

A quarterly newsletter for Volunteers and Friends of the Friends of Patuxent Research Refuge, Inc.



FRIENDS OF PATUXENT

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Burn Baby, Burn

By Jennifer Greiner, Patuxent Research Refuge Manager

Last November, I had the privilege of participating in the Agency Administrator workshop at the National Interagency Prescribed Fire Training Center (PFTC) in Florida. I was blown away at the dedication of resource professionals from across the country who are using “Rx Fire” to manage a wide variety of ecological systems on state and Federal lands, including National Parks, National Forests, and National Wildlife Refuges. I came away with a deep appreciation for the role of fire on the landscape, its importance as

a habitat management tool, and an enhanced understanding of how it works and why we use it.

As explained by Refuge Biologist Sandy Spencer, Patuxent Research Refuge has several hundred acres in early succession habitat, which, if left to its natural progression of vegetation, will transition from grasses and forbs to shrubby woody young trees, to a mature forest with a completely closed canopy...not ideal for a refuge that is trying to maintain some grassland habitat. Enter Rx Fire as a cost-effective solution.

Advantages of prescribed fire as a management tool are many: it is *Continued on page 2*



Prescribed Fire Training Center

Refuge Manager Jennifer Griener using a drip torch for ignition of prescribed fire during hands-on training at Elgin Air Force Base.

A Gift to Friends of Patuxent

Lowell Adams, Vice-Chair, Board of Directors, Friends of Patuxent

Late last year Friends of Patuxent was wonderfully surprised to receive an anonymous and unsolicited donation of \$25,000, no strings attached. The Finance Committee¹ was charged with the task of making a recommendation to the Board of Directors about how to spend the donation. With input from Patuxent Research Refuge Manager Jennifer Greiner, Eastern Ecological Science Center Director Tom O’Connell, and Friends’ Board members, the Committee deliberated by email and a final Zoom meeting. It made its recommendation to the Board of Directors at the Board’s meeting of January 2022, and the *Continued on page 13*

Inside...

The Saga of the American Black Duck.....	3	Hollingsworth Gallery - Spring 2022.....	11
Keep an Eye Out for the New Friends of Patuxent Website.....	3	Kid’s Discovery Center	11
Honoring the Legacy of Chandler S. Robbins.....	4	Come Meet Our New Wildlife Images Store Manager!.....	12
Pollinator Research Highlights at the U.S. Geological Survey’s Eastern Ecological Science Center.....	6	Plant Rant: Native Virginia Bluebells vs. Invasive Lesser Celandine.....	14
Functions and Names of Patuxent’s Lakes and Ponds.....	8	Volunteers Wanted for Plant/Bumble Bee Survey.....	16
What if You Were a Field Bird in Winter? Patuxent’s First Diversity Hunt.....	9	Sale of NASA Land Adjacent to Refuge Temporarily Halted.....	18
The Patuxent Wildlife Research Center Incinerator	10	Master Mimic, the Northern Mockingbird ...	20
		Around the Refuge.....	21
		New Legal Counsel for Friends of Patuxent.....	23

Burn Baby, Burn

Continued from page 1

quicker and uses less fossil fuel than mowing, there are fewer heavy tires crossing the burn unit putting wildlife at risk from mowing, and it removes thatch, which over time builds up and chokes out grasses and forbs.

Other benefits of prescribed fire as a habitat management tool include opening the mid- or under-story to daylight to promote desirable native species that are not shade dependent such as oaks (for forested units) and removing standing dead biomass (downed trees that can serve as fuel for uncontrolled fire). Removal of dead biomass not only returns nutrients to the soil but also clears obstacles preventing efficient treatment of invasives. Although fire seldom rids the landscape of invasives, as they often re-sprout, it does effectively reduce the above-ground biomass, allowing for more effective application of other mechanical or herbicidal treatments.

The National Wildlife Refuge System uses highly skilled and trained fire crews who understand fire behavior and know how to manipulate it safely. Significant planning goes into crafting well-designed burn plans, assembling knowledgeable crews, assessing weather and wind in the days preceding a burn, predicting how to prevent smoke impacts to surrounding resources, conducting safety briefings, and communicating with local authorities and neighboring landowners in advance of burn day. During the training at PFTC, I was amazed at how precise these fire crews are, burning safely even within a few feet of structures. I look forward to working with prescribed fire experts in the coming weeks of the spring “burn window” to conduct safe and successful prescribed burns on a number of units across the refuge.

Watch for before/during/after coverage of these burns on the refuge’s social media! 🦋



Prescribed burn on North Tract grassland.

Sandy Spencer, USFWS

Visit us on Facebook and Twitter

<https://www.facebook.com/P:atuxentResearchRefuge>

<https://twitter.com/USFWSNortheast/status/78546358377783296>

Friends of Patuxent is published quarterly and can be read online or mailed to our Friends upon request.

Many of the regular newsletter contributors and assistants are volunteers. We welcome and encourage all volunteers and Friends to submit items for the newsletter by sending or bringing them to:

Editor, Friends of Patuxent Newsletter
ATTN: Ross Feldner
 11811 Ivanhoe Street
 Wheaton, MD 20902

Or email to ross.feldner@verizon.net

All articles submitted to the Friends of Patuxent Newsletter will be reviewed by newsletter staff prior to their publication. We reserve the right to not publish submissions based on length, content or suitability.

Article submission deadlines:

Issue			Issue		
No.	Months	Deadline	No.	Months	Deadline
1	Jan-Mar	December 1	2	Apr-Jun	March 1
3	Jul-Sept	June 1	4	Oct-Dec	September 1

To become a member of the Friends of Patuxent or send a donation, please see “Membership Application” on page 23.

The Saga of the American Black Duck

by Steve Noyes, Volunteer Naturalist

American black ducks (*Anas ribripes*) can be found at the Patuxent Research Refuge, often with mallards (*Anas platyrhynchos*) with which they hybridize; they belong to a group of ducks called “dabblers” (surface feeders). Black ducks are an uncommon breeder on the refuge but can be found year around in small numbers. Although a couple of pairs of black ducks were recorded during regular breeding bird surveys on the refuge in the 2010s, no broods were found.

Males and females look similar, but females are usually lighter in color and beak and feet colors differ. Black ducks resemble female mallards.

Range

They are found in eastern North America along the Atlantic and Mississippi flyways in the U.S. Northern breeding black ducks usually migrate in the winter only far enough south to have open water available, so you might have a better chance of spotting them in the winter at the Refuge (again, with mallards).

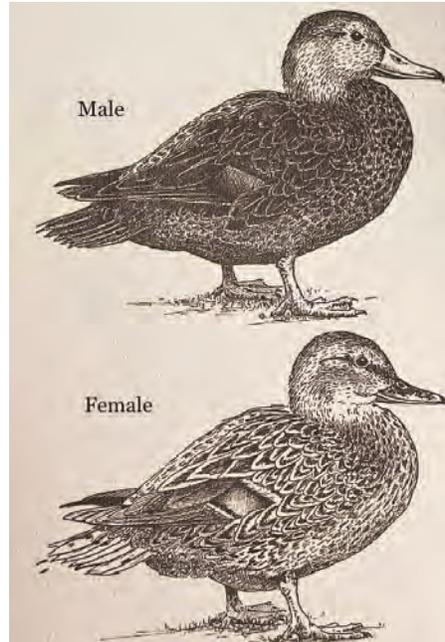
Nesting

Black ducks prefer wooded wetlands (forested islands, hummocks and, occasionally, tree cavities). Eight to ten eggs are laid. Incubation period: about 4 weeks, with fledging in 10 weeks.

The males stay with the female for the first two weeks of incubation then deserts her and hangs out with males in large groups in the marshes. There may be a second pairing if the first brood fails.

Food

Black ducks are mostly omnivorous. During breeding season, black ducks consume 80% vegetable foods and 20% animal foods (snails, other small mollusks, amphipods). Ducklings feed exclusively on water invertebrates



for the first 12 days, later switching to seeds and other plant food (sedges, wild rice, pickerelweed, water lilies).

Predators

Predators include crows, raccoons (on nests); great horned owls (on adults); snapping turtles, bullfrogs (on ducklings). At one time, lead shot

poisoning was also a leading cause of black duck losses.

Conservation

In the early 1900s, black ducks outnumbered mallards. Hybridizing with mallards has caused the black duck population to plummet since the 1950s. Neither species seems to differentiate itself from the other. Female black ducks often prefer mallard males for mates. As late as 1943, because of many genetic similarities, black ducks were considered a melanistic subspecies of mallards. Mallards seem to be more aggressive and adaptable to habitat changes. Loss of forested wetland habitats (due to drainage and urbanization) is another major reason for the black duck declining population.

So, while you're walking around the lakes and ponds of the refuge, keep a sharp lookout for these elusive ducks. Those apparently dark colored mallard females may in fact be American black ducks.

Source (text and illustration): “Birds of Lake, Marsh and Pond”, John Eastman and Amelia Hansen (artist), (1999) 🦋

Keep an Eye Out for the New Friends of Patuxent Website!

