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Letter to the Editor

In the fall edition of Habitat, in our feature called “This Moment in Maine,” we included the article “Removing Barriers” by Samaa Abdurraqib, and asked for feedback on how environmental organizations of Maine can make a real difference in our community by becoming anti-racist in everything they do.

“I thought it was just my own personal discomfort keeping myself and other BIPOC from nature, but this is a public issue now. The article, “Removing Barriers” by Samaa Abdurraqib, has proved for us what is going on. I feel that most minority people feel safer in groups than individually when they are in nature or doing any outdoor activities.

My first introduction to outdoor activities in Maine was at the end of 2016, when my friend, Afra, and I ended our “Job for Life” program. Our White mentors wanted to continue our friendship and help us with our English language skills in a fun way. We started to meet weekly for hiking, canoeing, camping, cooking, and movie nights. My first hike was in Thorncrag. I had fun being surrounded by nature. I felt free, relaxed and secure with my friends. With COVID-19, we started to go there more and do a lot of outdoor activities because we felt safer and welcomed in Thorncrag. It really affects us mentally and physically in the best way. We still participate in outdoor activities and we love to share our experiences with people in our New Mainer community so they can also do what we do and more. Being in nature will help you and your kids to be positive and open-minded. It will help you to understand other people and their cultures and beliefs. Most BIPOC are not interested in outdoor activities but I believe that they can change their minds after one good experience. We should never stop enjoying our lives because of fear of the unknown.”

Araksan Egueh
Vice President of Djiboutian American Community Empowerment Project, and Special Education Ed Tech at Connors Elementary School, Lewiston, Maine.

Araksan Egueh’s four-year-old son watching a caterpillar in Thorncrag.
Advocacy

Federal Focus: Supporting the Endangered Species Act

In addition to working in the Maine Legislature, Maine Audubon also advocates for important wildlife issues at the federal level. Among our federal priorities this year is achieving adequate funding for the Endangered Species Act (ESA).

We’ve seen the Endangered Species Act work in Maine. When Maine Audubon ran its first Bald Eagle cruise up Merrymeeting Bay in 1969, participants spotted just a single bird during the trip. At that point, Bald Eagle, Osprey, and other raptor numbers were in steep decline due in large part to side effects from the overuse of the pesticide DDT. Public advocacy worked—DDT was banned, the ESA was passed, and its protections extended to the Bald Eagle. When Maine Audubon ran its 50th Bald Eagle Cruise in 2018 on the same stretch of water as the first, participants spotted 47 individual eagles.

Protections offered under the Endangered Species Act are critical to the recovery of Maine species such as Piping Plover, Canada Lynx, Red Knot, Atlantic Salmon, and more. But Congress in recent years has slashed funding for the U.S. Fish and Wildlife Service, which oversees the recovery of listed species, and prevented it from effectively carrying out its mission. Each year, hundreds of endangered species receive less than $1,000 a year for their recovery, with many receiving no funding from the Service at all. Experts recommend that Congress provide a minimum of $50,000 per year per species for recovery to make sure that no species slips through the cracks.

Maine Audubon urges Congress to take strong action to support the recovery of endangered species. We have joined with wildlife partner organizations across the country to request that Congress fund the U.S. Fish and Wildlife Service at $592.1 million starting with the next fiscal year, which begins in October. This funding is critical to help reverse the growing trends of biodiversity loss in Maine and around the country.

Maine’s own Representative Chellie Pingree chairs the subcommittee that has a significant influence on U.S. Fish and Wildlife Service funding. Please join us in encouraging Representative Pingree and her peers to increase funding for our nation’s most vulnerable species by visiting maineaudubon.org/esa.
Education

Congratulations, Junior Artists
Congratulations to all the participants in this year’s Maine Junior Duck Stamp program! This “conservation through the arts” federal program is coordinated in Maine by Maine Audubon and the U.S. Fish and Wildlife Service. More than 400 students in grades K through 12 submitted art which was reviewed by judges Maine Audubon Staff Naturalist Doug Hitchcox, artists Michael Boardman and Sherrie York, Peggy Page, and USFWS biologist Kirstin Underwood. “It’s always a pleasure to see the knowledge that students have gained in waterfowl biology and conservation depicted in their artwork,” said Underwood. Ariah Lowell, 12, from Biddeford, won the Best in Show award with her painting of a Harlequin Duck (shown below). Moving on to the prestigious national competition, competing against all the other best-in-show paintings, Lowell was awarded third place and a $200 prize! View the winning art at maineaudubon.org/juniorduck.

