



Valley Views

Volume 38, Issue 3

December 2019/January 2020

President's Note

By Suzanne Offutt, PVAS President

Of late, I have had time to ponder legacies and what they might mean. I've ruminated on the usual notions around legacy, which would include gifts of money or other tangible resources to non-profits, foundations, churches, and other mission-driven organizations. But when I really thought of legacy and making a meaningful contribution to my world, my community, and my family in the time that I have walked the earth, I expanded on that meaning of legacy.

I am currently writing an article about Dr. Carl Bell, a 54-year employee of Shepherd University, who worked in the Science Department as a biologist. Dr. Bell taught biology, plant taxonomy, microbiology and probably every biology class that Shepherd ever offered. From that position, Dr. Bell managed to influence thousands of students in their later vocations, avocations, and pastimes. Taking a look at the dozens of tributes to Dr. Bell at the time of his retirement in 2015 and his subsequent passing in 2017, the reader can see the inspiration, the passion, the commitment, the sheer pleasure that Dr. Bell engendered in his students. His droll passion (an apt oxymoron for Dr. Bell) shone through those tributes. Those testimonies of impact and influence and the students who chose to carry on professional and avocational work in the fields of biology and botany are a part of his legacy.

In a circuitous manner, PVAS becomes one of the recipients of Dr. Bell's legacy. To name just a few, Bob Dean, Wil Her-shberger, Rodney Bartgis, and KC Walters all received some of their post-secondary education from Dr. Bell. And through them, PVAS has benefited. Our Birding 101 classes have introduced adults and young people to the world of birding through the able teaching of Bob and Wil, among others, for the past 35 years. Rodney received his undergraduate training at Shepherd University and, inspired by Dr. Bell, became a leading botanist in the state. As the director of the Nature Conservancy, Rodney sustained and promoted the co-management agreements between TNC and PVAS for both Yankauer and Eidolon nature preserves. KC went on to major in Forestry at the Master's level, but returned to the Shepherdstown community and now ably manages all of PVAS's preserves. All are both legacy receivers and legacy givers in this continuum of natural history.

In the present time, PVAS is reaching the age of 37 years, no longer a callow youth, nor a staid institution. The board has begun to contemplate this idea of legacy and the longer view of the effect that PVAS is making in our communities and the future capacity for impacts in a more sustained way. With the thoughtful input of the Board of Directors, outside advisors, and our membership, we are looking for means of building our legacy funds of financial resources to build and enhance our other legacy aspects. Following Dr. Bell's model, we see ourselves as modeling education, passion, and appreciation for the out-of-doors, but will need deeper financial resources to continue our dynamic community action. We invite our members and our community at large to consider PVAS as a place to endow their own legacy efforts. Look for more opportunities in the future.

2019 Annual Appeal Is Underway

Show your support for PVAS programs, preserves, and conservation efforts by donating to the 2019 Annual Appeal! You should receive a copy of our Annual Report in early December, summarizing all the ways we worked to "*preserve, restore, and enjoy the natural world through education and action*" in 2019.

But there's always more to be done. With your help, we can continue to provide important outdoor learning experiences for children, grow our programs for adults and families, and protect valuable local habitats.

To donate toward the Annual Appeal, simply use the enclosed remittance envelope to mail a check to "PVAS" at PO Box 578, Shepherdstown, WV 25443. Or, donate via our secure credit card payment processing at this link: www.potomacaudubon.org/annual-appeal/. Your donation is 100% tax deductible.

Thanks to the generosity of members like you, we're looking forward to a productive and excellent 2020!

Potomac Valley Audubon Society is dedicated to preserving, restoring, and enjoying the natural world through education and action.

Cool Spring's Nighttime Singing Insects Feature a New Soloist: Fast-tinkling Trig *Anaxipha tinnulacita*

By Wil Hershberger, Nature Images & Sounds

The Potomac Valley Master Naturalist's three-hour elective class covering the singing insects was held at Cool Spring Preserve on Saturday, September 7. The inside portion of the class was well attended and sparked interesting questions and discussions. After a short break, we assembled outside for a nice walk through the preserve.