HOME ABOUT ► INITIATIVES ► BOOKSTORE NEWS & PUBLICATIONS ► SUPPORT ► VISIT ► EVENTS CONTACT MEMBERS ►

WELCOME!

Friends of Patuxent is a non-profit organization supporting the Patuxent Research Refuge in Maryland.

[Learn more about the Friends.](#)



Look for the new Friends of Patuxent website this spring! The website is being built with Wild Apricot membership management software and will have a new look and feel. The secure website will make it easy to join, donate, and renew membership online. An e-mail containing information on its many features and member access will be sent closer to the time when the new website is launched.

Honoring the Legacy of Chandler S. Robbins

Lowell Adams, Vice-Chair, Board of Directors, Friends of Patuxent
 Stephanie Everett, Patuxent Volunteer
 Tim Parker, Education Coordinator, Patuxent Research Refuge

Chandler Robbins (Figure 1) spent his entire professional career at the Patuxent Wildlife Research Center (now the Eastern Ecological Science Center). He was an internationally-known and respected ornithologist and well-loved in the Patuxent community. Chan passed away March 20, 2017 at the age of 98. Friends of Patuxent, in consultation with Chan’s family, established an endowment to honor his legacy, and to further the appreciation of birds and their habitats through research, conservation, and education.



Photo: PWRC/USGS

Fig. 1. Chan Robbins was an internationally-known biologist who spent his entire professional career at Patuxent Wildlife Research Center (now Eastern Ecological Science Center). Among his many accomplishments were senior authorship of a field guide to birds of North America and establishment of the North American Breeding Bird Survey.

Under the direction of an endowment committee¹ with representatives from Chan’s family, Eastern Ecological Science Center, Patuxent Research Refuge, and Friends of Patuxent, a new nature trail at Patuxent’s South Tract is being planned (Figure 2). Inspired by Chan’s participatory bird walks, the trail will carry on his legacy of introducing people to the enjoyment of recreational birding and to



Photo: Google Maps/USGS/USDA

Fig. 2. Conceptual design of the Wisdom Trail at the National Wildlife Visitor Center.



Photo: Marcia Watson

Fig. 3. The outdoor pavilion near the National Wildlife Visitor Center has been renamed the Dr. Chandler S. Robbins Outdoor Education Center.

the science of bird conservation. Stations along the trail will teach visitors how to identify some of the birds of Patuxent and where those birds might be found. The trail also will convey the importance of protecting birds and

their habitats, something that was very important to Chan.

The nature trail will be approximately ½ mile long and will pass by the outdoor education pavilion (Figure 3),



Photo: USFWS/T. Parker

Fig. 4. Conceptual design of the listening horn on the Wisdom Trail.

renamed the Dr. Chandler S. Robbins Outdoor Education Center. The trail will feature a series of hands-on interactive stations designed to engage visitors and encourage them to explore and interact with their surroundings. It will be called the “Wisdom Trail” in tribute to Chan’s approach to nature, as well as a nod to a Laysan Albatross that Chan banded in 1956; when researchers saw the albatross again 50 years later, still healthy and raising chicks, they named her “Wisdom.”

At one of the stations on the Wisdom Trail, visitors will learn about identifying birds by listening to their songs and calls; they also will learn that different birds live in different habitats. An informative display will show several Patuxent birds, along with cues to their songs, and encourage visitors to listen for them. A listening horn (Figure 4) will be placed near the meadow-forest edge to help users focus their attention and compare the sounds in the two different habitats.

At another station visitors will use a spotting scope to search for pictures of birds hidden in the trees (Figure 5). When they find each bird, visitors will be rewarded with a fun fact or a short tidbit of information. The pictures will be placed in positions appropriate for each bird – a nuthatch will be heading down a tree trunk, for example, and a wood thrush will be on or near the ground. Having visitors search for pictures instead of live birds ensures they will enjoy success, and gives them the confidence to search for real birds on their own.



Photo: Matt Beziat

Fig. 5. Conceptual design of the viewing scope station on the Wisdom Trail.



Photo: USFWS

Fig. 6. Conceptual design of the bird silhouette tree on the Wisdom Trail.

The Wisdom Trail also will feature a metal sculpture depicting a tree with several birds in silhouette (Figure 6). The sculpture will be located in the meadow where it may be easily seen from a distance, beckoning visitors to explore the trail toward the Robbins Outdoor Education Center.

As part of the Wisdom Trail project, Friends of Patuxent established an annual Chan Robbins Bird Walk exclusively for Friends members. The inaugural walk was held on June 26, 2021, and was very well received. Watch for a notice about this year’s walk.

Additional projects will be supported by the Robbins Endowment in the future. If you would like to help keep Chan’s memory alive by supporting our work, you can make an online donation through the Friends of Patuxent website (<http://www.friendsofpatuxent.org>) or you can send a check made payable to “Friends of Patuxent” to Friends of Patuxent, 10901 Scarlet Tanager Loop, Laurel, MD 20708. Please make a note on the check, or send us an email, letting us know you wish to designate your donation to the Dr. Chandler S. Robbins Memorial Endowment.

¹Dr. Chandler S. Robbins Memorial Endowment Committee: Lowell Adams (Chair), Ken Cohen, Stephanie Everett, Tim Parker, Matt Perry, George Robbins, Jane Robbins, Jay Sheppard, and Marcia Watson. 🦋

Pollinator Research Highlights at the U.S. Geological Survey's Eastern Ecological Science Center

by Aaron Aunins, Sam Droege, Deborah Iwanowicz, Jennifer Malpass, and Nimish Vyas;
USGS Eastern Ecological Science Center

June 20-26, 2022 is Pollinator Week, an annual event recognizing pollinator health. Animal pollinators are critical for sustaining healthy ecosystems and prosperous human populations. Globally, about one-third of domesticated crop production and about 70% of all plant species require pollination services by bees, birds, butterflies, bats, beetles and other insects. Here are a few highlights of pollinator research conducted by U.S. Geological Survey's (USGS) scientists at Eastern Ecological Science Center, including several scientists located on the Patuxent Research Refuge.

Native Bee Inventory and Monitoring Laboratory

Patuxent Research Refuge is home to the Native Bee Inventory and Monitoring Laboratory, a collaboration between USGS and U.S. Fish and Wildlife Service (USFWS). The lab is the primary support institution for monitoring, identification, and survey techniques for the 4,000 North American native bee species. Building on a foundation of nearly 20 years of dedicated work on native bees, the lab is now rapidly expanding due to the growing recognition of the importance of native bees and other pollinators for healthy ecosystems. The lab has supported and consulted in every state, and collaborated with hundreds of students, academics, institutions and non-governmental organizations colocated around the globe. In order to increase the capacity for expertise in natural history, monitoring and identification



Photo: Sam Droege, USGS.

New "hoop houses" at Patuxent Research Refuge will expand opportunities for propagating native plants used by pollinators.

for native bees and stinging wasps (such as hornets), the lab has developed technique manuals, training classes, and identification guides for over 1500 species. The lab also maintains an online gallery of high-resolution public domain images of bees and wasps to aid in identification (<https://www.flickr.com/photos/usgsbiml/>) and consults and trains numerous people interested in the tricky art of processing and identifying bees.

The lab is now increasing work on understanding the complexity of bee-plant interactions and has documented at least 200 species of bees visiting plants on the refuge so far. Plants have evolved seasonal and daily bloom

times, chemical compositions, colors, and shapes to attract only certain kinds of bees, and bees are equally picky about which plants they visit. To support research into bee-plant interactions, an area of the refuge previously used for raising endangered cranes has recently been outfitted with automatic watering systems. Irrigation, the lack of deer and ample space for growing out native plants have led to refuge staff, other USFWS groups, and community non-profits working on native pollinator plantings to volunteer to help raise these plants. Some of the plants are then used in partner efforts to recover landscapes for pollinators and create biodiverse habitats. Clair Maffei, a USFWS employee, is co-lo-

cated at the lab to help the service to expand their efforts to build up capacity to identify and understand native bee biology.

Improving pollinator forage on U.S. Department of Agriculture conservation lands

U.S. agricultural productivity relies heavily on both domesticated and native insects for pollination services, and the economic value of insect pollination services is estimated at ~ \$15-30 (USD) billion annually. Reliance on domesticated insects such as European honeybees (*Apis mellifera*) for pollination services is growing even as colony numbers decline. Since 1985, programs administered by the Farm Service Agency and the Natural Resources Conservation Service have restored many millions of acres of grassland, providing important mixed forbs (flowering plants) that honeybees use for forage. However, escalating values of agricultural crops, especially those for bio-energy, have reduced the willingness of landowners to enroll or re-enroll in conservation programs such as the Conservation Reserve Program and Environmental Quality Incentives Program. As conservation acreage area has declined, there has been an increasing need to improve the habitat for honeybees and other pollinators on federal conservation program lands.

