



FRIENDS OF PATUXENT

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The Nimble Conservationist

Brad Knudsen, Refuge Manager

My formative days in the wildlife conservation field were subjected to many “truths.” Statements such as “Odd patches of vegetation are good habitat,” and “The edge effect – that zone (or ecotone) where two different types of habitats come together - is GREAT for wildlife diversity,” etc. I have learned that what may have been true then, is not necessarily true now – AND – it may depend on specific goals and objectives, based on WHERE you are doing your conservation work, and WHAT your management objectives are.

Let’s look at the “edge effect” statement for example. It certainly may be true that the diversity of species where a forest meets a field may be higher in number. However, at a place like Patuxent Research Refuge, where we are managing in the long-term for forest interior dwelling species of birds (FIDs), an edge may be a bad thing. FIDs generally steer clear of breaks in the forest canopy, preferring to be at least 200-300 yards away from such breaks. The “edge effect” here also likely means invasive species such as mile-a-minute, Japanese stiltgrass, and lespedeza can proliferate, replacing and reducing the natural biodiversity the “ecotone” may have exhibited during more pristine times.

Early in my career, I spent ten years managing those little jewels of the Na-



Fotolia

Scarlet Tanager

tional Wildlife Refuge System known as Waterfowl Production Areas – complexes of prairie wetlands and upland habitats purchased with federal Migratory Bird Hunting and Conservation Stamp funds, specifically to raise native waterfowl. There – in North and South Dakota and Wisconsin – trees invading the nesting grasslands were bad – very bad. Fast forward to Patuxent, where we are trying to increase

Continued on page 2

9th Friends Wildlife Holiday Bazaar Scheduled for November 2, 2019

Jeanne E. Latham, Vice-chair, Friends of Patuxent

If you haven’t experienced the Friends Wildlife Holiday Bazaar, you will want to attend this fun event. Also, you will be supporting **your** national wildlife refuge, Patuxent Research Refuge and Wildlife Research Center at the same time.



Matted photo of a male Indigo bunting, ceramic dish, and hand-painted egg with Snow leopards.

Continued on page 19

Inside...

Hide and Seek Anyone?	3
Spotlight on Christine McElroy	4
Wildlife Holiday Bazaar.....	5
2018 Plant Inventory Progress Report - A Banner Year.....	6
Back to Spain - Farewell Maryland	7
Around the Refuge (photo essay)	8
2019 Volunteer Appreciation Potluck.....	9
Kids Fishing Day	9

Telemetry Advances at Patuxent Research Refuge	10
Battling the Bailey Marsh Beavers.....	12
From Wildlife Images Bookstore.....	13
Anniversary of Egg Shell Thinning Publication	14
Bee Conservation Lab Hosts Science Day Open House.....	16
Hollingsworth Exhibitors for 2019	18
Friends of Patuxent Membership Application	19

The Nimble Conservationist

Continued from page 1

trees and decrease open fields, again, primarily to promote habitat for FID species such as scarlet tanagers, prothonotary warblers, and ovenbirds. So – different environment, different objectives, different management – best to be nimble in your thinking!

The National Wildlife Refuge System (NWRS) itself is nimble in even greater ways. The diversity of habitat the NWRS represents on its 835 million acres allows refuges to often times respond to species in peril because we have the variety of habitats we can manipulate/manage in different ways in an effort to help those specific species. In 2014, when it became apparent that the continental population of monarch butterflies was crashing in a very big way, Fish and Wildlife Service (Service) Director Dan Ashe announced the Service would be targeting restoration and enhancement of over 100,000 acres of monarch habitat. Action plans developed nationwide the following year identified over 250,000 acres to be restored and/or enhanced for monarchs, with nearly half of that acreage being on

NWRS lands. At Patuxent, we altered our mowing schedules to mow much later in the summer, allowing milkweed to mature, produce pods, and to be available throughout the majority of the monarch’s life cycle on the refuge. We also provided dozens of seed pods to local schools for their pollinator gardens. Dozens of other pollinators were helped by this simple (nimble) change in our grassland/roadside mowing protocols.

“What more substantial service to conservation than to practice it on one’s own land?”
Aldo Leopold

Due to climate change, Great Dismal Swamp NWR in southern Virginia is now managing many of its pine stands for Red Cockaded Woodpecker habitat, anticipating the northerly expansion of that endangered species as temperatures continue to rise. When I was stationed at Great Dismal in the

early 1990’s, we managed for wood ducks and restoration of Atlantic White Cedar. Times change, and species in peril can change, thus management goals and objectives change. Again, it helps to be nimble – and to have the habitat that allows for such flexibility.

One of the most nimble of all conservationists was Dr. Aldo Leopold, largely regarded as “the father of modern-day wildlife management.” His field experiences as a biologist with the U.S. Forest Service shifted his conservation thinking from “must kill predators to grow more deer” to “predators are necessary to keep deer and other native ungulates from overpopulating and destroying their habitat.” (Leopold explained it all much more eloquently than that, but he wasn’t under a tight deadline to get to press!!). He also recognized not all lands were meant to be cropland or pasture or managed for timber production. Much of this marginal land was best suited to be managed – or in many cases to be left alone – to produce wildlife and to provide ecosystem services such as flood control, prevent soil erosion, etc.

