



Spoonbill Feathers—Roseate Spoonbill. 2020 Chertok Photo Contest, Honorable Mention Winner, Advanced Category. Photo: Laura Garza

© Laura Garza

This Month's Program:

June 17, 2021

33rd Annual Chertok Florida Native Nature Photography Contest—Virtually

Once again Orange Audubon Society (OAS) will celebrate the end of its season with an exclusive showing of eligible entries in its Kit and Sidney Chertok Florida Native Nature Photography Contest, culminating with announcement of the winning photographs. As last year, this year we will do the program on OAS' [YouTube channel at 7 p.m. on June 17th.](#)

As we show images taken from the Panhandle to the Everglades, the suspense will mount ... who will win the

contest in the Youth, Novice and Advanced Amateur/Professional categories? Finally winners will be announced and over \$1,300 in ribbons, cash and other prizes will be awarded.

This is OAS' 55th year and the 33rd year of this wonderful photo contest. We hope you join us! Just go to OAS' YouTube channel at 7 p.m. on June 17th. Here is [the link.](#)

Teresa Williams, Chertok Contest Chair

Don't Miss Orange Audubon's Virtual Silent Auction!

Just because we can't be in the same location, doesn't mean we must miss out on hosting Orange Audubon Society's (OAS) Silent Auction. This June, we will hold OAS' first ever online auction. The easy-to-use BiddingOwl platform will be utilized so that you can survey all auction items and bid on those that interest you.

From gift certificates for restaurants and attractions to services like landscape consultation or a day birding with an expert, there will be something for everyone and 100% of auction proceeds will benefit Orange Audubon Society's Nature and Environmental Education Center Fund.

A link and instructions for participating in the auction will be shared in OAS' Mid-month Update email when we go live! Since the auction is virtual, you can share the link with family and friends to help make this our best auction ever!

Linda Gaunt and Lori Parsons, Silent Auction Co-chairs

Bird Chats with OAS

Bird Chats with Orange Audubon Society (OAS) are fun online programs happening on most Thursday nights on Zoom. Programs coming up include Hannah and Erik Go Birding on June 3rd, Our Florida Big Year by Natasza Fontaine and Robert Gundy on June 10th, and Bringing Birds to your Yard by Ron Robinson on June 24th.

The Bird Chats team — Jack Horton, Sam Mitcham, Kathy Rigling, Susan Thome-Barrett and yours truly, Deborah Green — will take a break in July but be back with more great programs in August.

Register just once [at this link](#) to be sent the Zoom link each week. All programs are archived on [OAS' YouTube Channel.](#) Hope we see you online!



Green Jewel - Eastern Pondhawk on Silver Buttonwood. 2018 Chertok Photo Contest, Honorable Mention, Youth Category. Photo: Lillian Frazer

Summer Break and Planning Time

Orange Audubon Society (OAS) programs go on hiatus in July and August as the board plans for our next program year. We will continue to post on OAS' [Facebook page.](#)

Send any suggestions for activities to info@orangeaudubonfl.org.

Orange Audubon Society guest speaker programs are the 3rd Thursday of each month (September–June) and all but June start at 7:00 p.m.

These programs are normally held at Harry P. Leu Gardens.

However, they will be held virtually until further notice due to COVID-19 health precautions.

Bird Chats with OAS are offered most other Thursdays at 7:00 p.m. Your one-time registration at [this link](#) enables you to be notified before each Bird Chat.





Vision 2050

Vision 2050 is a comprehensive plan for smart, thriving, and healthy growth in Orange County that guides how and where growth should occur. The process kicked off in October 2020, and from late May to early July 2021, the 3rd and final Vision 2050 virtual Town Hall Series will occur.

This series will feature 'Orange Code', the county's updated zoning code that implements the Vision 2050 comprehensive plan to regulate development and manage compatibility by addressing building form (height, setbacks, lot coverage) ahead of building use. To learn more about Vision 2050, or to take the surveys, please visit www.ocfl.net/vision2050 or [this link](#).

Audubon Florida (AF) has developed suggested talking points you may want to emphasize as you participate. These are available [at this link](#).

If you would like to join an Orange Audubon Society/AF Zoom discussion prior to the town hall meetings, please email info@orangeaudubonfl.org. We will set the date and time to be most convenient to participants. This is a chance to provide input on future growth in Orange County, so please engage.

*Olivia Sciandra,
AF Conservation Organizer*

Time to Ban Toxic Pesticides

The lawsuit against use of the brain-damaging organophosphate insecticide *chlorpyrifos* (pronounced **klor-pee-ruh-faas**) now has a decision from a federal appeals court after more than a decade of delay. The decision now falls to the Biden Administration's U.S. Environmental Protection Agency (EPA) Administrator Michael Regan after the previous administration reversed a proposal to ban agricultural uses of chlorpyrifos in 2017.

Chlorpyrifos was banned for most residential uses in 2000 since this relative of nerve agents—invented for the Nazi gas chambers in World War II—affects the human, as well

as the insect, nervous system. Earlier organophosphate insecticides, such as Malathion, along with DDT and its organochlorine relatives were banned by the Federal Insecticide, Fungicide, and Rodenticide Act of 1972.

Chlorpyrifos is a poster child for problems with federal pesticide regulation, according to the non-profit Beyond Pesticides, and it is just one of numerous organophosphate chemicals remaining on the market. These WW2-era nerve agents have no place in 21st century agriculture and should have already been eliminated from use.

Beyond Pesticides points out that chemical-intensive farming will keep farmers on a pesticide treadmill, substituting one toxic pesticide for another. The increased use of bee-toxic *neonicotinoid* and highly hazardous *synthetic pyrethroids* also cause harm to health and the environment. A move toward organic farming is necessary.

The EPA now has less than 60 days to either modify the food tolerances (allowed levels of the chemical on food) of chlorpyrifos and publish a finding that the new tolerances are safe for infants and children or to revoke all tolerances. The agency must also determine whether *to modify or cancel registration of the chemical for food use under federal pesticide law*. In mid May, Canada [announced its intent to cancel all remaining registrations of chlorpyrifos](#).

Please make your comment soon to the EPA [through Beyond Pesticides' link](#).

Free the Ocklawaha

Thanks to the hard work of the [Free the Ocklawaha River Coalition for Everyone \(FORCE\)](#), support has been building for restoration of The Great Florida Riverway—The Ocklawaha, Silver and St. Johns Rivers and historic Silver Springs.

Orange Audubon has joined citizens from Florida and across the nation whos have written 22,464 letters asking for Governor DeSantis' support to restore this environmentally and economically important riverway by breaching the Rodman/Kirkpatrick Dam. Please sign up for action alerts [with FORCE](#) and see the [viewbook](#).

