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SHOOTING THE BREEZE

A Publication of Bull Run Mountains Conservancy, Inc.

Habitat and Diversity

by Michael Kieffer

Species, within a habitat, require nutrients, water, shelter, and space to survive, all of which comprise their niche. An *idealized niche* is defined as the limits, for all of the important environmental features, within which individuals of a species can survive, grow, and reproduce, but is often reduced to a *realized niche* by competition between species. Over time some species' niches become more specialized as these species evolve reproductive advantages through more efficient and unique energy cycling. As habitats naturally develop, less energy in the system is left dormant and energy cycling is intensified.

Specialization enables a wide diversity of life forms to live with a limited supply of nutrients and energy. Older, more diverse ecosystems have the greatest species specialization. Without disturbance and given enough time, species richness and complexity peak. Conversely, natural or unnatural disturbances cause an ecosystem to revert to an earlier successional state. The ecosystem will then begin a series of seres (successional stages), the number of which depends on the disturbance and climate. The seres naturally mature towards increased complexity and energy conservation.

As species become increasingly specialized, they become increasingly bound to more specific niches. A specialist's niche may only be found in rare habitats or habitats that are naturally far apart. Some species are mobile enough to reach suitable habitats if a disturbance leaves its present space uninhabitable, but some species do not possess such mobility or have no habitat corridors in which to travel. This is a reason that large, intact preserves contain many more species than smaller, fragmented preserves. This is also the concept behind ecologists and land conservationists' drive to connect all preserves, thus increasing their overall effectiveness.

In an intact ecosystem, specialists have an advantage, keeping the number of generalists in check. In a disturbed ecosystem, generalists have the advantage and their increased population size may slow or arrest specialists from re-inhabiting a community. Under constant disturbance, generalists start replacing specialists on regional scales.

An ecosystem dominated by generalists can comprise many individuals, but has few species using the limited resources. As more diverse habitats continually become disturbed, the probability that specialists will become extinct increases. The more chaotic or diverse a system, the more stable or the closer a system is to equilibrium. Everyone should remember from high school science experiments that the more data one obtains, the more accurate one's results. This concept of complexity equating to greater balance pervades everything in nature, which we are only a trace element. Continually fragmenting our landscape will only lead to less diversity and decreased stability.

Based on the simple assumption that complexity in living systems increases with time, we should prioritize and conserve all of the earth's oldest communities that are still intact. To learn the most about how living systems work, it seems self-evident that you need to study the most complex systems. Once a diverse ecosystem is destroyed, it is lost, in human terms, forever.

BRMC works to enhance our audiences' understanding of the natural world. This works best for us if the Piedmont natural communities can be preserved and in many cases given time to heal from human induced disturbances. The process for Piedmont communities to mature towards increased complexity and energy conservation takes centuries, but the first step is to set large tracks aside.



SHOOTING THE BREEZE
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BRMC volunteers are the lifeblood of the organization. We simply couldn't do it without them. It doesn't matter if it's performing a skit at the Halloween Safari, helping with parking at the event, showing up to help with weeding at the Mountain House, or the cadre of volunteers who show up on a regular basis to pick up trash at Leopold's Preserve, every volunteer role and every function is vital. This fall, I had the great pleasure of working with Laura Hassell, the executive director of the White House Farm Foundation (that owns and manages Leopold's Preserve), to organize and participate in two volunteer events at the Preserve and to see these remarkable people in action. By all accounts, both projects were a huge success, mainly due to the number of folks who came out to lend a hand.

No More Japanese Stiltgrass

The first event, held on September 4th, was an invasive plant removal project at what is called the "deer enclosure" at Leopold's. (Yes, it's an enclosure, because it keeps deer out.) The enclosure was built in 2020 to protect an endangered ecosystem that is unique to our area: an Upland Depression Swamp.

There are many invasive plants in the enclosure that pose a serious threat to native plants, so naturally it was the job of volunteers to remove some of them. Specifically, the focus was on Japanese stiltgrass, an invasive grass that is common to forests and woodlands in the eastern United States.

