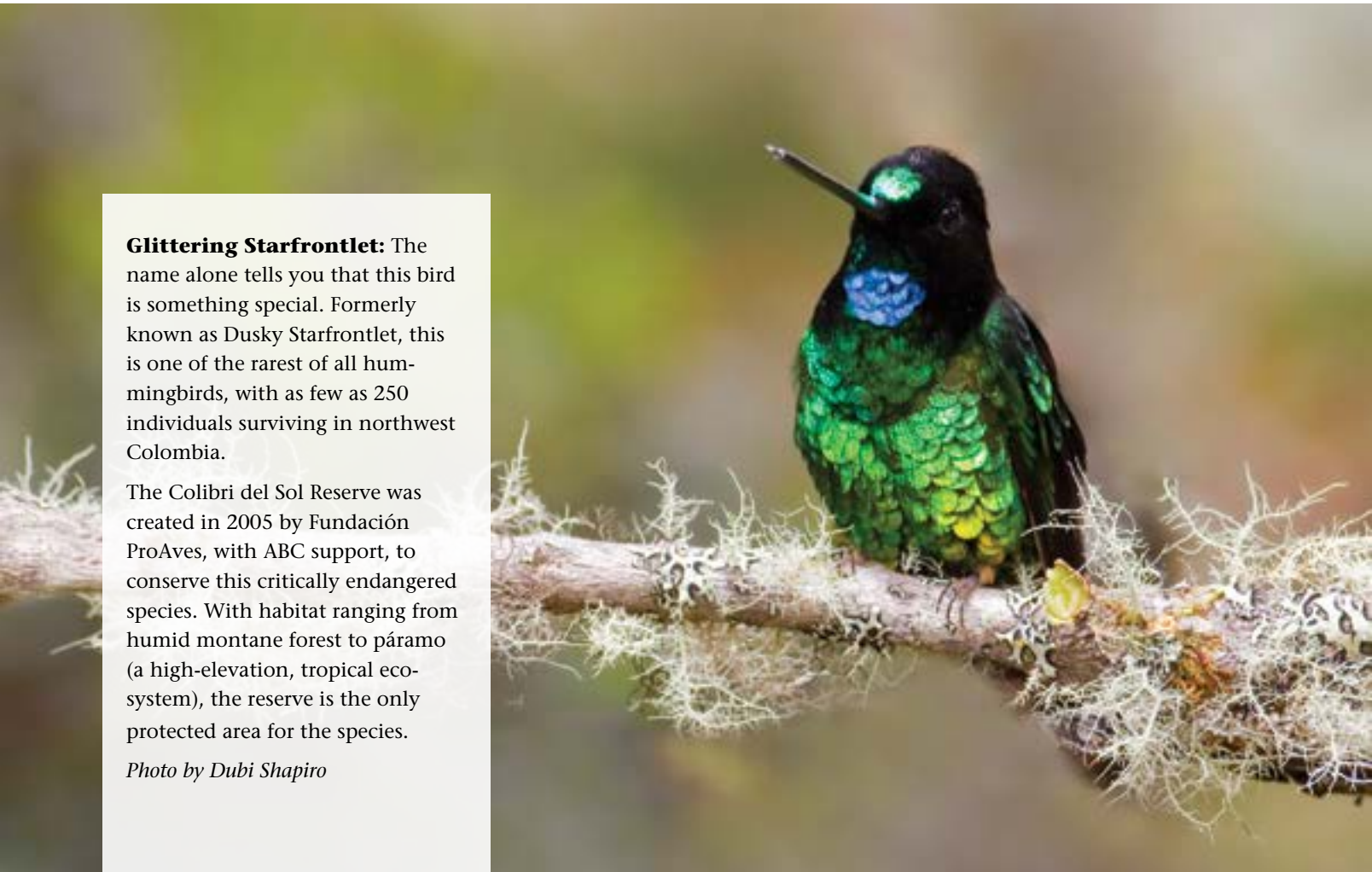
Nearly 200 hummingbird species find shelter at the 70-plus reserves that ABC supports across the Americas. That's more than 50 percent of the approximately 365 known species! Some are wide-ranging, like the Sparkling Violetear, which can be seen at 23 reserves. Others are limited to just one reserve. For example, the endangered Royal Sunangel is seen only at Abra Patricia in Peru. But these birds have plenty in common: brilliant names, remarkable looks, and extraordinary behaviors. Here are a few of these striking hummingbirds and the reserves that help to protect them.