*Orange Audubon Society
Conservation Committee*



Orange Audubon Society (OAS) mission: To promote public understanding of, and an interest in, wildlife and the environment that supports it; foster the recognition of the tangible and intangible values in the remaining natural areas of Florida and the world, and our responsibility for the conservation of the Earth's natural ecosystems.

Orange Audubon Society
P.O. Box 941142
Maitland, FL 32794-1142
www.orangeaudubonfl.org

President and OASis Editor:
Deborah Green
info@orangeaudubonfl.org
(407) 637-2525

The OASis (Orange Audubon Society information source) newsletter is published monthly, September–June, and posted on the OAS website. A link announcing new issues is e-mailed to subscribers.

Never miss out on OAS happenings. Add or update your email address by contacting newsletter@orangeaudubonfl.org.

For other membership information, contact: Mike Daley
miked129e@gmail.com
(407) 417-7818

JOIN OAS' [MEETUP](#) GROUP

LIKE OAS' [FACEBOOK](#) PAGE

Orange Audubon Society, Inc. is a Florida not-for-profit organization, tax exempt under Section 501(c)(3) of the Internal Revenue Code.

A COPY OF THE OFFICIAL REGISTRATION AND FINANCIAL INFORMATION MAY BE OBTAINED FROM THE DIVISION OF CONSUMER SERVICES BY CALLING TOLL-FREE, 1-800-435-7352, WITHIN THE STATE. FROM OUTSIDE OF FLORIDA CALL 1-850-410-3800. VISIT www.800helpfla.com FOR HELP. REGISTRATION DOES NOT IMPLY ENDORSEMENT, APPROVAL OR RECOMMENDATION BY THE STATE. REGISTRATION NO. CH2330

Climate Change Makes Summer Longer

May in Florida is often hot and dry, and spring presents a different face than it shows in the northern U.S. where residents still face occasional snow. But what will happen to the seasons as the climate continues to change?

A group of scientists in China have studied climate records and developed computer models to project what might happen to the seasons in the future under a scenario of “business as usual” carbon emissions. They found that by 2100, summer in the Northern Hemisphere might last nearly half the year, and winter shrink to only four weeks.

In 1952, summer—which they defined as days with temperatures in the top quarter of the temperature range—lasted from June 23 to September 9. By 2011, summer lasted from June 12 to September 15, a change of 17 days and winter shrank by three days. By 2100, they project that summer will last from May 6 to October 19, and winter only from December 18 to January 18—a 5 and 1/2 month summer and one-month winter. Spring and fall will shrink too.

How will these changes affect Florida? Because Florida is on a peninsula, it’s possible that the shift in seasons won’t be so extreme here. The ocean on three sides of the state may have a buffer effect on these temperature changes. But as we all know, many species of birds don’t just stay in Florida. Florida is a migration corridor and many of our part-time residents spend their summers further north or winters further south; therefore, they will be affected by these seasonal shifts. Long, hot summers will lead to more intense heatwaves and summer wildfires, and warmer winters might lead to more winter storms due to an unstable climate. There will also be changes to plants leafing out in spring and losing their leaves in fall, as well as insect abundance at the times that bug-eating birds are raising babies.

With fewer freezes in shorter winters, invasive plants will be able to move north. And people will be affected by more heat waves over the summer. Responding to these changes will require a response by decision-makers, conservationists, and society at large.
Sonia Stephens, OAS Climate Co-Chair

Measure to Manage: A Climate Partnership for Greenhouse Gas Inventories

The old adage—you can’t manage what you don’t measure—has led Audubon Florida’s Climate Team to develop a partnership with the International Council on Local Environmental Initiatives (ICLEI), the Regional Resilience Collaborative and 18 municipalities. And 18 lucky students have had an opportunity to gain valuable new skills.

Paving the way for lowering of Greenhouse Gas (GHG) emissions, Florida’s largest, simultaneous GHG Inventory initiative was conducted January through April.

The Partners

ICLEI was founded three decades ago when a group of impassioned mayors asserted their role in fighting environmental pollution at the United Nations. ICLEI has been the leading sustainability network of local governments dedicated to providing technical assistance to members. In 2013, ICLEI developed the ClearPath standardized GHG calculation tool, a cloud-based update to ICLEI’s Clean Air and Climate Protection software. The East Central Florida Regional Planning Council — established in 1962 as an area-wide association of governments — adopted a resolution toward renewed regionalism and a collaboration for resilience in 2018. This formed the East Central Florida Regional Resilience Collaborative (R2C). Members are Brevard, Lake, Marion, Orange, Osceola, Seminole, Sumter, and Volusia counties and their municipalities.

Audubon Florida (AF) is committed to providing climate solutions as well as training conservation leaders. Student fellows from the University of Central Florida, Florida Institute of Technology, and Stetson University were recruited by AF to join this project and to receive college credit for their time.

The Process

Students were paired with a representative from a participating city or county. ICLEI-Local Governments for Sustainability provided specialized training and resources for completion of the GHG inventories. Students met weekly with ICLEI to learn necessary technical skills. Paired students and municipal staff also met regularly to



Students, municipal contacts and Audubon staff and chapter leaders. meet on Zoom this January.

collaborate on the data received and on using the ClearPath tool.

The GHG inventories assess the emissions produced by government operations such as water and energy consumption in municipally-owned buildings, by municipal fleets and waste services, and lay the groundwork for resilience planning.

Throughout this program, students had the opportunity to obtain technical skills such as formulating data requests, calculating emissions, and managing data, along with communicating and networking with a wide range of municipal contacts and resilience and sustainability professionals, all while earning university credit.

Local government staff not only had the invaluable assistance of their student intern, but learned where they can improve data storage and quality, what emission sources are within their operations, and how to develop their climate action plan.

East central Florida is home to approximately 20% of Florida’s population and is its tourism epicenter.

Because we generate a lot of GHG emissions, our area has a lot to lose without swift mitigation actions. The completion of these local government baseline inventories is a major step towards mitigating climate change impacts for birds and their habitats.

Audubon looks forward to seeing the inventories bear fruit as local governments adopt solutions that reduce emissions, save taxpayer dollars, and make communities more resilient.

*Halle Goldstein and Olivia Sciandra,
AF Conservation Organizers*

Orange County 2021 Solar Co-op Open

The Orange County 2021 Solar Co-op closes to new members on July 30, 2021 or when it has reached 200 members.