Leopold’s famous quote - “To keep every cog and wheel is the first precaution of intelligent tinkering” is an elegant way to express the importance of being nimble in the conservation world. It’s hard to be nimble when species and habitats continue to be degraded or disappear altogether. Your options are limited in an 800 acre monotypic corn field – but not so limited when you have a diverse mix of plants, animals, soil types, etc. at your disposal.

To keep this planet healthy and spinning will no doubt require greater degrees of nimbleness than ever, as threats to the environment continue to emerge. Finding ways to heal the “scar tissue” we leave behind, discovering new ecological relationships, and using the growing body of “best science available,” all will be important tools for those nimble conservationists now and in the future. 🐻

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. However, 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 19.

Hide-and-Seek Anyone?

Mary Ann Hartnett, Volunteer. Photos by Tim Parker, Environmental Education Coordinator

Wish there was a convenient way to view birds at South Tract without intruding into their lives? Well now there is and it is within a few feet of the trail door near the Visitor Center. In early May, after the post holes were dug and the support posts set in place by staff (Martin Brockman, Adam Conger, Kaitlyn Baligush and Mark Riley), staff (Tim Parker and Allie Dudley) and volunteers (Bobby Jones and Frances Kent) installed the viewing blind boards. The slanted viewing port design is intended to allow humans to view birds at various heights without revealing their presence. The birds do not see their human observers so they do not exhibit their usual concerns about a possible threat. Being located on a paved trail allows individuals with limited mobility to use the blind.

With a goal to foster familiarity with song-birds and provide a learning opportunity about conservation efforts, the staff created new environmental education programs, “Feathered Friends”, that are centered around the blind. Students are given laminated guides to identify different species, and numbers are posted on the bird feeders so the instructors can help the young birders locate a particular species. The blind is not just for school groups. Birders can bring their binoculars to observe song bird plumage and behavior up close. Photographers should check it out. The area between the blind and the feeders is an open field with ground modification to mimic a forest floor. Logs, leaves and branches have been added to the area to enhance the habitat.

Funds for construction were provided by the Friends account for environmental education. 🐻

Already sighted:

- Downy Woodpecker
- American Goldfinch
- House Finch
- Red-bellied Woodpecker
- White-breasted Nuthatch
- Northern Mockingbird
- Chipping Sparrow
- Mourning Dove
- Red-winged Blackbird
- Ruby-throated Hummingbird

and that was just in May!



WE APPLAUD AND SALUTE OUR VOLUNTEERS

Spotlight on Christine McElroy

Bill Harms – Lead, Patuxent Research Refuge Plant Inventory Project

As the lead of the refuge plant inventory project, I would like to formally acknowledge the important contributions that Christine McElroy has done and is doing with restoring voucher specimens in the refuge's herbarium. The positive impact of her work cannot be overstated.

Christine has faithfully come to the North Tract Visitor Contact Station almost every Wednesday afternoon since 2017 to repair the specimens and the specimen sheets. Some of the specimens have become loose and detached from their specimen sheets. She has repaired hundreds of these specimens by re-attaching them more firmly to the specimen sheets. This will ensure that the specimens will remain intact for many years to come.

She has also replaced several dozen older specimen sheet labels which were starting to deteriorate because they are made of acidic non-archival paper. Replacing the labels is done by carefully taking off the old labels from the voucher sheets, photocopying the label's images to acid-free archival paper, and attaching the new labels to the sheets. Since the new labels are photocopies of the originals, no pertinent collection information is lost.



The old labels are filed separately so they are not lost. Replacing the older non-archival paper labels with newer acid-free archival paper labels is a standard herbarium curation practice to increase the durability of the labels.

By repairing the specimens and replacing the labels, Christine is in-

creasing the longevity of the specimens and is making the herbarium a more valuable resource for future researchers.

Christine deserves the recognition for her fine work, attention to detail, and devotion to making a good herbarium even better. 🐢

Calling for Your Articles and Photos

We're looking for articles—your articles—and cool photos for future Friends newsletters. You don't have to be a professional writer. Just jot down a paragraph or two about a nature topic dear to your heart. Or send us a photo or two of a beautiful plant, wildlife, or people at a Refuge or Friends' event along with a caption.

Please consider sending us your article and/or your photos for your next newsletter. Make sure to title your article and include your name and volunteer position. When you send it, put Newsletter Article in the Subject Line of your email. We'd like to hear from YOU. Here's where to send them: ross.feldner@verizon.net **Thank you so much!**



Friends of Patuxent Wildlife Holiday Bazaar



The 2019 Holiday Bazaar will be held Saturday, November 2 from 9 to 3 at the National Wildlife Visitor Center.

The Bazaar committee needs your help as we get closer to the event.

How to help:

- Join the committee - we need volunteers to:
 - Work on advertising the Bazaar. A resource and contact list is available and most of the work can be done online from home.
 - Manage the Friends of Patuxent Holiday Bazaar Facebook page
- Bring in donations for Baldy's Bargains - it's not too early.

When you drop donations at the Visitor Center, **PLEASE** remember to fill out a donation form and make a copy for yourself. Best sellers: books, CDs, DVDs, gift items, small housewares, and holiday items. We will **NOT** be accepting bed linens, posters, flat art, or large frames.

PLEASE DO NOT donate any item that will not fit in a standard, reusable shopping bag without prior approval from the Bazaar committee.