Sweeping down with its long tail feathers trailing, the stunning **Violet-tailed Sylph** usually forages low to the ground, visiting flowers on vines, trees, and shrubs in a repeated circuit. It's common in cloud forests, including Buenaventura Reserve in Ecuador (managed by Fundación Jocotoco) and two other ABC-supported reserves.

This sylph's flexibility is a key to its success: The birds use partly open areas in addition to forest. The male's outermost tail feathers—purple with blue tips—distinguish it from Long-tailed Sylph, which has a blue tail.

Photo by Martin Mecnarowski, Shutterstock



Glittering Starfrontlet: The name alone tells you that this bird is something special. Formerly known as Dusky Starfrontlet, this is one of the rarest of all hummingbirds, with as few as 250 individuals surviving in northwest Colombia.

The Colibri del Sol Reserve was created in 2005 by Fundación ProAves, with ABC support, to conserve this critically endangered species. With habitat ranging from humid montane forest to páramo (a high-elevation, tropical ecosystem), the reserve is the only protected area for the species.

Photo by Dubi Shapiro

The **Rufous-crested Coquette** is named for the male bird's incredible spiky crest. (The similar Spangled Coquette has a bushier crest.)

Found in scattered populations from Panama to Bolivia, this species is found in just two ABC-supported reserves: El Paujil in Colombia (managed by Fundación ProAves) and Villa Carmen in southeast Peru (managed by Amazon Conservation Association).

Shunning thick forest, these coquettes prefer shrubby clearings and edges, where they feed on low flowering plants and perch high along roadsides.

Photo by Paul Jones

The **Wire-crested Thorntail** stands out in humid Amazon forests, hovering like a bee in the canopy or perching at the canopy's edge.

A bird of northwestern South America, it's rare in Colombia; although it's more numerous in Ecuador and Peru, the species is uncommon throughout its range. This thorntail's numbers will continue to decline as land is cleared for cattle ranching and soy production.

The Wire-crested Thorntail finds refuge at four ABC-supported reserves, including Tapichalaca in Ecuador (managed by partner Fundación Jocotoco).

Photo by Glenn Bartley

The **Booted Racket-tail** sports puffy white leg feathers resembling cotton balls. These feathers, which are also seen on all puffleg hummingbirds, are not always visible, but are present on both male and female birds. (The males alone have elaborate tails tipped with "rackets.")

This Andean species has a very large range, from Colombia and Venezuela south to Bolivia, where the birds prefer humid woodland edges at mid-level elevations.

Thirteen ABC-supported reserves provide habitat for the Booted Racket-tail, including Abra Patricia in Peru, one of the reserves run by our partner ECOAN.

Photo by Glenn Bartley

A wide-ranging species, the **Rufous-breasted Hermit** is found throughout much of Amazonia as well as in Grenada and Trinidad and Tobago, where a distinct subspecies is recognized. It nears the easternmost limit of its range in the ABC-supported Stresemann's Bristlefront Reserve in Brazil (managed by Fundação Biodiversitas).

Unlike other hermit species, male Rufous-breasted Hummingbirds don't form groups, or leks, to attract females. They also defend their nests from intruders, an unusual behavior among male hummingbirds.

Photo by Ciro Albano

Hummingbirds 101

An expert explains how the tiny birds fly, feed, sing—and amaze

By Jennifer Howard

Sheri L. Williamson wasn't always fascinated by the birds she calls "prismatic pugilists." It wasn't until she and her husband moved to The Nature Conservancy's Ramsay Canyon Preserve in Arizona that Williamson began to pay serious attention to them. Soon "I pretty much had hummingbird blood pumping through my veins," she says. "They have their way of getting those tiny little claws into you." The author of *A Field Guide to Hummingbirds of North America* (Peterson Field Guide Series), Williamson is also the founder and co-director of the Southeastern Arizona Bird Observatory, and writes and speaks frequently about birds and conservation.

Jennifer Howard: What intrigues you about hummingbirds?

Sheri Williamson: Hummingbirds do just have a way of obsessing you. They're so fascinating, they're so diverse, and there's still so much we don't know about them. The Sword-billed Hummingbird in the Andes—nobody's ever seen their nest. Even some of our more familiar species are still yielding secrets.

JH: Do you have a favorite species?