Now, the enclosure is not small, measuring 160 feet x 60 feet, so this was not a small undertaking. However, with 13 volunteers armed with gloves and trashbags, we went through almost the entire area in just under three hours. In total we filled about 11 bags of the invasive stiltgrass!

"Thanks to the hard work of the volunteers both last year and this year (this was the second year we held the event), we are already starting to see a difference. The stiltgrass has been greatly reduced, making room for important native species to repopulate the Upland Depression Swamp," commented Laura Hassell. "This would not have been possible without these amazing people."



Beautifying the Pond

The second cleanup event was held at the main pond at Leopold's on October 9th. The goal was simply to gather all the trash that collected along the edges of the pond as well as any debris that was floating in the pond. It was interesting though. When I got to the pond I didn't really see much. It looked pretty clean already, so I was thinking all these poor volunteers (all 15 of them!) came out for nothing. Boy was I wrong.



We started by giving everyone a trash bag and some grabbers, to help them reach the trash more easily, and told them to go around the edge of the pond looking for whatever they could find (without falling in of course). In addition, we were lucky enough to be able to borrow a canoe from a neighbor, so we sent two people out to get the debris that was out of reach for those who stuck closer to shore, and to get anything in the middle of the pond.

It's amazing how every little piece adds up. What didn't seem like much at first quickly filled one bag, then another, then another. In total we ended up with 20 bags of garbage! Everyone who was there, including yours truly, was impressed by how much we accomplished in such a short amount of time. Laura Hassell felt the same: "It is incredible what a small (or in this case, large!) number of people can accomplish when they work together. The volunteers who showed up to help clean up the pond really showed a passion for helping us keep our pond and the larger watershed clean, which makes a big difference!"



BRMC Public Programs

Winter 2022



HIKE WITH A NATURALIST

Thursday, January 6th, 10 am (& every first Thursday of the month)

Join a professional naturalist to discover some of the flora and fauna of the local region. This program is free, meets at Leopold's Preserve (16290 Thoroughfare Road, Broad Run, VA 20137) and all are welcome. Please pre-register.

WINTER BIRD WALK

Saturday, February 5th, 10am-1pm

Join BRMC as we spend the morning birding with a focus on the areas winter waterfowl. Participants must bring their own binoculars and spotting scopes, as we cannot share due to Covid-19. We will meet at the Mountain House (17405 Beverley Mill Dr, Broad Run, VA 20137), before travelling to local ponds to view our winter ducks.

Pre-registration is required.

Members: \$15/non: \$20

HOMESCHOOL PROGRAMS

All programs are 10am-12pm. \$5 pp, including adults.

BRMC invites you and your child to spend an adventurous outing interacting with and learning about nature! We meet at Leopold's Preserve, 16290 Thoroughfare Road, Broad Run, VA 20137.

Winter Birds and Survival

Thursday, January 20th—10a.m-noon. Join us to view the colorful ducks spending the winter on our local ponds, as we discuss how mammals survive and thrive in the winter.

Geology

Thursday, February 10th—10am-noon. Join us to explore and discuss the geology of the Triassic basin.

Orienteering

Thursday, February 24th—10am-noon. Join us as we learn to use a compass and the lay of the land when orienting to a secret location in the woods.

Amphibians of Spring

Thursday, March 10th—10am-noon. Join us to explore the habitats and life cycles of amphibians. The spring chorus of frogs is the harbinger of spring and we will enjoy their display in full force.

LEOPOLD'S PRESERVE

Monthly Naturalist Walks

BRMC is proud to partner with **The White House Farm Foundation** and its mission to enrich individuals with knowledge of and involvement with our natural ecological systems for monthly naturalist walks on Leopold's Preserve: 16290 Thoroughfare Road, Broad Run, VA 20137.

Winter Schedule

Saturday, January 22nd, 10am-noon...Geology

Join us to explore and discuss the geology of the Triassic basin.