The deadline for donations is **October 15**.

- LIKE and SHARE us on FACEBOOK at **Friends of Patuxent Holiday Bazaar**.
- Post the Bazaar on your local **Nextdoor** site.
- Mark your calendar and come to help
 - Friday, November 1 - set up and decorate
 - Drop off baked goods and other goodies for the Bake Sale
 - Drop off house plant donations for the plant corner
 - Saturday, November 2 - THE BIG DAY - volunteers needed.

For more information contact

Brenda Stone at stonesoop@comcast.net or 301-490-0384.



2018 Plant Inventory Progress Report— A Banner Year

Bill Harms, Patuxent Volunteer

2018 was a banner year for the Patuxent Research Refuge (PRR) Plant Inventory Project (PIP) Team. The biggest event was the digital-imaging of about 4600 Refuge herbarium voucher sheets by the team. The PIP team appreciates Professor Maile Neel, Director of the Norton-Brown Herbarium, University of Maryland for her guidance and assistance in providing the equipment and space to image the voucher sheets and Dr. John Hall of the Mid-Atlantic Megalopolis Project (midatlanticherbaria.org) for his consultation with this part of the project. The PIP team also recognizes the Herbaria Consortium for providing the Internet portal, technical support, and computer resources to allow the images and accompanying data to be placed on the Internet.

Marnie Whitlock and Elaine Nakash headed up this effort by spending several weekends and countless hours at the University of Maryland in College Park imaging the voucher specimens. They used professional equipment (MK Digital Direct Photo-eBox PLUS) to digitally image the specimens and convert them into a format that made them ingestible to the Consortium database. After each session, Bill Harms uploaded the images to the Consortium database and matched them to the accompanying collection data already online in the PRR Herbarium's portal. The images and the data are accessible online for researchers to view and study.

We used a barcode on each voucher sheet that corresponds with the specimens' accession numbers to keep track of the sheets when we transported them between the Refuge and the University of Maryland.



Lightbox used for imaging the specimens.



Marnie holding a specimen for imaging.



Dr. John Hall, Marnie Whitlock, Bill Harms, Elaine Nakash

The project to image voucher specimens and make them available to the public on the internet is a joint effort of many educational institutions and governmental organizations throughout the USA and the world, and is funded in large part by the National Science Foundation. The Refuge Herbarium participates in this effort as a mem-



Boxes of voucher sheets ready for imaging.



Elaine and Marnie busy at work.

ber of the North American Network of Small Herbaria (NANSH). The Refuge should be proud to be associated with this project.

Since 2017, PIP team member Christine McElroy, has devoted her Wednesday afternoons to mounting specimens and restoring a countless number of voucher sheets that needed repair. Through her efforts, the longevity of the specimens will be extended and the herbarium will be an even more valuable resource.

PIP team members collected an additional 200-plus specimens for the herbarium and added about 10 new species to the refuge list. Thank you to Dave Anderson and Matt Beziat for their assistance in this portion of the project.

We are also excited to welcome a Lichen Survey Project led by Helga Matausch.

The PIP Team also participated in Refuge events at the National Wildlife Visitor Center. 🐢

Back to Spain - Farewell Maryland

Emilio Herrero, Patuxent Volunteer

Probably this is my best opportunity to say goodbye and thank all the staff at the Patuxent Wildlife Refuge for the warm welcome they gave me. My family and I have been in a USA-Spain educational exchange program. As I had some free time in the morning, I decided to spend it doing something I loved. I am a forester and Ranger and work for the Spanish Forest Service in Madrid. I found that the Patuxent Refuge was near my home and so I decided that I wanted to help here. After a presentation letter, everything went very well. Thanks Diana, thanks Brad and specially, thanks, Sandy.



I am enjoying your beautiful forests and learning a lot working elbow to elbow with Sandy in the forest inventory. Soon I will be in Spain again, I miss my mountains there. However, I will keep the best of my experience here with me always. I have met incredible people here. My best wishes to you in preserving your Refuge.

Finally I want to share with you this quote from Ralph Waldo Emerson:

"I do not count the hours I spend In wandering by the sea; The forest is my loyal friend, A Delphic shrine to me". 🐢

Around the Refuge

Photos by Matthew Beziat



Partridgeberry (South Tract)



Trailing Arbutus (North Tract)



Eastern Box Turtle (South Tract)



Widow Skimmer (North Tract)



Spatterdock (South Tract)



Red Columbine (North Tract)



American Field Pansy (South Tract)



Deerberry (South Tract)



Golden Ragwort (North Tract)



Virginia Strawberry (North Tract)

2019 Volunteer Appreciation Potluck Picnic at North Tract

A good time was had by all!

Diana Ogilvie, Park Ranger/Volunteer Coordinator. Photos by Diana Ogilvie



More than 60 staff, volunteers and Friends attended the Volunteer Appreciation Potluck Picnic on a beautiful Sunday in May at the North Tract Wildlife Viewing Area.



Some volunteers took advantage of the mild weather and visited with friends outside under the shade trees in back of the Environmental Education building, while others preferred to eat inside the air conditioning.



Chef Jeff and Dennis Hartnett presided over the grills, cooking hamburgers, hot dogs, veggie burgers and dogs for everyone to enjoy, along with the potluck bounty provided by Patuxent volunteers and Friends - the best cooks in Maryland. Clean up was a breeze thanks to the volunteers who stayed to help.

