

# Science to Action



# A New Era for the Cornell Lab of Ornithology

An interview between **Linda Macaulay**, chair of the Lab Administrative Board, and Executive Director **Ian Owens**



**Linda: Can you describe the biggest change between the Lab a year ago versus today?**

Ian: In a phrase, science to action.

**What does that mean for the Lab's work day-to-day?**

This is a time for us to be even more ambitious. To push science all the way through to conservation impact.

Birds are phenomenally observable, which has already enabled us to build the world's largest biodiversity database. We're also learning how best to monitor other taxa like fish and elephants. One of the things we need to focus on going forward is getting all this quality data into the hands of decision-makers. Data is crucial to making well-informed, fine-scale decisions. It's exactly what conservationists need.

**What are the data currently telling us?**

That conservation must be a global effort. Birds

We're pushing science all the way through to conservation impact.

transcend borders and so must we. That's a second focus for us—developing partnerships that help us scale conservation impact.

We've built amazing systems like eBird and Merlin, which engage millions of people, and sound analysis tools that are transforming how we protect the natural world. The question is, how can we make the most of those tools by putting them to use with and for partners like the Smithsonian (whom you'll read about in this report) and other key actors? If we can combine the Lab's strengths in science, technology, and engagement with our partners' expertise, suddenly what we do in Sapsucker Woods can extend to all corners of the globe.

**Are there places where you see this working well already?**

Absolutely. You can see our educational mission taking flight as people all over the world use the tools we've built to recognize birds, learn more

about them, and catalogue their observations. Helping people deepen their appreciation of the natural world and share it with others is a remarkable baseline.

It becomes transformational when we use science to hone these observations and put them into the hands of a group like the U.S. Fish and Wildlife Service. What the Lab and our community have built together is being used to track habitat health and protect species in real time, as USFWS has done for Bald Eagles. Now, both Mexico and Canada are interested in using our tools and systems in similar ways.

**That is a lot of new territory for the Lab!**

[laughs] I know. We honestly couldn't pull this off without our community of extraordinary staff, scientists, and supporters. We have specialists running multiple initiatives in parallel, which fuels

Conservation must be a global effort. Birds transcend borders and so must we.

our innovation in low-cost, highly effective tech. We have science educators training younger generations essentially to become science educators themselves. We have storytellers and science communicators activating people and policy-makers all over the planet.

All of it adds up to something bigger than any of us. And that's a third focus: offering people ways to pour their talents into the larger cause of conservation. When it's about the mission of protecting biodiversity, the ripple effect can become a superpower.

**What's the hardest thing about serving such a high-stakes mission?**

Often, it's easier to tell a fearful story than a hopeful one. The Lab has an important role to play here by grounding decisions in data and strong, actionable science. The pandemic

emphasized how hard it is for people to make decisions that interrupt our lives. Even when the danger is right in our faces, we find it hard. One remedy is to stick to the facts. If we follow the data, we can make conservation relevant for people—their neighborhoods, their kids—and find ways we can change for the better and feel some hope and pride about contributing to that positive change.

**What are you most looking forward to?**

I can't wait for the Lab's next 10 years. Among other things, I'm excited to help establish a global

system of acoustic monitoring that'll shine a light on areas humans can't easily get to—the Amazon, the Congo, Indonesia, the deep ocean. That's going to be a lot of work, but if we can't measure it we can't protect it.

It's a new era. I'm eager for everyone to read the stories in this report and get as fired up as I am about the partners and communities we're doing this work with.



Above: In partnership with the K. Lisa Yang Center for Conservation Bioacoustics, members of the Kukar Mining Team install a passive acoustic monitoring station to study post-coal mining and biodiversity recovery in Borneo. Photo by Mukhlisi Arkan



Left: eBird Status and Trends map showing the relative abundance of the Black Kite.

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## How Do We Drive Science to Action?

For more than a century, the Cornell Lab of Ornithology has been a center for scientific inquiry and curiosity about our world. In the Lab's next era, we will help to power a global movement of on-the-ground conservation.

### Data-driven Decisions

We will focus on fundamental science while accelerating applied science, transforming our resources and insights into high-impact applications.

### Global Partnerships

We will leverage our global presence to partner across industry, policy, and practice to extend our conservation reach.

### Audience Activation

We will inspire behavior change on a massive scale, connecting people from different backgrounds and perspectives through shared purpose.



# If This Reef Could Talk

Coral reef in Curaçao. Photo by Adobe Stock

Data-driven Decisions

Global Partnerships

## How can listening to reefs help protect biodiversity?

SCUBA gear—the wetsuit, mask, and flippers—are key tools for ocean scientists who study what lies beneath the surface.

According to Aaron Rice, an ichthyologist at the K. Lisa Yang Center for Conservation Bioacoustics at the Cornell Lab and a diver himself, “Most SCUBA diving bottoms out at 100–150 feet, so studying deep reefs can be quite a challenge.”

At the other extreme lie deep-sea submersibles: pressurized vehicles that take adventurers to ocean depths of 1,000 feet and beyond. But what about oceanic regions between 150 and 1,000 feet? This in-between depth is commonly called deep reefs—and it’s also a dark spot in terms of our understanding.

As the Lab broadens its scope to protect biodiversity beyond birds, we’re seeing more

and more of these dark spots on the map. Places people haven’t gone and in some cases can’t go. As Lab executive director Ian Owens says, “If we can’t measure it, we can’t protect it.” So how can we shine a light on those places and assess their biological importance?

Matt Duggan, a PhD student working with Aaron at the Lab, found a way. Using low-cost sound recorders, 360-degree cameras, and AI modeling, Matt has been gathering “spatial audio” in order to map biodiversity in the ocean’s 3D environment.