SW: My favorite species is more or less the one that's in my binoculars at the moment. My favorite almost has to be the Black-chinned Hummingbird. It's a pretty ordinary hummingbird in most respects. But I spent so much time banding them, getting to know their personal history, they're almost like family.

JH: Hummingbirds are so tiny. What can you tell us about their strength—and their distinctive way of flying?

SW: They're incredibly strong. They can lift a much greater proportion of their weight than eagles can. A hummingbird can bulk up from 3 grams to 6 grams and still be able to fly.

Their wings are much flatter than those of other birds. They don't cup the air. They're using the wing in a figure-eight motion. So much of the way they fly, and the way their nervous system interacts with their muscles, is more like insects. They're phenomenal athletes.

JH: How smart are they?

SW: They're among the brainiest of the birds. They have amazing memories. They can remember not only which plants have nectar but how often it's replenished and which flowers they've just visited. Absolutely they remember your backyard. And they may even remember you. If the feeder is empty, they come looking for you.

JH: Do they sing?

SW: Though few of our familiar North American hummingbirds are singers, singing is more the norm than the exception. In fact, many hummingbirds are very creative singers, and can incorporate bits of other birds' songs into their own. Having a variety of songs is a signal of success. Females don't want a guy in a garage band who can only play three chords of "Wild Thing."

JH: What do hummingbirds eat besides nectar?

SW: When the females are feeding their young, they have to eat more insects, because you don't build strong bones and beaks on nectar or sugar water. They are such high-energy birds, though, that they really do need that sugar. Spider silk is a very important part of a hummingbird's nest-building toolkit, and hummingbirds will eat trapped insects and baby spiders while they're taking spider web. Researchers have found that spiders are naturally high in an amino acid called taurine, a very important component for brain and nervous-system growth. It's like brain food for hummingbirds.

TOP: Photo of Sheri Williamson by Tom Wood

JH: We've heard reports that more hummingbirds are overwintering in the U.S. now. Is that true?

SW: From the Gulf States up the Eastern Seaboard, more and more northern hummingbirds are successfully overwintering. This flexibility may help them adapt as climate change alters their traditional wintering habitats.

JH: Why are there so many species west of the Mississippi?

SW: Hummingbirds really are mountain birds. Lots of mountains in the West! Those mountains provide a tremendous diversity of habitat for hummingbirds.

JH: Why are they so territorial at feeders?

SW: They are savage, savage creatures. When you think about it, a hummingbird feeder is a really unnatural situation. They can't quite get their heads around that. Their instincts tell them that nectar is a precious and finite resource.

JH: Habitat loss is a major threat to hummingbirds' survival. What other challenges do they face?

SW: In the temperate zone, weather is a major challenge, but hummingbirds are vulnerable to predation too. Some get caught by larger birds, even big flycatchers, or tangled in the webs of large spiders, or snatched off feeders by large mantids. Almost anything that will eat a large insect can eat a hummingbird. And then there's climate change: The colder colds, the hotter hots, the more ferocious storms are threats to all kinds of birds, not just hummingbirds.

JH: Why do we only have hummingbirds in the Americas?

SW: That is the $64 million question. It's very, very rare, but there are hummingbird fossils. They're not from the New World. They're from Europe. Thirty million years ago there were hummingbirds in Europe, and they were almost identical to our North American hummingbirds.

JH: What do we know about hummingbird migration?

SW: They're facing a lot of pretty daunting challenges when they migrate. But some of these birds put on enough fat that they could travel more than 1,100 miles across the Yucatan, across the Gulf of Mexico. These guys are much better oriented than we give them credit for. We consistently underestimate the abilities of hummingbirds. They have internal compasses and they have internal calendars.

A little female Rufous Hummingbird was captured and banded one winter in Tallahassee, Fla. The next summer she was recaptured 3,500 miles away on the shore of Prince William Sound in Alaska. That girl had at least 7,000 frequent-flyer miles in her account, and she wasn't even a year old.

We're reluctant to believe that something that small and seemingly delicate can undertake a challenge that would be daunting to us if we were that size. But they do, and they do a great job.

TOP: Black-chinned Hummingbird, sumikophoto, Shutterstock

What the Hummingbird Knows

A new project in Oregon aims to enhance working forests for birds

By Libby Sander

What can a hummingbird reveal about the health of a forest?

That's a key question conservationists and forest products companies will be trying to answer later this year on private forest lands in southwestern Oregon. There, in the rugged forests of the Klamath Mountains, ABC will collaborate with the Sustainable Forestry Initiative (SFI), Klamath Bird Observatory, and the National Council on Air and Stream Improvement in a new, two-year project to assess and enhance forest management for more than 15 bird species of special concern—including the Rufous Hummingbird.