Kids Fishing Day is Back

Diana Ogilvie, Park Ranger/Volunteer Coordinator

Staff and volunteers worked together on June 1st introducing 60 children to the joys of fishing on Kids Fishing Day at Lake Redington this year. The fish were hungry and practically every child was successful. As children left the event, they received a goody bag containing a fishing coloring book, a magnetic picture frame to show off their catch, and a list of additional places to fish in Maryland.



Telemetry Advances at Patuxent Research Refuge

Dr. Matthew C. Perry, Board of Directors, Friends of Patuxent

Patuxent has a long history dealing with radio telemetry going back to the early 1970s. The first animal tracking studies were done on the refuge with wood ducks and red-shouldered hawks. These studies were done to test transmitters and receivers planned to be used in a large Chesapeake Bay telemetry study with canvasbacks. Various techniques were used to elevate receiving antennae on cars and buildings to obtain maximum range from the transmitter. Many attachment techniques were utilized including the Dwyer loop harness developed by Patuxent researcher and alumni, Tom Dwyer. Although puddle ducks and hawks adapted to the loop harness used for attachment, diving ducks, like the canvasback, did not adjust and the attachment technique was terminated.

Wildlife researcher biologist, Mike Haramis, and veterinarian, Glenn Olsen, then tested techniques to implant the transmitters inside the ducks. This worked fine, but range was restricted to one mile, until they developed an implant transmitter with an external antenna. This antenna greatly increased tracking distance from an airplane, but became many more times effective when sat-



Greg Kearns with sora rail shortly after instrumenting with small Motus transmitter.



Tracking transmitter on car located near Cash Lake to track wood ducks, 1972.

ellite tracking was developed. These progressive breakthroughs allowed for many studies with several species of diving ducks, including sea-ducks, currently studied by Patuxent researcher, Alicia Berlin.

The telemetry technology has now advanced so that many researchers dealing with many species of birds, bats, and insects can now operate collaboratively with over 350 towers located throughout North America. The new tracking technique is called Motus Wildlife Tracking System and commonly called Motus, which is Latin for movement. The system works by having all animals equipped with transmitters on the same frequency (166.38 MHz in North America), but a different unique digital code for each individual animal tag attached to each animal. The tower picks up the signal of a passing bird or other animal and data are processed in a centralized database, which then can be downloaded by the individu-

als studying the animal. This unique system was developed by Canadian researchers and now used by many scientists throughout North America.

Locally, Patuxent researcher Mike Haramis has collaborated with Greg Kearns of Patuxent River Park, to obtain extensive data on sora rails instrumented in the broad wild rice marshes of the Patuxent River. Data have been obtained for migrating sora



Piping plover instrumented with a Motus transmitter.

Photo by Peter Patton

rails from numerous towers along the Atlantic coast, several of which were erected by Greg and Mike. By having towers and receivers that are constantly recording the presence of nearby birds, they have been able to know when rails arrive and leave Maryland and when they arrive and leave other Atlantic coast areas that have active towers.

Greg Kearns, in collaboration with Patuxent Research Refuge staff (Brad Knudsen and Jennie McNichol) recently received a \$5000 grant from the Maryland Ornithological Society to establish another tower in Maryland, located at Patuxent Research Refuge. This tower will be located at the National Wildlife Visitor Center and has the potential to not only record signals from migrating sora rails, but other species studied by other researchers. The tower will also allow new research studies of other animal species of interest to Patuxent biologists to be initiated without the added cost of erecting a tower. A major advantage of having the tower at the Visitor Center is that it can also be used for educational purposes for the many school children and adults who visit Patuxent.

There are currently 243 projects that utilize the Modus system in North America, which represent 17,000 individual animals of 173 species. The Maryland area at present has few towers, which hinders local researchers. By increasing the number of towers more data can be obtained, which increases the precision of all tracking studies. These movement and location data become more important as habitat declines for wildlife due to increasing human populations especially in coastal states like Maryland. The problems for birds and other animals are not only loss of habitat, but that existing habitat has been compromised by wind turbine activities and other human-caused problems like sea level rise from global climate change. Hopefully, Patuxent's role in wildlife research by creating more towers to track movements of animals will help mitigate some of the negative impacts of humans to benefit wildlife populations. 🐢



Female sora rail banded and ready for release.



Male sora rail instrumented and ready for release



Erecting a Motus tower near Patuxent River.



Motus Tower along Patuxent River, Jug Bay area



Motus receiving station to record animal movements.

Battling the Baily Marsh Beavers

Kaitlyn Baligush, Recreation Assistant

Within Bailey Marsh located on North Tract lives a beaver pair who loves nothing more than to continually dam up our water control structure which causes flooding on Wildlife Loop. The grate covering the structure needs to be cleared daily, and the marsh is located 6 miles away from the contact station. With only two staff members stationed at North Tract, our volunteers have been crucial in accomplishing this task. Greg Crites and Jerry Herman routinely trek to the marsh to check the condition of the grate (and take photos). Jerry even set up a trail camera to help us catch the beavers in action in addition to many other critters including deer, coyotes, and river otters! 🐿️



Beaver pair crossing road at Bailey Marsh



This section of Wildlife Loop was completely under water after the beavers blocked up the water control structure and several days of rain.