Since 2014, researchers at the USGS Eastern Ecological Science Center in collaboration with USGS Fort Collins Science Center, USGS Northern Prairie Wildlife Research Center and the U.S. Department of Agriculture (USDA) Beltsville Agricultural Research Center have led genetic sequencing and bioinformatics efforts to identify the specific species of pollen collected by honeybees. The primary sequencing technique employed in these studies is metabarcoding, where the same gene region of a bulk pollen sample is polymerase chain reaction amplified

and sequenced on a high-throughput genetic sequencer. Although, different pollen species share the same polymerase chain reaction primers, the region amplified is unique to different species to allow their relative proportions to be quantified in a sample. Each sequence is identified through comparison to a genetic reference database of possible plant species that may have contributed to the pollen pool. This research provides an empirical evaluation of floral resources used, forage quality, and the relative contribution of those resources to honeybee health and productivity. In addition, this research is informing the development of cost-



Regular checks on European honeybee colonies are necessary to monitor colony health and marked bees used in bee foraging studies.

effective seeding mix options that can be used to enhance honey production and improve the health and fitness of honeybee colonies on U.S. Department of Agriculture program lands. Researchers are also analyzing pathogens found in the pollen and stomachs of honeybees to identify plant species and determine if certain plant species are associated with specific pathogens during different times of the year.

Determining the influence of ozone pollution on pollination

Ozone pollution results from the use of fossil fuels like gasoline, jet fuel, and diesel oil. Winds carry ozone across the landscape, polluting the air of urban, rural, and natural areas, across the nation and around the globe. Several negative effects of ozone on the environment have been documented, such as changes to water and nutrient cycles and adverse effects on plant and human health, but to date, no field studies have been conducted to determine if ambient atmospheric ozone also disrupts pollination.

Recent laboratory research suggests that ozone may break down the chemicals (scent) that flowers release into the air to attract pollinating insects. A floral scent may be composed of over 100 organic volatile chemicals. Bees follow the trail of these floral volatiles to locate distant flowers, and disruption of these flower-visitor signals could threaten habitat quality, biodiversity, and even national security by disrupting the U.S. food supply system.

Scientists at Eastern Ecological Science Center have partnered with University of California and U.S. Department of Agriculture to explore relationships among bee foraging success, weather, and ozone concentrations. Ultimately, this research will be used to better understand effects of fossil fuel use on pollination and to inform air quality regulations.

To learn more about Eastern Ecological Science Center's research on pollinators, and other fish and wildlife, visit usgs.gov/centers/eesc. Follow us on Facebook at facebook.com/USGSEESC for the latest updates on our science and ways you can get involved, including events at Patuxent Research Refuge. 🐝

Photo: Nimish Vyas, USGS.

Functions and Names of Patuxent's Lakes and Ponds

by Matthew C. Perry, Emeritus Scientist, Patuxent Wildlife Research Center (now Eastern Ecological Science Center)

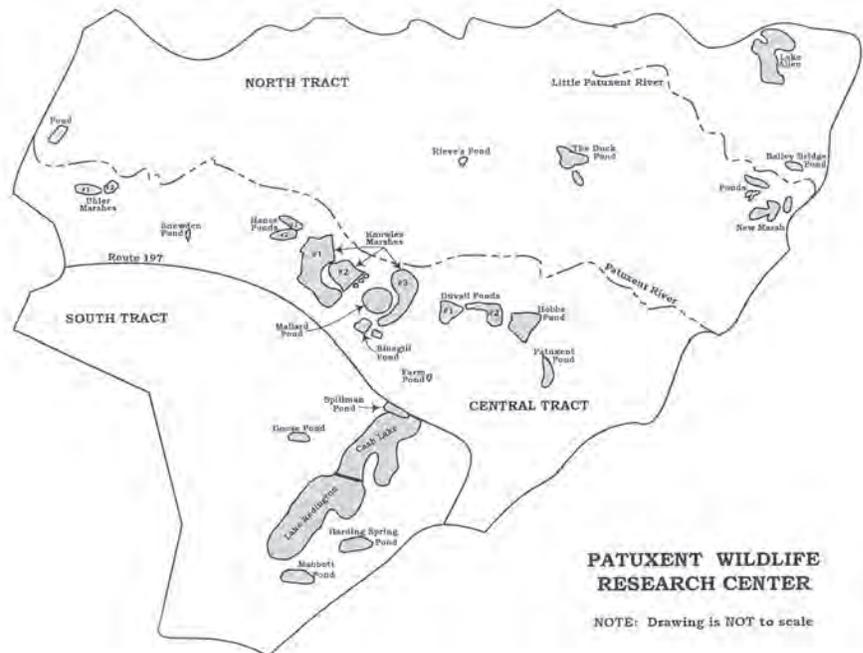
The state of Maryland is unique in that there are no major natural lakes (and very few large ponds) in the entire state. When Patuxent Research Refuge was established in 1936 the early administrators and biologists were aware of the value of the Patuxent River for waterfowl (predominantly wood ducks), but staff were eager to create lakes and ponds to supplement the river for waterfowl use. This was in response to the nation's desire to boost declining duck populations, but also to demonstrate to managers in other parts of the United States optimum techniques to increase duck population numbers. However, not all lakes and ponds were created as waterfowl habitat, and some had totally different functions.

The first created wetland on the refuge was Cash Lake, which was created in 1938 as a dammed ravine on the South Tract area of the original refuge land, located on the south side of the Laurel Bowie Road (Rt. #197).



Early morning mist on Snowden Pond during the fall.

Cash Lake was constructed by the Civilian Conservation Corps (CCC) with the objective to create a recreational fishing area. Cash Lake was named for Cash Branch that flows through the refuge and was impounded (dammed) to form the lake. Former volunteer, Charlie Robinson, recounted an old local story that Cash Branch was named for a freed Black



Graphic representation of the lakes and ponds at Patuxent Research Refuge.

slave named Cash, who lived on the property after emancipation.

Cash Lake was initially used for public fishing and probably used by the CCC men stationed in the local area. Another early pond created for public fishing was Farm Pond, which was created on the Central Tract in 1944. Farm Pond was an excavated wetland created to demonstrate to farmers an easy way to create water supply for farming, but that also could be used for fishing.

All public fishing on the refuge was terminated during the 1950-80s when waterfowl management was a focus of the refuge. Biologists objected to anglers walking the edges of the lakes and ponds in areas where they were studying the nesting habitat of ducks. Fishing was again allowed for public recreation at Cash Lake (but not Farm Pond) in the 1990s around the time

the visitor center was being planned.

Another early impoundment on the Refuge was Snowden Pond, flooded in 1946 in the headquarters area of the Central Tract. Snowden Pond was built by men of the Civilian Public Service (conscientious objectors) during World War II. Snowden Pond actually qualifies as a lake as the sunlight does not reach the total bottom and the temperature is not uniform from top to bottom.

There are some areas of Snowden Pond that do not freeze completely during cold winters and believed to be due to underwater springs in the pond's bottom. Ice skating was originally permitted for resident staff of Patuxent, but when Dr. Dustman and Dr. Stickel were directors of Patuxent during the 1960-70s, Snowden Pond was officially off limits for resident

Continued on page 22

What if You Were a Field Bird in Winter?

by Sandy Spencer, Supervisory Refuge Biologist, USFWS, Patuxent Research Refuge

With no cozy cabin with a blazing fireplace to curl up in front of while the blizzard rages outside, what would you do? By the time you read this, the memories of the January 3 snow storm will have “melted away” (ha ha!). While we enjoyed the aesthetic value of a winter wonderland from the comfort of our homes, sparrows such as song, field, white-throated, savanna, swamp, chipping, occasional grasshopper, and junco struggle to find shelter. For many areas on the refuge, mowing the tall grass has been delayed until March or April just for this purpose. Note the many little thermal pockets created by the grasses bent over from the weight of the snow. These igloo-like features provide safe cover for birds, small mammals, and rabbits. The seeds from the grasses also provide a source of food.

Even on cold winter nights without snow, the spaces down low around the bases of the grasses provide shelter from the cold and wind for these birds, all puffed up to retain body heat.

Photos here are examples of thermal pockets created by tall grass and other vegetation, unfortunately they don't capture all the little birds I saw flitting in and out. 🐦



Patuxent's First Diversity Hunt

by Genny Davis, Chesapeake Conservation Corps, Patuxent Research Refuge

In fall of 2021, Patuxent Research Refuge hosted its very first diversity hunt! The hunt was led by Eric Morris, founder of N.onT.ypical Outdoorsman, in which he hopes to inspire more diversity in outdoor recreation. Seven first-time hunters were paired with seasoned mentors from N.onT.ypical Outdoorsman. Participants learned hunting ethics, hunting etiquette, shooting fundamentals, and deer behavior. Although only one deer was harvested, participants had a great time experiencing their first hunt and made plans to return to Patuxent during future hunting seasons. 🐦



WE APPLAUD AND SALUTE OUR VOLUNTEERS

The Patuxent Wildlife Research Center Incinerator

by Sandy Spencer, Supervisory Refuge Biologist, USFWS, Patuxent Research Refuge

Some of you reading this article may not even know that the Patuxent Wildlife Research Center (now USGS Eastern Ecological Science Center) has an incinerator. It stands on the Patuxent Research Refuge's Central Tract, behind the old Stickle Lab site, north of Snowden Pond. Installed in the 1940s, it is now about 80 years old! I am not sure why the refuge, quite new and young in the 40s, would have needed an incinerator then, but in later decades the incinerator was used to dispose of biological wastes, including food waste scraps and carcasses of deceased captive animals. In its heyday, when the whooping crane program was active and more wildlife research was being conducted on Center than today, it was in "hot" demand by the vet hospital, or researchers.