“Spatial audio allows you to enter an environment you can’t dive to,” Matt says, “which is important because biodiversity at that depth is indicative of how we’re treating the environment of the shallows—and it’s the shallows where we find so many species of fish humans rely on for sustenance.”

I was astounded to learn that 75% of fish families — maybe even more — talk.

The Lab is internationally recognized for marine bioacoustics innovation... but how do we make the move into full-scale ocean conservation? And how do we get someone like Matt into the deep reefs?

**The Beginning of a Beautiful Friendship**

Carole Baldwin is the director of the Smithsonian’s Deep Reef Observation Project. Carole knows a lot about fish and she’s been exploring coral reefs off the coast of Curaçao for a long time—13 years and counting. “I was writing a lot of grant proposals and was ready to leave,” she says. “Then Matt showed up.”

After getting connected through one of Matt’s professors at Cornell, Carole was so impressed by his enthusiasm, creativity, and command of machine learning that she brought him to

Curaçao. Their primary goal? Devise the right metrics to map ocean diversity and determine where ocean conservation should be focused.

Matt’s and Aaron’s spatial audio is paving the way. Carole: “I was astounded to learn that 75% of fish families—maybe even more—talk.”

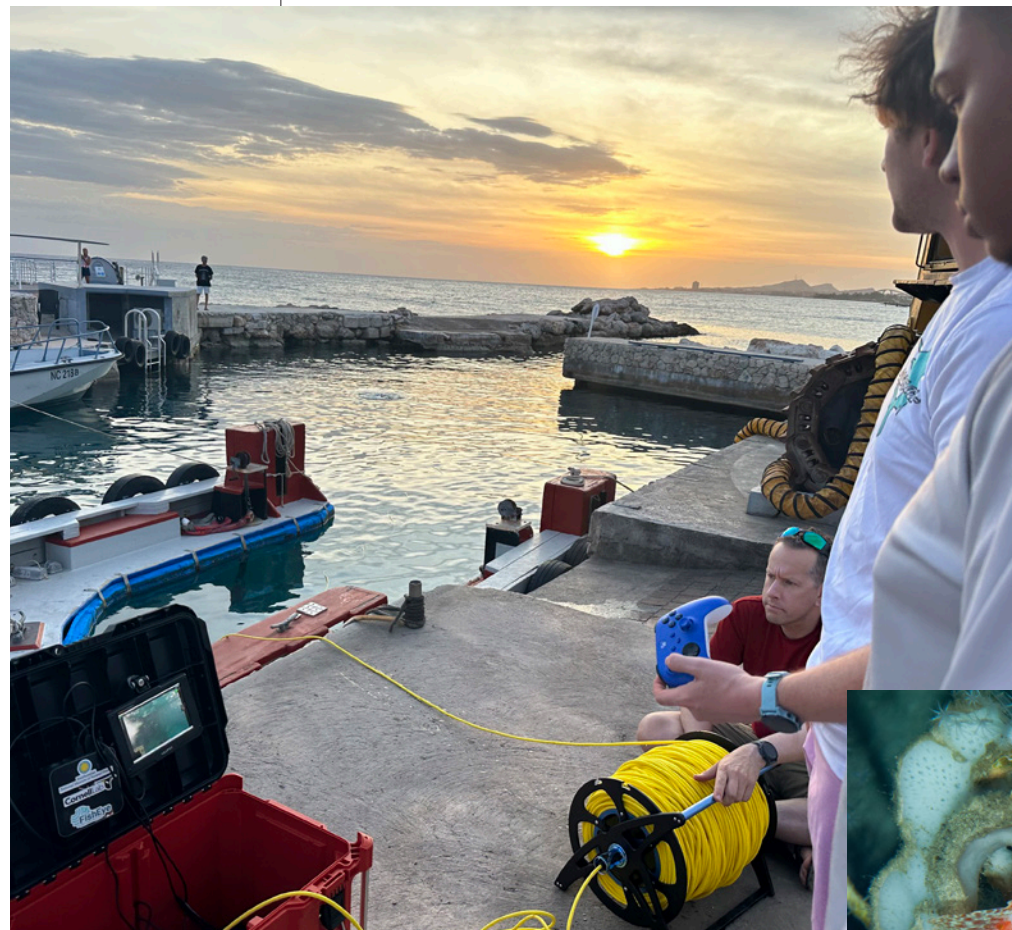
Because fish make sound internally, even direct observation can’t always tell you which fish are making which sounds. Using 360-degree cameras paired with audio, Matt and Aaron began to catalog fish species, sound by sound.

Eventually, Matt, Aaron, and other scientists will need to have a reliable way to match the sounds they capture to species without direct observation. “Matt and Aaron basically have to create the reference library for fish species sounds,” explains Carole.

As of now, only 5% of the world’s oceans have been studied, so Matt and Aaron’s approach to cataloging sounds opens up the potential to do oceanic population studies all over the globe.

One thing the Lab is uncommonly good at? Building a vast reference library of sounds found in nature.

As Aaron says, “The Macaulay Library at the Cornell Lab already hosts the largest repository of fish sounds in the world, but Matt and I have been trying to add to it and expand it.”



Above: Matt Duggan (center), Aaron Rice (left), and Matt Girard (right) monitor a manned submersible, the Curasub. Photo by FishEye Collaborative

Right: Deep reef scorpionfish swimming on the Curaçao reef. Photo by Carole Baldwin



Aaron Rice (left), Matt Duggan (center), and Aldemar Rodriguez (right) test a method to deploy a low-cost recorder and hydrophone with a remotely operated vehicle at the Curaçao Substation. Photo by FishEye Collaborative

**An Early Detection System for Ocean Health**

Once they have a robust reference library of fish sounds in hand, Matt and team will no longer need 360-degree cameras and can instead deploy low-cost, passive audio recorders at scale. As Aaron says, “Reefs may be gone by 2050. So we really have an opportunity to bring this cutting-edge technology to the global-scale problem of declining coral reefs.”

