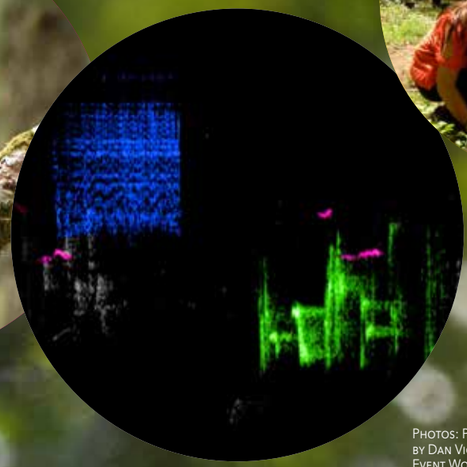
TheCornellLab

2017 ANNUAL REPORT

You're helping the Cornell Lab of Ornithology go to new places, reach new people, and lead science and conservation into new territory.



Photos: Philippine Eagle by Kike Arnal; Insets Left to right: Verdin by Dan Vickers, ML# 55492491; participant in 2017 Young Birders Event Workshop by Sam Miller; Northern Spotted Owl by Gerrit Vyn; Bird vocalization spectrograms from Bird Academy's ***Be a Better Birder: How to Identify Bird Songs course***; School Garden Grant students by Caleb Weaver.

MEDIA THAT MOVES THE CONSERVATION NEEDLE

When asked why the Cornell Lab of Ornithology spearheaded a Conservation Media initiative in 2008, Multimedia Productions director John Bowman notes that "almost every endangered species success story starts with a community that's committed to a cause." Nearly a decade later, the program is finding success not only in telling the stories of the world's most imperiled birds, but in partnering with communities around the globe to deliver those stories to the right audience, at the right time, to make a difference.

The Cornell Lab's multimedia team collaborates with local groups to create media tools that inspire action–from changing policies to help a threatened species to educating children on the value of conservation. Because the Cornell Lab works in places where resources are scarce, we offer our services pro bono–something we're able to do thanks to the support of donors at all levels.

"Nobody else is doing this—going to Latin America and Africa and Asia and creating custom, powerful media with in-country conservationists in order to make their efforts more successful."

– John Bowman, Multimedia Productions director at the Cornell Lab of Ornithology

Cornell Lab producer Eric Liner on assignment on Alaska's Yukon Delta.

IGNITING A PHILIPPINE EAGLE REVIVAL

When renowned wildlife filmmaker Neil Rettig envisioned a remake of his 1981 BBC conservation film about the Philippine Eagle—in the name of reenergizing conservation efforts for the world's most endangered eagle—he found little interest from broadcast networks in the United States.

At the Cornell Lab of Ornithology, he found a willing partner with new ideas about how natural history media can meaningfully contribute to progress. Within weeks, the Cornell Lab signed on to lead and underwrite the project, dispatching Rettig and a film crew to the island of Mindanao for an intensive 6-month effort to film eagles in the wild, using the most advanced 4K ultra-high-definition media technology. Working in parallel, Cornell Lab producer Eric Liner conducted on-camera interviews with conservation leaders, government officials, and Filipino villagers to capture the human dimension of the eagle's story. The primary destination for Liner's and Rettig's work is the Philippine Eagle Foundation (PEF), the leading conservation organization dedicated to protecting this majestic eagle.

The foundation said they needed to get their messages into the highest levels of the Philippine government, and into the most remote villages where the last few precious eagle territories are threatened by deforestation and poaching. The final suite of media resources—delivered in three languages (English, Tagalog, and Visayan)—is allowing the PEF to reach every one of their key audiences.

Anti-poaching poster from Philippine Eagle Foundation

Local outreach packages–including anti-poaching posters (above, the headline reads "Keep Me Wild and Free") and children's books (right)–were customized for the Philippine Eagle Foundation's educational efforts in rural villages, where the eagles are threatened by illegal hunting and deforestation.

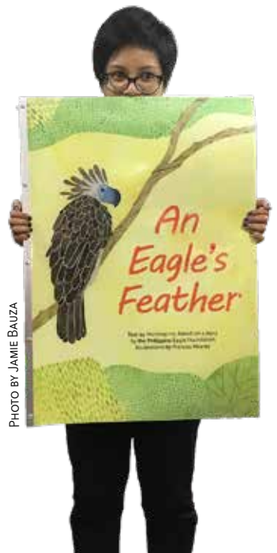


Photo by Jamie Bauza

Still image from "Agila: Laban Ng Lahi"

The Cornell Lab donated media coverage to a Filipino-produced TV special broadcast on the Philippines' largest network in 2015. The show also aired on a Filipino global satellite TV channel.

Image courtesy of "Matanglawin"

The Cornell Lab distributed free Philippine Eagle footage to media outlets across the Philippines, such as local TV news stations and the highly popular nature show "Matanglawin."

Still image from soon-to-be-released film "Bird of Prey"

Now that the Philippine Eagle Foundation has the media to energize its mission, the Cornell Lab and film director Eric Liner are producing a feature documentary, "Bird of Prey," for global outreach. "This new 4K, high-definition film and our archive will be stored digitally and used forever," says Rettig. "We gave all our ownership to Cornell because we trust that Cornell is going to put it to use the way we want it forever."