The co-op is a no hassle way to learn more about solar energy from the trusted nonprofit [Solar United Neighbors \(SUN\)](#) and [Florida SUN](#). Sponsored by Orange County Government and the City of Orlando, the co-op facilitates homeowners and small businesses forming a group that can leverage the power of bulk purchasing.

SUN provides unbiased, installer-neutral support through each stage of the process of going solar. It explains how solar works, how it can be financed, and how it can be installed on your home through monthly webinars.

Co-op member volunteers choose an installer on behalf of the entire group through an open and competitive bidding process. The selected installer provides everyone in the group with a personalized proposal for their consideration; there is no obligation to install. Using bulk purchasing power, participants secure discounted pricing and a quality installation.

For information, see SolarUnitedNeighbors.org/orange.

Heaven Campbell, FL SUN

Borderless Birds Film on YouTube

In bird migration, how do changes in one location influence changes in another? How are birds able to be resilient and survive changes?

West Volusia Audubon Society has launched a new film, *Pájaros Sin Fronteras/Borderless Birds*, directed and produced by the chapter's treasurer, Megan Martin.

The 50-minute film explores the similarities and differences in bird species in Central Florida and Puerto Rico and explores both ecological and social themes through interviews and oral history.

It looks at ways communities can unite around multifaceted solutions to conservation challenges.

To view the film, search on YouTube for West Volusia Audubon or use this [link](#).



Black-necked Stilt. Photo: Mark Meifert

Get Out and Bird!

The June Challenge begins on Tuesday, June 1st and extends through the month. June is historically one of the slowest months for birding in Florida. Back in 2004, Alachua Audubon originated this friendly competition, meant to build your birding skills and keep you engaged in nature. Each birder picks a county, any county in the state, and tries to compile the biggest list of species for that area during the month.

All birds are countable and follow the [American Birding Association \(ABA\)](#) checklist. If your local population of an exotic species is recognized as established by the ABA, then any member of that population is an ABA-countable bird. Otherwise put it on your non-countable list. For instance, a bird belonging to an established population of Monk Parakeets would be ABA-countable. An escaped Monk Parakeet, or a Mute Swan at Lake Eola, would not be.

List your ABA countable species first, and then your [non-native non-ABA birds](#).

An important twist for the June Challenge is that *you must see the bird, not just hear it*.

Follow any state or local COVID-19 restrictions and stay safe. The June Challenge rules are at [this link](#).

Orange Audubon Society's (OAS) May 27th Bird Chat focused on this competition and where to see summer birds. See [this link](#).

In 2020 there were 119 participants from 22 counties. Our own Sam Mitcham, an OAS member, had the 6th highest species list in the state! Sam saw 123 ABA countable species and 8 non-countable species! That is currently the number to beat for Orange County! See you out there.

Kathy Rigling

June Challenge Kickoff Field Trip

June 5, 2021

Orange Audubon Society will kick off the June Challenge on Saturday, June 5th, with an expert-led field trip to Orlando Wetlands Park (OWP). Leaders are skilled and enthusiastic birders Gigi DelPizzo and Lorri Lilja.

We will meet at OWP at 7 a.m. and bird until about noon.

The field trip fee is \$10. Reservations are required by contacting me at riglingk@aol.com or (407) 488-9559.

This is always a fun trip. Feel free to bring lunch and beverages and continue your June Challenge birding on your own.

Kathy Rigling

Birdathon Results

On April 10–11, 2021 birders teamed up, picked hotspots and set off for Orange Audubon Society's (OAS) 2021 Birdathon, a friendly competition to see the most species in a consecutive 24-hour period and raise the most funds.

Only species recognized by the American Birding Association were countable. Teams collectively saw 172 species, up from 148 last year.

Top teams were Bruce Anderson, Leesa Sward and Teresa Williams (106 species); Sam Mitcham (95 species); and Lori Mathis and Brook Rohman (92 species), including 3, 8 and 14 one-of-a-kinds, respectively—species seen only by them.

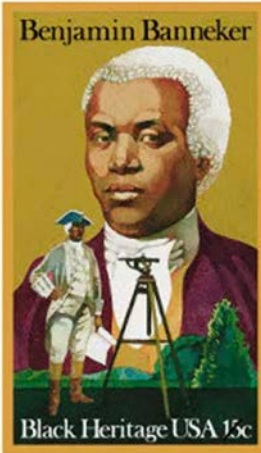
To date, Birdathon donations total \$2,697. Top fundraisers were Anderson, Sward and Williams (\$1,546); Paula Duenas (\$310); Deborah Green (\$240); and Lorri Lilja and Sherri Ryan (\$234).

You may still donate to Birdathon, OAS' uniquely Audubon fundraising event through [the Donate button](#) on our website. Proceeds will benefit OAS' conservation initiatives, educational programs and/or funding for a future nature and environmental education center, target site: Lake Apopka North Shore Restoration Area.

Kathy Rigling and Teresa Williams, Birdathon Co-Chairs

17-Year Cicadas Emerging

This summer, billions of red-eyed, black-winged cicadas will swarm the eastern United States for the first time in 17 years. Known as Brood X, the cicadas will emerge from underground where they have been feeding on plant roots. They will molt to adults, mate and die all in a manner of weeks.



In 1749, a free Black man, astronomer, almanac author, and polymath (person who knows a lot about a lot of subjects) observed the emergence of cicadas on his 100-acre Maryland homestead.

Benjamin Banneker (1731-1806) watched the cicadas carefully, recording whenever they reappeared. After 1749, he observed the emergence in 1766 and was able to predict the brood's return in 1783 and 1800. Banneker rarely receives credit for this remarkable scientific find. [See link.](#)

Florida's only periodic cicada is a Panhandle species that emerges every 13 years. But we have 18 other species that emerge mostly annually. Here is a [University of Florida study on our cicadas](#). Cicadas make a racket but don't really hurt plants. They are food for wildlife and part of the food chain.



Annual cicada *Neotibicen* spp. Orlando Wetlands Park. Photo: Mary Keim

In Case You Missed It...

150 Years of Wildlife Conservation

The state of Florida played a significant role in the origins of wildlife conservation in the United States. According to Orange Audubon Society's May speaker, Dr. Mark Madison—the first historian of the US Fish and Wildlife Service (USFWS)—it began in response to the plume trade. From the 1880s to 1900, Florida's egrets and other birds were killed by the millions in order to decorate ladies' fashionable hats with their feathers.

Large numbers of birds were also killed in "market hunting" that provided edible birds to markets and restaurants in cities. In the same period of time, the passenger pigeon, the flocks of which darkened skies with their enormous numbers, were hunted to extinction by 1914.