Very shortly after starting down Linda's Loop along Bullskin Run, we heard Long-spurred Meadow Katydid (*Orchelimum silvaticum*) singing from the brushy tangles at the margin of the woods. This species was first found in Jefferson County here at the preserve in August 2017. As we entered the wooded portion of the trail, the insect chorus changed with Davis's and Two-spotted Tree Crickets being the most abundant singers. These arboreal species create a mellow, trilling tone that rings from the trees from late July through the first frosts. Lesser Angle-wing Katydid (*Microcentrum retinerve*) were numerous and singing almost constantly as we headed farther west along the trail. After a few repetitions of hearing them sing, their staccato rattles were easily recognized by the group. This species easily outnumbered the Greater Angle-wing Katydid (*Microcentrum rhombifolium*), who were ticking away from the treetops in only a few locations.

Jumping Bush Crickets (*Orocharis saltator*) were singing everywhere we stopped to listen. Their bright, short, silvery trills were another species song that was easily learned by the students. Another species of bush cricket, the Restless Bush Cricket (*Hapithus agitator*) were found in numerous locations along the path. However, north of Florida, males of this species do not sing. As we painted the vegetation with our flashlights, we saw large numbers of small crickets known as trigs. We were nearing the area where the Slow-tinkling Trig (*Anaxipha tinnulenta*) was found in August of 2018. Unfortunately, the males of the trigs we were seeing were not singing, so a positive identification could not be made at the time. As we strolled along heading toward the west field of the preserve, we continued to see many of these small trigs. I collected a male and a female about halfway between the cairn and the west field.

While standing in the west field, we were bathed in the light of a just past first-quarter moon. I had the group listen; the insect chorus-ing had changed from what we had been listening to in the woods just moments ago. Now the tone was lower-pitched, the amplitude quieter, the sounds coming from below and around rather than from above. I think that Nathaniel Hawthorne captured the feeling best when he penned, in the *Canterbury Pilgrims*,

"He listened to that most ethereal of all sounds, the song of crickets, coming in full choir upon the wind, and fancied that, if moonlight could be heard, it would sound just like that."

Once I got home, I transferred the captured trigs to a singing cage and allowed them to settle in. The male began to sing the next day. His song was not familiar – he was not a Slow-tinkling Trig as I had suspected. His song was faster, slightly more than twice as fast as I had expected. Examining his song and getting a hand lens to examine the male revealed that this was a new species for Jefferson County and for West Virginia – this was the first Fast-tinkling Trig (*Anaxipha tinnulacita*) documented in the state. I was fascinated that we had not heard the Slow-tinkling Trigs singing in the places where they had been singing in the previous year and on my previous visits to the preserve this year. It was also interesting that these Fast-tinkling Trigs were not singing while we were in the field listening for anything that sang. Perhaps it was too cold for them – by this point it was getting close to 65°F, and many of the singers were slowing down, their songs labored and lower in pitch than when we had started our walk.

Perhaps these newly described species¹ of trigs mature at different times of the season, and their chorusing's do not overlap that much. These details will require a few more years of listening, listing, and lingering in the woods and the fields of Cool Spring.

¹ See (<https://entnemdept.ifas.ufl.edu/walker/buzz/s610lwf14.pdf>)



Photos: Above, female, and left, male and female *Anaxipha tinnulacita* photos © Wil Hershberger

PVAS Events

Upcoming Adult Programs

By Krista Hawley, Adult Programs Coordinator

Winter is a wonderful time to be outside. While the temperatures can be cold, there is something peaceful and serene, almost soothing, about a walk in the cold, crisp winter weather. While a walk during the other three seasons in our Mid-Atlantic area is always lovely, stepping out into December or January's brisk air can seem like an invigorating accomplishment. Please consider joining PVAS at one of our exciting winter events!

Have you ever participated in a bird count? If so, we would love to have your experience and guidance again this year. If you have not previously been a part of bird count, we have some wonderful opportunities for you.

PVAS will be hosting four Christmas Bird Counts this season. These local-area counts are part of a massive, historic 119-year-old citizen science project. A volunteer-based Christmas Bird Count has been conducted throughout the



western hemisphere every year since 1900, under the auspices of the National Audubon Society, with the purpose of monitoring the status and distribution of early-winter bird populations.