Just like birds, coral reefs are uncanny indicators of overall ecological health. That’s why the plan is to replicate the Curaçao approach elsewhere, “catch ecosystems that are starting to deteriorate early on,” as Carole puts it, and ultimately set up a global detection system for ocean health.

Matt has just been awarded a Fulbright fellowship to return to Curaçao and continue his research. “I’ll be staying in the captain’s quarters in the sister ship of the *Calypso*, Jacques Cousteau’s research vessel.”

Part of Matt’s mission during his Fulbright is to empower local marine biologists to do this kind of research and own the process. “Often they are tuned into what the important questions are.” Matt and a team of local scientists and engineers will be installing a 90-ton glass-walled classroom

Just like birds, coral reefs are uncanny indicators of overall ecological health.

and restaurant 40 feet below the ocean surface. The director of the research center told Matt, “It’s really like a silent movie down here!” Matt’s response: “Why don’t we integrate spatial audio?” This means that someone in a wheelchair can watch a pristine coral reef 40 feet below the surface and listen to the community of fish click, pop, grumble, and boom.

“Birds are charismatic because we can see them communicating,” Matt says. “And yet, the majority of the population has never seen a fish talk to another fish.”

Thirteen years in, Carole’s project is the longest-running deep reef study in the world—and it’s the only one with this degree of community outreach and local capacity building. Of course, scientists and organizations the world over are monitoring ocean chemistry and temperature. But we don’t yet know how those changes affect biodiversity—and, as Carole says, “there’s no coordination across reference libraries or tech.”

“We need a leader in this effort,” she adds, “someone who can head a global monitoring program for deep reefs through underwater acoustics. The Cornell Lab of Ornithology is who I want at the table.”

# eBird Is

Data-driven Decisions   Global Partnerships   Audience Activation

How does our community turn participatory science into conservation action?

5

## Drive State Wildlife Action Plans

State agencies can now leverage eBird Status and Trends data to help them create blueprints for conserving birds, fish, and wildlife. As Bradley Wilkinson, program coordinator at the U.S. North American Bird Conservation Initiative, explains, “eBird state-level summaries provide trends as well as specific geography that is pretty fine-scale, which is really valuable information for our state planners to have when creating their state wildlife action plans.”



Evening Grosbeak by Brian Genge / Macaulay Library

1

## Empower One Million Dedicated Birders

eBird makes it easy and fun to keep track of your birding adventures... but it's actually a carefully designed participatory science project that captures data for conservation and management. In 2023, eBirders submitted **18.7 million** checklists!



Photo by Rachel Philipson

2

## Generate Validated, Actionable Data

Our eBird Science team uses proven statistical methods to transform **1.8 billion observations** submitted by eBirders into useful information for scientists and policymakers. eBird tracks data on the world's 11,000 bird species and provides the world's most accurate and updated information on the status and trends of 2,400 species and counting.



Wood Thrush by Curtis Marantz / Macaulay Library

“eBird data help us better understand what is happening on the properties we manage. Now we can be more strategic about conserving lands and building corridors to help species adapt to the changing climate. Without eBird data, monitoring our properties is just not feasible.”

— Lauren Miller, Conservation Director of California's Sierra Foothills Conservancy



Blue-winged Teal by Balu Chennupati / Macaulay Library



Photo by Ashley Dayer

## Partner with Land Trusts

The Cornell Land Trust Bird Conservation Initiative works with land trusts and conservation organizations, which collectively protect more than 60 million acres—that's an area twice as large as the National Park Service system in the lower 48! Many of these organizations have limited conservation dollars, so using eBird creates a faster, data-driven path to developing management plans and identifying critical lands to protect.

4

Burrowing Owl by Brad Imhoff / Macaulay Library



Photo by Lauren Miller

3

## Translate Data into Habitat Objectives

By analyzing eBird data at scale, we can identify regions where a specific habitat may be lacking and start working with partners, like the Gulf Coast Joint Venture, to protect enough acreage to support waterfowl.

# the Engine

Yellow-billed Loon and newly hatched chick on Alaska's Arctic Coastal Plain. Photo by Gerrit Vyn

Audience Activation

Global Partnerships

How can shining a light on America's Arctic change minds and inform policy?

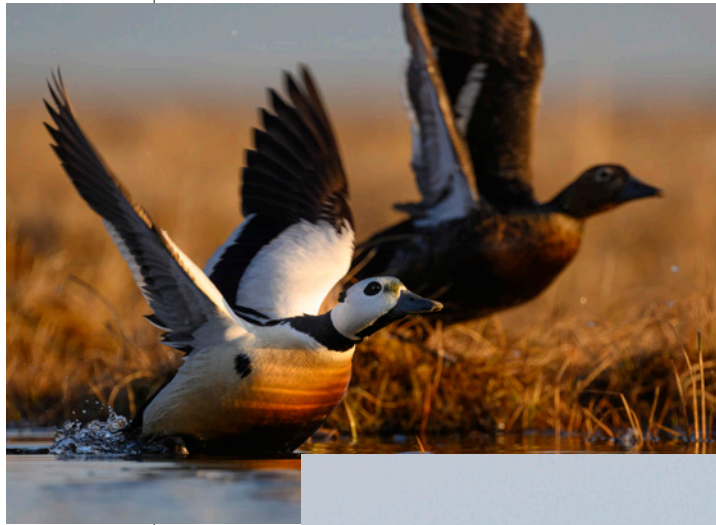
The nation's largest single tract of public land is a 23-million-acre unbroken tundra that's essential for wildlife, people, and the Earth's climate.