Still image from "African Grey Parrot: Species in Decline"

A BIG DIFFERENCE FOR THE AFRICAN GREY PARROT

The Cornell Lab created a film about the plight of African Grey Parrots that was translated into four languages and shown to delegations of 180 countries at the Convention on International Trade in Endangered Species (CITES) meeting in South Africa. The film's moving footage of illegally trapped parrots and visualizations of the bird's shrinking range helped raise enough votes to ban the export of wild parrots from central Africa. According to Sarah Lieberman, vice president of international policy at the Wildlife Conservation Society, the video "made a big difference in the final outstanding outcome. It was forwarded and shared widely on social media. There was at least one government that was leaning to oppose or abstain, but the video convinced them to support the proposal."

Still image from "Wetland Loss in the Yellow Sea"

A POWERFUL POLICY TOOL

More than 3 million migratory shorebirds use the Yellow Sea's intertidal zones as stopover sites along the East Asian-Australasian flyway, and roughly two-thirds of these mudflats have disappeared since 1950. The Cornell Lab's film "Wetland Loss in the Yellow Sea" outlines the dire threats to this Southeast Asian coastal wetland ecosystem complex. The film has been translated into five languages and used by the Paulson Institute in working with the Chinese government on coastal wetlands projects, by conservation representatives in Russian–Chinese bilateral meetings, and by conservation groups across the region.

STRATEGIC PARTNERSHIPS FOR GLOBAL IMPACT

The Cornell Lab of Ornithology has a global mission to interpret and conserve the earth's biological diversity, but the Lab doesn't have offices all over the world.

Instead, the Cornell Lab looks for strategic partners across the globe, collaborating with on-the-ground conservationists who know their birds, landscapes, and societies best. Such collaborations enable the Cornell Lab to convert conservation science into action that's tailored to be more effective at conserving birds and biodiversity in a specific location.

Verdin by Gordon Karre, ML # 52308011

A CORNELL–CHICAGO UNIVERSITY PARTNERSHIP TO HELP A DESERT BIRD

Emma Greig is a University of Chicago PhD and the FeederWatch project leader at the Cornell Lab of Ornithology. Greig found a way to unite her alma mater and her employer in an ongoing research project on the Verdin, a desert-dwelling bird.

Verdins are adapted to hot, arid regions, but ironically, they may not be thriving in the heat of a warming world.

Greig and colleagues from the University of Chicago are working with undergraduates from both universities to study desert ecology at Organ Pipe National Monument in southern Arizona. Greig and her team finished their third year of Verdin research in 2017.

Their research has documented a significant decline in breeding Verdins at the study site that so far seems to be associated with below-average rainfall and above-average temperatures.

Research at this site will continue with the hope of understanding how desert species are able to alter their reproductive behavior in the face of environmental change.

EMPOWERING LOCALS TO PROTECT A BIODIVERSITY HOTSPOT

The Yucatán Peninsula is one of the most important spots for birds in the Western Hemisphere—home to more than 500 resident species and critical habitat for more than 120 species of Neotropical migrants. The Maya Forest and surrounding areas host one of the highest concentrations of wintering Neotropical migrants in Central and South America.

To curb the rampant deforestation that threatens the Maya Forest, the Cornell Lab's Conservation Science team launched the Yucatán Project as part of an overall initiative to foster partnerships for biodiversity conservation in Latin America.

Angel Fernando Castillo Cime

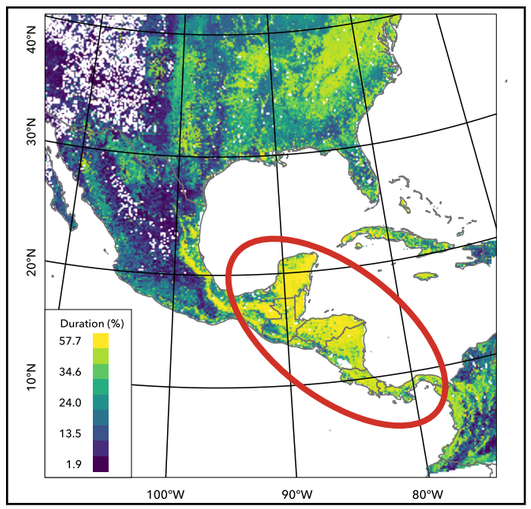
Volunteers from the Yucatán Jays birding club learn how to use eBird for bird surveys in the Maya Forest of Mexico.

Led by Cornell Lab researcher Viviana Ruiz-Gutierrez, the Yucatán Project unites all three nations of the peninsula—Mexico, Guatemala, and Belize—in developing a scientifically rigorous bird-monitoring program for the Maya Forest and using the program's data for forest and bird conservation.

In Mexico, the Cornell Lab has partnered with CONABIO, the Mexican government's biodiversity agency, to train 70 local volunteers as part of their community-based bird monitoring initiative using eBird. This effort will provide valuable data on birds of conservation interest that CONABIO and local communities can put to good use. For example, communities can use the data to assess environmental impacts of proposed development and make better informed decisions for both people and nature.

In Guatemala, eBird is being established as the official database for community-based monitoring in the Maya Biosphere Reserve. The Cornell Lab's Ruiz-Guitierrez and a Wildlife Conservation Society representative met with the director of Tikal National Park to discuss how bird monitoring could help protect the ecological integrity of the park. Later the team conducted eBird training workshops for guides and park rangers in conjunction with the Guatemalan government's Institute for Tourism. The workshops, which counted as credit for the renewal of tour-guiding licenses, showed participants how they can use eBird data to further conservation objectives in the Maya Biosphere Reserve.