A serious drawback was the cost of its operation. It ran on propane and the pilot had to be kept burning all the time so the incinerator would be ready to fire when needed. This used approximately



6,000 gals of propane on average over the course of a year (per Chuck Wicks). And whenever this little shop of horrors got fed, trained personnel had to stand there and wait until the process was complete. In Maryland, a facility had to have a license to possess and operate an incinerator, and the operators had to have annual training and certification,



to the tune of about \$200 a person. In addition to these costs, there were personnel time and salary for its maintenance and repairs and keeping vegetation clear of it. In the past 3 years, the incinerator has not been used and is turned off. It is simpler and more cost effective to package up the biological waste, store it in the walk-in freezer on Central Tract and schedule a pickup by a company that handles biological waste disposal. Matt Perry shared a



funny tale about the incinerator. When the Fish and Wildlife Service (FWS) was tasked with removal of invasive mute swans from the Eastern Shore, Matt was told that a truckload of about 200 dead swans was being delivered to him to dispose of in the incinerator. Alarmed at the sudden and daunting task of trying to handle such a grue-

some load, he asked Gary Sumeriski (then facilities manager) for help. "Don't worry, I'll take care of it," said Sumeriski. And so he gave the carcasses a mass burial. Where? We'll never know!

USGS is planning to dismantle and remove the incinerator. Till then its aging hulk must be continually mowed around and cleared of vines and debris. The powerlines that feed it must be mowed under



and tree limbs trimmed back. Once removed, however, that section can be allowed to reforest, the powerlines and poles can be removed, and both these acts will reduce the mowing footprint and burden on staff. And we can all bid farewell to yet another quirky and interesting thing that defines Patuxent! 🦋

Hollingsworth Gallery - Spring 2022

by Faith Leahy-Thielke, Patuxent Volunteer

Spring! – it is coming (I’ve been assured by expert government authorities) – though we’ll perhaps still be masked – we’ll be treated to exhibits of the artwork and photography of David Scheirer in April, Bill Reichhardt in May, and Kathleen Ryan Gardiner in June.

David Scheirer grew up in the Washington D.C. area and earned a Bachelor’s of Fine Arts at MICA (Maryland Institute College of Art). He presently makes his home on a small farm in Maryland. Scheirer’s favorite medium is watercolor. He writes that he enjoys finding “interesting combinations between realism and crisp detail” exploring the “expressive fluidity” of watercolor paints. He spends his free time outdoors, collecting fossils, beachcombing, and bird watching. These activities inspire much of his artwork by providing his subjects. A case in point is a recent book he illustrated. Several months last year were devoted to “Seashells of New England, a Beachcomber’s Guide.” Scheirer contributed 69 exquisite paintings of shells found on beaches from southern Connecticut to northern Maine to this book by Sandy Allison.

What Scheirer observes outdoors, he paints – often life-sized – birds, plants

and other natural “artifacts” – usually as “small works.” He also does commercial and book illustrations, pet portraits and accepts private commissions.

May not only brings flowers, it greets the return of Bill Reichhardt. His elegant sailing, nature, and wildlife images graced the gallery once before in April of 2019. The former practicing attorney from Virginia is “retired” and living in Annapolis. He writes that in the last two years, travel restrictions have kept him “focusing more on those opportunities around me.” He’s spent time in local parks and wildlife preserves — with a concentration on birds, mostly seabirds and predators — trading landscapes for close-ups and macro images. He calls the output from this time his “pandemic body of work.” At least part of his exhibit will have this focus, but last fall, he and his wife managed to dodge Corona variants and travel to Africa for a safari (that had twice been postponed.) They traveled through Botswana and Zimbabwe in September and October. Reichhardt captured over 5000 images of birds and animals. He hopes to include those he deems best and is busy editing them.

The formerly self-described “serious amateur” has definitely become a “pro.”

In June we’re delighted and are fortunate to view the lovely watercolors of Kathleen Ryan Gardiner. She is a “signature” member of the Baltimore Watercolor Society, a member of the American Watercolor Society, and a “juried member” of the Working Artists’ Forum and the Maryland Federation of Art – an incredible number of “creds!” She studied art at SUNY (State University of New York) in Plattsburgh, N.Y. She earned a degree in Education with minors in art and Social Studies. Gardiner has taught both in N.Y. and Maryland. She has continued teaching via Zoom and studying in various workshops. An internationally recognized watercolor artist, Gardiner has explored a variety of mediums, but watercolor is her favorite. She has painted the lakes and mountains of New York, historic urban architecture, and the Chesapeake Bay region. Her paintings of Assateague are part of Gardiner’s latest body of work, in which she includes landscapes, seascapes, and reflections. Light and shadow in her work “draw viewers into their story.”

I’m thinking spring will be even more wonderful this year with these lovely exhibits! 🦋

Kids Discovery Center

This winter, Patuxent Research Refuge opened the Kid’s Discovery Center in the main lobby of the National Wildlife Visitor Center in an immense effort led by volunteer Barrie Hershkowitz. Each month, a new wildlife theme will engage pre-k/k-aged children and parents using a variety of parent-led, hands-on activities to learn about nature. December’s theme was Birds in Winter, January’s theme was What is Torpor, and February’s theme was Trees in Winter. Over the course of these three months the Kid’s Discovery Center had over 100 participants!



Come Meet Our New Wildlife Images Store Manager!

by Karen Atwood, FOP Board Member and Refuge Volunteer. Photos by Karen Atwood.

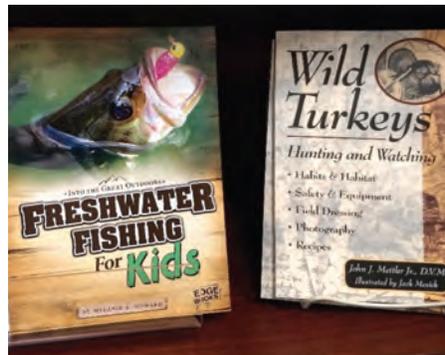
There's new life in the Friends of Patuxent (FOP) Bookstore & Nature Shop! Welcome, new manager **Ann Carlson**. She joined us part-time in July and is enthusiastically powering up the shop again after COVID-19 closures. Ann was formerly an independent bookstore owner, accountant, corporate CPA and CFO. As you may know, prior longtime manager Linda Shive switched coasts some months back to share the joys of her young grandchild's life in California; yes, they're thriving. Successful managerial candidate Ann, as it turns out, once lived in California. Small world!

Ann Carlson comes to us more recently from South Carolina, near Pawley's Island. Work and family life moved her all over the country, but the love of books always traveled with her, along with the dream of having her own bookshop at a beach. That dream she realized in 1998, acquiring and operating her bookstore in Georgetown, SC, where she ran it successfully for 20 years, retiring to Maryland in late 2017.

Here in the Friends' *Wildlife Images Bookstore & Nature Shop*, Ann has embraced the National Wildlife Refuge mission. She's adding some fresh, contemporary products and resources, weaving in themes from fishing, animal tracking and hiking to trees, birds, native plants and pollinators. Ann's looking into Spanish-language materials, too. Come explore the shop's growing selection of resources, paralleling more Refuge Visitor Center and Science Center education and research themes. Learning-extension games, puzzles, books and supplies join our "just the thing" special gifts for birthdays,



Ann retired to Maryland in 2017. Luckily for us, she missed her bookstore days.



Intriguing ways to engage and learn. We now also carry "Wingspan," the new, competitive strategy game that's intriguing birders and non-birders, alike!



thank-you's, Easter baskets, Mother's Day and Father's Day. Come browse our unique nature-themed jewelry, fun and functional outdoor apparel and wares, distinctive stationery products, quality wildlife materials and field guides. **Support your local National Wildlife Refuge — shop here!**

If you're a Friends of Patuxent member, kindly remember to let us know when you shop, so that we can apply your 10% Members' discount to your purchase. Not a member yet? Check out the Friends' website to explore membership: www.friendsofpatuxent.org. Our mission as Friends of Patuxent is to support the research, wildlife

conservation and education missions and programs of the Patuxent Research Refuge and Eastern Ecological Science Center. FOP raises funds for educational programs, exhibits and research, as well as other Refuge and Science Center projects.

Have some ideas and/or some time? Share your suggestions for mission-support merchandise; explore being one of our new shop volunteers. Half-day and full-day helpers, we need you! Stop in to chat if the shop's having a quiet moment, or email Ann: wibookstore@friendsofpatuxent.org.



