RIVERTOWN NATURALIST

The newsletter of the Hudson River Audubon Society, a chapter of National Audubon.

March – April 2023

The Dry Tortugas & Florida Keys

Presentation by Michael Bochnik at Lenoir Preserve Nature Center
Wednesday, March 22, 2023 @ 7:00 p.m.

Our own Michael Bochnik, HRAS past President and current Field Trip Leader, will take us to the Dry Tortugas — seven coral islands found 80 miles west of Key West, Florida.

The Dry Tortugas are a major birding destination in the United States. It hosts thousand of nesting tropical seabirds, such as boobies, noddies, and frigatebirds. It is a well-known place for neotropical migrants to stop at on their way north after crossing the Caribbean.

Michael will take us on a tour of Fort Jefferson, the largest all-masonry fort in the United States. It was built between 1846 and 1875 to protect the nation's gateway to the Gulf of Mexico. He will also cover the drive out to Key West from the mainland, stopping at a few of the well-known birding hotspots.

SANDWICH TERN © LORRAINE MINNS/APA

MAGNIFICENT FRIGATEBIRD © PETER CAVANAGH/APA

Michael Bochnik is a Senior Scientist who works at Benjamin Moore Paints and previously worked at Ciba-Geigy. He is the compiler of the famed Bronx-Westchester Christmas Bird Count, and was the region 9 editor of the *Kingbird*, a publication by the New York State Ornithological Association, for many years.

LOCATION: LENOIR PRESERVE NATURE CENTER, 19 DUDLEY ST, YONKERS.

PRESENTATION ALSO ON ZOOM, REQUEST INVITATION FROM INFO@HRAS.ORG

President's Message

I am looking forward to a case of Spring Fever. I wish you all that slightly out-of-body feeling that comes with trees leafing out, shrubs flowering, spring ephemerals pushing up in forests, and the arrival, or, for many species, the transit, of migrating birds.

March and April are erratic months for weather. There's still a good chance for a late winter blizzard in March; April can, and should, have a lot of rainy, gloomy days. Although wet weather does not make for human enjoyment of the outdoors, it is good for gardens, farms, forests, reservoirs, and ducks.

There will be sunny and warm spring days, with birds singing, and plants coming out of winter dormancy. In March, migrating species will start to trickle in; April is when migration really gets underway, although we will have to wait until May until it's in full swing.

There is a short, almost magic period, when leaves have just started to come out on trees and spring migrants are arriving. It's warm enough for insects to hatch out – and that's great for energy-starved birds. Warblers, the joy of spring time birding, will be easier to see when leaves are first budding — when the leaves are smaller than even the warblers. The males are sporting their best colors. Many are singing. The warblers that will stick around to breed are singing to defend their territory or attract a mate. The ones in transit may be trilling away to practice for when they seriously need to broadcast their presence.

Leaf out has been coming earlier and earlier over the last 20 years as climate has changed. The migrants that are not making long distance journeys may have enough clues to move north earlier than the long distance ones. Migration is complicated and filled with danger; we don't know how birds will adapt to climate change.

We do know that leaf out has been coming earlier and earlier. Last year, leaf out was between March 15 and April 1, according to the USA National Phenology Network (www.usanpn.org) They use the first leaves on lilacs and honeysuckles, out first in spring , to determine the date for "first leaf index" or what the less precise would call leaf out.

Last year, a friend mentioned she was a volunteer in a phenology study. I didn't know what phenology was or that, unaware, I have spent decades as an amateur phenologist. Phenology is "the study of natural phenomena that recur periodically, as migration or blossoming, etc. and of their relation to climate and changes in season." Thanks, Webster's Dictionary. Spring is the time we all become phenologists.

The American Robin used to be a common index bird — oh, we'd say, I saw my first robin, it must be spring! That might have been true — once upon a time ago. A century ago, in Central Park, on the Christmas Bird Count (1922), six robins were found; the following year (1923), none. They were present in such small numbers they could easily be overlooked — until their cousins flew north to join them. Here, on our 2021 Bronx-Westchester Christmas Bird Count, 1,615 robins were found. If you didn't see a robin until the Vernal Equinox, the reason could be that you hadn't been outside for most of the winter. Robins have been expanding their range northward for decades; their population has increased. We need another index bird to let us know spring has arrived.