This globally important region—the breeding and foraging grounds for millions of birds arriving from all seven continents, a place where tens of thousands of caribou roam and birth their calves, and an essential permafrost carbon repository—also bears a name that obscures its true value to the planet: the National Petroleum Reserve–Alaska (NPR-A).

The federal government has long recognized the value of the NPR-A, managing the lands and waters as a potential source of oil and as a crucial ecological resource: approximately 13 of the 23 million acres of the NPR-A are designated "Special Areas," deserving of maximum protection for their vital ecological and cultural value. Despite these designations, not one single acre of the NPR-A is permanently protected, and the pressure from the oil and gas industry to increase drilling in and around these Special Areas is growing.

# America's Imperiled Arctic Wilderness

Top: Steller's Eider pair takes flight. Middle right: Male Bar-tailed Godwit. Photos by Gerrit Vyn



To ensure nature has a voice, the Protect the Arctic impact campaign is helping people throughout the country learn about and advocate for "America's Arctic"—the collective term for the NPR-A and the adjacent 19-million-acre Arctic National Wildlife Refuge.

The stakes for this campaign couldn't be higher. Over the years, hundreds of test wells have been drilled within NPR-A, and industry has acquired the development rights to 2.5 million of the NPR-A's 23 million acres.

As policymakers debate the future of these essential and imperiled lands and waters, the Lab's Center for Conservation Media is playing an integral role in Protect the Arctic's nationwide effort to raise awareness and stoke protective action through engaging films that can reach millions of Americans.

"The biggest pieces of federal public land, land that all Americans own, are in Alaska... an incredibly difficult place for the average American to ever get to see and appreciate," says Jason Paulsen with the Protect the Arctic campaign. "We rely on photography and videography of the highest caliber, filmmakers who can go up to these remote places and capture those sounds and images, and then tell the stories of their importance and value, and bring that experience back down to all Americans."

Jason adds, "Couple that with a reputation for scientific integrity and it would be

hard to imagine a better partner than the Cornell Lab and Gerrit Vyn for filming and sharing these special places."

#### A Photographer on the Tundra

It was 30 years ago that aspiring 25-year-old wildlife photographer Gerrit Vyn first laid eyes on Alaska's Arctic tundra. In the intervening

decades, he has returned fifteen times to learn about and document the universe of wildlife and lands of America's Arctic. Now, Gerrit is a producer for the Center for Conservation Media with decades of experience capturing the sights and sounds of remote landscapes and turning them into emotionally charged films that boost conservation efforts around the globe.

In partnership with Protect the Arctic, Gerrit and his team spent six weeks during the summer of 2022 capturing one-of-a-kind footage from Teshekpuk Lake, the largest of the NPR-A's Special Areas. The resulting 19-minute film, *America's Arctic: Teshekpuk Lake*, features massive flocks of King Eider, spectacular Buff-breasted Sandpiper courtship displays, and adorable newly hatched Bar-tailed Godwit chicks.

#### Ongoing Challenges, Hope for the Future

In March 2023, the Biden administration approved the Willow project, one of three proposed projects in the reserve, which would drill for oil along one edge of Teshekpuk Lake.

Conservation Media is playing an integral role in raising awareness and stoking protective action.

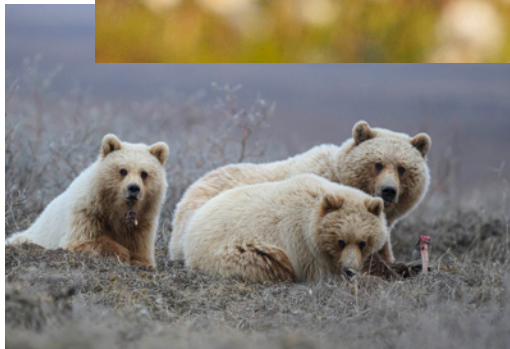
This development would necessitate hundreds of miles of roads and pipelines, an airstrip, a mine, and hundreds of wells to the area, and the resulting emissions would be like adding two million cars to the nation's roads every year of the project's life.

But on the heels of the release of the Teshekpuk Lake film came a step in the right direction: In April, the Biden administration finalized protections for the Special Areas of the NPR-A. According to Nicole Gentile of the Center for American Progress, this new rule will be difficult for subsequent administrations to overturn, both because of the legal hoops to jump through, and because "in the public mind once something is protected, rolling that back is deeply unpopular."

Gerrit says that some in the industry call Willow "the next big hub for oil and gas, from which they would expand across the NPR-A. Each concession to drilling infrastructure is permanent. Birds and wilderness, in turn, need permanent protections in the NPR-A Special Areas that can't be undone."



Middle left: A nest of eggs on the Arctic tundra. Right: Grizzly bears gnawing on a caribou bone in the foggy gloom of Arctic midnight. Opposite page: Teshekpuk landscape. Photos by Gerrit Vyn



SCAN CODE TO



WATCH THE FILM

The film *America's Arctic: Teshekpuk Lake*, was watched more than **50,000 times** in just the first three months of release. In the summer of 2024, Gerrit Vyn returned to the NPR-A to capture footage of Colville River, another one of the Special Areas. Says Jason Paulsen of Protect the Arctic: "We're committed to finding every way possible to capture imagery from America's Arctic... so it reaches as many people as possible."