Across the United States and Canada, more than 280 million acres of forested land are certified to the SFI Forest Management Standard, and millions more are positively impacted through the SFI Fiber Sourcing Standard. Over the past 20 years, SFI has had a positive influence on responsible forest management from Canada's boreal to the U.S. Southeast. The next step: understanding the value of those forests as bird habitats and using that vast expanse of working forests to increase conservation for birds and other wildlife.

That's exactly the goal in the Klamath Mountains. Given how many acres forest products companies influence there, they can contribute to turning the trends around for Rufous Hummingbird and other birds that depend on various types of forest habitat to survive. By managing with an eye toward biodiversity, these companies create conditions that many birds need for successful breeding, migration, and wintering.

The hummingbird and other focal bird species, in turn, play a crucial role in helping forest products companies manage their acreage sustainably. Scientists have found that certain bird species' requirements for healthy habitat reflect what many other animals need, too. If it's good for the birds, it's good for many other critters—and a sign of a thriving, well-balanced forest ecosystem.

Forestry and forest economics will still guide the management, but the partners will use their knowledge of birds and habitat to look for opportunities to adjust their practices to enhance the conditions for a suite of species. The birds, in other words, will help to guide the management, says John Alexander, Executive Director of the Klamath Bird Observatory. "We don't want to see birds get listed as endangered," Alexander says. "We want to use our deep understanding of what birds represent to do better."

TOP: Rufous Hummingbird by Edward Lai

A Common Hummingbird in Decline

Rufous Hummingbirds follow the nectar. Their tremendous migration—the longest of any hummingbird, up to 3,900 miles from Mexico to southeastern Alaska—is timed to coincide with the flowering of plants along the way. The bird travels an elliptical route, heading up the lowlands of the West Coast in spring where plants flower early, then hitting the Rocky Mountains' high-elevation meadows on the return trip in the fall. The Klamath Mountains, which extend into northern California, mark the southernmost end of its breeding range.

The hummingbird is relatively common and widespread. But its population has declined across its range by 2 percent every year between 1968 and 2013, according to the North American Breeding Bird Survey. In the Klamath Mountains of southwestern Oregon and northwestern California, the annual declines are more than 3 percent.

Scientists don't know the precise reason for this decline. But they speculate that it seems to be the result of two trends: habitat loss, especially the conversion of forest habitat to pastureland in Mexico, and climate change, particularly recent droughts in the West, which reduce flowering of trees and shrubs. And so the hummingbird is much like the proverbial canary in the coal mine, says Bob Altman, ABC's Pacific Northwest Conservation Officer.

"When we see these declines, we want to dig a little deeper and say, 'What's that indicative of?" Altman says. "Are we losing flowering plants due to insecticide spraying? Is the

TOP: View of Oregon's Rogue Valley from Hobart Bluff. Photo by Brandon Breen, Klamath Bird Observatory
BOTTOM: Female Rufous Hummingbird by Birdiegal, Shutterstock

bird now out of sync with flowering because of climate change? Too much loss of habitat? If the bird is struggling, it raises a red flag about the conditions the bird represents."

In God's Country

Some people who live in the Klamath Mountains call it God's country. Known as one of the most biodiverse temperate regions on the planet, the rugged region contains a remarkably rich array of trees and other plants. The reason for this is that the Cascade Mountains, the Sierra Nevadas, and the ancient Klamath Mountains—and their three distinct forest ecosystems—all collide there. The abundance of tree and shrub species shelter a mix of birds that, like the Rufous Hummingbird, are also focal species in the new project, including Black-throated Gray Warbler, Pacific Wren, and Olive-sided Flycatcher.

But the health of these forest ecosystems is declining, and with it, many of the same bird species. It used to be that natural fires would disturb the forests and trigger natural cycles of new growth. Centuries of fire suppression have prevented the forest from regenerating naturally—and providing birds and other creatures with the different stages of forest habitat they need to thrive.

The forests' health depends on this disturbance. Now a new source of disturbance—in the form of forest management—will play that role. During the two-year project, Alexander says, scientists will work side by side with SFI program participants to assess what the companies are already doing on their commercially managed lands that benefits birds and where they can do more. The central question is this: "How can we create habitat for birds within the economic and operational constraints of the companies?" Alexander says. "It's going to be about trying to find that sweet spot."