In reaction to this multifaceted slaughter, several important events occurred. Our own Florida Audubon Society was created in 1900 to help birds. That same year, the U.S. legislature passed the Lacey Act, the first federal law protecting wildlife. Wardens and bird protectors were hired to enforce the new law. Many of these wardens have been murdered in the line of duty.

Next, President Theodore Roosevelt, an avid birder himself, created the first national wildlife refuge (NWR) in 1903 — the Pelican Island NWR in Florida — in order to preserve bird habitat. During his administration from 1903-1909, President Roosevelt created another 50 NWRs and four game ranges.

The U.S. government also passed the Migratory Bird Treaty Act in 1916 to combat poaching and over-hunting. The act provided federal funding and wardens to protect birds.

Another huge influence was Marjory Stoneman Douglas' 1947 book, *The Everglades: River of Grass*. Perhaps not coincidentally, in the same year the Everglades National Park was established.

Ultimately the Endangered Species Act of 1966 became the first federal endangered species legislation that, in addition to protecting species from extinction, also acquired habitat for

the newly-established NWR system. Four resident Florida species were saved from almost-certain extinction with this protection: the American alligator, the loggerhead sea turtle, the Key deer, and the West Indian manatee.

Today, there are 567 NWRs that cover 150 million acres of land and 600 million acres of marine habitat. Thirty-one NWRs are in Florida.

Dr. Madison mentioned the many heroes in the history of conservation: Wardens Guy Bradley, Paul Kroegel and Jack Watson; journalists like Jay "Ding" Darling; authors like Marjory Stoneman Douglas and Rachel Carson; and environmental activists like Archie and Marjorie Harris Carr. All made major contributions to protect Florida wildlife species and habitat.



Marjory Stoneman Douglas signing her new book, *Everglades: River of Grass*, at Burdines, 1947. Photo: University of Miami Libraries

When asked about his favorite NWRs, Dr. Madison highly recommended several. From Egmont Key NWR and J.N. "Ding" Darling NWR in Florida, to the John Heinz NWR in Philadelphia, Monomoy NWR on Cape Cod, and the Chincoteague NWR off the coast of Virginia, he described them all as wonderful places to visit. The [NWR website](#) contains information on all of the NWRs. You can also donate there.

He also extended an invitation to visit the [National Conservation Training Center](#) in West Virginia where he curates the collection of some half-million items of conservation-related historical significance.

Terry Piper, Programs Chair

City Nature Challenge

It was a great first year effort for Orlando's City Nature Challenge, co-sponsored by The Nature Conservancy and the City of Orlando (with publicity by Orange Audubon Society [May OASis](#), p. 3). There were 181 observers, 1,462 observations, 615 species identified, and 2,193 identifications! Thanks to the participants for making this inaugural City Nature Challenge a success!

Conservation Florida's Bioblitz at D Ranch Preserve

On May 22nd Orange Audubon Society (OAS) joined about 50 avid naturalists in a Bioblitz at Conservation Florida's D Ranch Preserve in Deltona. Everyone's enthusiasm was contagious.

As profiled in the [March OASis p. 5](#), through a grant from Cornell Lab of Ornithology to Apalachee Audubon, OAS is partnering with Conservation Florida in promoting use of eBird and getting birders onto private lands. If you have never used eBird and are ready to try, see [our eBird presentation on Bird Chat](#).

iNaturalist and eBird



Two extremely popular mobile apps for recording your observations are eBird and iNaturalist. When should you use which? If you are doing a Bioblitz and recording plants and other organisms that you see with your phone or a camera, use iNaturalist. For general birding, use eBird.

Aside from any contribution to science, eBird helps you keep life, year, state and county lists. It has an Explore function that helps you look for best birding hotspots and for particular species. The eBird mobile app has become very convenient — using your phone's GPS it identifies your birding location and offers you a list of species recorded there.

When a bird species you record is flagged by eBird as Rare, based on past sightings at that location by birders — since the Rare annotation comes up immediately as you record it in the field, you can try to get a photo of it as evidence. A recording of the bird's sound or call can also provide useful evidence.

However, other than offering you a list of what has been recorded at a location, eBird leaves you on your own on identifying the bird — Cornell Lab of Ornithology's Merlin app, which is directly linked to eBird, may help. But a bird doesn't stay still like a plant to let you observe it and see key characters and snap a photo.

If you record that you have seen something rare, the eBird reviewer may question your observation and ask you for more details. But eBird reviewers are volunteers and get busy.

In contrast, iNaturalist normally has you post your observation with a photo. You can suggest an identification for the organism, and then others in the iNaturalist community weigh in on what species they think it is. With two IDs done by volunteers in addition to location and photo, the identification is considered to be "research-grade."

As a disadvantage, iNaturalist has no checklist function; each species or individual organism needs to be submitted separately. There is also no ability to share observations — with eBird when more than one person is birding together, one birder can do the list and share it with the others, with each recipient having the option to check and add and delete species.

For Research Purposes

An online forum comparing these two apps brought many comments from researchers who use the accumulated data for ecological studies.

Consensus was that there are more valid IDs on iNaturalist thanks to the community vetting process. But eBird records abundance data — you are supposed to write numbers of each species seen.

eBird asks you before you submit: Is this list a complete list of all the birds you saw and identified? If you say no or you did not do counts or estimates of species seen, it is not considered

a complete checklist. From a science perspective, eBird's required recording of time spent birding is valuable because one can then deduce rarity of a species.

iNaturalist provides presence-only data with no information about effort. According to one researcher, "This is the least useful type of ecological data and can't really be used for any studies of abundance or population trends,... The flip side is that the (iNaturalist) data may have a low error rate" thanks to the photos as physical evidence and the community and expert ID input.

In conclusion, experienced users of both apps say that eBird is more valuable as citizen science data from a modeling sense and iNaturalist is a broader and more engaging community.

Upload an eBird list into iNaturalist

Without photos or audio recordings, uploaded eBird checklists won't be verifiable or become research grade, but they will still count towards a Bioblitz total. For the next Bioblitz, here's how to upload an eBird checklist to iNaturalist (thanks to Christianah Oyenuga of The Nature Conservancy for this information):

- Log into eBird and go to your Checklists. Select the "View or Edit" option for the appropriate checklist
- Click "Checklist Tools" at the upper, right-hand corner of the page and select "Download" from the dropdown box
- Open the CSV files to your computer using Excel or a similar program. Edit that CSV file to match the format specified by iNaturalist at https://www.inaturalist.org/observations/import#csv_import (this needs to be followed exactly or the upload will not work)
- Once your file is appropriately formatted, upload it into iNaturalist by selecting the blue "upload" button on the same page

Orange Audubon's Bird Chat [reviewed mobile apps including iNaturalist and profiled eBird](#). It's all quite amazing and quite an upgrade from the old days of the notebook and pencil.