# PEOPLE POWER

## Audience Activation

How can global participation lead to global conservation?

### BIRD ACADEMY

355,000+ ENROLLMENTS (THROUGH JUNE 2024) IN

25 COURSES

I am on Course Eight! I like you and the Bird Academy that much. I got a volunteer gig with Audubon as a bird naturalist after only eight months studying with the Lab.

— Bird Academy lifelong learner

FeederWatching made me a better birder and will now be a lifelong project for me.

— FeederWatch participant

### FEEDERWATCH

32,943 PARTICIPANTS (2024)

8,739,298 BIRDS REPORTED (2024)

### MERLIN BIRD ID

10 million ACTIVE USERS (JAN-AUG 2024)

40% INCREASE OVER 2023

Merlin sound ID has completely changed my birding. I get from 25% to 50% more species on a walk, and it has made me a much better ear birder.

— Merlin user

Not only did I learn useful and ready-to-implement strategies but I also connected with colleagues and built a community that I look forward to reaching out to in the future.

— K-12 retreat attendee

### K-12 EDUCATION

3,500+ SCIENCE EDUCATORS TRAINED SINCE 2020

The first annual Harriet Tubman Freedom Bird Walk had a transformative impact. Learning about Tubman's naturalist skills adds a new dimension to her legacy.

— Celebrate Urban Birds mini-grant awardee

### 2024 GRANTS TO DEEPEN COMMUNITY TIES TO NATURE

92 2024 MINI-GRANTS IN 22 COUNTRIES/TERRITORIES

Going out before daybreak and watching the birds helped keep me in tune to Nature. Watching birds has become one of the most important parts of my life.

— NestWatch participant

### THE 2024 GREAT BACKYARD BIRD COUNT

642,000 PARTICIPANTS  
210 COUNTRIES  
7,920 BIRD SPECIES  
385 COMMUNITY EVENTS

I just participated in the Great Backyard Bird Count for the first time. Now I'm always waiting for the next discovery.

— Count participant

Since learning species names I'm fully devoted to feeding and protecting these creatures.

— Merlin user



Photographs courtesy of participants and partners

Global Partnerships

Data-driven Decisions

How can a new generation of scientists transform their communities into conservation corridors?

Punta Soldado is a small island off the west coast of Colombia, a critical stopover along the Pacific Flyway, with as many as 8,000 migrating shorebirds visiting annually—Western Sandpipers, Spotted Sandpipers, Wilson’s Plovers, and many more. With its vast, pristine beaches flanked by mudflats and mangroves, the island is home to a community of 500 Afro-Colombians, who fish and harvest the mollusks that thrive there.

As young resident Michel Sinisterra puts it, “The ocean is life. It’s hope. When you’re near it, you forget your problems. It brings peace. I don’t think I’ll ever be separated from the ocean.”

In recent years, climate change has increasingly put this delicate ecosystem and Michel’s way of life in peril. By 2021, rising ocean levels, warmed by more frequent and severe recurrences of El Niño, dramatically eroded the beach. The mangroves—vital nursery grounds for fish and mollusks—were destroyed. Many residents were forced to relocate farther inland, and the island fell eerily silent.

The shorebirds dwindled to just 200.

What if we could partner with emerging local leaders across multiple disciplines and tackle habitat loss on-site, all along the Pacific Flyway?