Home to Hummingbirds

Rufous Hummingbird habitat tends to be young, shrubby forest with an abundance of trees and other vegetation that produce flowers and nectar. But in forests that are commercially managed for wood products, this kind of deciduous vegetation is sometimes compromised, as it competes with

commercially planted conifer trees. But there may be other ways in the context of commercial forest management to encourage conditions favorable to the hummingbird.

Biologists know a great deal about the type of habitat Rufous Hummingbirds need. The new project aims to better understand the habitats current sustainable forestry practices create—and identify ways to make those habitats even better for birds.

There are several ways to provide good habitat for the hummingbirds. Maintaining small patches of flowering shrubs and other vegetation the hummingbirds love—salmonberry, columbine, currant—is one way. Allowing unmanaged young forest to regenerate naturally is another, along with keeping flowering shrubs in areas beneath transmission powerlines. Also helpful is minimizing disturbance to the ground so it remains productive and healthy. Finally, shrubs and young trees can thrive in places where it's too difficult for pine, fir, spruce, or other conifer seedlings to survive, such as along logging roads, on steep slopes, or in depressions or gullies.

Birds are the focus of this project because they are a shared conservation priority for all of the forestry and bird conservation partners. They're also easy to monitor and terrific barometers of a forest's health. But they're not the only creatures that benefit from the work, Altman says.

Well-managed forests harbor the opportunity to provide a range of attributes that could benefit a multitude of species. "If you are providing flowering trees and shrubs and the nectar they produce for Rufous Hummingbird, that also is a big potential benefit for any other pollinating animal—bats, too," he says. And what's good for Rufous Hummingbird is also good for bees.

Yet although the hummingbird's presence in a forest signifies flowering trees and shrubs, "that's just one little part," Altman says. "They don't represent big trees, they don't represent lush ground cover of grasses—all those other species represent all those other conditions out there. The forest is many things, and Rufous Hummingbird is just one of the pieces."

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.*

LEFT: Rufous Hummingbird habitat in the Klamath Mountains by Sam Brown, Klamath Bird Observatory
TOP: Rufous Hummingbird by Scott Bechtel

‘The Most Beautiful Bird in Jamaica’

The Streamertail’s lush home benefits from a new Caribbean partnership

By Gemma Radko

Jamaica is a naturalist's dream, with a remarkably high proportion of plants and animals that occur nowhere else on the planet. Among its 28 endemic bird species are the Red-billed Streamertail, which is the most abundant and widespread hummingbird in Jamaica, and the Black-billed Streamertail, a far less common hummingbird found only in the eastern part of the island. The two species are sometimes lumped together as one—the Streamertail—including when it was chosen as the national bird of Jamaica.

Thanks to a new partnership between ABC and the Jamaica Conservation and Development Trust, work is now under way to enhance opportunities for bird conservation to benefit the streamertail and many other birds in one of the country's most remarkable protected areas: the Blue and John Crow Mountains National Park. ABC recently helped the Trust win a grant from the Latin American Reserve Stewardship Initiative (a partnership of the March Conservation Fund and ABC) to develop a much-needed tourism strategy.

This grant aims to increase visitation and revenue to the park to strengthen park management and conservation, and to benefit the Streamertail and other Jamaican endemics such as the Jamaican Blackbird, Yellow-billed Parrot, Crested Quail-Dove, and Blue Mountain Vireo. Neotropical migrants that find stopover and wintering habitat in the park will also likely benefit, including Louisiana Waterthrush, Ovenbird, Black-throated Blue Warbler, Prairie Warbler, American Redstart, and Black-and-white Warbler.

Meet the Doctor Bird

The local name for the Streamertail is "doctor bird." The male's outer tail feathers, which are longer than the bird itself, along with its black crest, reminded Jamaicans of the top hat and coattails of an old-time doctor. The Arawak Indians, who were early inhabitants on the island, referred to the Streamertail as the "God bird," since they believed these hummingbirds had magical powers and were the reincarnation of dead souls.

This snazzy hummingbird has also caught the eye of visitors. In Ian Fleming's James Bond short story, *For Your Eyes Only*, the first line reads, "The most beautiful bird in Jamaica, and some say the most beautiful bird in the world, is the streamer-tail or doctor humming-bird."