You KNOW you need a catchy new cap and sweatshirt!



NEW Bookstore & Nature Shop Days and hours in the National Wildlife Visitor Center on the refuge's South Tract: **Saturdays, 10 a.m. to 4 p.m., and Wednesday through Friday, 11 a.m. to 4 p.m.** We'd like to open Tuesdays, too, but need more volunteers – want to help? *Free training, along with the satisfaction of knowing that you're helping support the Patuxent Research Refuge and the Eastern Ecological Science Center. Please join us!* 🦋



New nature jewelry, Charlie Harper-style.

A Gift to Friends of Patuxent

Continued from page 1

Board approved the recommendation. The recommendation was to distribute \$12,000 each to the Refuge and Science Center for the projects outlined here. Ten thousand dollars of the funds going to the Science Center will be used to help fund internship opportunities focused on increasing engagement with historically-under-served communities. Two thousand dollars of the funds going to the Science Center will help to support development of a bird banding field station on the Refuge. The Science Center annually collects and bands up to 1,800 birds from mid-August to mid-November. Birds are currently processed at a small wooden structure with an improvised roof. The Science Center intends to replace this crude structure with a small field station building and covered pavilion. This new bird banding station will provide Science Center banders with an improved work environment that is more reflective of the stature of the Science Center's North American Bird Banding Laboratory. It will improve access to researchers, managers and the general public, and better enable the Science Center to collaborate on cut-

ting-edge bird science, while creating rich, engaging learning experiences.

The \$12,000 going to the Refuge will be used to upgrade facilities of the Children's Discovery Center in the National Wildlife Visitor Center. The Discovery Center was designed to introduce young children to nature through hands-on activities and crafts. Parents work together with their 3- to 8-year-olds to explore a variety of age-appropriate monthly themes. Free timed tickets, available at the Information Desk, admit each "Parent-Child Team" into the teacher-developed Discovery Center, and follow-up activity packets accompany children home to help reinforce their learning experience.

The remaining \$1,000 of the donation will be retained for growth of Friends of Patuxent.

We are deeply grateful to the anonymous donor and to you all for your support of Friends of Patuxent. Thank you!

¹Committee members: Lowell Adams (Chair), Ken Cohen, Rich Dolesh, Stephanie Kaufman, Brenda Stone, and Natalie Woomer. 🦋

Plant Rant: Native Virginia Bluebells vs. Invasive Lesser Celandine

by Helen Lowe Metzman, FOP board member and volunteer on the Plant Inventory Project and Herbarium teams.
Photos by Helen Lowe Metzman except imaged 1938 herbarium voucher.

As the Patuxent Research Refuge wakes from its winter cloak of silhouetted deciduous trees and tawny meadows, the emergence of spring summons the arrival of myriads of ephemeral wildflowers and their pollinators. Native spring wildflowers have established roots, rhizomes and bulbets on the Refuge, and return year after year with almost phenological precision.

One of these lovely native perennial spring wildflowers, Virginia bluebells (*Mertensia virginica*, Boraginaceae or Borage family) has been a denizen of river bottoms for millennia. Sadly, Virginia bluebells have come under threat from the rapidly spreading lesser celandine (*Ficaria verna*, Ranunculaceae or Buttercup family). Despite the encroachment of lesser celandine, Virginia bluebells can still be found in colonies flanking the banks and floodplains of the Little Patuxent and Patuxent rivers.

As the temperatures start to warm in early April and columnar tulip trees, sweet gums, paw paws and towering white sycamores remain bare, Virginia bluebell leaves start to push up and out of moist bottomlands. Their non-toothed and smooth leaves often have a tint of purple that eventually turns completely green as they mature. Soon after emerging, bluebells send up a flower stalk with coiled buds. The five petalled fused funnel-like flowers start off pink and turn blue prior to opening due to pH changes in cell sap. As the inflorescence uncoils, bluebell flowers delicately dangle from their arched stems and attract pollinators such as butterflies and bumblebees.



The Virginia bluebell.

The flowers are reliant on pollinators to set seed and some sources suggest bluebells are pollinated by bumblebees and long-tongued bees in search of nectar and pollen for their young. In another strategy, short-tongued bees along with carpenter bees slit the flower tube to steal nectar without entering the flower itself. Butterflies, sphinx moths, bee flies, skippers and hummingbirds are also listed as potential pollinators. (Gracie, 2012).

Cherokee used Virginia bluebells for whooping cough and tuberculosis, Iroquois used the roots in tea as a poison antidote and for venereal disease, and the plant was also substituted for comfrey. (Moerman, 1998) However, Virginia bluebells, like comfrey and many species in the borage family, contain pyrrolizidine alkaloids, which may be toxic to the liver when taken internally in large doses.

By the time the trees leaf out, bluebells have finished their spring fling and begin to senesce as their leaves turn yellow and eventually die back. To observe this ephemeral native beauty, hike down the Little Patuxent River Trail on North Tract in early to mid-April.

Sadly, while searching for the Virginia bluebells along the river in spring, one will undoubtedly also see carpets of glossy cordate or heart shaped leaves with shiny yellow flowers of the invasive European lesser celandine. Even though the species was introduced in the 1700's as a horticultural plant, it wasn't until recently that its population soared. Don't confuse lesser celandine with the native Celandine poppy (*Stylophorum diphyllum*) or non-native greater celandine (*Chelidonium majus*) - also in the poppy family.



Lesser Celandine.



Virginia bluebell taken at the USGS Bee Inventory and Monitoring Lab.

Lesser celandine has diploid and tetraploid variants - two sets and four sets of chromosomes respectively. In the diploid variant, the plants reproduce sexually via seeds, and in the tetraploid variant, they rapidly reproduce asexually from tubercles that form in their leaf axils. After lesser celandine leaves senesce by summer, the tubercles, tubers and roots of the plant can remain visible covering large tracts of the bottomlands and lay dormant throughout the summer months. The invasive plant is a threat not only to Virginia bluebells but also to the Refuge's trout lily, dutchman's breeches, spring beauties, toothworts and other native flowering plants.

Lesser Celandine was a favorite flower of the English romantic poet William Wordsworth, so much so that he

penned three poems with its name. The plant is also commonly known as pilewort since its tubers look like piles - another name for hemorrhoids. Lesser celandine was used for hemorrhoids due to the Doctrine of Signatures, a philosophy of medicine mainly employed during the Middle Ages that made use of plants that resemble human body parts for treating that specific part of the body. Like many species in the buttercup family, lesser celandine contains toxins that are harmful if eaten raw as well as protoanemonin in the sap that can cause dermatitis. Some online resources suggest lesser celandine's tubers are edible in a young stage when boiled and dried and contain vitamin C in the leaves, which is beneficial for scurvy. Other sources caution to completely avoid it due to the plant's toxicity. Even though bees and beetles are attracted to the nectar deep in the petals, animals avoid eating the plant and humans should never eat enough lesser celandines to remove the huge mats from our river bottoms.

The Patuxent Research Refuge herbarium collection housed in the South Tract Visitor Center contains a voucher of Virginia bluebells from 13 April 1938, but not one for Lesser celandine until 2011 - indicating that the species



Imaged 1938 herbarium voucher.

was not present when the Refuge was established in 1936.

Although it is virtually impossible to remove lesser celandine without the use of chemicals, Virginia bluebells should be encouraged by replanting to help ensure future generations and pollinators enjoy their exquisite vernal floral displays for many millennia to come.

To see Virginia bluebells and learn about other **Early Spring Wildflowers** found at the Refuge, join a hike led by the Patuxent Plant Inventory Project volunteers on **Saturday, April 30th from 9:00 am - noon at the North Tract Visitor Center Contact Station**. The program is free but requires registration by calling **301-497-5887**. 🦋

Foster, Steven and Duke, James. *Peterson Field Guide to Medicinal Plants and Herbs of Eastern and Central North America*. Houghton Mifflin Harcourt. 2014.

Gracie, Carol. *Spring Wildflowers of the Northeast*. Princeton University Press. 2012

Moerman, Daniel E. *Native American Ethnobotany*. Timber Press. 1998

Volunteers Wanted for Plant/Bumble Bee Survey

by Native Bee Inventory and Monitoring Lab, Eastern Ecological Science Center at Patuxent Research Refuge

The Native Bee Lab has developed a simple Plant/Bumble Bee Survey that permits anyone to survey what plants Bumble Bees use anywhere there are Bumble Bees (literally). We call it “Ask a Bumble Bee.”

We are recruiting individuals and networks such as Master Naturalists, Master Gardeners, State and Federal biologists and similar entities to encourage and redistribute this call for volunteers to their members.

Our goal is to quantify which plants native bumble bees use, rank the plants by that use, and also identify which plants they don't use. (You would think we would already know this, but we mostly have anecdotal and scattered studies that largely don't quantify the plants the bees don't use). See below for plant data from a pilot study in 2021.