Share Your Patuxent Experience



You, and most folks who visit Patuxent Research Refuge, find a connection with nature. It may be the calm feeling of the forest sanctuary; the sight of a Great blue heron flying over the lake; the scent of a fox who passed by the spot early this morning.

Please share your experience – the one that left you inspired, smiling, grateful, amused, or however you felt. You may have written a description in your nature journal or drawn what you saw in your sketchbook, or taken several photos of wonderful places, critters and sights

Send your write-up, photo(s), sketch, or excerpt so others can enjoy it too. If you prefer, you may do it anonymously; or we will be glad to acknowledge you as author, artist or photographer.

Thank you in advance for sharing.

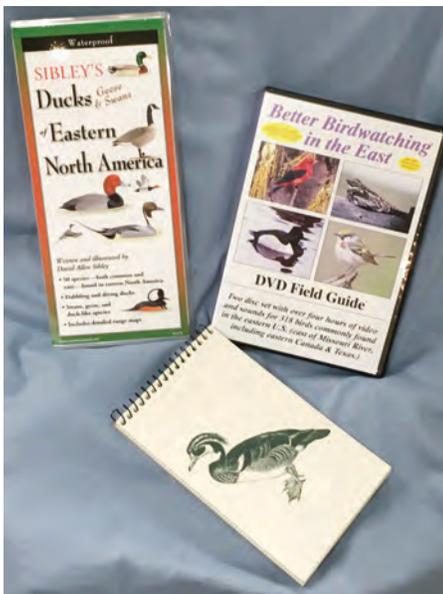
You may send your submissions to Jeanne Latham at jelatham@verizon.net. Jeanne is the Vice-chair of the Friends of Patuxent. If you have any questions, call her at 410-798-1601.

From Wildlife Images Bookstore

Celebrating the Duck Stamp Art Contest

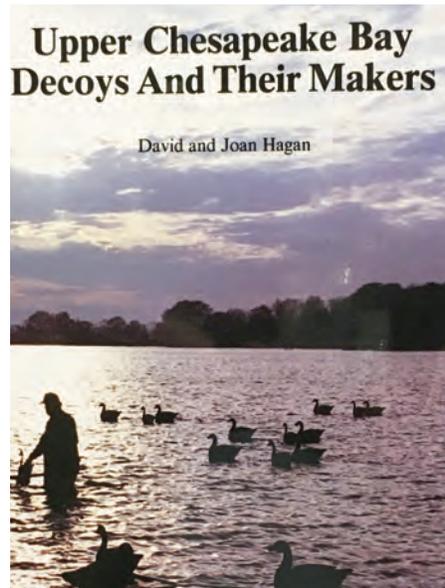
Evelyn Kirby, Volunteer

In conjunction with the September 2019 Federal Duck Stamp Art Contest at Patuxent Wildlife Visitor Center, the bookstore is highlighting duck related gifts and merchandise. Here are a few selections for you.



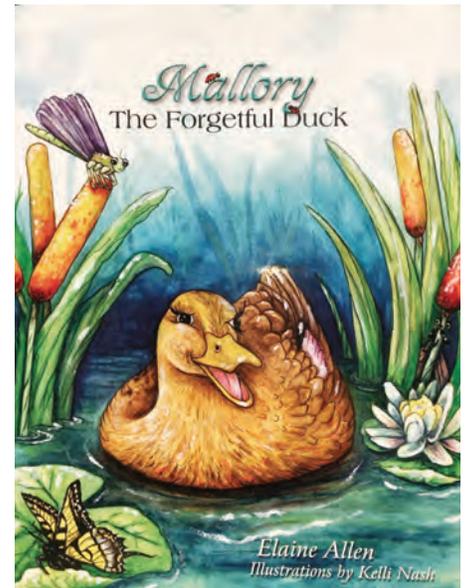
What child doesn't love ducks, and what child hasn't forgotten where he or she has left a favorite toy? In *Mallory, The Forgetful Duck*, by Elaine Allen, Mallory can't remember where she left her nest of eggs. She searches the whole pond and as she searches, your child meets several different birds and waterfowl and learns about their nests and what their eggs look like. This book, beautifully illustrated by Kelli Nash, is sure to delight children from pre-K to 3.

After your child has seen the entries in the duck stamp contest, how about giving them the coloring book *North American Ducks and Geese and Swans* by Ruth Soffer, so they can try their hand at creating their own version of area ducks?



The paintings on display in the contest are beautiful, but your pleasure doesn't have to stop there. The book *Upper Chesapeake Bay Decoys and Their Makers*, by David and Joan Hagan, has photographs of over 80 decoys and their makers. Read about this important form of folk art "from early decoys, faded and worn smooth from early use, to recent decoys which go directly from the artist to the collector without ever touching the water."

Select your own life-sized or miniature duck decoy from the display in the bookstore.



As you look for ducks in the wild can you tell a merganser from mallard in flight, do you know which are dabbling ducks and which are diving ducks? The handy folding guide, *Sibley's Ducks of Eastern North America* might be helpful. Listen and learn the call of ducks and birds on the DVD, *Better Birdwatching in the East.* And take time to make a quick sketch of your favorites in our pocket size notebooks with illustrations on the front (some are ducks).