Bird count volunteers join teams that go out in the field and follow specified routes through a designated 15-mile diameter circle, counting every bird they see or hear all day. Experienced and novice birders alike are always welcome to join the teams. Feel free to check the PVAS events calendar for specific information about the Washington County, Maryland Christmas Bird Count on Saturday, December 14th, the Charles Town count on Sunday, December 15th, or the Inwood count on Saturday, January 4th, 2020. Each event will host a dinner 'tally rally' where everyone is welcome to come together at the end of

the day, tally their bird counts, and share a meal together.

The C&O Canal Winter Bird Survey on Saturday, January 18th is another opportunity to participate in an annual citizen science project. For over 20 years, birds along the entire 185 miles of the C&O Canal have been counted. This survey, which had been coordinated by the District of Columbia Audubon Society, is designed to provide a snapshot of birds present on the C&O Canal.

To find out more about these and other programs, check the calendar insert found in this issue of *Valley Views*, Month-at-a-Glance, subscribe to our biweekly *Heads-Up PVAS!* e-newsletter, and check our website (www.potomacaudubon.org) regularly. We are adding programs and events all the time, so checking the website on a regular basis is the best way to keep up to date.

Volunteer Spotlight

Have You Met Patti Mulkeen-Corley?

Patti Mulkeen-Corley is one of our wonderful new board members and has already proven to be a dedicated Cool Spring Preserve volunteer. She is a recently retired teacher who is ready to spend more time outdoors. At this fall's Day of Caring, Patti served on the gazebo staining crew and enjoyed the job so much she came back to stain both of Cool Spring's decks on her own time! If you haven't seen the deck makeover, come check it out, it is beautiful. We would not have been able to complete this large project without her. She has also spent many hours working in the garden beds at Cool Spring. We always appreciate seeing her cheerful smile and having her can-do attitude around.

All of our PVAS volunteers are great! If you know someone who deserves a shout out, please contact Kristin at kristin@potomacaudubon.org.



PVAS Events

Tracing The Travels Of Saw-Whet Owls

By Doug Pifer

The caravan of cars reached the top of South Mountain. A couple dozen riders emerged into the night, bundled into parkas and wearing winter coats. As we inhaled crisp November air, our ears were blasted with a continuous amplified recording that sounded like a big truck backing up.

PVAS members gathered at the South Mountain owl banding station near Boonesboro, Maryland. We hoped to witness the capture and banding of migrating saw-whet owls. The owl-banding shed accommodates only a few people, so we gathered in front of the banding station, met station Coordinator Steve Huy and listened to his introduction.

During October and November, Huy and a few intrepid volunteers band saw-whet owls as they migrate from their breeding grounds in the Canadian forests to their wintering grounds in the eastern United States. For Steve Huy (pronounced like the slang word for U-turn) this is a labor of love. He's become accustomed to sleepless fall weekends.

The smallest bird of prey in the eastern United States, a saw-whet weighs no more than a robin. The owl got its name from its nocturnal "song" that reminded early settlers of a whetstone sharpening a saw. To twenty-first century ears unfamiliar with saw sharpening, the analogy is lost. It sounds more like a backup alarm.

Banding migratory birds requires special licenses and training, under strict state and Federal regulations. Bird banding stations use mist nets, of mesh so thin it's virtually invisible, to catch birds flying through the woods. In the 1960s, bird banders discovered that if they opened their nets at night, they sometimes caught many migrating saw-whet owls. Now 125 partnering bird banding stations participate in Project Owl-net, with funding from the Maryland DNR and many other agencies.

In 1966, when Wisconsin ornithologist Tom Erdman played a recording of a male saw-whet owl's call, he captured eleven times more saw-whets than he had before. Project Owl-net banders now routinely broadcast recorded songs of the male saw-whet owl as an audio lure. Huy said barred and screech owls prey upon saw-whets, and sometimes get tangled in the nets. They too are banded and released "farther down the mountain."

Once captured, an owl is removed carefully from the net and placed in a cloth bag. This minimizes stress on the bird during transport to the heated, well-lighted bird banding shed. There the owl is weighed, measured, and an aluminum band is gently slipped over its tarsus, the feathered part of the leg just above the toes. Leg bands identify place and date of capture. If a bird is already banded, data from the band is recorded.

Age and sex are determined by weight and feather condition. Males are generally one-third smaller than females. The owl is aged by shining an ultraviolet (UV) light on certain feathers. The fresh plumage of an owl then fluoresces bright raspberry red. The fluorescence comes from a coating of pigment called porphyrin, which breaks down over time. The overall fresh feathers of saw-whets less than a year old glow brightly. The more worn feathers on older birds glow quantitatively less under UV light. Then after a short interval to allow its eyes readjust to darkness, the little owl is released into the night.