- You don't need to identify specific bumble bee species (though our goal is to get you there!).
 - Everything is non-lethal.
 - You only need a cellphone (for taking pictures of plants), pencil, paper.
 - You can survey any location where bumble bees occur.
 - Your garden, arboretums, parks, plantings, natural areas, refuges, urban, suburban, farm, wilderness, roadsides, and weedy patches are all places that the Bee Lab would like you to survey. The richer the plant diversity, the more plants are competing for bumble bees and clearer the preferences will be.
 - You can survey a site repeatedly throughout the year.
- Half-hour walk.
 - You can take whatever path you like, anywhere you like.
 - Take notes about all the blooming plants to 10 feet on either side of that path (yes, including invasives and garden flowering plants that are not native).
 - Count all the bumble bees (and carpenter bees!) along this route and note what flowers they are on.
 - Take pictures of all the flowering species (so that we can check ids).
 - Take pictures of your field sheets and upload all the pictures using your phone (no apps to download!).



Black and Gold Bumble Bee (Bombus auricomus), (c) sankax, some rights reserved.

The target region consists of Maryland and these other states: ME, NH, VT, CT, MA, RI, NY, NJ, PA, DE, VA, DC, WV. What if you are not in those states or are in Canada, can you participate? Yes! And we will process data from the primary states first and those outside later.

Basic instructions (see links below for more details).

- Done! (but we really want you to do more than one survey!)

How will this help anything?

- It allows us to quantify what flowers Bumble Bees use (by species) and don't use.
- Plant use information can be plugged into planting guides.
- We can look at differences among regions and plant combinations.
- We can identify overlooked bumble bee plants.
- We can look at non-native and native plants.
- We can downvote currently favored bumble bee plants (if they get a low score).
- We can compare use across states, urban/non-urban, parks, etc.
- We can look at bumble bee counts and their relationship to location and the plants at that location.

- You can get copies of all the data and use it however you like (for example, you might want to compare bumble bees' use of an area that you have begun planting to one that you have not).
- Researchers can play with these data in any way they like.
- We can assign your area (for example a park or a group of people like MD Master Gardeners) a project code and generate separate reports of results just for you.

How can you get involved? Just email Jenan El-Hifnawi at bumble-beecount@gmail.com, our fabulous coordinator, and she will sign you up and can answer detailed questions.

When do things start? Once you see the first bumble bee, of course. We are particularly interested in what flowers are used by emerging queens. The poor things have been sitting underground all winter and are vulnerable to starvation if there are no plants to feed on. No queens, no bumble bees. So, we want to figure out what good queen food is.

Now for Some Pilot Results: We completed about 100 surveys during the pilot project in 2021 (thanks participants!); mostly these came from the end of the bumble bee season. We extracted data for each plant that occurred on at least 10 of those surveys and created an index of use (we can send you details about that index if you wish).

Remember this only includes a subset of the region's plants...so just compare the use from among this list. If a plant is not included that is your fav, it might score high, but we did not get enough surveys (Hint: You could change that this year).

The bigger the index number, the "better" the plant is for bumble bees (yes, we know that we are lumping all sorts of bumble bees together here).

Continued on page 19

Plants that Had Bumble Bees (in order of use)

Silphium perfoliatum	Cup Plant	26.4
Pycnanthemum muticum	Short-toothed Mountain Mint	25.2
Monarda fistulosa	Wild Bergemont	24.9
Solidago species	Goldenrod Sp.	23.9
Trifolium pratense	Red Clover	23.1
Convolvulus species	Morning Glory Sp.	11.5
Eupatorium serotinum	Late Boneset	8.5
Verbesina alternifolia	Wingstem	8.3
Ampelopsis glandulosa	Porcelain Berry	7.1
Trifolium repens	White Clover	6.5
Rudbeckia hirta	Black-eyed Susan	4.3
Symphotrichum species	Frost Asters	3.9
Lantana species	Lantana sp.	3.7
Echinacea purpurea	Purple Coneflower	3.5
Plantago lanceolata	Narrowleaf Plantain	2.0
Rudbeckia triloba	Brown-eyed Susan	1.6
Solanum carolinense	Carolina Horsenettle	1.5
Rudbeckia species	Rudbeckia sp.	0.5
Cirsium arvense	Canada Thistle	0.3
Calystegia species	Bindweed Sp.	0.3
Verbena urticifolia	White Vervain	0.2
Phlox paniculata	Fall Phlox	0.1
Taraxacum officinale	Common Dandelion	0.1

Comment: Cup plant is only vaguely native to the region (occurs naturally only in Virginia, but look at its use by bees!). Interesting to see how low the "Susans" (Rudbeckia) score as well as Dandelions.

Plants that No Bumble Bees Visited

Achillea millefolium	American Yarrow	0.0
Begonia cucullata	Begonia	0.0
Daucus carota	Queen Anne's Lace	0.0
Dianthus armeria	Deptford Pink	0.0
Erechtites hieraciifolius	American Burnweed	0.0
Erigeron annuus	Annual Fleabane	0.0
Erigeron species	Fleabane sp.	0.0
Eutrochium species	Joe-Pye Weed sp.	0.0
Galium species	Bedstraw sp.	0.0
Oxalis species	Woodsorrel sp.	0.0
Persicaria longiseta	Oriental Smartweed	0.0
Phytolacca americana	American Pokeberry	0.0
Rosa species	Rose sp.	0.0

Comment: Interesting to see that Yarrow, Fleabane, and Queen Anne's Lace had no use.

Please participate in the Plant/Bumble Bee Survey and help update these lists and make them more complete!

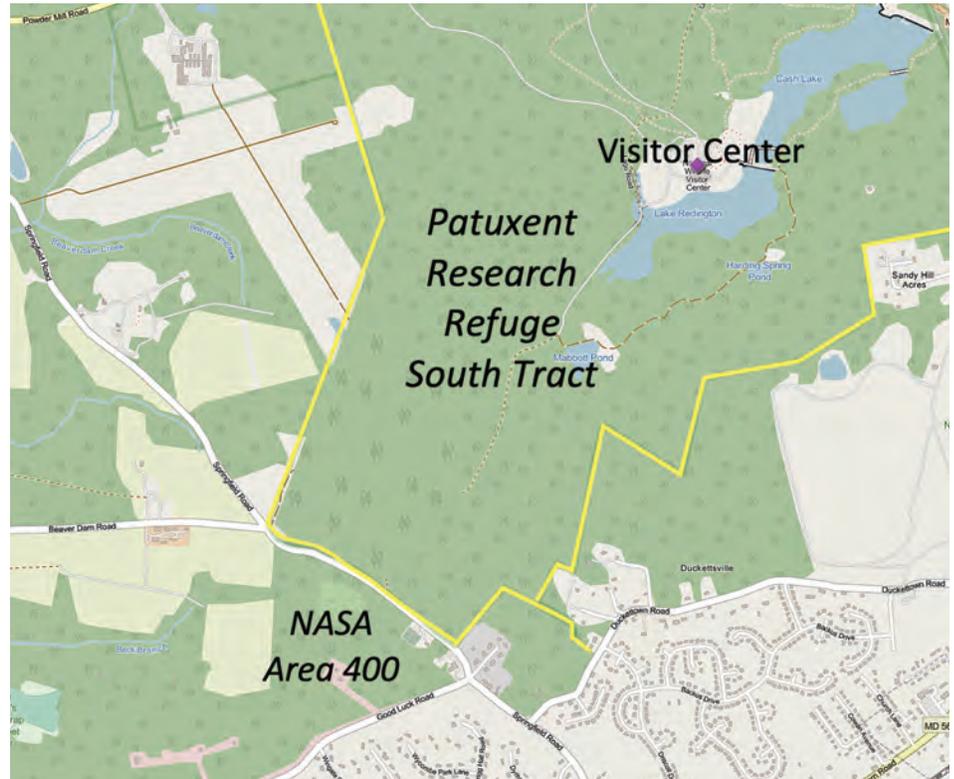
Sale of NASA Land Adjacent to Refuge Temporarily Halted

By Marcia Watson, Member, Board of Directors of Friends of Patuxent

In a surprise [announcement](#), the Public Buildings Reform Board (PBRB) has temporarily halted the process through which it intended to sell NASA's "Area 400" tract adjacent to Patuxent Research Refuge, as well as 14 other federal properties included in a [package of recommendations](#) issued in late December of 2021. The PBRB cited the fact that one of their board members has resigned, and thus the board no longer has a five-member quorum as required by law for its operations. Under law, PBRB must wait until December of 2024 for its next opportunity to move forward with the sale of the NASA land and other federal properties.

The proposed sale of the NASA land has been a confusing issue, full of twists and turns related to an obscure law and a little-known agency. PBRB was established to carry out the provisions of the Federal Assets Sale and Transfer Act (FASTA) of 2016. The intention of the law was to streamline the process of selling properties no longer needed by federal agencies, thus reducing the burden to the taxpayer of maintenance costs on unused properties, while bringing in cash that could be used by the agencies for their budgets. Under FASTA, PBRB takes nominations of unneeded properties from federal agencies, and produces a set of recommendations for the sale of the lands; the PBRB recommendations are submitted for approval to the White House Office of Management and Budget, and then sale of the lands is accomplished through the General Accounting Office.