Next up, project leaders will work with partners to expand community-based monitoring into Belize.



Frank La Sorte

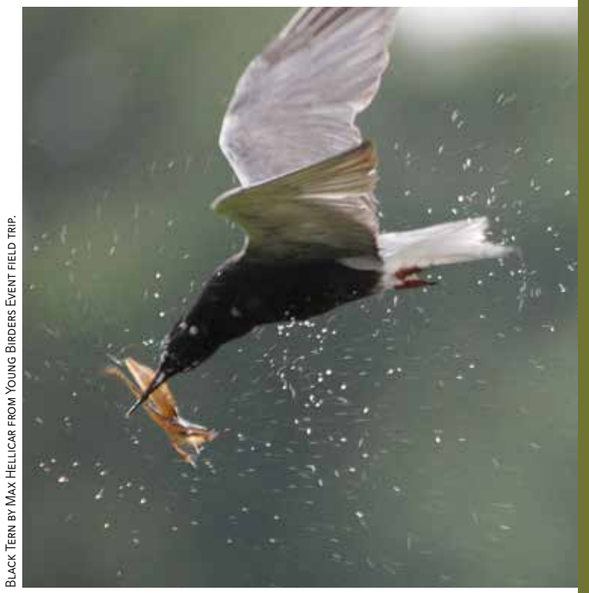
This eBird model from Cornell Lab researcher Frank La Sorte shows that Neotropical migrant birds spend more than half of the year in the Yucatán Peninsula region.

CONNECTING THE NEXT GENERATION

In July, the Cornell Lab partnered with sponsors Carl Zeiss Sports Optics, Princeton University Press, and Wild Birds Unlimited to bring 18 teenaged birders from across the U.S. and around the world to Sapsucker Woods for a 3-day intensive training course. The young birders received instruction from Cornell Lab experts in field biology, eBirding, and audio recording. The Young Birders Event seeks to stoke the passions of high-school students who want to dedicate their lives to birds and explore careers in ornithology.

"The Cornell Young Birders Event was absolutely amazing. Words don't do justice to how incredible these few days truly were. It was a privilege and absolutely fantastic."

–Max Hellicar, a 2017 Young Birders Event participant from the United Kingdom, writing to the Cornell Lab about his life-changing experience



Black Tern by Max Hellicar from Young Birders Event field trip.

Young Birders Event class of 2017; photo by Ian Davies

SCIENCE POWERED BY PEOPLE

Birds are ambassadors for our relationship with the Earth, teaching us how nature works and serving as sensitive indicators of the planet's natural systems. Thanks to private support from thousands of donors as well as key public grants, the Cornell Lab is able to harness the power of citizen science to gather and analyze this critical information. Each year, more than 100,000 participants around the globe submit millions of observations to our open-source databases–from a Project FeederWatcher in Ohio observing his feeders to a birder in India submitting an eBird checklist from her morning walk.

Graphic courtesy of eBird

This global map is composed entirely of eBird data submissions from nearly 5 million locations worldwide, as of July 2017.

INCREASED DIGITAL SUBMISSIONS FUEL RESEARCH AND RESOURCES

The Macaulay Library began receiving media submissions online through eBird from the public in 2015. Since that time, the archive has swelled to more than a quarter of a million sound recordings and 4 million images. Thanks to this growth, today the Macaulay Library is the world's largest archive of natural history audio, video, and photo records—a trove of information available to researchers, conservationists, and the general public.

Last year the Macaulay Library created a suite of new tools and features to encourage even more contributions from citizens worldwide. These include a new eBird "Illustrated Checklist" that allows users to see opportunities to gather needed high-quality material, as well as "Profile Pages" that showcase contributions from community members and their observations. With more media than ever, the archive enhances other Cornell Lab resources, such as the Birds of North America and the Neotropical Birds online references.

The Cornell Lab is also using the millions of new images and sounds to improve Merlin, our popular smartphone bird identification app that helps birders of all levels identify and learn about birds. Capitalizing on rapid advancements in machine learning, the Cornell Lab partnered with Visipedia (a collaboration between Caltech and Cornell Tech), to use thousands of images from the archive to train computer vision models to create Merlin Photo ID.

At first Merlin Photo ID was only available on computers, but last year in-house developers made it small and powerful enough to run on a mobile device without an internet connection. Merlin users can now identify 1,400 North American birds in a split second from a photograph pulled from their smartphone.

Thanks to the increase in global submissions, Merlin has expanded to include species found in Europe and Central America. Spanish versions of Merlin have launched in Mexico, Belize, and Guatemala, and will soon launch in Honduras, Costa Rica, and Colombia.

Left to right: Rose-bellied Bunting by Luke Seitz, ML # 39615851; Merlin for smartphones; eBird illustrated checklist featuring media from the Macaulay Library

PROJECT FEEDERWATCH: 30 YEARS OF COLLECTIVE EFFORT

Since Project FeederWatch, a partnership between the Cornell Lab and Bird Studies Canada, launched in 1987, this citizen-science effort has had 69,000 participants submit 2.5 million checklists that include 142 million birds—data that have informed 30 scientific publications.

The 6 million volunteer hours that FeederWatch participants have spent collecting data add up to over nine human lifetimes. A project like this simply could not be done by a single scientist. The geographic scale at which these data are collected would require one person to be in 10,000 places at once.

There is no better way to monitor bird populations on a large scale than through citizen-science efforts, and from these data we learn about the state of the natural world in changing times. With Project FeederWatch people take their hobby of feeding birds and turn it into something bigger.