Why put a yellow-eyed bundle of feathers through the trauma of capture, banding and release? Project Owl-net, a dedicated group of trained biologists and private citizens, has been gathering fascinating data on banded saw-whets for the past 20 years. Recently, sophisticated nanotags and geolocators also enable bird students to track the wanderings of these owls. Saw-whets migrate erratically, and they're far more numerous than was once believed. Over 90 percent of all captured owls are female, with only a few first-year males.

How many are there and are populations increasing or decreasing? Do adult males travel elsewhere or stay on their northern breeding territories? Like most research, the data leads to more questions. The more we learn about these wonderful owls, the better our ability to protect them in the future.



Saw-Whet Owl mobbed by kinglet © Doug Pifer/Pennsylvania Game Commission

PVAS Events

A Successful Fall Fundraiser

By Erin Shaw, Program Administrator

Our fall fundraiser on October 27th - "A Fête in Fernbank" - was a wonderful success. Thanks to a fantastic volunteer effort, about 65 people enjoyed a warm, sunny fall afternoon at the home of Mr. Alan Gibson and Dr. Scott Beard. We are incredibly grateful to Alan and Scott for sharing their beautiful home and backyard with us.



The incomparable PVAS Events Committee once again covered all event details and provided a stunning spread of food, desserts, and beverages. Guests enjoyed the "PVAS Marketplace," jumping at the opportunity to start their holiday shopping. Ellen Murphy's beautifully crafted felt animals made the Marketplace exceedingly special this time around.

Thanks to all who helped, attended, and donated, we raised just over \$9,000 at the event! Check the website events calendar to stay posted on our upcoming Spring fundraiser, or, reach out to me at admin@potomacaudubon.org to be added to the fundraiser invitation list.



38th Annual Bird Seed Sale Wrap-Up

We'd like to thank everyone who supported the 2019 Bird Seed Sale - because of you, we more than doubled our profits from last year! Coordinating the logistics of multiple pick-up locations would not have been possible without a fantastic volunteer team, including Susan and Joe Brookreson, Jim Cummins, Susan Jones, Dotti Mozden, Peter Mulford, Diana Mullis, Suzanne Offutt, Steve Paradis, Marie VanValkenburgh, and Michael Zagarella.

The partnership of Sunny Meadows Garden Center was invaluable. Shawn Eby and his team were wonderful to work with, and we hope to continue our partnership with them in future years. Ken Raines at Wild Delight is also due a thank you, as well as all the businesses that allowed us to use their space as a pick-up location, including Audiology, Inc. in Martinsburg and Hunter's Hardware in Berkeley Springs.

Based on the feedback we received this year, in future years, we plan to distribute ordering forms at least a month in advance of the order deadline. If you have any other suggestions on how to improve the Bird Seed Sale, or if there's a specific product you'd like us to offer next year, we'd love to hear from you! Send a note to admin@potomacaudubon.org, or call our office at 681-252-1387.

This Race is for the Birds!

Saturday, March 28th, 2020

Run, walk, or volunteer on the trails of Broomgrass

Registration opens December 1, 2019 at

www.runsignup.com

Family and Youth Programs

Wrapping Up Fall Watershed Programs

By Amy Moore, Lead Teacher & Naturalist

In early November, we wrapped up our 4th grade Watershed Education Initiative for the season. Our two new AmeriCorps volunteers - Griffin and Laurel - our returning AmeriCorps volunteer - Matt - and I hit the ground running and together taught at a total of four schools. These schools included Orchard View Intermediate and Mountain Ridge Intermediate in Berkeley County, and South Jefferson Elementary and Ranson Elementary in Jefferson County. In total, 614 students engaged in the program.

Most of our watershed field trips took place at either Cool Spring Preserve or Poor House Farm Park near Martinsburg, WV. These outdoor learning experiences would not have been possible without the help of incredible volunteers who lead educational stations. Here's a big THANK YOU to Tony Maciorowski, Kerri Godfrey, Diane Niedzialkowski, Captain Lou Scavnicky, Christy Fraga, Susan Brookreson, and Marcie Beyersdorfer.