Deborah Green

Lake Apopka Wildlife Drive Diary

Sunday, May 23rd was my shift as Lake Apopka Wildlife Drive (LAWD) ambassador. Deborah served with me since the scheduled second ambassador was ill. The Blue Grosbeak was out there singing in the leafy trees across from the shelter. It wasn't windy—which it has been all week—or hot, but the sun blasted light. Car traffic was the slowest I've seen out there by far.

With half an hour left—my shift is 10-12:30—Deborah encouraged me to do the drive, so I did. Traffic was light and I did it in 2 hours with a few stops.

Along Lust Road before the pump house there were tons of Anhingas and a few cormorants. Small, cream-colored water lilies were abundant.

Baby Common Gallinules have hatched. Two gallinule couples jostled, rearing back on their wings displaying their big claws on their breasts. One couple mated, “drowning” the female underwater. Six Black-necked Stilts browsed about 100 feet out.

The few Glossy Ibises were the most extraordinary I have ever seen. Their backs and heads were glorious, deep silk chocolate brown.



Glossy Ibis. Photo: Joyce Stefancic

White string lilies were in bloom on a ridge out in the lake. Great Blue Herons, Little Blue Herons, Great Egrets and Snowy Egrets were still in breeding plumage, and several Great Blue Herons were on nests.

Almost all the winter ducks have migrated north, but I spotted a few lingering Blue-winged Teal. Fulvous and Black-bellied Whistling-Ducks were visible. You still need know what you're doing to see a wide variety of birds out there, but it gets easier as time goes by.



Purple Gallinule in bladderwort. Photo: Kathy Rigling

I saw bladderwort (*Utricularia*), which was new to me, some growing by the road and more further out. Growing in big, bright yellow patches, about 3 inches tall, the flowers evenly spaced from each other, this plant captures small organisms by means of bladder-like traps. I got as close as I could in sandals, stepping onto a thick mesh of filamenty stems, and was surprised that the water that gushed onto my foot was very cool. There were so many flowers in the bright sun before the pump house that I wanted to sing “the hills are alive...!!”.

I took the lakeside route and saw rosy camphorweed blooming deep pink. New flowers were abundant on the pickerelweed, water hyacinth, water hemlock and cattails.

Along the levee, a branch of every single shrub had a dragonfly perched on it, probably the four-spotted pennant. Also along the lake, Anhingas sat high on every branch. I have never seen anything like it.

Going straight north on Laughlin where it turns onto Interceptor, there's a bridge with a locked pipe gate. On the far side of the bridge, eight tiny Barn Swallows sunbathed on the blasting white, rocky road. I pulled over at the right corner where there's a generous apron and watched them.

Two Mottled Ducks walked along the right of the road about 75 yards farther up. There were hardly any cars so swallows eventually flew out onto the side of Interceptor to sunbathe. They must nest under the bridge. There weren't hordes of them, but I saw at least 20–30 swooping around. After a moment, the sunbathing swallows rolled halfway onto their sides, as if to take advantage of the hot road to bake bacteria and insects out of their feathers. I have never seen that before either!!

Red-winged Blackbirds, Boat-tailed Grackles and Common Gallinules were everywhere. The red-wings swooped and sang frequently and with abandon, and alligators swam in the canals. The white cloud shapes were incredibly varied, from high, wispy cirrus to puffy-shaped clouds.

I volunteer as an ambassador at LAWD once a month. The wildlife and plants are different every month, and the drive is an easy way to see wildlife, much like at Merritt Island and Loxahatchee National Wildlife Refuges. Under a shelter at the entrance, two ambassadors welcome newcomers in their cars and fill them in on safety information and other details. To volunteer as an ambassador, contact Deborah Green at info@orangeaudubonfl.org.

Cecie Catron, LAWD Ambassador



Barn Swallow. Photo: Joyce Stefancic

Sixth Ecotourism Year

In 2020 nearly 150,000 visitors enjoyed exploring the 11-mile one-way Lake Apopka Wildlife Drive (LAWD). Any weekend, you can see many out-of-state plates, and these LAWD visitors buy gas and supplies, eat in restaurants, and stay locally, which brings in ecotourism dollars. Orange Audubon Society (OAS) president Deborah Green and colleagues used a St. Johns River Water Management District-commissioned University of Florida ecotourism study from 2018 and current LAWD visitation numbers to estimate an economic benefit of \$5.6 million in 2020. As part of the 6th anniversary celebration on May 1, 2021, Deborah wrote an [Orlando Sentinel Op-Ed on the local benefits of birding ecotourism](#). OAS emphasizes the “people” benefits of true ecotourism as well as benefits to the local economy and environment.

Northwest Florida Panhandle Trip Recap

Sixteen birders met on April 28th at Wakulla Springs State Park to kick off Orange Audubon Society's (OAS) 2021 Northwest Florida Panhandle birding trip with a private riverboat tour on the Wakulla River. Thanks to the keen eyes and story-telling expertise of park ranger/boat captain Maria Sanchez, we had great views of Yellow-crowned Night Heron (some nesting), Spotted Sandpiper and one Prothonotary Warbler that we found hiding in plain sight.

We traversed the mysterious waters where mastodons, the Apalachee Indians, Tarzan and a creature from the black lagoon (of same movie fame) had gone before.

After a picnic supper on the grounds and a natural history talk by park ranger Jeff Hugo, we ended day one observing about 250 Chimney Swifts as they returned to roost in an abandoned chimney at the Lodge at Wakulla Springs. The Friends of Wakulla Springs website includes an interesting [historical timeline here](#).



Chimney Swifts returning to roost in the chimney at Wakulla Springs State Park. Photo: Wakulla Springs SP

On day two, Natasza Fontaine, Apalachee Audubon Society director and one of OAS' own NORTH SHORE BIRDING FESTIVAL millennial trip leaders, expertly and exuberantly led us to Bald Point and St. George Island State Parks where we added American Oystercatcher, Gull-billed Tern, Upland Sandpiper, Northern Gannet (immature), Ruddy Turnstone and other shorebirds to our trip list. Stops along Hwy. 98 in Eastpoint as we ended day two offered great side-by-side views of Sandwich and Forster's terns gathering atop old pier relics.

On day three, Jim Cox was our host and birding guide at Tall Timbers Research Station (TTRS), a leading

land trust and home of the study of fire ecology. As director of vertebrate ecology research, Jim oversees the study of pineland species like the declining Brown-headed Nuthatch (BHNU) and the federally endangered Red-cockaded Woodpecker for which banding of nestlings is an important monitoring tool.