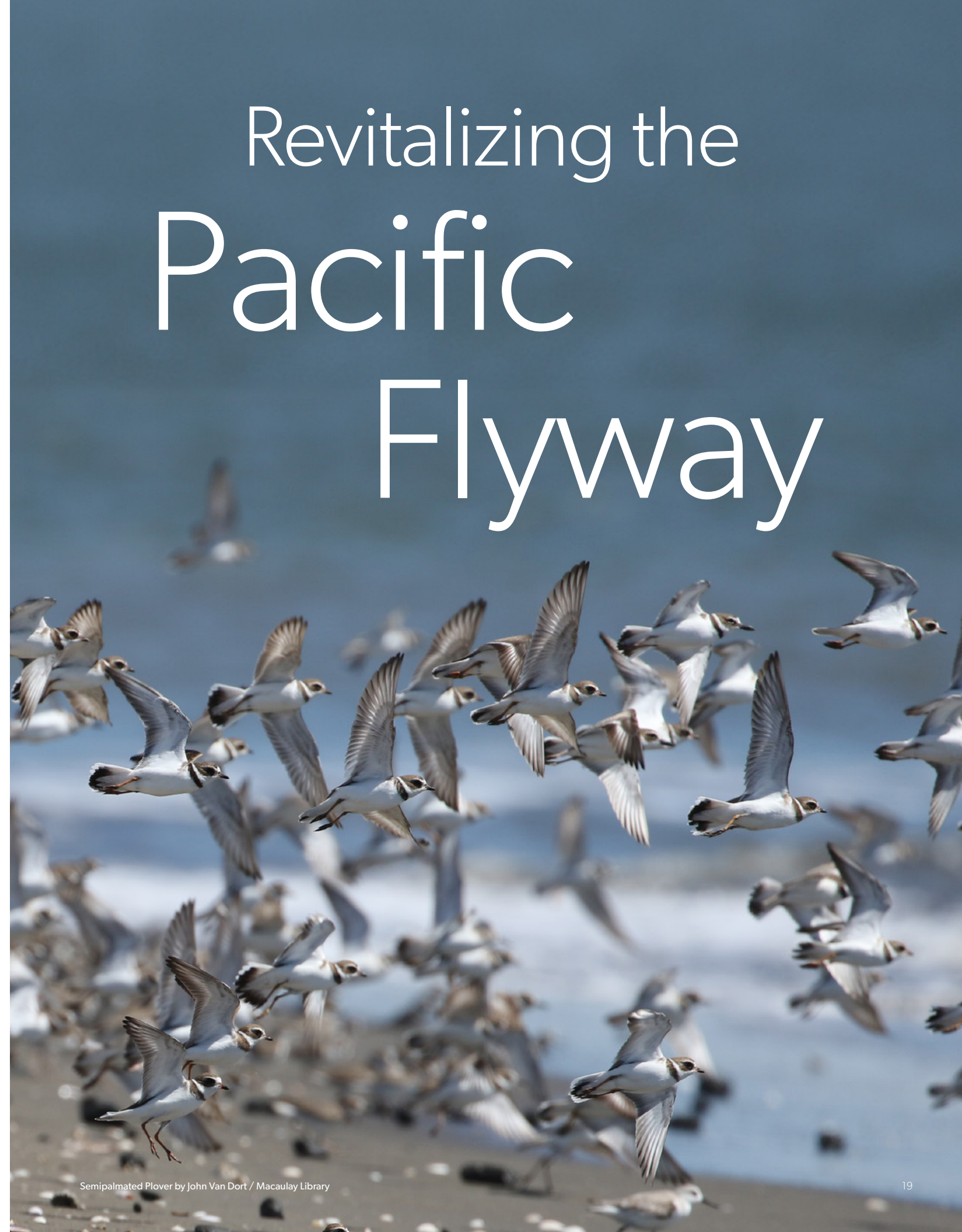
#### A Bold Question

One reason climate change feels so staggering is because it’s a global phenomenon, and its manifold challenges differ greatly region by region. No single organization can tackle it all at once. While the Cornell Lab of Ornithology is an outpost for change nestled in Sapsucker Woods, birds are borderless. To create impact on a global scale, we have to make strategic alliances with conservation innovators all over the world. And we have to be in it for the long haul.

In 2019, the Lab asked a bold question: What if we could partner with emerging local leaders across multiple disciplines—architecture, biology, engineering, ornithology, the social sciences—and tackle habitat loss on-site, all along the Pacific Flyway?

Collaborating with The David and Lucile Packard Foundation, we launched the Coastal Solutions Fellows Program expressly for this purpose. We began bringing together the best and brightest Latin American scientists and innovators to work in concert with communities, go after on-the-ground results, and build conservation capacity for future generations.

# Revitalizing the Pacific Flyway



Semipalmated Plover by John Van Dort / Macaulay Library

# 30 Fellows Spearheading a Movement

The idea of protecting 4,000 miles of coastline: It's a feat no conservation agency could pull off on its own. But our Coastal Solutions Fellows—30 strong and counting—are building a corridor of coastline conservation.

Across the continuum of science, land-use planning, and conservation policy, they're piloting new approaches that balance the needs of shorebirds with those of local communities.

Collectively, the results speak for themselves: Through the Coastal Solutions Fellows Program we have helped 28 priority shorebird species, from Snowy Plovers and Red Knots to Hudsonian Godwits and Whimbrels.

And we're just getting started.



2020 Coastal Solutions Fellow Laura Edith Ibarra installs temporary fencing to protect shorebird nests in Baja California Sur, Mexico. Photo by Laura Ibarra



**Jonathan Vargas** partnered with the real estate industry to protect priority sites in Baja California's critical Snowy Plover habitat, reducing human disturbance by 90%.



**Varinia Sagastume** organized a rigorous survey of nesting and wintering shorebirds in Guatemala and established her own consulting firm to help nonprofits incorporate conservation into their aquaculture practices.



**Natalia Martínez-Curci** helped protect 7,000 acres of Chile's Caulín by marshaling local community leaders and Universidad Austral de Chile to formalize an agreement establishing best-management practices for seaweed farming.

## Reversing the Decline

The challenges buffeting Punta Soldado's community inspired Johann Delgado to tackle conservation solutions by becoming a civil engineer. "I could see the waves going right up to the town. Suddenly, you realize it's not just about numbers," he said. "It's about lives. It's about dreams."

As a Coastal Solutions Fellow from Colombia, Johann partnered with the residents of Punta

Soldado and built a team of sociologists, biologists, and engineers who modeled ocean currents and constructed elevated sandbars to protect the mangroves.

Last year a welcome indicator of success for Johann's strategy arrived from thousands of miles away as shorebirds started returning in the hundreds, then the thousands. It happened after a La Niña event that helped the recovery of the island's beaches and mudflats. By the end of the season, Punta Soldado's naturally restored coastline attracted as many as 5,000 shorebirds.

In addition to the coastal defense strategy, Johann's team designed environmental education programs, recognizing that the key to long-term success is ensuring islanders value the connections between birds and the ecosystems.

Every chance he gets, Johann credits the Coastal Solutions Fellows Program for his career. "I tell people Coastal Solutions is a smart investment because it's about people power," Johann says. "By reaching young professionals early in their careers and believing in them, you are giving them the chance to change the world."

## Going Beyond the Pacific Flyway

The need and urgency for solutions is greater than ever. We must rise even higher to meet the increasing challenges that migratory birds and coastal ecosystems face in our changing world.

After all, the Pacific Flyway is not the only migratory superhighway in the Americas. The habitats and species along the Mid-continental and Atlantic Flyways must also be protected. In the coming decade, we plan to scale our impact to the most important and threatened regions along all three.

To do that, we will expand and evolve our proven model, working with dozens of future Fellows eager to spark a lifetime of positive change. The successful scaling of the program will require strong partnerships with leaders, communities, and institutions on the ground as well as with donors worldwide. Together, we can achieve an ever bolder vision for healthy coastal ecosystems across the Americas.