While teaching, we instructors have moments of great satisfaction hearing students share their excitement or curiosity about what they are learning. Laurel's students at Mountain Ridge Intermediate liked to share how excited they were to bring home the activities they did with her in class to their families. For Matt, his moment of satisfaction occurred when a student exclaimed that the forest he was walking in during the field trip's interpretive hike was way cooler than the "Wailing Woods" - a forest in a popular video game, Fortnite.

Griffin shared that he and students at Ranson Elementary had great discussions about stewardship, and while exploring the schoolyard, a few boys started a trash collecting competition. For me, it was watching students fall into the cold water on a breezy, 45 °F day and barely notice their discomfort because they were just so enthralled about being in a stream, catching macroinvertebrates. These types of moments truly reinforce for us how meaningful these experiences in nature are for kids.

We already have six watershed field trips on the calendar for Spring 2020, and we're sure to add more. If you're interested in learning more about the watershed program, or would like to lend a hand as a volunteer, reach out to me at amy@potomacaudubon.org or 681-252-1387.

Camp Programs

Scholarship Program Helps Send Kids to Camp

By Mary Etta Boesl, Chair of Camp Scholarship Committee

The Potomac Valley Audubon Society will offer scholarships for children ages 3 through 18 to attend day camps and overnight camps during the summer of 2020. Campers in Jefferson, Morgan, and Berkeley Counties in West Virginia and in Washington County, Maryland, are eligible. Check the PVAS website in early February 2020 for camp details and application forms. There will also be updates in *Valley Views* and the e-newsletter, *Heads Up, PVAS!*

If you know a child who would benefit from a camp experience, please encourage that family to apply for a scholarship. Special consideration will be given to applicants with financial need and/or academic excellence in the natural sciences, but please apply regardless. Scholarships will be available for the many daytime Audubon Discovery Camp options offered by PVAS, and for the more adventurous and experienced, reputable overnight nature camps.

Last summer, PVAS sent 17 campers for an experience of a lifetime! Scholarships helped 15 children attend PVAS Audubon Discovery Camp day programs. The Discovery Camp sessions most requested were Camp Survivor and Earth Art. PVAS also awarded scholarships to overnight programs at Wind Dance Adventure Camp in Morgan County and Coastal Bird Studies at Hog Island Audubon Camp in Maine.

This year's PVAS Camp Scholarship Committee includes Susan Brookreson, Mary Duke, Kathryn Henry, Ellen Murphy, Mary Lynn Robinson, Erin Shaw, and myself. We look forward to helping as many children as possible attend nature camps this coming summer. For additional information, contact PVAS Program Administrator Erin Shaw at admin@potomacaudubon.org or myself at meboesl@yahoo.com.



Conservation

Top 5 Ways Animals Survive the Winter

by Laurel Schwartz, AmeriCorps Environmental Educator

As the weather gets colder, you may find yourself wondering how animals survive the heavy snowfalls and bitter cold brought on by the winter season. While cold climates present daunting challenges for survival, local wildlife species use adaptations or instinct to endure the winter season. Here are the top five unique strategies animals use to survive winter weather conditions:

1. Many species of birds begin their migration in the fall season. Monarch butterflies will also begin their migration to Mexico in the fall, as temperatures begin to drop. Migration allows animals to avoid harsh winter conditions and continue to search for food sources through the winter. Many birds, animals, and insects migrate in groups, in order to increase chances of survival and reproduction during and after their migration. Migration requires a significant amount of energy, so only the individuals most fit will survive the journey.

2. Adaptations of physical composition, including coat thickness, color, and body weight also aide animals in their winter survival. Some animals grow a thicker coat in the winter, preparing for lower temperatures. Others may adapt their camouflage for the winter, enabling them to better blend in with the snow. For example, the arctic fox will change its coat in anticipation of the winter months. Gaining body weight before winter also allows animals to survive longer periods without meals. Many bear species will gain extra body weight before the winter. Shorter daylight hours help to trigger these physical changes.

3. In addition to gaining weight ahead of time, many animal species gather and store food for the winter months. Squirrels will often bury acorns to find again later, creating a food cache. Storing food allows animals to save energy and avoid foraging on the coldest days. Beavers also create a food cache for winter food storage.