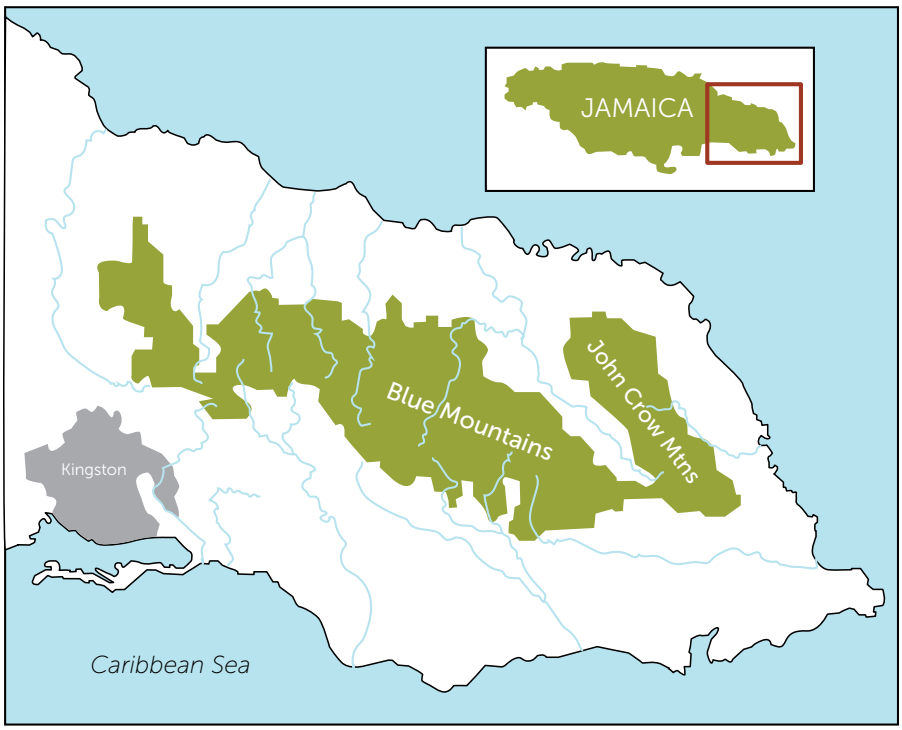
These eye-catching hummingbirds are the only two members of the genus *Trochilus*, which is endemic to Jamaica. The genus is currently split into two separate species, the Red-billed and Black-billed Streamertail. The males grow remarkable specialized tail feathers, called "streamers," which have scalloped and fluted edges that make high whining sounds as the bird buzzes around. Males wave these long tail streamers to entice females, but outside of breeding, the species are solitary, like most other hummingbirds.

The Red-billed can be found in a wide variety of Jamaican habitats from sea level to the highest mountains. They are most abundant in closed forests, but also visit plantations, parks, and gardens with suitable flowers and hummingbird feeders. The Black-billed occurs only in eastern Jamaica, particularly in the humid reaches of the John Crow Mountains. Its range overlaps with the Red-billed Streamertail's between the Blue and John Crow ranges, where these two species often interbreed.

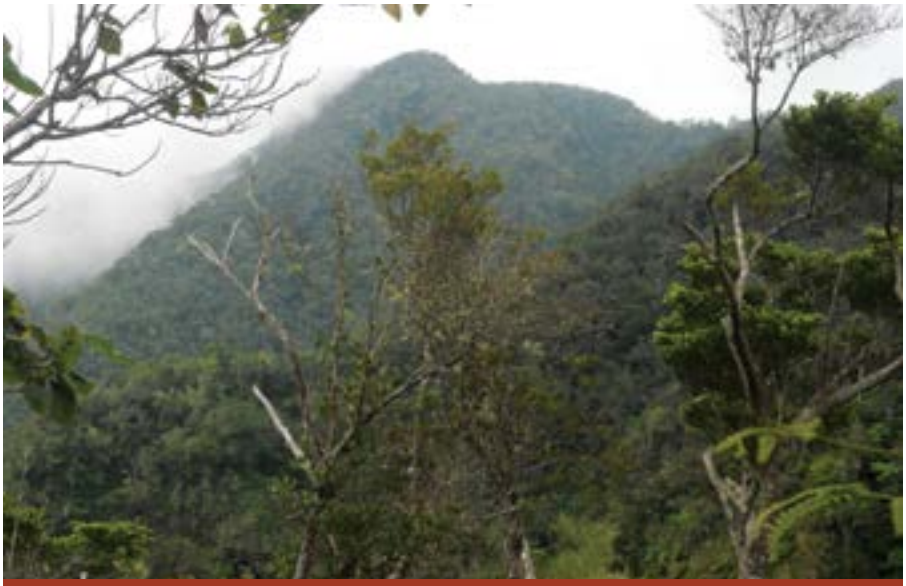
"Jamaica is home to such a remarkable diversity of birds," says John Tschirky, an International Program Officer with ABC. "By supporting the Trust's efforts to enhance the management of this important Caribbean landscape, we are taking a key step toward protecting their birds."