Participant holding Brown-headed Nuthatch hatchling prior to banding at Tall Timbers. Photo: Teresa Williams

Our visit was late in the BHNU baby season, but fortunately banding one last set of hatchlings awaited our visit. We learned that BHNU adults sound like your dog's squeak toys and weigh about 10 grams; hatchlings are oblivious to being handled by humans and sleep through the entire banding/handling process; and most important, that a BHNU hatchling in hand is a unique and awe-inspiring experience for humans.

We also observed contents of a Red-cockaded Woodpecker's nest, its eggs still unhatched. Northern Bobwhite and Eastern Towhee that are usually heard more often than seen, and Red-headed Woodpecker were so plentiful that by day's end they had been dubbed TTRS timewasters.

Other great species seen included Swallow-tailed and Mississippi Kites, an Eastern Wood Peewee, Purple Martins, a pair of Blue Grosbeaks, Indigo Buntings, a pair of Summer Tanagers and a Yellow-breasted Chat.

On day four Jeff O'Connell, former Apalachee Audubon field trips leader, was our expert guide at St. Marks National Wildlife Refuge where we added Northern Shoveler, Red Knot,



Stilt Sandpiper at St. Marks National Wildlife Refuge. Photo: Jeff O'Connell

Stilt and White-rumped Sandpiper, Black Skimmer, Merlin and Bobolink to the weekend list. Just as in December 2019 when Jeff was our guide, he again led us right to the spot where the refuge's famous large, pink wading bird awaited: the lone, wild American Flamingo thought to be recurring since Hurricane Michael (October 2018). The group enjoyed getting to know Jeff and the refuge and no doubt will be back.



Bobolink at St. Marks National Wildlife Refuge. Photo: Jeff O'Connell

Collectively, 140 species were seen thanks to the expertise of local guides, Natasza, Jeff and Jim.

The more experienced birders in our group—Bert Alm, Space Coast Audubon Society's (SCAS) field trips leader, and Leesa Sward, former OAS board member and educator—helped those who were less experienced spot and identify birds, and Carol Hebert (SCAS and Conradina Chapter Florida Native Plant Society) helped with native plant identification.

Behind the scenes, long-time friend Wendy Johnston (Apalachee Audubon member), kept her pulse on rare bird sightings before our arrival, made great suggestions on logistics of the trip itinerary and was OAS' personal Uber Eats, delivering picnic dinner and lunch meals from Hopkins Eatery.

It's great to go birding with friends in the Northwest Florida Panhandle!

Teresa Williams, Trip Organizer

Ruby-Throated Hummingbird: A Design Wonder, Species Extraordinaire

Our smallest birds, hummingbirds often fly backwards and they can migrate 1200 miles (2000 kilometers) across the Gulf of Mexico without taking a break. All nature lovers want to see (and adore) these remarkable creatures. We can't get enough of them.

The only widespread hummingbird in the Eastern U.S., Ruby-throated Hummingbirds live year-round in Central Florida and turn up in late fall and winter in woodlands, citrus groves, gardens and backyards. This winter they visited my plants and nectar feeder at least three times a day like clockwork. I saw them at breakfast, lunch, and dinner when I sat down to eat by my kitchen window: males, females and an odd, pale, fuzzy immature. At first I thought it was an exhausted, dazed adult survivor of a bad storm.



Ruby-throated Hummingbird. 2010 Chertok Florida Native Nature Photo Contest. Close Encounters Category, 3rd Place. Photo: Michael Libbe

Less than four inches long with a wingspan of 4.5 inches, the adults have an emerald green back, black mask, gray-white under parts, and a green crown. The male has a distinctive brilliant iridescent red throat that appears black in low light, a needle-like bill for sipping nectar and a forked tail. The female has a white throat and a blunt tail with white spots. Tiny structures in their feathers called melanosomes (similar to soap bubbles) shimmer in the light, producing the iridescence and shifting colors as you view the bird from different angles. How marvelous is this?

Ruby-throated Hummingbirds feed on the nectar of red or orange tubular flowers of trumpet vine, cardinal flower, jewelweed, bee-balm, and red-buckeye — all Florida native plants.

And they will come to nectar feeders. The nectar doesn't need to be red, and it is easy to prepare with a quarter cup of sugar and a cup of warm water. A less familiar fact: these birds also eat insects — mosquitoes, gnats, fruit flies, small bees, and spiders. They catch them in mid air or pull them out of spider webs.

Hummingbirds are precision flyers with an extraordinary ability to stop in an instant, hang motionless in midair, and adjust their position up, down, sideways and backwards. They dart between nectar sources with fast flights or sit on a small twig to look around. Pugnacious males aggressively defend their food sources and execute spectacular chases, often jabbing intruders with their beaks.

Females build a nest the size of a large thimble on a slender, descending branch of a deciduous tree 10 to 40 feet off the ground. (Can there be room for eggs or babes?) Made of thistle or dandelion, it is held together with strands of spider silk or pine resin. The female stamps on the base of the nest to stiffen and shape the rim of the nest by pressing it between her neck and chest. She decorates the exterior with bits of lichen and moss, perhaps for camouflage. Truly astounding!



Ruby-throated Hummingbird female on nest, Mead Botanical Garden. Photo: Sam Mitcham

Fortunately populations of Ruby-throated Hummingbirds steadily increased every year from 1966 to 2014. Partners in Flight estimates a global breeding population of 20 million with 84 percent spending some part of the year in the U.S. You can attract these birds with plants

that generate red tubular flowers (preferably native plants) and by installing a feeder. Be sure to place it in a spot safe from predators like cats, and not too close to a window they could fly into.

Be patient and look for their tiny silhouettes perched on cable lines and slender bare branches where they are waiting to examine your new plants or feeder. Check it out! There is much to learn about this spectacular bird, truly an avian miracle!
Linda Carpenter



Sunning — Florida Scrub-Jay. 2018 Chertok Florida Native Nature Photo Contest. Youth Category, Honorable Mention. Photo: Jake Turner

Jay Watch

The Florida Scrub-Jay is our state's only endemic bird species — found nowhere else in the world. It was listed as federally Threatened by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act in 1987, largely due to loss of its native scrub habitat and decades of fire suppression that allowed the scrub to become overgrown and low in acorn production.

Through Audubon Florida's Jay Watch, scrub-jay surveys are conducted each year from mid-June to mid-July on public lands with known populations of the jays.

A video introducing the program is [Florida Scrub-Jay Ecology](#). Another made by Archbold Biological Station is ["At Home in the Florida Scrub"](#).