4. Because maintaining a high metabolism requires high energy costs, some animals use true hibernation to stay alive over winter. During an animal's true hibernation, they will take shelter in a specially selected, secluded area. The animal's metabolic rate will drop, and their body temperature will lower significantly as well. These changes will occur over an extended period of time. True hibernation, however, does not have to be continuous. Examples of animals which undergo true hibernation during the winter include garter snakes, some bat species, and box turtles.

5. Torpor is a sort of shorter-term hibernation. Torpor, unlike true hibernation, is an involuntary response to food scarcity and environmental conditions. Animals which undergo torpor do not have their metabolic rates and body temperatures lowered as significantly as do true hibernators. Daily torpor generally lasts less than twenty-four hours. Though many associate bears with true hibernation, bears actually undergo torpor. Because bears are not in a true state of hibernation, they are able to awaken more easily and escape a threatening situation, if needed. Generally, larger animals utilize shorter states of torpor to save energy and smaller animals utilize a state of true hibernation.



Give the Gift of Summer Camp

by Erin Shaw, Program Administrator

It may seem a long way off right now, but the summer season will be here before we know it. If you're looking to give the child(ren) in your life something to look forward to during these chilly winter months, consider gifting them with a week or more of Audubon Discovery Camp. Registration for camp will open in early February, and our teaching staff are in the midst of planning fun new themes for each of our camp sessions, held every week in June and July at both Yankauer and Cool Spring nature preserves.

To purchase a gift certificate (in the amount of your choosing) for PVAS's Audubon Discovery Camp, email or call me at admin@potomacaudubon.org or 681-252-1387. I'll be happy to iron out the details with you, and send your gift off to the recipient of your choosing.

Potomac Valley Master Naturalists

Master Naturalists Celebrate 2019 and Look Forward to 2020

By Krista Hawley, Adult Programs Coordinator

As a successful 13th year comes to a close for the Potomac Valley Master Naturalist Program, the PVMN Coordinating Committee is hard at work planning the upcoming 2020 class year. This program is one of PVAS's most popular adult programs, with over 100 certified Master Naturalists.

The Master Naturalist program is patterned after the long-established Master Gardener program. It trains individuals in the fundamentals of natural history and nature interpretation as a way of promoting responsible stewardship of West Virginia's natural resources.

Students in the Master Naturalist program receive 62 hours of training on a variety of natural history topics in both classroom and field/lab environments. To obtain certification, students have four years to complete all classes and two years to complete 30 hours of volunteer work. Many of our members volunteer at WV state parks, in citizen science projects, and for PVAS programs.

Volunteers are the backbone of PVAS, and our Master Naturalists are one of the greatest resources PVAS has. We rely on our volunteers in all aspects of our programming, from serving the youth of our community through environmental education to leading nature walks at our preserves. The Master Naturalist program enriches and builds upon the skills that many of our volunteers already possess.

Applications for the 2020 class year are currently being accepted. Information about the program and applications can be found at www.potomacaudubon.org/education/adult/masternat/, or by contacting myself at adultprograms@potomacaudubon.org or 681-252-1387.

If you would like to meet some of our Master Naturalists and hear about the program, please join us at our Open House on Wednesday, January 8, at 6 p.m. at Hospice of the Panhandle's Education Center. This event is free and open to the public. Register at: www.potomacaudubon.org/event/potomac-valley-master-naturalists-open-house/.

Current Master Naturalists will gather on Saturday, January 25 for the annual meeting, potluck, and silent auction. This is a time for Master Naturalists to gather, socialize, briefly conduct PVMN business, honor the new

graduates, and recognize Master Naturalists who have achieved 5-year and 10-years of active membership. We welcome all Master Naturalists to attend!



Notes from the Preserves

In the Preserves

By KC Walters, Conservation & Land Manager

Chilly weather is here, but the care of the preserves never ceases! Fall was a rough time for the volunteer workdays. A few had to be cancelled due to hazardous weather conditions and several simply had no volunteers sign up. We are hopeful that exciting new upcoming opportunities will drum up some volunteer activity.