The land in question, NASA Area 400, is a 105-acre tract located at the intersection of Springfield and Good Luck Roads in Prince George's County, and is immediately adjacent to the



southern boundary of the Patuxent Research Refuge's South Tract. The land, surrounded by a chain link fence, is almost wholly forested, except for a small clearing in the center that houses a few small NASA buildings. The site was previously used by NASA for testing of rocket fuels.

In December 2021, NASA Area 400 was included as one of 15 properties that PBRB recommended for sale at fair market value on the open market. Given the intense development pressures in Prince George's County, such sale would almost certainly result in Area 400 being purchased by a developer.

The clearing and development of the NASA land would have a negative impact on the Refuge by removing an important forested buffer. Forest buf-

fers help to preserve water quality, provide habitat for wildlife, and help to minimize the effects of sound and noise pollution, two deleterious effects that accompany human development.

Apart from impacts to the Refuge, development of the NASA land would also be harmful to the Anacostia River and the Chesapeake Bay. The NASA land is located in the headwaters of the Anacostia River, in an area that has been largely spared from the centuries of environmental degradation that has plagued downstream parts of the Anacostia watershed. Recently, thanks to sustained efforts by the Anacostia Watershed Society and other environmental groups, and with funding from the EPA, the Anacostia has been showing signs of improvement. This turnaround would be imperiled by removal of the forest in Area 400.

For these reasons, the board of Friends of Patuxent is supporting the transfer of NASA Area 400 to the Patuxent Research Refuge, where its forest will continue to protect the watershed and serve the environmental protection, research, and recreation goals of the Refuge. Because the US Fish and Wildlife Service cannot afford to pay fair market value, and because the land is already owned by the US Government, we would like to see the transfer occur without cost to the Refuge.

Many Friends of Patuxent members responded in early January when we, the Friends of Patuxent Board of Directors, issued a call to action, asking Friends members to contact their elected members of Congress to urge them to use their influence to halt the sale of the NASA land on the open market. In a true grass-roots effort, we mobilized our network of connections within other local organizations, and asked them to join our letter-writing campaign.

We have no way of knowing how many citizens contacted their Senators and Representatives, but we know that our voices were heard. On January 20, 2022, [six members of the Maryland Congressional delegation sent a letter](#) to the Office of Management and Budget, stating “. . . we write to express our support for an inter-agency transfer to the U.S. Fish and Wildlife Service of the 105-acre parcel owned by the NASA Goddard Space Flight Center. Such a transfer would allow this parcel, also known as Area 400, to be added to the Patuxent Research Refuge (PRR), with lasting environmental benefits for future generations . . . We urge your support for a transfer to the U.S. Fish and Wildlife Service in the most expedient manner possible . . .” The letter was signed by Senator Benjamin L. Cardin, Senator Chris Van Hollen, Representative Steny H. Hoyer, Representative C.A. Dutch Ruppersberger, Representative John P. Sarbanes, and Representative Jamie Raskin.

Subsequently, on January 26, 2022, the Office of Management and Budget (OMB) [disapproved PBRB's initial recommendation](#) to sell the NASA land

and the 14 other properties, citing failure of PBRB to address key criteria including financial planning, stakeholder consultation (including the need for input from the general public), and scheduling concerns for two of the properties. OMB gave PBRB 30 days to address these issues and resubmit its recommendations.

We fully expected that, with such direction from OMB, PBRB would open a process for receiving public input on the sale of the NASA property and other lands. However, no such process was announced by PBRB, and when Friends representatives inquired, we were informed by PBRB that it was not taking public comments at the time.

Given the short timeline for PBRB to resubmit its recommendations, the Friends board elected to work with other non-profit organizations to continue contact with members of Congress. The Choose Clean Water Coalition gathered signatures of 27 local environmental groups on a letter that it sent on February 24, 2022 to the Maryland Congressional delegation, again urging our elected officials to support transfer of the NASA land to Patuxent Research Refuge.

On the same day, February 24th, PBRB issued its [announcement](#) that it was not moving forward because of the resignation of its board member.

A [March 1, 2022 article in the Bay Journal](#) quotes Jennifer Greiner, manager of the Patuxent Research Refuge, saying that the deferral of the PBRB process until December of 2024 “buys a significant window of time for USFWS to continue to work with NASA.” Ms. Greiner had earlier said that “we have been and will continue to consult with them on the viability and potential for this parcel — including condition of the property and infrastructure, existence and cleanup of any contaminants, and specific terms of transfer.”

The Board of Friends of Patuxent will continue to support these efforts and we hope that our members will respond to another call to action if one is needed. 🐝

Volunteers Wanted for Plant/Bumble Bee Survey

Continued from page 17

For instructions and resources to help you do the survey, please download these documents:

1. [Ask a Bumble Bee! Bumble Bee Floral Survey Instructions](#) (PDF)
2. [Maya's Bumble Bee Survey: A Short Story, Diagram, and Field Sheet](#) (PDF)
3. [Field Sheet – Use this form if you cannot identify bumble bees to species](#) (PDF)
4. [Field Sheet – Use this form if you can identify bumble bees to species](#) (PDF)
5. [Bumble Bee vs. Carpenter Bee vs. Honey Bee Identification Guide](#). This PDF is intended for people who cannot identify bumble bees and carpenter bees. It contains pictures of bumble bees, carpenter bees, and honey bees and a brief description of how to differentiate between them.
6. [Bumble Bees of the Eastern United States](#). This PDF booklet is a guide to the bumble bees of the Eastern US. Beginning on page 14, there are sections on 21 common *Bombus* species within the Eastern US. The guide includes information on ID characteristics, range, phenology (seasonal timing), and more.
7. [Bumble Bee Watch Species Profiles](#) (website). The Bumble Bee Watch collaborative provides species profiles with identifying characters, lookalikes, seasonal patterns, ranges, and more for most *Bombus* species. The link provided goes to *Bombus affinis* (Rusty-patched Bumble Bee); you can select other species using the drop-down menu at the top right.
8. [iNaturalist Bombus Species](#) (website). The link goes directly to the *Bombus* genus; you can use the search bar to look up other species. 🐝

Master Mimic: the Northern Mockingbird

by Ross Feldner, Friends of Patuxent Newsletter Editor & Volunteer

“There is probably no bird in the world that possesses all the musical qualifications of this king of song, who has derived all from Nature’s self.” — John James Audubon, *Birds of America*.



Photo: National Gallery of Art

Audubon Northern Mockingbird painting.

A mockingbird can produce a wide variety of sounds and up to 350 unique songs! They are known for mimicking other birds and even human music and the sounds of machinery so it’s not surprising their Latin name is *Mimus polyglottos* which translates to many-tongued mimic. Polyglot is a person who speaks many languages. At a recent outdoor event in a park I thrilled to a mockingbird demonstrating its repertoire, singing for long stretches of time without repeating any one phrase.

These talented singers are linked to popular American culture from the “Mockingjay” from the Hunger Games to the world-famous novel *To Kill A Mockingbird*. One online study site explains, “The title of *To Kill a Mockingbird* has very little literal connection to the plot, but it carries a great deal of symbolic weight in the book. In this

story of innocence destroyed by evil, the ‘mockingbird’ comes to represent the idea of innocence. Thus, to kill a mockingbird is to destroy innocence.”

The longest quotation about the book’s title appears in Chapter 10, when Scout explains:

“Remember it’s a sin to kill a mockingbird.’ That was the only time I ever heard Atticus say it was a sin to do something, and I asked Miss Maudie about it.

‘Your father’s right,’ she said. ‘Mockingbirds don’t do one thing but make music for us to enjoy...but sing their hearts out for us. That’s why it’s a sin to kill a mockingbird.’”

The song “Listen to the Mockingbird” is woven deep into American culture. Written in 1855, it was one of the most popular songs of the nineteenth century selling millions of copies of sheet music and was sung (and whistled) throughout the United States and parts of Europe. This popularity carried over into the 20th century with the song featured as the instrumental introduction to a number of the early short films by The Three Stooges, rendered comically with birds chirping cheerily in the background. Not coincidentally, once and future Stogie Shemp Howard whistles it repeatedly throughout the classic 1940’s film comedy, *The Bank Dick* starring the immortal W.C. Fields.



Photo: Wiki Commons

The Three Stooges.



Photo: Ross Feldner

Northern Mockingbird, Central Tract.

It was also used as the theme song for Terrytoon’s magpie characters, the mischievous Heckle and Jeckle.

Although there are 16 bird species worldwide with the name “mockingbird” there is only one native to the United States where it is a year-round resident. Northern mockingbirds have easily adapted to human development and reside across suburban towns and cities where open lawns and parks make perfect hunting grounds for their insect prey. Males often sing solo from high perches like the tops of houses and telephone poles, where their performance often involves leaping into the air and fluttering back down.