Signs of spring will be everywhere. Skunk cabbage will be pushing up, even through snow. You might not admire it for its odor, but it is one of the few plants that can raise its interior temperature above the surrounding air temperature. You might prefer to look for other spring ephemerals, like Dutchman's breeches or Yellow Trout lily. In April, look for early arriving warblers such as Pine, Palm and Yellow-rumped Warblers as well as Louisiana Waterthrushes. Great and Snowy Egrets will arrive in large numbers in April; go to Marshlands Conservancy in Rye to look for them.

Have fun exploring the season's changes.

—Fran Greenberg

Wildlife Considerations in Forest Management

Presentation by John Butler
of Van Cortlandt Park Alliance

Wednesday, April 26, 2023 @ 7:00 p.m.

There are myriads of considerations to take into account while managing a forest. Outside of the many human stakeholders that have a say in forest management, wildlife have a wide variety of habitat needs. This presentation will be an introduction into the nuances in dealing with forest wildlife species. Small case studies include the Pileated Woodpecker, the Scarlet Tanager, and the Eastern Red-backed Salamander.

John Butler is Program Director of Restoration & Stewardship at the Van Cortlandt Park Alliance. He develops goals for forest restoration and management for the park's 640 acres of forested land, as well as engaging community members. He has a bachelor's degree in Wildlife and Fisheries Biology and a master's degree in Geographic Information Sciences. He is a Certified Ecological Restoration Practitioner; earned from the Society for Ecological Restoration. He has a special affinity for salamanders, a keystone species in healthy forests.

IN-PERSON: LENOIR PRESERVE NATURE CENTER, 19 DUDLEY ST, YONKERS.

ZOOM:
EMAIL INFO@HRAS.ORG FOR LINK.

Welcome Lenoir Preserve's new curator!

Julia Snook, the new Curator at Lenoir Preserve in Yonkers, was raised in the deserts of Arizona and moved to New York in 2020.

She has a Bachelor's degree in Parks and Recreation Management and is currently in school to pursue a Master's in Biology.

Before joining the team at the Westchester County Department of Parks, Recreation and Conservation, Julia worked as an environmental educator at Saguaro National Park in Tucson, an AmeriCorps Climate Corps Fellow in San Francisco, and a Program Director at a summer camp in Putnam County.

Julia worked as the Naturalist at Marshlands Conservancy in Rye for seven months before moving over to Lenoir.

When not at work, Julia enjoys taking care of her pets, playing the trombone, baking, and frequenting local estate sales.

She's excited to work with the Audubon Society to help serve our Preserve!

Science Watch

Hiding in Plain Sight

SLEEPING GRASSFROGS

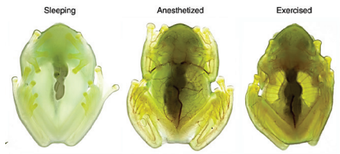
If it wasn't for that green skin on their back, you would probably be able to read a newspaper through them. — J. Delia

Transparent animals are readily found in the open ocean where it's hard to find something to hide behind. Many jellyfish, octopuses and squid are transparent. Transparency in vertebrates is more difficult to achieve because their red blood cells (RBCs) are full of brightly colored hemoglobin. Larval eels solved this problem by eliminating RBCs entirely, getting their oxygen by simple diffusion. Transparent land vertebrates are even harder to find. Among those few is the glassfrog (*Hyalinobatrachium fleischmanni*) that lives in rainforests throughout Central America.

Viewed from above, its muscles are transparent, and its skin is semi-transparent, but for a green smudge. That, and its highly transparent ventral skin, makes it all but invisible when sleeping during the day on a green leaf (see backlit frogs above). In 2020 researchers showed that glassfrogs exhibit "dynamic transparency." Awake they are more visible, but as they fall asleep and are more vulnerable to predation, they become more transparent. But what happens to their RBCs?

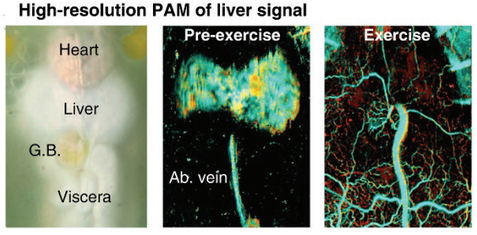
Carlos Taboada and Jesse Delia, Duke University, Durham, NC, and American Museum Natural History, New York, NY, respectively, wanted to answer that question. "When they are awake, the circulatory system is red. When they are asleep, it's not. Where are the red cells going?" said Delia. They and their team published the answer in the December 23, 2022 issue of *Science*.