Pollinating Maine’s State Parks
Maine’s State Parks system is an iconic state treasure, and Maine Audubon is pleased to be starting an exciting project, both working with parks system leadership and doing site work at three parks in particular this summer to start. Working with our friends at U.S. Fish & Wildlife, we will be developing demonstration habitat restoration plantings and interpretation at Range Pond, Lamoine, and Two Lights/Kettle Cove State Parks, as well as helping forge some new and sustained local stewardship partnerships in nearby communities. We also hosted a series of webinars in May to help the three conservation entities become more aware of issues related to diversity, equity, and inclusion. Make sure you tell the staff at a Maine State Park this summer how excited we are about the project and partnership!

Future Focus Recap
Maine Audubon is proud to call it a wrap on our inaugural youth-led lecture series. Future Focus ran monthly starting in October, and featured Maine youth climate justice activists Anna Siegel, Amara Ifeji, Sirohi Kumar, Josh Wood, and Jess Cooper. Previous speakers interviewed subsequent guests, and the whole program was conceived and coordinated by a dedicated steering committee. We look forward to resuming the series in the fall. Recordings of the series are available at maineaudubon.org/futurefocus.
Conservation

Thanks to our Song Meter Partners and Volunteers

Maine Audubon would like to extend an enormous thanks to our partners and volunteers who helped us survey birds and listen to hundreds of hours of bird songs recorded over the past two years as part of our efforts to test the use of remote song meters for monitoring breeding bird presence at four Forestry for Maine Birds (FFMB) “demonstration forests.” To date, 44 people have assisted with the project and contributed a total of 1100 hours. Participants have identified more than 85 species through recordings and point counts, ranging from 39-77 species per site, and including 16 of the FFMB Program’s 20 Priority Species. One recording was particularly puzzling to some long-term birders, but with some sleuthing they determined it was the seldom-heard night song of the ovenbird, a small ground-nesting warbler with a very loud voice. A final report will be available in the fall.

Kudos to Stream Smart

Maine Audubon Wildlife Ecologist Sarah Haggerty recently organized and hosted an introductory Stream Smart training session for road professionals of all backgrounds. A lot of thought went into how to keep participants engaged during the three-hour Zoom session. One of the tricks she and partner Alex Abbott from the U.S. Fish and Wildlife Service used was to create an interactive video of the stream table—a giant sand box that can demonstrate what happens at different water levels when a stream is constricted—to share during the training. One of our partners reported that “she knocked it out of the park” and one of the 175 participants said that it was the best training he had ever been to! Sarah and Alex were supported by Conservation Associate Hannah Young and representatives from state and federal agencies including the Department of Inland Fisheries & Wildlife, Department of Environmental Protection, Land Use Planning Commission, Army Corps of Engineers, U.S. Fish and Wildlife Service, and Maine Department of Transportation. The program was so successful they are now considering ways to incorporate some of the lessons they learned into future workshops.
Sanctuaries

Fields Pond: Make Way for Loons!
Late this spring, Maine Audubon staff installed an artificial loon nest, often called a “loon raft,” on Fields Pond. The pond was an ideal candidate as the nesting loon pair has failed to hatch chicks for years. The loons experience pressure from both predators and human disturbance. Maine Audubon Ecologist Tracy Hart said this is part of what is hoped will be a larger expansion of the Maine Loon Project. She emphasized that rafts are only recommended in certain cases; used incorrectly they can reduce loons’ chances of successful nesting. “Rafts can help loons whose nests fail again and again due to fluctuating water levels, shoreline predators, or disturbance from human activities onshore.” Fields Pond Manager David Lamon said, “Having a nesting raft here will also be a great educational tool to help visitors learn more about loons and the challenges they face.”

Gilsland Farm’s New Outdoor Classroom
Thanks to a generous grant last fall from Jane’s Trust, Maine Audubon is in the final stages of replacing our beloved Instructional Tent at Gilsland Farm with a new post and beam structure designed and built by Maine Barn Company. This will expand our outdoor classroom capacity, enable safe outdoor learning in most weather for small groups, and host numerous Maine Audubon and community programs and events. The outdoor classroom will allow us to restore and expand Maine Audubon programs and give us critical capacity to run programs safely year-round even in a global pandemic, thus helping us recover some of our reach and revenue that has been lost in the past year.

Hamilton: A Network of Habitats
Look for a new interpretive sign at Hamilton Audubon Sanctuary later this summer which will point out some of the features of this unique place. Located in West Bath, the sanctuary sits on a peninsula in the New Meadows River. The sign along the Red Trail, which loops around the meadow, describes the variety of diverse and interconnected habitats of high value for coastal waterfowl and wading birds. Summer visitors can expect to see Common Eiders in the cove and mudflats, Ospreys hunting in the cove, and Tree Swallows spiraling in the upland meadow.