In Ian Fleming's James Bond short story, *For Your Eyes Only*, the first line reads, "The most beautiful bird in Jamaica, and some say the most beautiful bird in the world, is the streamer-tail or doctor humming-bird."

LEFT: Red-billed Streamertail by Judd Patterson; this page: Black-billed Streamertail courtesy of Blue and John Crow Mountains National Park



The Blue and John Crow Mountains National Park is an important watershed for the island, supplying water to more than 40 percent of Jamaica's population.



The park's core Preservation Zone, roughly 65,000 acres, is recognized as a UNESCO World Heritage Site for both its biological and cultural value. In addition to its high level of endemic species, it has an important place in Jamaica's history as a refuge for slaves seeking freedom from colonial plantations.

Cloud forest in the Holywell area of the park. Photo by Susan Otuokon, JCDT

A Park of Many Parts

Situated in the northeastern part of the island near Jamaica's capital, Kingston, the Blue and John Crow Mountains National Park protects 120,000 acres of moist tropical and subtropical forest. It is one of the largest protected areas in the Caribbean and also one of the region's largest migratory bird hotspots.

Two main mountain ranges have their own distinctive characteristics. The Blue Mountains reach 28 miles across the eastern part of Jamaica and are frequently covered in mist, giving them a characteristic blue color. These are Jamaica's highest mountains; they rise steeply in such a small area that it is possible to drive in a few hours from the coastal plains to an elevation of more than 7,000 feet. The Blue Mountains are famous for their coffee plantations, where the highly sought-after Blue Mountain coffee is produced.

The John Crow range parallels the northeast coast. Although the geology of the Blue Mountains is shale, the John Crow Mountains are limestone, so the soil and vegetation, as well as flora and fauna, are different. The name "John Crow" comes from the Jamaican name for the Turkey Vulture, a common bird in the area. At its southernmost point, this range joins the eastern end of the Blue Mountains.

Mountains For All

When Columbus encountered Jamaica in 1494, these mountains were heavily forested. Early Spanish settlers established cattle ranches at the foot of the mountains; when the English captured the island, they cleared the lower slopes for farming and logged the forests. Today, the upper reaches of the park's mountains remain protected, closed-canopy moist tropical forest.

Some of Jamaica's endemic bird species, left to right: Jamaican Oriole by Sharp Photography; Jamaican Mango by Sharp Photography; Blue Mountain Vireo by Paul Jones

The rest of the park consists of buffer and recovery zones made up of modified forest, timber plantations, shade coffee groves, and degraded woodlands.

It's the Trust's job to manage the park on behalf of one government agency; the group also coordinates with other organizations that play a role, including the Forestry Department, cultural heritage preservation agencies, and community-based organizations. Their job is a big one, involving work with surrounding communities to promote sustainable livelihoods and stewardship of the area's natural and cultural resources.

But it's one that is abundantly worthwhile for all concerned. The park's core Preservation Zone, roughly 65,000 acres, is recognized as a UNESCO World Heritage Site for both its biological and cultural value. In addition to its high level of endemic species, it has an important place in Jamaica's history as a refuge for slaves seeking freedom from colonial plantations.

The park's mountainous slopes also comprise an important watershed, supplying water to over 40 percent of the island's population. "Jamaica is going through severe drought right now, and water rationing has been put in place," Tschirky says. "Protected and well-managed watersheds are needed more than ever, for the people and for the future of plants and animals found nowhere else."

If you plan a visit, be sure to visit the 30-acre Holywell area. "This 'park within a park' serves as a gateway," says Susan Otuokon, the Trust's Executive Director. "Holywell features five wonderful trails and a very interesting visitor's center, along with interpretive signage in the picnic areas and on trails."

It's also where you'll pay your entrance fee to the Blue and John Crow Mountains National Park, contributing to protection of the Streamertail—and all of this Jamaican wonderland.