Our growing network of Coastal Solutions Fellows are not only leading lights in their respective fields, they are architects of a better future. And they are ambassadors for the Lab, extending our conservation reach.

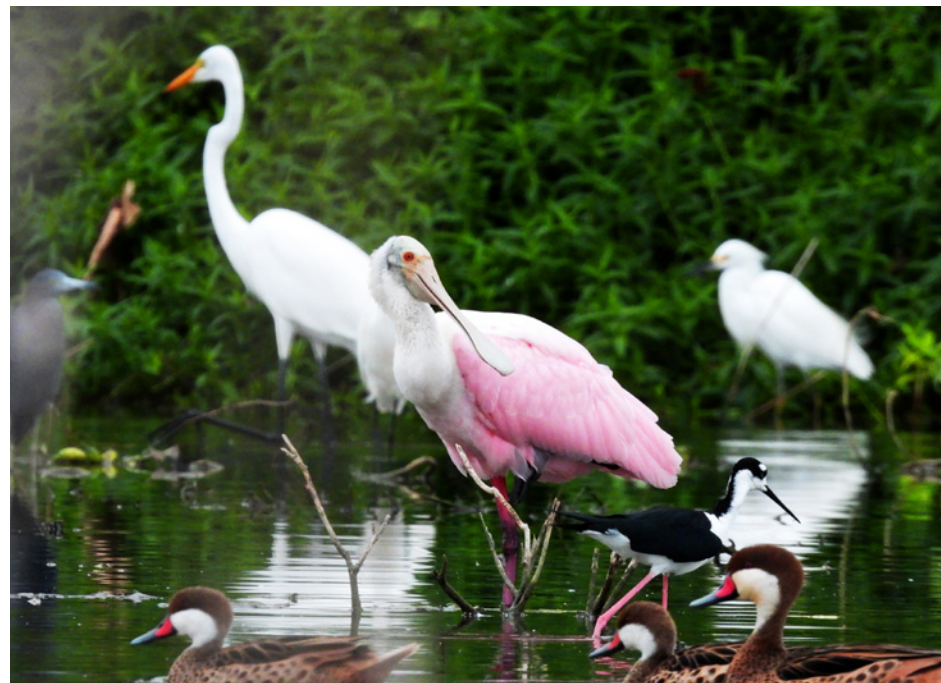
As Natalia Martínez-Curci says, "Coastal Solutions has changed everything for me."

No other organization in Latin America to my knowledge undertakes conservation in such an inclusive, interdisciplinary way. Now I think differently, and I see in my students the same desire. This is how change happens."

Our growing network of Coastal Solutions Fellows are not only leading lights in their respective fields, they are architects of a better future.



Left: Photo by Eliana Montenegro  
Opposite: Photo by Daniela Ruz



# Education & Engagement

## Audience Activation

How do we create accessible and engaging learning experiences?

### Supporting the Next Generation

Thanks to donor support of Experiential Learning Grants, dozens of undergraduate students have one-of-a-kind opportunities to work alongside the world's top biologists, computer scientists, educators, and communicators each year. Annually, the Lab also provides many early-career researchers with the financial support needed to pursue cutting-edge research and a community of peers to help fuel their discoveries.

47

Undergraduate students received donor-supported Experiential Learning Grants in 2024, helping them gain skills across disciplines. Students participated in projects ranging from science communication to studying the impacts of mowing on grassland birds.

21

Graduate students received awards to support their research thanks to donor-supported funds. In addition to their own research, graduate students provide valuable mentorship and training to undergraduate students.

34

Lab-supported postdoctoral researchers are conducting studies ranging from the behavioral and chemical ecology in birds to the use of birds as indicators of biodiversity and ecosystem health in agricultural landscapes of Central and South America.

### A Vibrant Welcome for Visitors

In June, the Imogene Powers Johnson Center for Birds and Biodiversity reopened to the public after a yearlong renovation. The redesigned space features more than a dozen new multimedia exhibits that invite visitors behind the scenes and into the world of birds. Exhibits include a bird discovery lab that explores how birds see, hear, and sense the world; an updated multimedia theater; and a gigantic, interactive touch-screen wall that displays a real-time map of eBird data submissions, where visitors can also submit their own Sapsucker Woods sightings.

"We want to inspire people, feed their curiosity with accessible science, and create a sense

When they leave, we want visitors to feel much more committed to protecting birds and nature with us.

of community and belonging," says Visitor Experiences Manager Lisa Kopp. "When they leave, we want visitors to feel they're part of something bigger, and much more committed to protecting birds and nature with us."

Ellen and Steve Adelson and the Adelson Family Foundation made a lead gift to support the Visitor Center renovation and name the Adelson Family Bird Discovery Lab. "The Cornell Lab community and its work are deeply important to our family and to improving our world," Ellen says. "We are thrilled to think of all the visitors who will leave the Lab full of wonder and curiosity, inspired to care about birds and nature, because of this beautiful, engaging new space."

Cornell rising senior Santi Tabares Erices (right) and Cornell staff member Kim Savides studying the impacts of mowing on grassland birds.  
Photo by Rachel Phillipson



Cornell undergraduate Karen Mendoza interacts with a new exhibition on animal sounds; she conducted research this summer on visitor experiences.  
Photo by Alexandra Bayer



# Financial Report

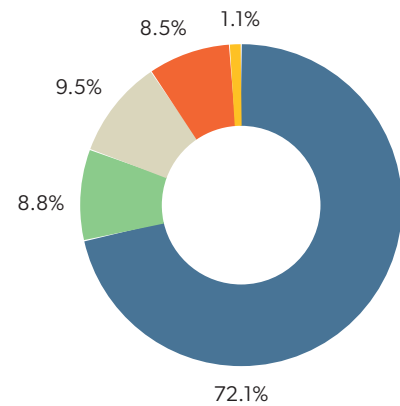
2024 Fiscal Year:  
July 1, 2023, to  
June 30, 2024

In fiscal year 2024, thousands of members and donors provided more than 70% of our annual revenue, a total of \$35.9 million. These funds expand our capacity to promote global conservation through research, education, and participatory science.