Maine Audubon biologists also helped Alfred Lund install a loon raft on a central Maine lake this spring.
Chapters

Downeast Audubon Awards Second Memorial Scholarship

A second-year student at College of the Atlantic (COA) in Bar Harbor has won this year’s $2,000 Sal Rooney Memorial Scholarship, awarded by Downeast Audubon. Eleanor Gnam came highly recommended by John Anderson, past DEA board member and COA Professor of Ecology/Natural History. From Madison, Wisconsin, Gnam is primarily studying biology and environmental science but is also very interested in conservation and land use policy. After graduate school, she plans to have a career in field biology, preferably involving birds in a way that’s directly relevant to conservation and policy—perhaps working for a government agency or an NGO where she can do education and outreach as well as science. The scholarship is in memory of long-time DEA board member and conservation biologist Sal Rooney who passed away in 2018.

“I’ve liked birds for as long as I can remember,” said Gnam, “but I started getting serious about it in high school when I met some birders who showed me how much I had to learn. I still consider myself very much an amateur birder, though! I’m more interested in phylogeny, physiology, and natural history than I am in pure species ID.”

This spring Gnam worked with COA’s herpetologist studying Spotted Salamanders in Acadia National Park. This summer she will be out on Great Duck Island with Professor Anderson working with Leach’s Storm-Petrels.

“Last summer we had a student band a number of breeding pairs and mark their burrow sites, so one thing I’ll be doing is surveying those birds to look for recurrence in mates or burrow sites,” Gnam said. “I’ll also be cataloguing breeding petrels, active burrows, and chicks. That survey will be in association with a vegetation survey that’s also taking place this summer, and we hope it will provide a good baseline for examining the relationship between forest regeneration and the petrel population out on the island. I’m beyond excited for my work this summer and I’m incredibly grateful for the opportunity.”

“I’m beyond excited for my work this summer and I’m incredibly grateful for the opportunity.”
Maine businesses that have made a demonstrated commitment to Maine’s wildlife and habitat by investing in Maine Audubon

**EAGLE**
- L.L. Bean
- Portside Real Estate Group
- TD Bank

**FALCON**
- Bernstein Shur*
- Down East:
  - The Magazine of Maine
  - Maine Beer Company, LLC
  - Martin’s Point Health Care

**OSPREY**
- Highland Green
- OceanView at Falmouth

**OWL**
- Anonymous
- Baker Newman Noyes
- Biddeford Savings Bank
- Bissell Brothers Brewing*
- Boston Trust Walden
- Brann & Isaacson
- Dow Capital Management
- Gorham Savings Bank
- H.M. Payson & Co.

**LOON**
- Allagash Brewing Company
- Androscoggin Bank
- Axis Natural Foods
- Bath Savings Institution
- BCM Environmental & Land Law, PLLC
- Casco Systems LLC
- Coffee By Design
- Coyote Graphics
- CPRC Group, LLC
- Fun and Sun Rentals
- Giroux Energy Solutions Inc.
- Green Clean Maine
- Harvard Pilgrim Health Care
- Kittery Trading Post
- Lee Auto Malls
- Northeast Delta Dental
- Oakhurst Dairy
- The Patagonia Outlet
- Patrons Oxford Insurance Co.
- Rootstock Philanthropy *
- Strategic Media
- Terrance DeWan Associates

**CARDINAL**
- Albin, Randall & Bennett CPAs
- Back Cove Financial
- Bath Savings Trust Company
- Belfast Veterinary Hospital
- Coastal ACE Hardware
- Cornerstone Financial Planning, LLC
- Doyle Enterprises, Inc.
- East Brown Cow Management
- Fallbrook Woods
- Flatbread Company
- Gnome Landscapes
- Havana Restaurant
- Inn By The Sea
- Kennebunk Savings
- Lafayette Hotels/Lafayette Oceanfront Resort
- Lee International
- The Maine Sportsman
- Mindful Employer
- Morog Falmouth Volkswagen
- Mazda Porsche Audi
- Norman Hanson & DeTroy
- Norway Savings Bank
- Osteopathic Healthcare of Maine
- Pat’s Pizza (Scarborough)
- Peak Dental Health
- PeoplesChoice Credit Union
- Quince & Co.*
- Simons Architects LLC
- Town & Country Federal Credit Union
- Warner Design Associates
- WellTree, Inc.

To learn about our Corporate Partner program, visit maineaudubon.org/corporate or contact Maureen Duggan at mduggan@maineaudubon.org

*New Corporate Partner.
Please consider leaving us a little behind.