Your purchases from the Wildlife Images Bookstore help support the work of the refuge.

"Friends" receive a 10% discount

Anniversary of Eggshell Thinning Publication

by Matthew C. Perry

This year marks the 50th anniversary of probably the most significant scientific finding and publication that has ever emanated from Patuxent. In 1969, Patuxent researchers Robert Heath, James Spann, and Fred Kreitzer published an article entitled, "Marked DDE impairment of mallard reproduction in controlled studies." This paper, published in the prestigious journal *Nature*, revealed for the first time the connection with the persistent chlorinated hydrocarbon chemical, DDT, in the food chain of birds and the phenomenon that became known as "eggshell thinning." With scientific evidence, the authors demonstrated that DDT could change to another chemical (metabolite) called DDE, which then could negatively influence the bird's ability to produce enough calcium for eggshells during the egg-laying process. Although the study was conducted in controlled situations with mallards, it had implications for all wild birds during the reproductive process.

For several decades following the end of World War II, DDT had been commonly used for insect control throughout the United States. The use of this chemical was hailed as a miracle chemical that would greatly increase food production and control common pests of humans, like mosquitoes. It was undoubtedly effective, but nature lovers around the world were also aware that the population of some species of birds were declining. Rachel Carson in her 1962 book, *Silent Spring*, stated, "DDT is the most powerful pesticide the world has ever known."

Although many persons thought there was a direct effect of DDT killing birds, the studies by scientists at Patuxent re-



Crushed egg of a brown pelican due to eggshell thinning.

vealed that the problem with DDT was not direct mortality in most cases, but was indirect by causing reproductive failure due to eggs produced that were thin-shelled or had no eggshell at all. Species most impacted were species that fed high on the food chain, like pelicans, ospreys, and bald eagles, that were feeding mostly on large fish.

Following this major finding Patuxent scientists continued with numerous other controlled studies with captive black ducks, night herons, kestrels, screech owls, and barn owls. Other scientists worked in museums throughout the United States where they measured the thickness of eggshells to document that the eggshell thinning became a problem following liberal use of DDT at the end of World War II. The data produced by these well-planned and executed studies

were indisputable that DDT and its metabolites were causing eggshell thinning and that the declines in bird populations were due to reduced recruitment. The agricultural industry working with the chemical manufacturers, argued against the findings at Patuxent in lengthy hearings conducted by the U.S. Congress. Many Patuxent scientist testified on Capitol Hill defending their findings, only to be ridiculed by the attorneys of the well-funded Agro-Chemical industrial conglomerate.

The hearings were not going well for Patuxent until Dr. Lucille Stickel convened a secret nighttime meeting in Merriam Laboratory of her scientists with Assistant Secretary of Interior for Fish Wildlife and National Parks, Nathaniel Reed. Secretary Reed promised immediate assistance and at the



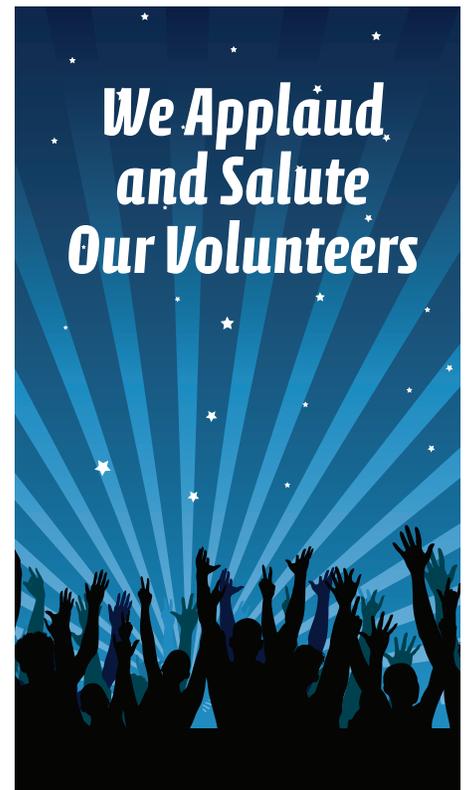
Research biologist, Jerry Longcore, checking egg production of black ducks on a diet including low levels of DDE.

next hearing new attorneys were present to represent Patuxent scientists. The study data were eventually considered credible and with legislation and pressure from Congress and EPA Administrator William Ruckelshaus, President Nixon signed a ban on the use of DDT and other persistent chlorinated hydrocarbons in 1972.

Although some argued that it would take 20 years before bird populations could be restored due to the amount of DDT in the environment, many naturalists noticed that bald eagle and osprey populations on the east coast were making a slight comeback after 10 years of the ban on DDT. These populations continue to increase, and both species were removed from the List of Endangered Species. Patuxent scientists and their assistants who worked on the many pesticide studies at our Laurel location and other areas of the US can take great pride in their diligent work in publishing findings that led to the ban on DDT. This year marks the 50-year anniversary of the breakthrough publication that made this ban a reality. 🐢



Research biologist, Stan Wiemeyer, measuring eggshell thickness of pelican eggs in Patuxent laboratory.