As a mission-driven nonprofit organization nested within a world-class academic research

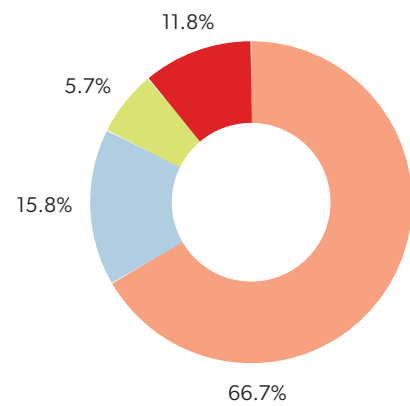
institution, the Cornell Lab provides information, tools, and inspiration to people and partners around the world to help reverse the decline in birds and biodiversity.

Strong philanthropic support enables us to invest in people, technology, and innovative ideas to accelerate our work. Thank you for supporting the Cornell Lab of Ornithology.



## FY24 REVENUE

Membership & Gifts	\$35,900,136
Grants & Contracts	\$4,400,293
Program Income	\$4,745,378
Invested Funds Income	\$4,239,039
Other	\$549,828
<b>Total Revenue</b>	<b>\$49,834,674</b>



## FY24 EXPENDITURES

Program	\$30,249,714
Development & Membership	\$7,143,320
Administration & Infrastructure	\$2,595,018
University Administrative Support	\$5,340,000
<b>Total Expenditures</b>	<b>\$45,328,052</b>

If you have questions, comments, or requests for the Cornell Lab's membership and development team, please contact Mary Guthrie at 607-254-2157 or [msg21@cornell.edu](mailto:msg21@cornell.edu).

Whimbrels by Grigory Heaton/ Macaulay Library



# Thank You

## One Song, Many Voices

Just like a flock of birds, the Cornell Lab of Ornithology finds special strength in numbers. It's why we collaborate with an expanding network of communities and organizations, nationally and globally, and why we turn to committed supporters like you, at every level, to strengthen the capacity of the Lab and engage millions in learning about birds and biodiversity. Thank you for all you do to advance our work, as well as a shared understanding of nature. You are part of a mighty and growing flock of members and supporters who power local, national, and global collaborations, committed to the notion that by working together, we will bring about a healthier planet and more hopeful future.

In this newly installed sculpture in the Visitor Center, each bird represents donors to our multiyear Spark Campaign, embodying the generosity of more than 350,000 supporters, fueling research, education, and conservation on behalf of birds and nature.



## Why We Support the Lab

Over the years we have watched the recognition and influence of the Cornell Lab grow nationally and internationally. Partnerships with conservation and research-focused organizations—like submarine acoustic environment research—were simply brilliant. **Today it seems that there is literally a symbiotic relationship between the Lab and international conservation and research efforts. Bravo!**

—Carolyn Mangeng & Dale Spall  
Los Alamos, NM

As a retired associate from Cornell Cooperative Extension, Cornell's Land Grant program that brings the knowledge of the University to the people, **I give to support the Lab's multifaceted and excellent outreach to the public.** This outreach effort not only informs the public in a myriad of ways, but also spreads the word about how everyone can help birds in this challenging time.

—Donna Scott; Ithaca, NY

To have access to [eBird's] detailed information has taken our birding hobby to another level and brought hours of enjoyment to our lives. **The fact that it's free to anyone inspired us to include the Lab in our giving plans.** Our hope is that the good work being done will continue and provide solutions to the challenges faced today by birds and all of the natural world.

—Karen & Dan Carpenter; Farmer's Branch, TX

## Our Corporate Sponsors

Through partnerships with these companies and organizations, we grow our capacity to reach and engage new audiences to improve the understanding and protection of birds, from backyards to ecosystems around the world.

The Cornell Lab is grateful to these sponsors for their support during the past year.

- Acopian BirdSavers
- Aramark
- Better Bird
- Birds & Beans Coffee
- Celestron
- Enthusiast Hotel Collection
- IOWA
- Pennington Wild Bird Feed
- Perky-Pet
- Princeton University Press
- Swarovski Optik
- Wild Birds Unlimited, Inc.
- Wild Birds Unlimited at Sapsucker Woods
- Wild Delight
- Wingscapes
- Zeiss
- 3-D Pet Products

For information about partnership opportunities, contact Justin Cleveland, Manager of Corporate Partnerships, at [jbc258@cornell.edu](mailto:jbc258@cornell.edu).

Please view our list of legacy society members and honor and memorial tributes at [birds.cornell.edu/donors](https://birds.cornell.edu/donors).

“Not that long ago, I would have described what was happening in simpler terms: Birds come and go. Now standing still, I am watching them and they are watching me, and we see each other hiding in plain sight.”

—Amy Tan, *The Backyard Bird Chronicles*



*This page:* Lesser Goldfinch by Don Danko / Macaulay Library

*Front cover:* A team of biologists in South Carolina monitors Whimbrels on Deveaux Bank, where almost half of the estimated Atlantic Flyway population of the species rests and refuels. Photo by Andy Johnson

*Back cover:* Red Knots by Ryan Sanderson / Macaulay Library