Many of you have made extraordinary expressions of support to Maine Audubon this past year. We have gratefully accepted all of your gifts and put them to immediate use. We can look back over the last year and see how your support kept our sanctuaries, staff, and programming intact and strong during one of the most difficult periods in history. What’s more, we’ve seen the power of this year’s transformational estate gifts to add tremendous resources to all of our continuing and future conservation, education, and advocacy efforts.

Inspired by your generosity, Maine Audubon will be launching a new planned giving portion of our website (plannedgiving.maineaudubon.org). We have hired trusted consultants to design a tool to help any visitor navigate possible ways to make current and future gifts, based on a variety of personal factors. We also stand ready to hear more from you about how we can best help you—to discover your options for making a future gift, to consider which aspect of Maine Audubon you hope to impact most, and to stay engaged with our activities and programs well into the future. We will be reaching out to select members and long-time supporters with some specific questions about how we can work with you to meet Maine Audubon’s future income needs—for everyone’s benefit.

Planned giving is for everyone, from supporters who make $25 gifts once a year, to those who underwrite major programs. The result of your current and future giving is a diverse and relevant organization with a history of 180 years of wildlife conservation activities in Maine. Imagine what we can accomplish together in the next 100 years.

Kate Lewis
Director of Development
New Tools Help Tell the Stories of Migration

By Nicholas Lund
Tracking bird migration began by accident.

One day in 1822 in the German village of Klütz, residents noticed a White Stork walking around with a 30-inch spear sticking out of its neck. The bird, dubbed Pfeilstorch, or “arrow stork,” was captured and when the Germans examined the spear they found it to be made of African wood. The stunned residents could think of no explanation except that the unfortunate bird had narrowly escaped a hunter in Africa and flown more than 2,000 miles to Germany.

Our understanding of bird migration has greatly expanded since 1822, but the methods haven’t really changed too much: attach something to a bird and see where it goes. Maine Audubon is expanding its involvement by joining a massive international effort to track animal movements through automated radio telemetry, a project called the Motus Wildlife Tracking Network. It’s already teaching us new things about how birds and other animals are moving through Maine.

Motus, from the Latin for “movement,” seeks to track species migration via a collaborative network of antenna towers which pick up the “pings” of animals fitted with special transponders. The more antennas in the network, the better chance they’ll have of picking up a ping, and the more information available to scientists. Maine Audubon is joining the effort by installing antennas at its Fields Pond Audubon Center in Holden and Hamilton Audubon Sanctuary in West Bath (see Maine Audubon and Motus, page 15).

Cooperation and collaboration have always been central to migration science. In the same way that the Pfeilstorch was a collaboration (however unwitting) between African hunters and German townspeople, and how bird banders rely on others to submit sightings of banded birds, Motus creates a shared network open to all scientists. Any one tower may receive pings from dozens of different species of bird, bat, or even insect. According to Bird Studies Canada, which founded and manages Motus, more than 1,032 receiver stations have been erected in more than 30 countries, capturing data from more than 230 different tagged species.

“Motus is really a community science project,” says Dr. Amber Roth of the University of Maine. “It’s an infrastructure project and part of a community, not something proprietary.” Dr. Roth has been using Motus as part of her biology field work, but had hoped to use it in more of an educational way. She saw an opportunity to use Motus to talk about science—engineering, computer science, radio technology, and physics—in addition to the biology of the animals themselves, and Fields Pond in Holden seemed like a perfect place to get started. This spring and summer, she’ll oversee projects at Fields Pond to tag Bobolinks and Monarch butterflies and see where they go. That is, if they can catch any.

(Left:) A nanotag tower on Stanley Ledge, a rocky island near Addison, Maine, used by Refuge Biologist Linda Welch and her team.
Photo courtesy of Linda Welch
Motus works by first outfitting a study species with a tiny radio transmitter, often called a nanotag. Attaching transmitters to tiny study species is perhaps the most challenging part of the process, but also produces the most insights, as scientists have never been able to track such small animals so accurately. With the species in hand, a biologist attaches a nanotag the size of a small black battery—"a shriveled black bean," one biologist called it—trailed by a long antenna. Transmitters are typically attached to birds with a small harness that fits around their legs, but it’s attached to bats and insects with surgical glue.

Once released, the animal resumes its natural movements and when it gets to within a certain distance of a receiver—up to about 12 miles, a distance that varies depending on the type of tag and antenna, the height of the animal, the presence of obstructions, etc.—the ping is recorded and the data transmitted to Bird Studies Canada for decoding. Scientists or the public can then find their pings in the data and learn about when and where their species traveled.