Carolina Wren by Anne Duvall/Project FeederWatch

BIG DAY BECOMES A GLOBAL BIRDING EVENT

On May 13, 2017, more than 20,000 birders from 150 countries joined together as a global team, contributing more than 54,000 eBird checklists containing 6,652 species—more than 60% of the world's birds.

That's a new world record for the number of bird species reported in a single day, and it's thanks to multinational birders from Antarctica, Brazil, and Canada to India, Spain, and Zimbabwe. All seven continents contributed data to the massive citizen-science event.

Team Colombia led a grassroots effort to claim the mantle for most species seen on Global Big Day. Having placed third behind Peru and Brazil in 2016, Colombian birders were motivated to improve their standing. Countrywide efforts to engage youth groups, birding groups, and even people new to birding paid off—more than 1,000 Colombian birders submitted a total of 2,500 checklists to tally a world's-best 1,486 species.

More than 5,000 Cornell Lab supporters also participated in Big Day, helping us raise a record-breaking $603,000 for bird and biodiversity research, education, and citizen science. From birders on the ground in every corner of the globe to supporters around the world, Big Day 2017 was truly a global effort to create a better world for birds and nature.

"Global Big Day presents a vignette of what is possible when people and organizations work together, accomplishing what could never be accomplished alone," said eBird project leader and Big Day organizer Chris Wood.

"Being part of this Global Big Day event was truly magical, as it aligned more than 1,000 Colombians who were synchronized and interested in a common thing—going to every corner of this huge country to look for every single bird.

This was a beautiful thing in this post-conflict, post-war time that we have been living in Colombia. People were in high spirits, in part because this experience would have been impossible 10 years ago."

–Diego Calderon, COLOMBIA Birding

Speckled Tanager by Luis Agudelo, ML# 58167541

INNOVATING TECHNOLOGY FOR CONSERVATION

The Cornell Lab of Ornithology is a technology incubator for avian science and conservation, where acoustic monitoring opens up new possibilities for inventorying biodiversity, and big data models illustrate the massive movements of entire populations of migratory birds.

New technologies offer better ways to understand the natural world–and protect it. With support from donors alongside public grants, the Cornell Lab is teaming up with technology companies to develop 21st-century conservation technology solutions.

Spotted Owl by Gerrit Vyn

"The Swift has allowed us to greatly expand the spatial coverage of our Spotted and Barred Owl survey efforts. It has opened up new possibilities for bioregional-scale, multi-species research and conservation efforts that were previously impossible."

–Zach Peery, principal investigator for the El Dorado Spotted Owl Demography Project of the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife

INVENTING A NEW AGE OF ACOUSTIC MONITORING

For decades, biologists have known that listening for living things beats looking for them. It's often a lot easier to hear the vocalization of a bird than to see it.

But remote audio recording units have been too expensive for resource-strapped conservation groups and government agencies. The Cornell Lab's Bioacoustics Research Program (BRP) had a solution—invent something new.

BRP introduced the Swift acoustic recording unit in 2017, a device that costs about a third of other audio recording units and can operate about 3 weeks continuously while collecting 16 gigabytes of data per day.

Swift units collect acoustic data on all vocalizing animals (from birds and mammals to frogs and insects) as well as weather conditions (wind and precipitation) and anthropogenic activities (airplane overflights).

Swift units have been deployed on all seven continents for biological inventories. In northern California, Swift units are listening for Spotted Owls in critical habitat. In central Africa, researchers with the Cornell Lab's Elephant Listening Project are using more than 80 Swift recorders to learn about African forest elephants.

Because these elephants inhabit dense tropical forests, it is difficult to monitor populations by sight. By recording elephant vocalizations, Swift units allow researchers to monitor their numbers and determine where critical resources are to be found. By matching audio recordings with video from camera traps, researchers are gaining a better understanding of the elephants' habits, social structure, and communication.

The audio recordings also have helped uncover patterns in poaching activity that local authorities in Africa can use to reduce illegal hunting.

Christopher L Wood

Swift unit deployed in northern California.

Photo courtesy of Elephant Listening Project

Swift units in Africa are used for acoustic monitoring of forest elephants.

SEEING THE BIRDS IN THE BIG DATA STREAMS

Cornell Lab scientists are just starting to discover the fine-scale data relevant to birds that can be extracted from today's HD weather radar imagery, orbiting NASA satellites, and the eBird big-data ocean of more than 415 million bird observations from around the world.

First comprehensive look at full life-cycle conservation

In spring 2017, Cornell Lab researcher Frank La Sorte led a team of scientists that used a Microsoft Azure Research grant to create Spatio-Temporal Exploratory Models (STEM) for migratory bird species of the Western Hemisphere. The team conducted the first comprehensive and detailed population-level analysis of Neotropical migratory birds and their environmental associations all along their travel routes, from North American breeding grounds to wintering areas in Central America.

The study, published in the journal *Global Change Biology*, found that these migrant birds spend the majority of their year (more than 7 months) in Central America. The study also merged climate change and land-use projections to find that these species will face severe pressures on their wintering grounds due to human-caused habitat loss.

"Our findings indicate that land-use change on their wintering grounds in Central America may be the most pronounced threat for these birds over the next few decades, as people continue to convert forests to cropland or grassland," says La Sorte.