Bee Conservation Lab Hosts Science Day Open House for Researchers, Academics, and Public Lands Managers

Rich Dolesh, Chair, Friends of Patuxent

USGS scientists and volunteers in collaboration with the Friends of Patuxent hosted a highly successful open house event at the Bee Conservation Laboratory on Central Tract on April 26, 2019. The purpose of this event held for scientists, academic community representatives, researchers, and land managers was to introduce the Bee Lab to the regional research community and “create a dialogue to foster a pragmatic union of pollinator research with conservation management and practice,” according to Sam Droege, USGS scientist at Patuxent Wildlife Research Center and head of the Bee Conservation Lab.

By serendipity, this new opportunity for collaboration on potential field research and study has occurred because of the return of the Bee Lab to Patuxent from its former temporary location at BARC. The Bee Lab is now housed within the former Endangered



*Three spotted Digger Bee (*Habropoda excellens*).*

Crane pen area, which was vacated last year by the dispersal of Patuxent’s cranes to other locations in the country. The Bee Lab, which is located within the fenced-in 30 acres of the former crane pens offers a unique opportunity to explore possible working relationships with federal, state and local government entities; university and academic partners; and non-profit organizations that could co-locate study projects and foster

scientific knowledge and research beyond what could be accomplished by working alone.

The open house event, attended by more than 60 people, exceeded everyone’s expectations. Researchers and conservation land managers who were interested in pollinators, native meadow management and field rehabilitation were able to talk with others involved in similar work and exchange ideas and information. Small groups had the opportunity to do a walking tour with Sam and several of the volunteers and interns at the Lab. Many connections were made, and people got to see colleagues who they hadn’t seen in years. Ideas flowed among those with similar interests and research focus and people met those from new organizations and new agencies.

Liz Humes, a volunteer at the Bee Lab and founder of a non-profit conserva-



Sam Droege, head of the USGS Bee Conservation Lab describes some of the opportunities for collaboration to scientists and academic researchers at the former endangered crane pens



Some of the nearly 60 local and regional researchers and land managers who visited the Bee Lab’s open house.



Rich Dolesh, chair of the Friends of Patuxent welcomes guests to Science Day at the Bee Lab



Sam wraps up his remarks in a timely fashion--just minutes before drenching thunderstorms.

tion organization called Remeadow (www.remeadow.org), said of the event, “For me, as founder of Remeadow an organization dedicated to using scientific research to guide public action in supporting at-risk pollinator habitat, I made numerous connections with so many researchers some of whom have been doing research on meadowlands for over forty years and some who are embarking on new studies. Having them all in the same place at the same time was extremely empowering. Following up with them for future collaboration is in the works and such an exciting prospect! Thank you, Friends of Patuxent for helping to make these connections. They are seeds of change for pollinators’ future!”

The Friends of Patuxent has long been interested in pollinator conservation and have made a special commitment to this national conservation imperative. Five years ago, the Friends hosted the first Monarch Festival at North Tract for families and kids, an event which has been broadened to be include conservation of all pollinators. In 2018, the Friends of Patuxent Pollinator Festival attracted 500 people, many of whom had never been to Patuxent before. (Mark your calendar now and pass the word to friends and family about the 2019 Pollinator Festival on Sept 21, 2019, 10:00am—2:00pm)

In co-hosting the Science Day event at the Bee Lab, the Friends continue

our support for the missions of the Patuxent Research Refuge and the Patuxent Wildlife Research Center. The Friends have been working to support the refuge and the center for more than 25 years and have raised funds for educational projects, facilitated acceptance of research grants, helped to host scientific gatherings, and promoted the missions of the Fish and Wildlife Service and the US Geological Survey at Patuxent.

If you are interested in pollinator conservation, would like to volunteer your time at the Pollinator Festival, or would like to learn more about opportunities for volunteering at the Bee Lab, please contact the Friends at <http://www.friendsofpatuxent.org/contactus.html>

If you want to learn more about bees follow the Bee Lab’s Fine Art Public Domain pictures and blog at USGSBIML on Instagram, Flickr, or Tumblr. 🐛

Bring the family to the 5th Annual Friends of Patuxent Pollinator Festival



Ross Feldner

See pollinator and bee displays and learn how to make your home and garden pollinator-friendly.

There will be games for kids, special displays of live bees and monarch butterflies, and nature hikes to see pollinators in the wild.

Talk to pollinator experts and take home a free pollinator plant for your yard or balcony.

If you want to learn more about pollinators you won’t want to miss this enjoyable and educational event

For directions and more information, visit: <http://friendsofpatuxent.org/>

Hollingsworth Exhibitors for Summer 2019

Faith Leahy-Thielke, Patuxent Volunteer

Summer 2019's artists and photographers are a multi-talented trio. In July, Vernon Sears' work will grace Hollingsworth again. On display in August will be Howard Clark's images, the fruit of skills honed and perfected over the last 55 years. In September we'll enjoy the work of Lanham resident, photographer, Gloria Brown.

The "wonder of life" and "creative spirit" of youth are qualities that revered local artist and musician, **Vernon Sears**, has maintained throughout his long life. He was born in D.C. and raised in Mount Rainer. As a child in the 50's he was inspired by the TV show "Anyone Can Draw" and enjoyed the cartooning and caricatures of Mort Drucker and Jack Davis. A tour in Viet Nam only temporarily derailed a life in the arts. Afterwards, he studied at the National Academy of Fine Arts in New York City with financial aid from the GI Bill. Sears eventually returned and took up residence in Mount Rainer where he has remained active in Veterans' organizations while pursuing his art. Oils, acrylics, and oil pastels may have been his preferred media, but Sears goes where his spirit and efforts lead him. We'll enjoy what he chooses to exhibit this July.