Please contact Jacqui Sulek at Jacqui.Sulek@audubon.org with your interest in participating, and she will steer you to the required online, and possibly in-person, training.

Dragonfly Field Trip

Mary Keim and Randy Snyder—long-time Orange Audubon Society (OAS) members—are extraordinary naturalists. “We like everything—plants, birds, butterflies, ...” said Mary at the beginning of OAS’ biannual Dragonfly Class offered on May 15th at Orlando Wetlands Park.

Mary and Randy teach in the field, and we learn to recognize the dragonflies by their habitats and behavior. Using our binoculars, we can focus on the characters to distinguish closely related species.



Mary showing dragonfly wing anatomy at beginning of class, Randy is at center. Photo: Deborah Green

Most participants saw 16 species. Everyone learned or reviewed the very common Eastern Pondhawk, the females of which green (photo p. 1) and males are blue. Later in the day we saw several instances of these smaller dragonflies eating members of their own species!

We also learned to recognize both Needham’s and Golden-winged Skimmers, dragonflies with a reddish thorax with a yellow stripe. These two species are distinguished by the color of the base of the front vein. It is yellow (females) or red (males) in Golden-winged Skimmers but black in Needham’s Skimmer. Skimmers are the largest family of dragonflies in our area and typically fly and perch within a few feet of the ground.

We learned that a white stigma is diagnostic for a skimmer called the Four-spotted Pennant, even when the four dark spots on the wings have not yet formed. The Four-spotted Pennant is the one we see along the Lake Apopka Wildlife Drive so commonly at this time of year. The easily recognizable Halloween Pennant has orange wings with darker brown bands. I would recommend learning to recognize the aforementioned most common species as you get started in dragonfly identification. Mary referred us to a good source for more information, the Odonata Central website.



Top, Golden-winged Skimmer. Photo: Lorri Lilja. Middle, Great Blue Skimmer. Photo: Mary Keim. Bottom, Prince Baskettail. Photo: Mary Keim.

Leaving sunny Orlando Wetlands Park, Mary and Randy took us along a shady road at the adjacent Seminole Ranch Conservation Area. We found the Slaty Skimmer and Bar-winged Skimmer. The Great Blue Skimmer, a rarer species in our area with a distinctive white face, also likes shady areas (see photo above).

We saw the Cyrano Darner and Regal Darner, the females of which have an ovipositor with “blades.” Mary made us chuckle with the old story that the darners stitch your mouth together while you are sleeping. Gray-green Clubtail, Little Blue Dragonlet, Blue Dasher, and the Carolina Saddlebags were also spotted. My favorite sighting of the day was the Prince Baskettail, a larger dragonfly that flies at least six feet above us with its distinctive wing patterning and emerald green eyes.

Thanks, Randy and Mary, for making learning to identify dragonflies fun.

Deborah Green

South Carolina Coastal Birding Trip September 17-19, 2021

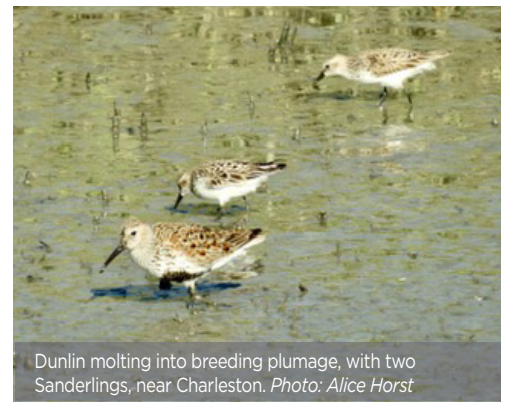
This will be Orange Audubon Society’s third trip to South Carolina, and this one will be based out of Beaufort and focus on seeing southward migrating shorebirds.

Our skilled guide Craig Watson will lead us to Bear Island and Donnelley Wildlife Management Areas, Santee Coastal Reserve, Fish Haul Beach, Harbor Island, Bailey Road Tidal Impoundments, and possibly some private lands. Craig, along with partner Pamela Ford, have led us on the two previous trips and we are thrilled that they are actively planning this birding adventure, focused on shorebirds.

The trip will be limited to 16 participants, require vaccinations, and follow COVID-19 safety protocols.

Cost is \$105 for Audubon members and \$120 for non-members. If you are not a member, please join directly through OAS as instructed by Teresa. To register, contact Teresa at mwilliams@cfl.rr.com and for trip questions, contact Deborah at info@orangeaudubonfl.org.

OAS will accept registration payments starting July 1, 2021 to hold your space, but contact Teresa beforehand to get on the list. This trip will fill, and we want to give OAS members first chance. Participants will secure their own lodging in Beaufort (early booking recommended).



Dunlin molting into breeding plumage, with two Sanderlings, near Charleston. Photo: Alice Horst

Those who dwell, as scientists or laymen, among the beauties and mysteries of the earth are never alone or weary of life.

Rachel Carson in *The Sense of Wonder*

Book Reviews for Your Summer Reading



Sunrise on the Lake Apopka Wildlife Drive. Photo: Lynn Marie Folts

L.M. Folts
Photography

Nature Obscura by Kelly Brenner

As most birders know, nature is all around us—while we may travel to a wild park or preserve for a change of scene—birds, plants, and other species are all around us even in the most urban settings. Though sometimes it can be hard to appreciate them because they are hidden.

In *Nature Obscura*, Kelly Brenner takes readers on her explorations of nature in urban Seattle — meeting crows, hummingbirds, snails, moths, and even microscopic tardigrades along the way. Brenner is an urban naturalist who combines a sense of wonder about nature in a big city with keen scientific observation. Her book takes us through a year of exploring the landscape of the city, from beach to mountains, and from a busy boat harbor to a botanical garden and even a miniature moss forest growing on her roof.

The book’s title gives a clue to Brenner’s purpose: she observes some very “obscure” species, like moss and slime molds, as they grow, live, and reproduce in the most unexpected corners of the city. But the book’s title also refers to a “camera obscura,” a device used by early painters to illuminate and reveal the world around them in unexpected ways. While Brenner’s focus is on the interconnectedness of nature and the human landscape, she also gives

some guidance and suggestions for readers who might also be interested in improving their observational skills (there’s even a chapter called “How to Be an Urban Naturalist”).

While Brenner’s focus is on nature observation, her writing is the opposite of dry and spare. Instead, her prose is deeply felt and evocative, expressing her wonder in the jeweled colors of a dragonfly and the mysterious movements of slime molds alike. If you’re looking for a book that will help you reconnect to your sense of wonder in nature in the city, this is a fascinating read.