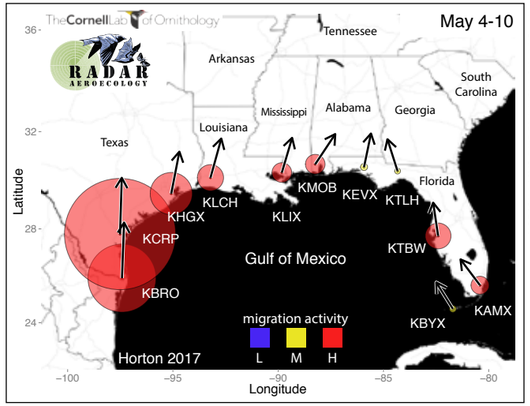
An urban mystery comes to light

For years ornithologists have noticed that migrant birds often congregate in urban areas in September and October, yet they were at a loss for an explanation. Why did autumn eBird sightings of these species spike in big cities where stopover habitat is hard to come by?

Further STEM analysis by Frank La Sorte may hold an answer. In another study published in *Global Change Biology* this past summer, La Sorte showed how high levels of urban nighttime light pollution are associated with higher concentrations of nocturnally migrating birds across eastern North America in autumn. Like moths to a flame, migrating birds seem to be attracted to the bright lights of the big city.

The Cornell Lab will continue this work in 2018 by deploying radar, audio, and video monitoring systems in New York and Switzerland to study the effects of artificial light pollution on migratory birds.

Yellow-billed Cuckoo, one of the migrant species attracted to urban areas in autumn. Photo by Joshua Covill, ML # 56663781.



Map graphic from the Birdcast Project.

RADAR AEROECOLOGY IN ACTION: This graphic summarizes nocturnal bird migration activity monitored by radar during the second week of May from 1995 to 2015 around the Gulf of Mexico, representing the first study to capitalize on the archive of two decades of NOAA radar data. The size of each circle represents migration activity at that radar station, and the arrows show mean track direction. Funding for the Cornell Lab's radar aeroecology research comes from the Leon Levy Foundation, Southern Company, National Fish and Wildlife Foundation, NASA, NSF, and Rose Postdoctoral Fellowship.

Following birds into the dark

In fall 2016, the Cornell Lab's Information Science program, along with partners at UMass Amherst, received a National Science Foundation grant for an extensive Dark Ecology research project. The term "dark ecology" is a nod to the ongoing mystery that, even after centuries of ornithology, very little is known about how birds navigate their seasonal voyages through nighttime skies.

The project will mine bird data from 25 years of archived NOAA radar imagery from across the United States. Scientists have studied birds via radar at local scales before, but no one has picked through the nation's radar imagery archive to analyze trends in large-scale bird population movements. Until now, the data processing load was just too much.

Thanks to an Amazon Cloud Credits for Research grant, the Dark Ecology team is developing an automated process for big data analysis that will make the U.S. weather radar archive into the most comprehensive catalog of bird migration in the world. In one of the project's initial forays, Cornell Lab postdoctoral researcher Kyle Horton will analyze archived radar data in the Gulf of Mexico to measure the overall change since 1992 in numbers of migrating birds passing through the Gulf Coast.

Overall, the Dark Ecology project will highlight the importance of airspace as habitat and the emerging field of aeroecology. Ultimately, the project will provide hard science about potential impacts to migrating birds from energy and urban construction projects to help policymakers reach informed decisions.

BIRDS ARE A POWERFUL TEACHING TOOL

"We will conserve only what we love. We will love only what we understand. We will understand only what we are taught."

The Cornell Lab's Education program closely follows this advice by Senegalese conservationist Baba Dioum. Birds are ideal teaching tools, because students everywhere can connect with birds at a personal level. Experienced educators at the Cornell Lab are developing teaching materials that meet K-12 curricula standards and are fun. Educational materials are customized for Spanish-language audiences, so they are relevant and effective throughout most of the Western Hemisphere. We also develop educational content for all ages, because even for adults, birds can spark a love of science and conservation.