Roth and her students hope to learn about both local movement and international migration during their Bobolink and Monarch studies this summer at Fields Pond. The Bobolink project aims to tag birds on fields around the sanctuary and then compare their migration patterns to other Bobolink populations in Vermont, New Hampshire, Pennsylvania, and other states. “We’re hoping to look at migration strategies, to see if individuals in similar populations have different strategies,” explains Dr. Roth. “We know that most Bobolinks go to Central South America, but others go to the Galapagos! Some might migrate inland, while others may go over the ocean. We don’t really know.”
The Monarch project, managed by undergraduate Wildlife Ecology student Wesley Hutchins, will focus on local movements of Monarch Butterflies raised at Fields Pond, working to better understand how long the butterflies remain at the site of their birth before moving on. He’s excited to work with insects, his favorite group, but is understandably nervous about handling the delicate creatures. “We’re going to use very small nanotags, ones that weigh about 0.13 grams, and glue them to the underside of the butterfly in such a way that doesn’t restrict their natural flight.”

The data gleaned from Bobolinks and butterflies at Fields Pond will join a large and growing body of data that Motus has contributed in Maine.

Linda Welch, Refuge Biologist for the federal Maine Coastal Islands National Wildlife Refuge Complex, has used Motus to learn more about the offshore movements of terns in the Gulf of Maine. She has overseen projects tagging Common and Arctic Terns at nesting colonies on Petit Manan, Matinicus Rock, Metinic Island, and Ship Island in Blue Hill Bay, and her team has learned interesting things about how birds are moving to and from their nest sites.

“We’ve gotten some really great colony attendance behavior. How many foraging trips per day, how many hours foraging, how does that differ between incubating or chick rearing? Are they foraging at night? Questions like that,” she says. Welch found that terns went from three foraging trips per day when just feeding themselves, to 12 trips per day when feeding chicks, including frequent nocturnal trips. Welch says that she likely couldn’t have gathered this data without Motus, as the terns are impossible to observe at night and the movements of any one individual bird in the colony are difficult to follow.

One application of this information may be to better understand how foraging terns may react to the presence of new structures in the sea, such as floating offshore wind turbines. “Arctic Terns really struggled to find food in 2013,” she says, “and spent more time than usual—about 88% of the daylight hours—out foraging. That’s a long time.” How would these tired birds react to new construction in the water? As Maine works to test floating offshore wind in the Gulf of Maine in order to help meet its
climate goals, Motus towers may be installed on the turbines themselves to understand which species are coming close.

Motus has also proven useful in studying the movement of bats, which are difficult to otherwise track due to their nocturnal habits. Trevor Peterson, a Senior Wildlife Biologist at Stantec, tracks Maine’s long-distance bat migrants: Red Bats, Silver-haired Bats, and Hoary Bats. In 2015, Peterson mist-netted several Eastern Red Bats and tracked them with the help of a temporary tower at Maine Audubon’s Gilsland Farm in Falmouth. Though Peterson never heard from the Gilsland bats again (their tags may have fallen off, he says, or they just might not have traveled near a tower), the Gilsland tower picked up a ping from another Red Bat he tagged near Harpswell, part of a surprising path the individual took all the way to coastal Massachusetts.

“The distances they travel are surprising to some people, but these creatures are basically just flying wings, they’re very well adapted for flight.”

“Motus data is teaching us that bats can cover a lot of ground very quickly,” Peterson says. “The distances they travel are surprising to some people, but these creatures are basically

Continued on page 16

An Eastern Red Bat gets a nanotag during Trevor Peterson’s 2015 research at Gilsland Farm.
Maine Audubon is excited to be a partner in the Northeast Motus Collaboration that is siting and installing 50 Motus receiving stations across New England, complementing the 45 stations recently installed in the Mid-Atlantic region.

The two Motus towers that were installed on buildings at Fields Pond Audubon Center and Hamilton Audubon Sanctuary this spring look like old-fashioned TV antennas, are connected to electricity and the Internet on site, and rise about 35 feet high (other towers are free-standing and solar powered). Each has four antennae that point in different directions, designed to capture movement from various locations.

In addition to the two at Audubon sanctuaries, we are partnering with the Western Foothills Land Trust, Bates College, Downeast Lakes Land Trust, Hirundo Wildlife Refuge, and potentially Saddleback Mountain to erect towers on their properties in 2021. Up to 14 towers will be installed in Maine, with more sites to be identified and secured in 2022.