Reviewed by Sonia Stephens



Monarch Butterflies at El Rosario, Michoacán, Mexico, February 3, 2018. Top, covering the trees. Bottom, closeup. Photos: Linda Cooper

Bicycling with Butterflies: My 10,201 Mile Journey Following the Monarch Migration by Sara Dykman

It all started as a daydream born from the desire to visit the overwintering Monarch Butterflies while crossing Mexico on a bicycle.

Unfortunately, the timing wasn’t right, and what started as an idea to make a quick visit in 2013 had solidified into an epic journey by 2016.

Author Sara Dykman began her 10,201 mile journey in March of 2017 with the goal of biking north from the oyamel forests of Mexico to the Canadian shores of the Great Lakes and back again following the annual migration of the Monarch Butterfly.

Dykman’s journey was predominately a solo trip. Along the way she made new friends and connected with others who advocate for the Monarch. It’s fair to say that she often relied on the kindness of strangers, much like butterflies, to make the journey a success.

Her travels provide a lens to better understand the day-to-day challenges Monarchs encounter during their perilous journey. Between logging, widespread use of herbicides and other environmental impacts, it becomes harder and harder for Monarchs to access the resources they need to complete their migration.

As someone who believes that a good trip starts with a solid plan, Dykman’s style is both intriguing and frustrating. She is not a dispassionate scientist. She is brash, emotional, and altogether human. The reader, at times, is left baffled by her choices while, at other times, is completely in sync as Dykman tries to navigate how to advocate without expressing how angry she is about the role humanity has played in making this migration harder.

Over the course of 264 days, the author takes her readers on a journey that is both eye-opening and intensely personal. If you long for adventure, an insight into conservation, or dream of experiencing life on the wing, I highly recommend this book.

Reviewed by Christina Wray

Thanks to the Contributors

Orange Audubon Society (OAS) would like to thank the following writers whose contributions have greatly enhanced the OASis this year: Shawnlei Breeding, Heaven Campbell, Linda Carpenter, Cecie Catron, Mike Cliburn, Jennifer Coleman, Linda Gaunt, Halle Goldstein, Mary Keim, Larry Martin, Lori Parsons, Terry Piper, Kathy Rigling, Victoria Schwartz, Olivia Sciandra, Sonia Stephens, Susan Thome-Barrett, Richard Valdez, Christina Wray and Teresa Williams.

Exquisite wildlife photos have enhanced the text. For use of these, OAS thanks: ARCI, Kathy Bargar, Jennifer Coleman, Linda Cooper, Sherry Fischer, Lynn Marie Folts, Mark Hainen, Milton Heiberg, Pat Husband, Mary Keim, Susan Kirby, Lorri Lilja, Mark Meifert, John Middleton, Sam Mitcham, Jeff O’Connell, Elza Phillips, Tina Pruitt, Kathy Rigling, Jack Rogers, Robert Sena, Steve Shaluta, Joyce Stefancic and many Chertok photo contest winners.

For careful and timely editing, we are most grateful to Mary Keim, Loretta Satterthwaite, Bob Stamps and Teresa Williams.

We will enjoy our two months off and then be asking for articles and use of your photos again for September. Deadlines are always middle of the month before. If you want to send an article or article idea, send to newsletter@orangeaudubonfl.org. Have a good summer and stay safe!

Deborah Green, OASis editor



Breakfast Time—Double-crested Cormorant. 2019 Chertok Photo Contest, Honorable Mention, Novice Category. Photo: Steven Madow

Update Your Membership

Please join Audubon at the rate of \$20 (students \$15) for your [3-way membership in Orange Audubon Society \(OAS\), Audubon Florida and National Audubon Society \(NAS\)](#). It takes a few months for a new membership to show up on our chapter roster provided by NAS. So please join now so we will have your correct mailing address for OAS’ one print-mailing of the year in September.

We ask that you join and renew directly with OAS so that we can better track any additional donations and your expiration date.

If you have questions about your expiration date, email membership@orangeaudubonfl.org.

Thanks for your support!
OAS Membership Committee

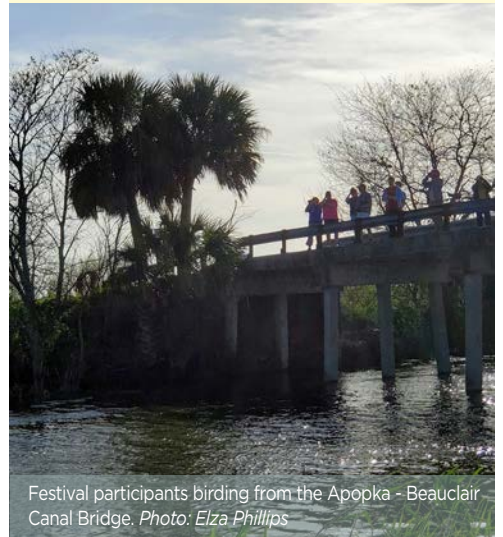
2021 North Shore Birding Festival

Orange Audubon Society’s 6th annual NORTH SHORE BIRDING FESTIVAL—featuring the Lake Apopka North Shore and other birding hotspots in Central Florida—will be December 2-6, 2021.

Registration will open in late summer. To be notified and for updates, sign up for the festival email list [at this link](#).

You can also follow new developments on the [festival Facebook page](#).

As done last year, we have again reserved the the Youth Camp at Wekiwa Springs State Park for the weekend. We will be repeating most trips from last year and adding some new ones. See the festival website [at this link](#). Save the dates!



Festival participants birding from the Apopka - Beauclair Canal Bridge. Photo: Elza Phillips

CALENDAR OF EVENTS

June Challenge Starts

June 1, 2021
Contact Kathy at (407) 488-9559

Bird Chats with OAS:

Contact Deborah at (407) 637-2525

- Hannah and Erik Go Birding

June 3, 2021

- Our Florida Big Year

by Natasza Fontaine and Robert Gundy

June 10, 2021

- Bringing Birds to Your Yard by Ron Robinson

June 24, 2021

Jay Watch Training and Surveys 2021

June dates TBA
Contact Jacqui.Sulek@audubon.org

June Challenge Kickoff Field Trip

June 5, 2021
Contact Kathy at (407) 488-9559

June Wekiwa Bird Survey

June 12, 2021
Contact Kathy at (407) 488-9559

Chertok Awards Program and Silent Auction

June 17, 2021
Contact Teresa at (407) 718-1977

Orange Audubon Society Summer Board Planning Meeting

July 25, 2021
Contact Deborah at (407) 637-2525

South Carolina Coastal Birding Trip

September 17-19, 2021
Contact Deborah at (407) 637-2525

North Shore Birding Festival

December 2-6, 2021
Contact Deborah at (407) 637-2525