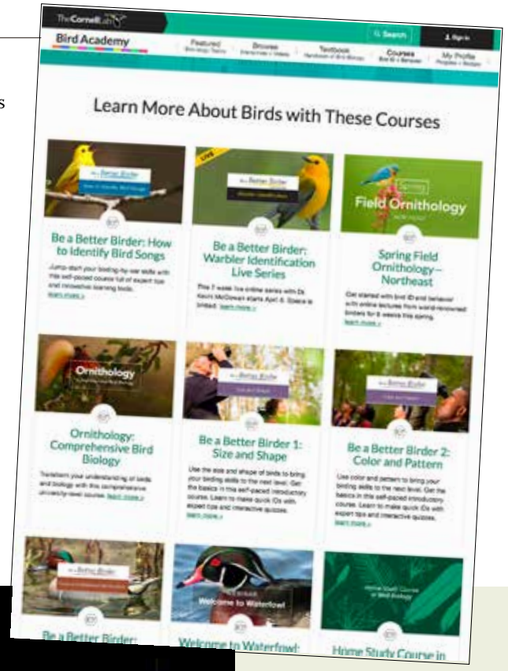
REACHING LEARNERS FROM 9 TO 99

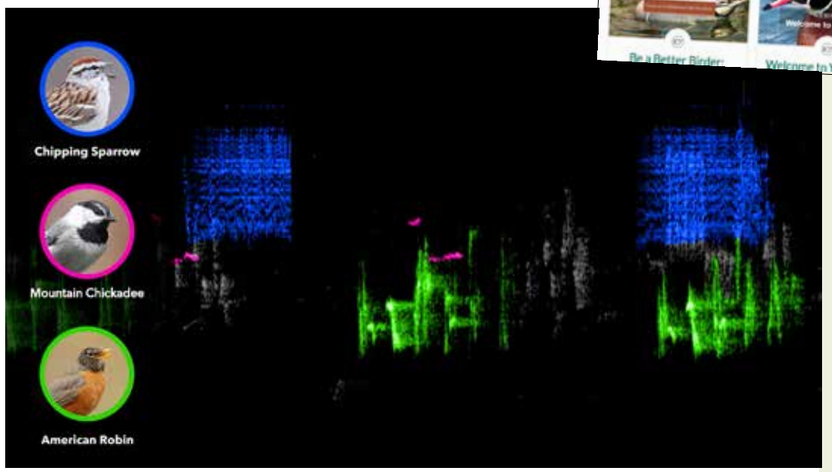
What would the Cornell Lab founder Arthur Allen think of today's Bird Academy?

Allen drew crowds of more than 100 people in Ithaca every week for his beloved Saturday morning bird walks a century ago. The professor's aim was to share his passion for birds with large audiences.

Today, the Cornell Lab operates a virtual Bird Academy that reaches millions of people worldwide with free multimedia content. Bird Academy's online courses have engaged more than 15,000 adult students from more than 30 countries.

In 2017, Bird Academy saw 180% growth in enrollment, due in large part to leveraging world-class resources from around the Cornell Lab. For example, one of the most recent course offerings—*Be a Better Birder: How to Identify Bird Songs*—makes use of nearly 200 sound recordings from the Macaulay Library. So far, more than 5,000 students have taken the course. New courses on the horizon for Bird Academy include *Getting to Know Your Feeder Birds* and *Understanding Bird Behavior.*





Bird Academy courses feature fun online learning activities, such as using your ears and eyes (via spectrogram visualizations) to identify bird songs.

"After I took just one lesson I heard more birds on my next walk in the woods.

I became more aware of the different sounds. This was exactly what I needed as I start trying to identify bird songs!"

–student comment from Bird Academy's "How to Identify Bird Songs" course

WIDENING THE CIRCLE OF BIRDERS

Celebrate Urban Birds is a citizen-science project that focuses on increasing equity, diversity, and inclusion in birding. The program hosts hundreds of low-income youth and community leaders working in underserved neighborhoods every year. Selected youth, educators, and community advocates receive full scholarships to travel to and attend 3-day workshops at the Cornell Lab.

Participants learn about citizen science, birds, stewardship, and using the arts as a tool to engage communities in conservation efforts. Youth learn about careers in the sciences and connect with undergraduate college students who inspire and motivate them. For most participants, this is the first time leaving their cities, traveling in an airplane, and walking in the woods. It is a transformative experience.

PHOTO COURTESY OF P.S. 228Q/CUBS

A mini-grant enabled all grades at P.S. 228Q in New York City to learn about birds.

Celebrate Urban Birds partners with 30 underrepresented communities to create programming to increase culturally diverse voices in the birding world. The program offers mini-grants, free educational kits, bird guides, and videos to create positive impacts in communities not historically represented in the sciences. In 2017, the grants supported community events, family programs, and festivals throughout the Americas.

PHOTO COURTESY OF EVENT FACILITATOR KUXTAL YAXKABA/CUBS

A mini-grant supported a bird festival in Milpa Alta, Mexico. The community event included art, native plants for habitat creation, and learning about the endangered, endemic Sierra Madre Sparrow.

MARILÚ LÓPEZ FRETTS

A youth workshop at the Cornell Lab provided an opportunity for low-income youth from the U.S. and Puerto Rico to explore the woods at night. All students received full scholarships and had the opportunity to learn about conservation science, science careers, and birding.

ATTRACTING NEW BIRD LOVERS, WITH A LITTLE HELP FROM OUR FRIENDS

Partnering with companies that want to invest in the future of birding and nature adds important support for Cornell Lab priorities. From teaching children about birds in school gardens, to helping make birds easy to find using a car's touchscreen, corporate partners help the Cornell Lab reach new people and welcome them to birds and birding.

Darcy Petzold

In 2017 BirdSleuth programs reached more than 800,000 children and trained more than 4,000 teachers.

INSPIRING CHILDREN TO GET DIRTY AND LEARN ABOUT BIRDS

Research shows that students who participate in school gardens are not only healthier and happier, but score significantly higher on science achievement tests. But many schools lack the resources to start a school garden, much less incorporate garden activities into the curricula.

During the past year, Alaska® organic fertilizer and the Cornell Lab's BirdSleuth project teamed up to provide school garden grants to K-12 schools. Alaska provided funding and fertilizer, and BirdSleuth provided standards-based educational resources for teachers.

Promoted in Lowe's stores nationwide, the School Garden Grant Program awarded up to $2,000, gardening supplies, and a BirdSleuth Habitat Connections kit to each selected school. So far $24,000 in funds and $1,800 in educational resources have been distributed. In May 2017, 5% of the gross sales of Alaska organic fertilizer products purchased at Lowe's were allocated to grants for the school garden program.

"Many students never get the chance to experience nature, get their hands dirty gardening, or make school-to-environment connections, so your assistance in making this happen is helping grow the next generation of 'earth protectors!'"