The Northeast Motus Collaboration was formed in 2017, and receives funding from the U.S. Fish and Wildlife Service’s Competitive State Wildlife Grants program. Other members of the New England Motus Project include New Hampshire Audubon, Massachusetts Audubon, the Willistown (PA) Conservation Trust, and the Carnegie Museum of Natural History. The New Hampshire Fish and Game Department is the lead agency and the Maine, Massachusetts, and Pennsylvania wildlife agencies are partners. Matching funds for the towers, a requirement of the grant, are coming from the Maine Outdoor Heritage Fund (Fields Pond) and a gift in honor of Claire Wilson DePalma (Hamilton) to advance science and education through this state, regional, and global initiative to track migratory birds, bats, and insects.
just flying wings, they’re very well adapted for flight.” Bats migrate differently from birds, Peterson says, because they can go into a state of torpor during the day to conserve energy. “Birds have to stage for a long time before they migrate in order to stock up energy for the trip, but bats don’t, so the timing is different.”

Peterson mentioned that the temporary Gilsland Farm tower picked up pings from other animals, including shorebirds migrating from Canada’s James Bay. Linda Welch mentioned the same phenomenon at her off-shore sites, which picked up migrating songbirds, shorebirds, and Saw-whet Owls tagged by other researchers around North America.

The collaborative aspect of Motus, which allows scientists to benefit from a wide network of receivers and also allows locations hosting towers to tell a better story about what creatures are migrating overhead, is what makes Motus so attractive to Maine Audubon. David Lamon, the Manager of the Fields Pond Audubon Center, is eager to get the tower installed. “We’re excited to be part of a larger network, which opens up new opportunities, and links education and conservation,” he says. “Conservation is about discovering stories, and education is about telling stories. Motus will help us tell more of the story.”

Motus also opens a window into aspects of a bird’s life that were hidden before, and clues to where the biggest threats to them lie. Scientists are especially concerned about aerial insectivores, the guild of birds that includes swallows and swifts, whose numbers have plummeted worldwide. In southern Ontario, where Birds Canada has created a dense gridwork of Motus receivers evenly checkerboarding some 60,000 square kilometers of land, scientists used transmitters that each weighed just two-tenths of a gram—one-seventh thousandth of an ounce—to tag more than 200 young barn swallows, then followed them for months after they left the nest, a job that would have been challenging to do with even a single swallow before Motus. Because it was nearly impossible, no one had ever really tried to find out how young swallows fared once they fledged—so no one knew, as these biologists learned, that independence is deadly. Even before the swallows’ dangerous migration to Argentina began, almost 60 percent of the young birds had perished—an unsustainable rate of loss, and one that easily explains the barn swallows’ crashing population. Just as importantly, it shows that at least some of the species’ underlying problems lay close to home, not in distant parts of the world, prompting further work to discover and correct them.

The barn swallow study also shows how important it is to understand all of a migratory bird’s life cycle, which we’ve rarely been able to do. Most of what we know about migrants comes through limited snapshots, the few places and times where their travels intersect with humans who take the time to notice, leaving us to try to imagine the wide landscape of their lives by peering through tiny, scattered peepholes. Only for a very few species do we have any real sense of their full, annual cycle—the routes, timing, habitats, and underlying resources that make such global journeys possible, and which support them even when they are hidden from human view. It seems that whenever we take a closer look, we make discoveries that challenge our assumptions—and even make us realize that our attempts to help may have been making things worse.

Excerpted from A World on the Wing: the Global Odyssey of Migratory Birds by Scott Weidensaul. Copyright (c) 2021 by Scott Weidensaul. Used with permission of the publisher, W. W. Norton & Company, Inc. All rights reserved.

Scott Weidensaul is one of the principals of the Northeast Motus Collaboration and author of nearly 30 books, including the Pulitzer Prize finalist Living on the Wind. A writer and researcher specializing in birds and bird migration, he is a native of Pennsylvania now living in New Hampshire. In this excerpt from his most recent book, A World on the Wing, he eloquently describes the importance of data being collected by the Motus network.
Nature Explorer Backpacks  
*(ongoing for families)*
Borrow one of three themed packs to explore birds, plants, and insects, or nature study skills. All packs include tools such as binoculars, magnifiers, or bug jars, field guides and other resources, and more! Reserve your pack online and pick it up at the Visitor Center.

**Programs for children and families**  
*(check online for dates & topics, registration required)*

**Create with Nature:** Let the natural world inspire you in these outdoor art sessions, featuring projects that interweave art and science.

**Read & Ramble:** Join us for an outdoor storytime, geared towards children ages 3-5 and their grown-ups. Afterwards, we’ll set you up with a related, self-paced activity to enjoy on the trails.

**Habitat Investigations:** Meet up with our educators for a hands-on exploration of one of Gilsland Farm’s many habitats. What will you discover as you get to know some of the plants and animals that live there?