Taboada *et al.* discovered that glassfrogs have few circulating RBCs when asleep. Upon awakening the number rises sharply. But they couldn't use ordinary light microscopy to see where the RBCs hide because many of the frog's organs have a mirror-like surface that helps it be less visible. In addition, the vanishing process is readily disrupted when the frogs are active, stressed or anesthetized. So, the team resorted to photoacoustic microscopy (PAM), a technique that is non-invasive and requires no special dyes in order to follow changes in red blood cell distribution. PAM uses ultrasound to penetrate and excite molecules within the opaque organs to release ultrasonic waves which can be imaged.



The researchers found that resting frogs increase their transparency two-to-three-fold by sequestering almost 90% of their RBCs in their mirrored liver. "All the signal was coming from the liver," said Taboada. PAM images (see figures below) of 13 sleeping or resting frogs clearly showed RBCs densely packed in the liver when the frogs were at rest. "The heart stopped pumping red, which is the normal color of blood, and only pumped a bluish liquid," said Taboada. Just a few seconds after the frogs started moving, red blood cells began spreading throughout the body, making them more visible.

High-resolution PAM of liver signal



Using ultrasound, the team showed that the liver volume of glassfrogs increases by 40% when they are resting. Liver sections of resting frogs revealed many swollen sinuses filled with tightly packed RBCs.

During the transparent state only 3.4% of the frogs' total hemoglobin is bound to oxygen, indicating they are in a condition of reduced metabolic activity. Perhaps they undergo transient hibernation? No one yet knows.

The unique finding that glassfrogs can densely pack RBCs into their liver and then unpack them to circulate throughout the body raises an important question. How do they avoid strokes? As tightly packed RBCs rub against each other they form clots, which cause strokes if they occur in blood vessels feeding the brain. Yet glassfrogs somehow circumvent this life-threatening event.

Glassfrogs can control when their blood clots. When wounded, a clot forms and becomes a scab. Yet when asleep with their RBCs squeezed into their liver, no clots form. Blood clots kill as many as 100,000 Americans each year. Understanding how glassfrogs limit clotting could lead to treatments that reduce strokes and deaths from clots in humans.

Almost 60 years ago, then Senator William Proxmire issued his first "Golden Fleece Award," for "wasteful spending" of government grants by scientists. The movement he spawned pressured many scientists seeking grants to justify their research by concocting "practical applications." This study demonstrates that so-called "blue skies research," with no "real-world" application in mind, can potentially lead to practical discoveries.

— Saul Scheinbach

SNOW GEESE ©YI/ADOBE STOCK

Migrant and Vagrants Traps in North America

Presentation by Paul Lehman

Wednesday, April 12, 2023 @ 7:00 p.m.

REGISTER FOR THE ZOOM PROGRAM BY GOING TO HTTPS://BRSSAUDUBON.ORG/PROGRAMS

Join Paul Lehman on a photo tour of North America's migrant hot-spots, from eastern Newfoundland and the Dry Tortugas to the western Aleutians and the California coast — and everywhere in between. Topics covered include what makes for a good migrant trap, when to visit and under what weather conditions, and characteristic and special birds found at many of the sites.

Paul Lehman began birding at the age of 9 in Larchmont. At 18 he moved to Santa Barbara, California, where he remained for 20 years before returning east in 1994 to live in Cape May, New Jersey, for 14 years, and then migrated back west to San Diego in 2008. Given his interests in geography, bird distribution, and working on bird lists in every state and province, he has traveled extensively throughout virtually every nook and cranny of North America.

He has written many articles and papers on avian distribution and identification. Formerly a lecturer in physical geography and environmental studies at the University of California in Santa Barbara, and past editor of ABA's *Birding* magazine for nine years, Paul has given talks on weather, bird distribution, migration, and vagrancy. Paul also led bird tours throughout North America for Wings, Inc. He was an associate editor for *North American Birds magazine* and he has been a principal consultant on several popular field guides, most recently as the chief consultant for the range maps in the National Geographic Society's *Field Guide to the Birds of North America* and *Complete Birds of North America*, *The Sibley Field Guides to Birds of Eastern and Western North America*, and several of Roger Tory Peterson's field guides.

Conservation / Environmental News

Compiled by Debbi Dolan

Our Green Energy Future

Governor Hochul started the new year off strong with the 2023 State of the State address. In her address, the Governor announced plans for a new Cap-and-Invest Program. This program will place a declining cap on greenhouse gas (GHG) emissions each year to help achieve our Climate Act requirements of a 40% decrease in GHG emissions by 2030 and 85% by 2050. The program will also invest in programs that will reduce emissions with an emphasis on disadvantaged communities, limit costs to economically vulnerable households, and create many new jobs. The Governor also announced significant investments in energy affordability, energy-efficient buildings, and clean air and water.