An Island of Endemics

Jamaica is the third-largest island in the Caribbean. It's part of the Greater Antilles group, along with Cuba and Hispaniola. The island has a particularly high proportion of endemic species.

The Blue and John Crow Mountains are Alliance for Zero Extinction sites for several species, including the Jamaican Petrel, which unfortunately is probably extinct.

In addition to 28 endemic bird species, there are 27 endemic reptiles—including the Jamaican iguana—and 21 endemic amphibians, including the Jamaican laughing tree frog and the rock pocket frog.

The island ranks fifth among the world's islands in terms of endemic plant life. Over 3,000 species of flowering plants have been recorded here; 830 are found nowhere else.

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.

The Search is On for South America's 'Lost Birds'

By Daniel Lebbin

High in the Santa Marta Mountains of Colombia in early 2015, two guards from Fundación ProAves' El Dorado Reserve found the Blue-bearded Helmetcrest, a hummingbird nobody had seen for 69 years. The rediscovery of such lost species is not as infrequent as one might guess. Finding them, as other ABC-funded expeditions have done in the past with the Pale-headed Brush Finch and other birds, can be vital to their conservation. It's hard to protect birds if you don't know where they live.

The International Union for Conservation of Nature currently ranks at least 24 species in the Americas as threatened, even though the species have no known individuals in the wild nor surviving in captivity. Most of these species should probably be considered extinct. But some may still persist, living in areas that are difficult to search and where few people go.

To untangle this mystery and determine if the birds are still out there—and therefore deserving of our conservation attention—ABC will finance three searches for some of South America's lost birds: the Tachira Antpitta, the Turquoise-throated Puffleg, and the Kinglet Calyptura.

In Venezuela, a team of researchers will seek the Tachira Antpitta, with participants from a wide variety of organizations: the Smithsonian National Museum of Natural History; Provita; Instituto Venezolano de Investigaciones Científicas; Colleción Ornitologica Phelps; the University of California, Santa Cruz; and Ascanio Birding Tours. The team will travel to the western part of Venezuela in June. Although the bird has not been recorded since the 1950s, security issues have limited field work that might have led to sightings of the species. Now, with access to the search area in the bird's small range along the border of Venezuela and Colombia, we believe this is the South American species most likely to be rediscovered.

Finding these birds could mean the difference between saving them and losing them forever.

In Ecuador, the search will soon be on for the Turquoise-throated Puffleg. Mainly known from the type specimen collected in Ecuador in 1850, there was an unconfirmed sighting of the puffleg in 1976. The Ecuadorian ornithologist Juan Freile Ortiz and Tulane University's Jordan Karubian will conduct three searches for the species this year and next, coordinating their efforts with our partner, Fundación Jocotoco.

Brazil's Kinglet Calyptura is the most famous of the lost species. A strange bird resembling a kinglet in size and shape, the species was common in southeastern Brazil during the 1800s. It went largely unobserved for 119 years until a historic sighting in 1996. A smattering of other unconfirmed sightings have been reported since. Luciano Moreira Lima of the Observatório de Aves-Instituto Butantan will search for the bird later this year.

These expeditions are far more than an attempt to detect birds that have long been elusive. Finding these birds could mean the difference between saving them and losing them forever. We encourage researchers and birders to embark on their own quests for other lost birds—and let us know if they plan to—so decades-old observations of birds like the Turquoise-throated Puffleg will not be our final glimpse of these marvels.

Daniel Lebbin is the Vice-President of International Programs at ABC. He received a BA in Biology and Environmental Science and Policy from Duke University and a PhD in Ecology and Evolutionary Biology from Cornell University. Daniel has participated in field research projects in Jamaica, Costa Rica, Ecuador, and Venezuela. A lifelong birder, Daniel enjoys bird illustration and photography. He co-authored The American Bird Conservancy Guide to Bird Conservation.

Illustration of Kinglet Calyptura courtesy of Tomasz Cofta

Andean Emerald (L) and White-necked Jacobin (R)
by Martin Mecnarowski, Shutterstock

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Female Blue-tailed Hummingbird by
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If you would like more information on how to join ABC's Legacy Circle with an estate gift, or if you have already included ABC in your estate plans, please contact Jack Morrison, ABC Planned Giving Director, at 540-253-5780, or jmorrison@abcbirds.org.

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The Calliope Hummingbird is a tiny species that breeds in the mountains of western North America. Photo by Glenn Bartley