Full event listings, prices, and registration at [maineaudubon.org/events](http://maineaudubon.org/events)
Fields Pond

The Explorers Club (for families)
Wednesdays and Fridays in June and August, 10:30 am or 1:30 pm
Pick your own topic/theme to explore Fields Pond with activity instructions and materials

The Story of Avian Wildlife Rehabilitation Datasets
Thursday, June 17, 7 pm, online
What bird species are being admitted into wildlife rehabilitations? What are the most common injuries? And what you can do to mitigate these bird injuries.

Landscape Photography Workshop
Saturday, July 10, 8–10 am
We will be using the many differing landscapes of Fields Pond as a backdrop to further develop our photography skills. *Space is limited.*

Family Fun Scavenger Hunt at Fields Pond
Saturday, July 10, 10 am–2 pm
Free event for the whole family.

Full Moon Hike at Fields Pond
Friday, July 23, 8 pm
Explore Fields Pond after dusk! *Space is limited.*

Fields Pond Butterfly Festival
Saturday, August 28, 10 am–2 pm
Ongoing events will include: Monarch tagging, Insect BioBlitz, Butterfly Story Walk, and crafts. Join the Butterfly Parade at 1 pm! Free event for the whole family.

CHAPTER EVENTS

Penobscot Valley Audubon
pvc.maineaudubon.org

Puffin & sea bird cruise
June 20, 12:30–6 pm
Puffin & sea bird cruise from Stonington, Seal Island National Wildlife Refuge. Reservations: Call Isle au Haut Boat 207.367.5193

Group paddle at Fields Pond Audubon Center
June 26, 9 am
Register: 207.989.2591

Caribou Bog Nature Walk
August 28, 8 am
Caribou Bog, Taylor Road Orono. Register at 207.989.2591

Downeast Chapter
downeastaudubon.org

Nature Walk at Harriman Point
Saturday, June 19, 7 am
Meet at the Maine Coast Heritage Trust parking area, Harriman Point Road, Brooklin. Leaders: Cathy Rees and Ann Brayton

Paddle the Narramissic River
Sunday, June 27, 7 am
Meet at the parking area upstream from the bridge, Upper Falls Road, Orland. Leader: Sue Shaw
Scarborough Marsh

Pricing and registration at maineaudubon.org/events.

**CANOE/KAYAK RENTALS**
Daily, 9 am–4 pm
Discover the meandering Dunstan River on your self-guided exploration. We’ll provide a canoe/kayak, paddles, and map.
*Book in advance at maineaudubon.org/canoe; for same day reservations, call 207.883.5100*

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**DROP-IN PROGRAMS**

**Guided Canoe Tours**
June 19–September 6
10–11:30 am
Discover wildlife and plants as you paddle along the Dunstan River.

**Early Morning Bird Walks**
Wednesdays, May 19 through September 30, 7–8:30 am

**Family Nature Walk: Mummichugs and Marsh Muck**
Wednesdays, June 30–August 21, 10:30 am–12 pm
Hands-on kids program.

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**Advanced Reservations Required**

**Full Moon Canoe Tours**
June 22, 23, 24, 8–9:30 pm
July 21, 22, 23, 8–9:30 pm
August 20, 21, 22, 7:30–9 pm
Experience the sights and sounds of the marsh under the full moon.

**Sunset Canoe Tour**
July 7, 7–8:30 pm;
July 30 & August 6, 6:30–8 pm
August 19, 6–7:30 pm
September 5, 5:30–7 pm
Enjoy the sunset while paddling the marsh.

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**SPECIAL PROGRAMS**

**Plant and Insect Survey**
August 8, 9 am–12 pm
Collect data that will help to determine the health of the marsh.

**Bird Monitoring**
July 10, 7–10 am
August 21, 7–10 am
Join us for a marsh-wide bird survey.

**Additional programs will be added as the season unfolds.**
Check the website, email smac@maineaudubon.org, or call 207.883.5100 for more information.
Trips and Special Programs

Seabirds of Matinicus Rock Boat Trip, New Harbor, ME
June 11, 8 am–4 pm
(arrive by 7:30 am)
A 32-acre island 18 miles offshore at the mouth of Penobscot Bay, Matinicus Rock is one of Maine’s most important seabird nesting colonies.

Sunset Puffin Cruises
July 10 and July 23, 7–9 pm
New Harbor, ME
This evening boat ride sails out of New Harbor to Eastern Egg Rock, where we will circle the island several times for great views of puffins, terns, and other seabirds.

Forestry for Maine Birds Workshops
Learn how to manage your woodlands with birds and other wildlife in mind. Our in-person workshops will introduce you to the importance of the Maine woods for our migratory breeding birds.
FMI: maineaudubon.org/ffmb or call Hannah Young, 207.781.2330 x219

• June 5, 9 am–12 pm
  Robbins Hill Scenic Overlook Solon
  The workshop is free, registration is required. Contact Jennifer Brockway at 207.679.7306 or somersetwcd.outreach@gmail.com.