At the end of October, we were fortunate enough to become recipients of two grant awards for Cool Spring Preserve. The first, from the Appalachian Stewardship Foundation, will be used to rebuild the Outdoor Classroom. The goals of this rebuild include (1) stabilizing the streambank, (2) providing easy access for the kids to get in and out of the stream using steps, (3) provide a stable platform for the kids to stand on within the stream, and (4) eliminate the downward slope of the classroom. We hope to provide a safe and fun learning space for everyone PVAS serves, while also protecting Bullskin Run and the adjoining marl marsh. The second grant is from the Eastern West Virginia Community Foundation's Two Rivers Giving Circle and will be used to construct a boardwalk over the section of Linda's Loop that periodically floods. We are hoping to have both projects completed by late spring. If you are interested in helping with either project please reach out to us.

The work of converting Cool Spring Preserve's front garden beds into a Monarch Waystation filled with native plants has begun! Cool Spring was selected as the recipient of the 2019 Monarch Alliance summer fundraiser. We now have \$2,500 to spend and an expert garden designer, James Dillon of Native Havens, to create a Monarch Waystation masterpiece this spring. In the meantime, we have several species that we need to rehome. We have iris, daffodil, lily, and peony bulbs, as well as plenty of Lamb's-ear available to transplant into your home gardens. Contact us if you are interested.

The Native Plant Sale held at Yankauer in October was a sweeping success. Seventy-five percent of the baby trees raised in PVAS's nursery went to their forever homes. The remaining trees were either purchased after the sale or planted at one of the PVAS nature preserves. In total, we grossed over \$1,000 from the sale of these trees and shrubs while also providing valuable habitat for our native species across our service area. A big thank you to all of our volunteers who turned out for this event; from those who crafted items to sell, to those who staffed a booth or table. We look forward to planning next year's sale and making it even bigger and better with more species to offer!

Yankauer now has a new bird feeding station. The new station is located next to the pavilion to be more accessible to all guests. We are currently seeking a new volunteer to fill the bird feeders once a week to help our feathered friends survive the winter months. The next Yankauer project will be sprucing up the front pollinator garden with a decorative rock border to help retain the mulch bed. Please join us at the next workday if you are interested in helping with this project.

Activities at Stauffer's Marsh and Eidolon are rather quiet at the moment, but several exciting projects are in the works. Stay tuned for updates as those projects develop.

This is the final month of 2019, so it is crunch time for Master Naturalists to squeeze in needed volunteer hours. Preserve volunteer workdays for the end of 2019 and start of 2020 are up on our website calendar now. Registering for workdays on our website or sending an email to katelyn@potomacaudubon.org, helps me to better plan the workday activities and communicate with you about changes or cancellations...you know, in case of SNOW!



Advocacy

Paper or Plastic?

By Neal Barkus, Panhandle Progressive

Remember when grocery clerks would ask this question at the checkout counter? Now you practically have to leap over the counter to prevent your groceries from immediately going into plastic bags. I have always assumed that plastic bags became the grocery industry's packaging of choice because of the cost savings to the grocers. This is basically true. I have also assumed that paper bags are both biodegradable in landfills and recyclable into other products, while plastic bags are not biodegradable and rarely recycled. But going beneath these assumptions a little further, the environmentally sound choice between paper and plastic bags is not at all clear.

Plastic bags started to appear nationwide in the 1970s and soon captured 80% of the bag market. The principal grocers in Jefferson County - Food Lion, Martin's and Walmart - all default to plastic bags at the checkout counter. Paper bags are available only on request at Food Lion and Martin's, which are both owned by the Dutch company Ahold Delhaize. Walmart does not offer paper grocery bags at all. One won't find any explanation of the default to plastic bags on the websites of these chains.

All the chains offer reusable bags for sale at around a dollar a pop, and these are probably a better alternative than either paper or plastic bags. But even this turns out to be debatable depending on what they are made from and how many times they are used. Most of these reusable bags are woven plastic of some sort.

There are several factors to consider when deciding whether paper or plastic bags are more environmentally friendly. First, whether the raw materials that go into the manufacture of the bag are renewable. Next, how much electricity and water are used to produce them and how much greenhouse gas is emitted in each manufacturing process. Then how readily each type of bag can be recycled. Finally, how biodegradable each type of bag is at the end of its life cycle.

On the question of renewability of resources, paper bags are the clear winner. They are made from trees. Paper bag manufacturers do not typically use trees from Amazon rainforests, but rather tree farms of fast growing species. While they are growing these trees capture carbon. Plastic bags on the other hand are made from petroleum, which is a non-renewable resource that produces greenhouse gas when burned.