There are several purposes for the white patches on a Northern mockingbird’s wings and outer tail feathers: These plumes of white are displayed during mating rituals, and they also flash them in defense of their territory from potential predators like hawks and snakes. Mockingbirds are extraordinarily territorial. They will often swoop and dive at pretty much anything they consider a threat, including people, if they get too close to their nests, which are usually between 3 and 10 feet off the ground in bushes or thickets. They will also chase other birds, such as crows, away from their food sources, like fruit-bearing trees, in the winter.

The next time you see or hear a mockingbird, take a little time to enjoy its variety of song and see if you can whistle along. 🐦

Around the Refuge

Photos by Jerry Herman



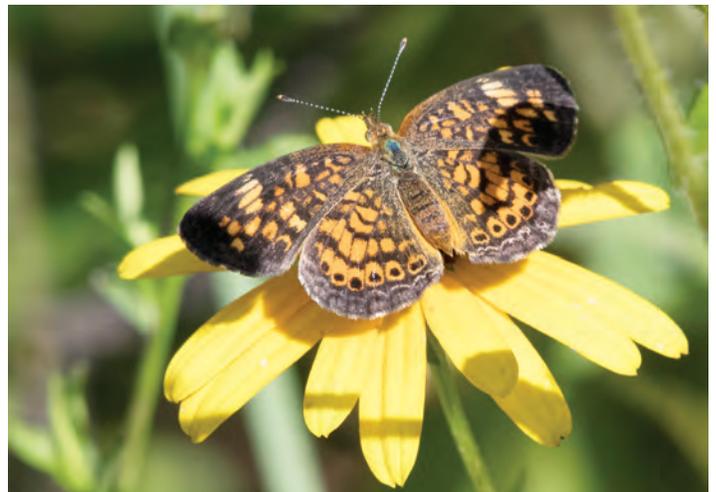
Monarch



Eastern Tiger Swallowtail



Hummingbird clearwing



Pearl crescent



Swallowtail



Red-spotted Purple Admiral

Functions and Names of Patuxent's Lakes and Ponds

Continued from page 8

skating due to the possibility of unsafe skating areas.

Snowden Pond was built to provide water for firefighting for the new buildings that were constructed before the War. Three other impoundments were constructed in the 1940s and had multiple uses. Lake Redington, located upstream of Cash Lake was created in 1943 for wildlife habitat. Lake Redington was named for Paul Redington, who was Chief of the Bureau of Biological Survey in the late 1920s, and very interested in duck populations. Fire Control Pond on the North Tract and Bluegill Pond on the Central tract were created in the mid-1940s for fighting fires in Patuxent forests and buildings.

A diesel engine located in the white pump house on the shoreline of Snowden Pond could draw water and bring pressure to the few fire hydrants in the headquarters area. The hydrants were painted white to indicate they were not pressurized like the red hydrants in urban areas. Snowden Pond was named for the Snowden family, who owned the land and Snowden Hall before the government purchased the area.

Seven other diked wetlands are named for local families that lived on the Central Tract and were created for waterfowl management research. From west to east, they include Hance Ponds (#1&2), Knowles Marshes (#1,2,&3), and Duvall Ponds (1&2). Two small diked ponds for waterfowl management on the South Tract (Mabbott Pond and Harding Spring Pond) were flooded in the late 1950s and named for original families living in this area.

Two excavated ponds in the Central Tract Headquarters area, Island Marsh 1 and 2, were created for research. The names of the Island Marsh units were renamed Uhler Marsh 1 and 2 in 1989 during Patux-



Old Pump House at Snowden Pond.

ent's 50th anniversary of the official dedication in 1939. The Uhler Marshes were named for Dr. Francis Uhler, who had been the genesis behind the creation of research wetlands for waterfowl. Gravel Pit Pond was originally the area where gravel was obtained for new Patuxent roads that formed the dikes for many of the created wetlands, but in 1963 was flooded and converted to a waterfowl production area with 19 small islands.

The name of Gravel Pit Pond was changed during the 1989 anniversary celebration to Hobbs Pond, in tribute to the popular bulldozer operator, Mr. Tom Hobbs, who had been the "human beaver" in the creation of ponds. Tom tragically died while working on campus the year before the anniversary. All shallow impoundments built in the 1950-60s were flooded with rainwater flowing from the upland watershed to the Patuxent River. The river forms the boundary between Prince Georges and Anne Arundel Counties on the refuge.

Mallard Pond in the Central Tract was created and flooded in 1957 as a water supply area for research with ducks in pens created in the Knowles 3 impoundment. This pond was also used to maintain hundreds of non-flying mallards used on various studies. Patuxent Pond in the far eastern part of the Central Tract was created as a green-tree impoundment. This type of unit is especially beneficial for wintering wood ducks that feed on abundant mast (acorns, beech nuts, and fruits). However, it is important that these areas are drained in early spring, so



Island Marsh 1 and 2 shortly after creation in 1957 and 1959 (renamed Uhler Marsh 1 and 2 in 1989).

trees stay alive during the growing season to provide more mast for wintering ducks.

There are two ponds on the Central Tract (Clay Pit Pond and Endangered Species Pond) and two ponds on the South Tract (Borrow Pit Pond and Spillway Pond) that are less than two acres in size and were created for various research and management objectives. Shaefer Pond was originally a 20-acre gravel pit on eastern land obtained by the Schaefer family in the 1970s. This large area was flooded by beaver in 1985 and since then has been important habitat for waterfowl but has not been used for official research studies.

The lakes and ponds in the Central and South Tracts of Patuxent Research Refuge were created during the mid-late 1900s in support of research and other related functions for the multitude of research and management objectives. In recent years some of these wetland impoundments have been permanently drained to address more recent objectives dealing with interior-dwelling songbirds. It is hoped that the original broad objective of Patuxent Research Refuge as a demonstration wildlife experiment station will be obtainable.

Part Two of *Functions and Names of Patuxent Lakes and Ponds* will discuss the 12 wetlands of the North Tract and will be published in the next Newsletter. These lakes and ponds became part of the refuge in 1992 with the addition of surplus government land on Fort Meade. 🦋

New Legal Counsel for Friends of Patuxent

Lowell Adams, Vice-Chair, Board of Directors, Friends of Patuxent



Attorney Benjamin Carter has agreed to serve as legal counsel to Friends of Patuxent. Benjamin is continuing a long family tradition of volunteer service to the organization. His mother, Linda Carter, earlier served as legal counsel to Friends and was a Board member of the organization for some time. They now practice law together at her firm, Carter Law, LLC, of Beltsville, Maryland.

Benjamin graduated from the University of Maryland Francis King Carey School of Law in May, 2020, and was admitted to the Bar in December of that year. Prior to attending law school, Benjamin earned his Paralegal Certificate from Anne Arundel Community College in 2016 and his B.A. in Economics from the University of Maryland College Park in 2015.

Thank you Ben and Linda of Carter Law, LLC, Beltsville, MD. 🦋

FRIENDS OF PATUXENT BOARD OF DIRECTORS 2022

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- Lowell Adams, *Vice-chair*
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- Diana Ogilvie, *Patuxent Research Refuge Liaison*
- Tom O'Connell, *USGS Eastern Ecological Science Center Liaison*

GENERAL COUNSEL

- Benjamin R. Carter, *Legal Counsel*
- Carter Law, LLC, Beltsville, Md.

FRIENDS OF PATUXENT BOARD MEETINGS

Friends Board meetings are currently held by Zoom at 4 pm. Dates for Board meetings for 2022 are: January 18, March 15, May 17, July 19, September 20, October 18. (both Board and annual members meeting). Dates, locations, and times are subject to change.

JOIN TODAY!

MEMBERSHIP APPLICATION

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- Individual (\$25/yr), gift: FOP bookmark (or other) Family (\$35/yr), gift: FOP decal (or other)
- Contributor (\$75/yr), gift: History of Patuxent DVD (or other) Sponsor (\$250/yr), gift: FOP hat (or other)
- Life (\$500), gift: FOP shirt (or other) Please ✓ size: S M L XL XXL XXXL
- Life-65+ (\$300), gift: FOP shirt (or other) Please ✓ size: S M L XL XXL XXXL
- Corporate \$1,000 Gift: 1/4 page ad in the Friends newsletter for one year. (4 Issues).

Donation \$ _____ Make check to "Friends of Patuxent" and mail to address on reverse side of this page.

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WE INVITE YOU TO JOIN!

Friends of Patuxent Research Refuge, Inc. is a designated Section 501(c)(3) public charity. It is a membership organization whose mission is to financially support the research of the Eastern Ecological Science Center and the environmental education, outreach and recreational missions at the Patuxent Research Refuge. All contributions are tax deductible to the extent allowed by law. Our Maryland Charitable Organization Registration-2348.

Your membership/contribution helps support the mission and programs at Patuxent. You also receive the following benefits:

- Quarterly newsletter (mailed on request or go to www.friendsofpatuxent.org)
- 10% discount in our Wildlife Images Bookstore and Nature Shop and other area refuge bookstores
- Attendance at member functions
- Participation in on-site educational programs
- Sense of accomplishment in providing many opportunities for wildlife-related recreation, education and research

(Application on reverse side)