–comment from School Garden Grant recipient in Georgia

FINDING BIRDS NEAR YOU WITH THE TOUCH OF A SCREEN

Following their customers' interest in nature, Subaru Corporation and its electronics supplier Clarion worked with the Cornell Lab's eBird program to deliver location information about birds to the dashboard of the 2017 Subaru Impreza. The app uses the car's touch screen to show recent birds reported to eBird within a 50-mile radius. The "Best Locations" tab shows local eBird Hotspots, along with a listing of species seen at that location over the past 30 days. The "Nearby Birds" tab shows a list of species sighted near the car's current location. The driver can tap on a bird's name to pull up a photo and range map. Then, if they want to find that bird, the app will tap into the car's navigational system to provide directions to the spot where that bird was most recently seen. The Subaru eBird app will appear in the 2018 models of the Impreza, Legacy, Outback, and Crosstrek.

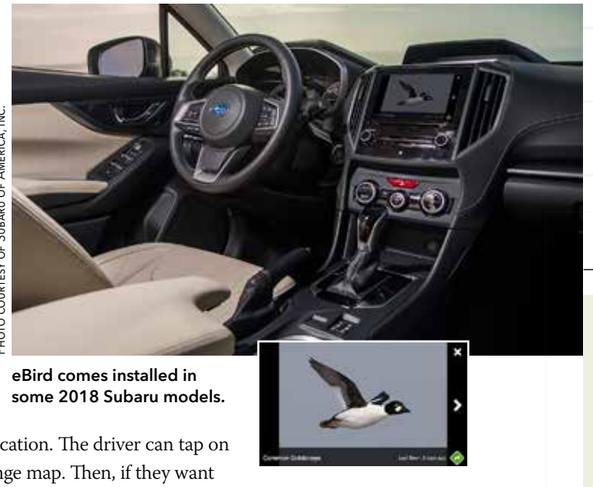


Photo courtesy of Subaru of America, Inc.

eBird comes installed in some 2018 Subaru models.

CORPORATE PARTNERS

The Cornell Lab thanks our partners for their support in 2016. Through these partnerships we reached out to new audiences to improve the understanding and protection of birds in backyards and around the world. **Thank you!**

Alaska® Fertilizer
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Celestron, Inc.
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Red River Commodities
Swarovski
Wild Birds Unlimited at Sapsucker Woods
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ZEISS

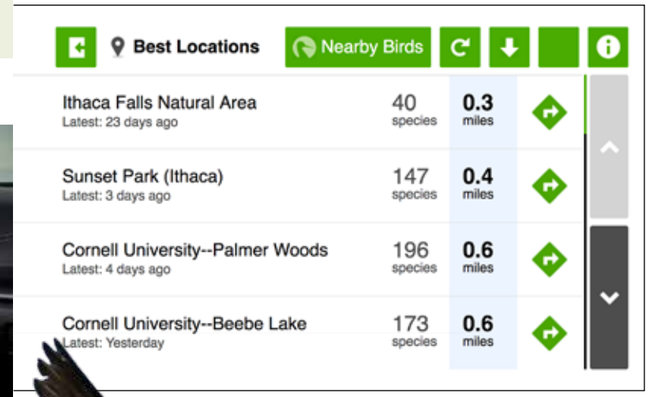
For information about partnership opportunities, contact Mary Guthrie, director of corporate marketing partnerships, at **msg21@cornell.edu**.

Charles Mollenhauer

Golden-wing Society members learned how to record bird songs at the "Weekend at Sapsucker Woods" donor event.

Special thanks to all our members and donors

We are deeply grateful to our more than 100,000 supporters at every level, all of whom make it possible for the Cornell Lab of Ornithology to advance the understanding of nature and engage people of all ages in learning about birds and protecting the planet. We're pleased to include a list of our leadership supporters online at **birds.cornell.edu/donors**.



"If you're a bird watcher, or just someone who loves nature and is curious about your surroundings, having eBird in your car is a gateway to exploration and adventure."

–Chris Wood, eBird leader

Common Goldeneye by Alex Lamereaux/ML # 65506791

The Sapsucker Woods Society

Celebrate your love of birds and the Cornell Lab beyond your lifetime by making a planned gift through your will or estate plan. By doing so, you can create a personal legacy that will have a lasting impact for birds, discovery, and conservation into the future.

It is easy to include the Lab as a beneficiary in your will; you can use the following wording: *I bequeath to Cornell University in Ithaca, NY, for the Cornell Lab of Ornithology, {____ dollars or ____ percent of my residual estate}.* Other estate plans can guarantee you lifetime income, protect your assets, and provide for your family. In every case, the ultimate beneficiaries of your generosity will be the birds.

To learn more about legacy gifts and the Sapsucker Woods Society, give Scott Sutcliffe or Bramble Klipple a call at 607-254-2424, visit our website at **birds.cornell.giftplans.org**, return the attached card, or send an email to **labgifts@cornell.edu**.

EVER FORWARD FOR THE BIRDS

Photo Courtesy of Linda Macaulay

In all the years I've been part of the Cornell Lab of Ornithology family, one constant has been that progress never stops. Scientific excellence and technological innovation advance ever-growing efforts to educate and engage people of all ages, all around the world, in appreciating and conserving birds and nature.

My heartfelt thanks to the thousands of members and donors who fuel the growth and progress of this purposeful, vibrant organization. You are a vital part of the accomplishments you've read about in this report. Thank you for sharing my passion and for making all that the Cornell Lab does for birds and nature possible. With friends like you, the Lab will move ever forward for the birds.