But when considering the use of resources and the release of greenhouse gas in the manufacturing process, plastic bags are the clear winner. Making a paper bag consumes four times as much energy and three times as much water as making a plastic bag. And because 1,000 paper bags weigh over nine times the same number of plastic bags, transporting them also consumes more energy.

It is difficult to pin down exactly how much more greenhouse gas is emitted by the manufacture of paper bags than plastic bags, but it is a certainty that paper bag manufacturing is dirtier. The

Sierra Club reports that you have to reuse a paper bag four times to reduce its carbon footprint to that of a plastic bag. Another study from 2008 asserts that paper bag manufacturing emits 80% more of this gas. A plastic bag manufacturer asserts that "solids" emitted into the air in the manufacture of paper bags is roughly twice what is emitted in the manufacture of a plastic bag.

The question of recycling further adds to the muddle. While paper bags can be recycled into other paper bags, the recycling process is inefficient, often taking more energy than it would to make a new bag. Furthermore, it takes about 90% more energy to recycle a pound of paper than a pound of plastic. But plastic bags are a recycling nightmare - most curbside recycling operations are not capable of recycling these bags because the thin plastic melts and fouls the machinery. It is estimated that only 12% of plastic bags are recycled.

So plastic bags often end up in landfills, where they can sit for 500 to 1,000 years. And plastic bags don't ever "biodegrade." Instead they "photodegrade" when exposed to light into smaller plastic particles. The more serious problem with plastic bags is that they don't end up being disposed of properly but end up as litter. They are everywhere, fouling land and water. Plastic waste is deceptive to birds and mammals, who often mistake it for food. This would lead you to think that paper is the better choice, but here is the big surprise: a paper bag that ends up in a landfill does not biodegrade much faster than a plastic one.

So perhaps the way to avoid this bag conundrum is not to use either type of single-use bag. The reusable bags offered for sale by grocery stores are a good option - if you use them long enough. Heavier reusable plastic bags and cotton bags also have the freight of energy and resource consumption in their manufacture and their own greenhouse gas emission problems. A heavy-duty plastic bag must be used five times to reduce its carbon footprint to that of a single-use plastic bag. A reusable cotton bag must be used 173 times.

There might be a political solution to the problem. Eight states - California, Connecticut, Delaware, Hawaii, Maine, New York, Oregon, and Vermont - have completely banned single-use plastic bags. Some cities and localities have also instituted bans, including Montgomery County, Maryland. Jefferson County Delegates John Doyle and Sammi Brown introduced legislation in the 2019 Legislature that would ban single-use plastic bags in West Virginia. The legislation was referred to committee, where it awaits some sort of action in the next session.

Most likely, however, we will have to change our behavior voluntarily. That's not to say we couldn't use a nudge. The German grocer Aldi, which is a small player in the market, provides that nudge. That chain will happily sell you a plastic or paper bag for about 10 cents each. Aldi claims this saves them money that they return to customers in the form of lower prices. Perhaps.

continued next page

Paper or Plastic? continued from previous page

But there is no doubt that Aldi's price on single use bags acts as a tax with the predictable result of encouraging shoppers to come up with their own bags or reuse bags they have previously purchased at Aldi or elsewhere. While this approach doesn't completely eliminate the problems associated with single-use bags, it gets us pretty close without government intervention. My conservative friends like this.

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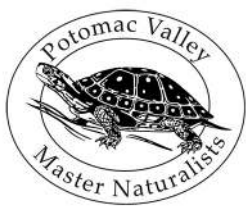
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CFC#29061



CFC#29061

MAIL TO:

December 2019/January 2020

Printed on 100% post-consumer waste recycled paper

Volume 38, Issue 3

The Potomac Valley Audubon Society meets at 7:00 p.m. on the second Wednesday of each month, September through May. Programs are free and open to the public. For additional information about PVAS or its programs and activities, please contact any of the board members listed here or see <http://www.potomacaudubon.org>. PVAS serves the Eastern Panhandle of West Virginia and neighboring Washington County, Maryland.

All Officers, Board Members, and Staff can be contacted at 681-252-1387.

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PVAS BOARD

PVAS Board meetings take place the first Thursday of every other month (September through June). Meetings are open to all PVAS members. Please contact the President or Vice President if you would like to attend.