Howard Clark had his PhD in physics when he got his "first big-boy camera" 55 years ago. That hobby became a passion that became avocation that became his "calling" as well as a career. He writes that even as a recent graduate, he was more interested in reading Modern Photography than Physics Today! The hobby Clark honed in camera clubs, seminars, and workshops enabled him to shift his career to explaining scientific achievements using the photographic and story-telling skills he'd acquired. Thirty-five years of worldwide business travel provided a huge stock of additional images. Clark combines artistic sensibility with software-editing skills to focus and highlight. Landscape and scenic views are his specialty – as are "intimate" views of animals, flowers, plants and trees – some of which will be on view at Patuxent. In 2011 Clark's eight-foot-wide "Great Falls" panorama was chosen as a permanent exhibit in the pedestrian tunnel leading to the Bethesda Metro Station. Nine of his photos are included in the permanent collection of the American Society of Civil Engineers – and another nine images are included in "Civil War Battlefields" – a recent "coffee table book." More than 25 galleries in the metropolitan area

feature Clark's work – Hollingsworth in August will make that 26!

Gloria Brown is living proof that retirement can unleash talents and proclivities suppressed by necessity. For over 50 years she worked for the Maryland State Government. This Lanham resident retired nine years ago – and began walking around Greenbelt Lake in Buddy Attick Park for exercise. She often called her son to describe the animals she spotted. Photographing wildlife was his own hobby and he prompted his mom to buy a camera. She has been taking her own pictures ever since. She and her Nikon L340 have explored Blackwater and North Point State Parks as well as Artemnesia and Greenbelt lake areas – in all kinds of weather! Although Brown has photographed all manner of wildlife, birds are her favorite – and favorite bird, the pileated woodpecker, is to her the most beautiful. She enjoys learning about her subjects and belongs to online groups like MDBirding – a fabulous site full of places with gorgeous photos of myriad avian residents. I am really looking forward to viewing Brown's work in September. Hollingsworth exhibits are always another great reason to visit Patuxent. 🐢

WE INVITE YOU TO JOIN!

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 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



9th Friends Wildlife Holiday Bazaar Scheduled for November 2, 2019

Continued from page 1

At this 9th Friends Wildlife Holiday Bazaar on Saturday, November 2, there will be over 30 vendors, selling wonderful nature and wildlife-themed items, which make great gifts. Examples of merchandise available are: jewelry, pottery, matted wildlife photos, greeting cards, turned wood items, fabric art, and so much more. Each vendor donates a percentage of their sales to the Friends in addition to paying a booth fee. While shopping for that special gift you will also help increase the amount of monetary donations the vendors make to the refuge. A real win-win event! The photo on page 1 shows a few items purchased at pre-

vious bazaars, which are now proudly displayed in my home.

At the Bazaar, you will also be able to enjoy live birds of prey, a bake sale, the Friends Crane Café with lunch items, a Baldy's Bargains shop with new or gently used treasures, free door prizes, conservation tram rides (weather permitting), and more fun opportunities.

The Bazaar is one of the fundraising activities, which the Friends of Patuxent sponsors. We hope you will come, shop, have fun, and support the Friends and your Refuge.

Save the date on your calendar – Saturday, November 2, 2019, Friends of Patuxent Wildlife Holiday Bazaar.

See you there! 

FRIENDS OF PATUXENT BOARD OF DIRECTORS 2019

- Richard Dolesh, *Chair*
- Jeanne Latham, *Vice-chair*
- Lowell Adams, *Secretary*
- Lindsey Baker, *Director*
- Ken Cohen, *Director*
- Courtney Koivisto, *Director*
- Kenneth Lavish, *Director*
- Matthew Perry, *Director*
- Clarence "Sparky" Sparks, *Director*
- Marcia Watson, *Director*

LIAISONS

- Diana Ogilvie, Patuxent Research Refuge Liaison
- Shannon Beliew, USGS Patuxent Wildlife Research Center, Liaison
- Douglas Meister, Esq., General Counsel

FRIEND OF PATUXENT BOARD MEETINGS

Friends Board meetings will be held at 5 PM at the Visitor Center on Jan. 15, 2019; Feb. 19, 2019; Mar. 19, 2019; Apr. 16, 2019; May 21, 2019; Jun. 18, 2019; Jul. 16, 2019; Aug. – no meeting; Sep. 17, 2019. Dates, location and times are subject to change.

We Applaud and Salute Our Volunteers

JOIN TODAY! MEMBERSHIP APPLICATION

Name: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 E-mail: _____



(E-mail address will not be sold or shared. It will be used for Friends and Refuge announcements only.)

Phone: (opt.) _____ New Renewal

- 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.*

Check here if you prefer not to have a gift, and instead have your entire dues support Friends of Patuxent.

Check here if you would like save a tree by reading our quarterly newsletter online.



Friends of Patuxent

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WE INVITE YOU TO JOIN!

Friends of the Patuxent Wildlife Research Center and 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 PWRC and the environmental education, outreach and recreational missions at the PRR. 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 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)