Gratefully,

Linda R. Macaulay

Linda R. Macaulay
Chair, Board of Directors
Cornell Lab of Ornithology

2017 BY THE NUMBERS

1.2 TRILLION DNA BASE PAIRS

In 2017, the Cornell Lab's Fuller Evolutionary Biology Program broke the trillion mark in total DNA base pairs sequenced from bird genomes.

400 MILLION BIRD SIGHTINGS

When birder Bill Thompson reported a Red-tailed Hawk from Cape Cod, the eBird database notched its 400 millionth bird-sighting record.

14 MILLION VISITS

In the past year, the Cornell Lab's AllAboutBirds.org drew web traffic from people all over the world looking for information about birds.

4 MILLION IMAGES; 300,000 AUDIO FILES; 60,000 VIDEOS

The Macaulay Library is the world's largest archive of natural history media.

100,000 SUPPORTERS

The Cornell Lab now has more than 100,000 supporters like you from around the world–a 163% increase from 5 years ago.

561 YEARS

People around the world have collectively logged the equivalent of 561 years of viewing time on the Cornell Lab's online Bird Cams in just the past year. In a recent survey, 93% of viewers agreed that the cams motivated them to learn more about birds and the environment.

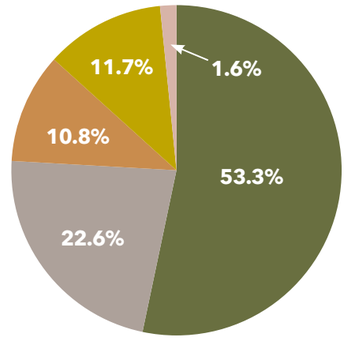
OUR MISSION: To interpret and conserve the earth's biological diversity through research, education, and citizen science focused on birds.

FINANCIAL REPORT

2017 FISCAL YEAR–JULY 1, 2016 TO JUNE 30, 2017

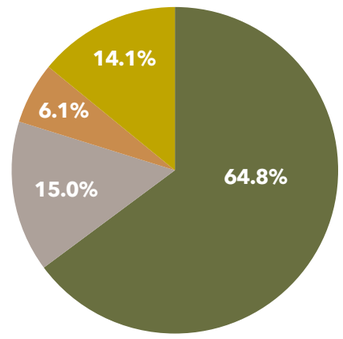
THANKS TO FRIENDS LIKE YOU, the Cornell Lab of Ornithology is a healthy and effective organization. Nested within the fabric of Cornell University, the Lab's strength lies in its unique institutional model that weaves together research and academics with outreach and conservation programs, and in the support of thousands of members and donors. As you can see from the pie charts, membership revenues and gifts are the single largest source of support for our programs and projects. Our members and friends provided 53.3% of our annual revenue, a total of $15.4 million that fuels innovation, growth, and scientific excellence. The bar chart depicts healthy growth over the past 10 years with revenues exceeding expenditures, allowing the Lab to continually expand and strengthen its vital research, education, and conservation efforts.

FY17 Revenue



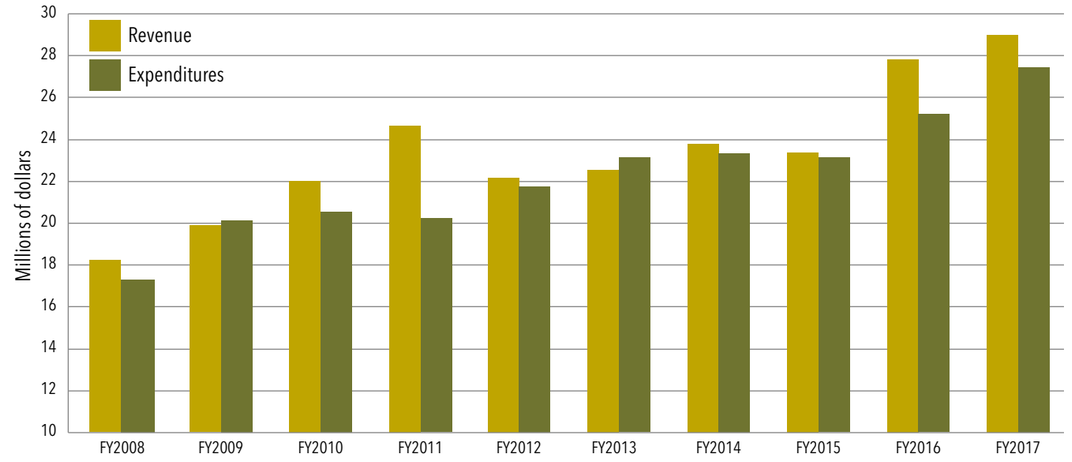
Membership & Gifts	$15,439,417
Grants & Contracts	$6,559,443
Program Income	$3,139,612
Invested Funds Income	$3,379,449
Other	$476,273
Total REVENUE	**$28,994,194**

FY17 Expenditures



Programs	$17,792,841
Development & Membership Services	$4,107,238
Lab Administration & Infrastructure	$1,668,008
University Support Services	$3,882,000
Total EXPENDITURES	**$27,450,087**

Annual operating revenue and expenditures, 2008–2017



If you have questions, comments, or requests for the Cornell Lab's membership and development team, please contact Bramble Klipple at 607-254-1105, bck42@cornell.edu, or Scott Sutcliffe at 607-254-2424, sas10@cornell.edu.