While New York State is making changes on a governmental level, there are many steps that individuals can take too. For a greener 2023, follow these money, climate, and energy-saving tips:

- Purchase ENERGY STAR® certified appliances.
- Use advanced power strips: Some electronics can still use electricity even when turned off. Advanced power strips stop this over-usage by automatically cutting power when a device is not in use.
- Sign up for Community Solar: Save money on electricity by subscribing to a Community Solar project in your area. After tapping into this clean energy source, you will see solar credits on your monthly bill based on how much energy the project has generated.
- Change your laundry habits: Many laundry practices waste energy. About 90% of the energy used in a clothes washer is put toward heating water. Switching from hot to warm water can cut energy use in half, and cold water saves even more.
- Drive less: By using other transportation options, such as carpooling, public transportation, or biking, you can save money on fuel costs and wear and tear on your vehicle, as well as lower your carbon footprint.

Everyone can take steps to clean our environment. By using these energy-saving tips, New Yorkers can take part in reducing emissions to help protect our air.

Source: NYS Dept. of Environmental Conservation

Disturbances in magnetic field impact avian vagrancy

It seems logical enough that bad weather can sometimes cause birds to become disoriented during their annual fall migrations — causing them to wind up in territory they're unaccustomed to. But why, even when weather is not a major factor, do birds travel far away from their usual routes?

A new paper by UCLA ecologists explores one reason: disturbances to Earth's magnetic field can lead birds astray — a phenomenon scientists call "vagrancy" — even in perfect weather, and especially during fall migration. The research is published in *Scientific Reports*.

Earth's magnetic field, which runs between the North and South Poles, is generated by several factors, both above and below the planet's surface. Decades' worth of lab research suggests that birds can sense magnetic fields using magnetoreceptors in their eyes. The new UCLA study lends support to those findings from an ecological perspective.

"There's increasing evidence that birds can actually see geomagnetic fields," said Morgan Tingley, the paper's corresponding author and a UCLA associate professor of ecology and evolutionary biology. "In familiar areas, birds may navigate by geography, but in some situations it's easier to use geomagnetism."

But birds' ability to navigate using geomagnetic fields can be impaired when those magnetic fields are disturbed. Such disturbances can come from the sun's magnetic field, for example, particularly during periods of heightened solar activity, such as sunspots and solar flares, but also from other sources.

"If the geomagnetic field experiences disturbance, it's like using a distorted map that sends the birds off course," Tingley said.

Source: Birdwatching, 1/27/23

Fields Trips with HRAS

March & April 2023 Schedule

EDITH G. READ NATURAL PARK AND WILDLIFE SANCTUARY

Saturday, April 1, 2023
1 Playland Pkwy, Rye, NY 10580
Meet at 8:00 a.m. by the lake on the far end of the Playland Amusement parking lot near Playland Lake.

Leader: Michael Bochnik

The last winter birds may be seen as well as the first signs of spring migration.

EDITH G READ WILDLIFE SANCTUARY IN RYE, NY © BLEUNG/ADOBE

EARTH DAY BIRD WALK

Saturday, April 22, 2023
Meet at 8 a.m. at Larchmont Reservoir. The entrance to the Reservoir is located at 687 Weaver Street (park next to the tool shed) in Mamaroneck.

Leader: Michael Bochnik

We'll search for the first early spring migrants.

CRANBERRY LAKE PRESERVE

Saturday, May 6, 2023
Meet at 8 a.m. at Cranberry Lake Preserve, 1609 Old Orchard St, West Harrison, NY 10604

Leader: Michael Bochnik

It's the height of spring migration. Both resident and migrating warblers, vireos, tanagers and more should be found.

MOTHER'S DAY WARBLER WALK

Sunday, May 14, 2023
Meet at 8 a.m. at Lenoir Preserve, 19 Dudley Street, Yonkers, NY.

Leader: Michael Bochnik

An HRAS tradition. We will take a leisurely walk around the preserve, including the butterfly garden in search of migrating warblers.

Count Feeder Birds for Science! Last dates in March.

The Hudson River Audubon Society will be sponsoring FeederWatch at the Lenoir Nature Center on the following weekends. Our mission is to count the birds of each species that visit our feeders and report them to Cornell Lab's bird census data.

All Saturdays will be 10:00 a.m. – 12 p.m.; all Sundays will be 2:00 p.m. – 4:00 p.m.

March 11–12	open
March 25–26	open

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