• June 12, 2 pm
  Forestry for Maine Birds Habitat Assessment I (Training), Rangeley
  Part of the Rangeley Birding Festival. Join Sally Stockwell of Maine Audubon and Logan Johnson, Forest Stewards Guild, as they give you skills to assess your woodland for bird habitat.

• June 19, 9 am–12 pm
  Wicopy Woods, Sebec
  Maine Audubon Annual Loon Count
  July 17, 7 am
  Help count loons on Maine’s lakes and ponds. FMI: maineaudubon.org/looncount or email: conserve@maineaudubon.org

• July 17, 9 am–12 pm
  McCoy-Chapman Forest, Bethel
  Maine Audubon Annual Loon Count
  July 17, 7 am
  Help count loons on Maine’s lakes and ponds. FMI: maineaudubon.org/looncount or email: conserve@maineaudubon.org

Save the date
Bar Harbor Pelagic Trip
September 11, 6 am–2 pm
Bar Harbor, ME
Maine Audubon’s annual fall pelagic trip out of Bar Harbor is always eagerly anticipated because of a great boat, great camaraderie, and, of course, great sightings of birds and marine mammals!

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Let’s Keep Those Cats Inside

There is no getting around the numbers: Cats are the number one anthropogenic cause of direct mortality in birds with an estimated 2.4 billion killed each year in the U.S. alone. Even with many of these being attributed to feral cats, the number of birds killed by owned, free-ranging cats still towers over collisions with buildings, the number two cause of mortality.

It’s not natural.
Anthropogenic cause means it originates from human activity. Human connection with cats goes all the way back to the domestication of crops. As crops were grown, harvested, and stored, this attracted rodents, which in turn attracted wild cats. Cats were so good at hunting rodents that they were supported by humans, eventually leading to the relationship we have with them today. As people spread around the world on ships, bringing food and other items that attracted rodents, they brought cats to protect their goods. Where the people went, so did the cats. But native wildlife hasn’t been able to cope with the spread of these perfectly-designed bird killers.

Do it for the birds.
We know we’ve lost 29% of the breeding bird population over the last half-century, and this comes from a variety of causes, including flying into windows (624 million), vehicle strikes (214 million), collisions with power lines (57 million), and hitting wind turbines (679 thousand). These all pale in comparison to the 2+ billion birds killed by cats which, put another way, account for more than 74% of all the anthropogenic causes of mortality in birds.

Do it for your cats.
I’ve owned cats my whole life and they’ve lived long happy lives indoors. Inside, cats get food that I know wasn’t poisoned, which you can’t say about the rodents your cat is catching. Conservation efforts have helped bring back many of our raptors, which are known to prey on cats. Other cat predators like coyotes are increasing across the state, even in urban areas.

Education is the first step.
This is not an easy thing to change. It took millions of years of evolution to create the predator that humans spread around the world in a matter of centuries. My hope is that in way less time we can spread enough awareness so that people will do the right thing for the birds we all love.

Let’s Keep Those Cats Inside
The Naturalist’s
Summer Almanac

JUNE

10 A partial Solar Eclipse will be visible early this morning.
13 It is baby season for many birds and mammals. Remember that in most encounters, they are best left alone. If you care, leave them there.
20 Happy Summer Solstice!
26 Don’t confuse Eastern Tent Caterpillars with nasty invasives; they are important food for several species of birds.

JULY

14 Baby puffins are hatching: Watch the Seal Island NWR Puffin Burrow Cam on explore.org
15 Look for Common Wood-Nymphs, a brown butterfly with orange spots that dances around fields and meadows.
20 Delay mowing fields if you can. Waiting another month will help save nesting birds.
23 Check moths attracted to lights in the evening and you may find stunners like the Beautiful Wood-Nymph. Then shut those lights off!

AUGUST

1 Tadpoles (larva) of Gray Treefrogs are beginning to metamorphose into adults, growing legs and absorbing their tails.
3 Use mainenativeplants.org to find native plants in Maine and filter by what is blooming this month.
22 Today we’ll have a Blue (Full) moon!
30 Late summer can be a good time to spot butterflies that are uncommon in Maine, like the Eastern Giant Swallowtail.
Brush with Nature

Announcing a Fall 2021 Plein Air Event and Art Auction

Inspired by nature, juried artists will be creating paintings at all eight of our sanctuaries from September 9–12. The public is invited to watch participating artists at work.

An auction of the artwork on September 25 will benefit Maine Audubon’s education, conservation, and advocacy programs.

maineaudubon.org/brushwithnature