Saturday, February 12th, 10 am-noon...Winter Birds

Join us to view the colorful ducks wintering on the wetlands

Wednesday, March 2nd, 6-7:30 p.m...Amphibians of Spring

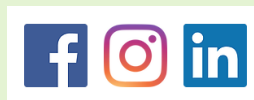
Join us to enjoy the harbinger's of spring in full force.

Wednesday, March 9, 5:30-7 p.m...Woodcock Watch

Join us for their elaborate courtship displays and flight.



Let's Get Social!



BRMC is now on Instagram and LinkedIn too! Like, follow us, and share with your friends the latest information on our education programs as well as partner updates and donor opportunities.



Hoo-hoo, hoo-hoo! I am the king of the forest, the Great Horned Owl. For two nights in October I ruled the forests at Leopold's Preserve as I taught people all about the Great Horned Owl during BRMC's annual Halloween Safari. This experience was so rewarding. Not only was I able to make people smile and laugh, but they came out of the woods having learned a great deal about one of the most prominent predators in our surrounding area - the Great Horned Owl.

At first, performing a five-minute skit was quite a daunting task, but after the first few groups came through I got more comfortable -even adding my own jokes. I said things like my favorite soda would probably be Mountain Hoo, and asked people to get the Big Axe Barn to play the Hoot Scootin' Boogie again.

To anyone looking to aid in conservation efforts or just looking to be more active in their community, I would highly recommend volunteering with the BRMC. It's very rewarding and an absolute blast! Hoo-hoo, hoo-hoo, I have to go now. Good day, or should I say, good night! –

Winter Naturalists



BRMC's Bluebird Trail

by BRMC staff

As you may know, one of the many projects we are involved in is a volunteer bluebird trail with team leader Joe Gardner and assisted by Michael and Kelp Armstrong who are all longtime supporters. This is an ongoing project that monitors bluebird boxes utilizing The Cornell Lab of Ornithology's NestWatch program. Right now, we monitor two houses at our Mountain House property, and 4 houses on the Wakefield School campus.

With that, we are so excited to expand our bluebird endeavor to Leopold's Preserve! This expansion starts with removing all of the old bluebird boxes throughout the preserve, which will be a great volunteer undertaking considering we are not sure just how many are there and where they are all located. Thankfully, we have dedicated and amazing volunteers to scour the preserve and help us remove the dilapidated bluebird shelters.

One reason to remove the old boxes is that they are not being properly maintained or monitored. This is a critical step in collecting data about the bluebirds in our area be-



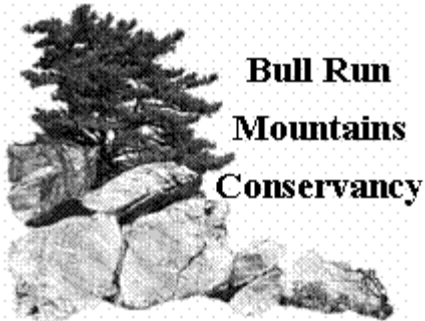
cause the boxes must be cleaned out regularly and monitored to ensure that they're being used by their intended occupants. The current boxes are attracting house sparrows and European starlings, which are both invasive bird species, that end up doing more harm than good.

With the installation of four new bluebird boxes at Leopold's Preserve, comes a unique opportunity for our BRMC community to be involved. Those who are interested will be able to have a bluebird box dedicated or

sponsored! Dedicating or sponsoring a bluebird box comes with some great benefits. You'll not only get a personalized plaque with your name on the box, but we'll refer to your bluebird box by name in all of our data reports (i.e. The Smith Family box). By sponsoring a box, you'll be able to follow along as we collect data and monitor the bluebirds who inhabit your box, and you'll have the rare opportunity to be involved firsthand in the type of research that is the foundation of our organization. Most importantly, your contribution helps to sustain projects like this one.

A dedicated or sponsored bluebird box is a wonderful way to show your support for our environmental efforts; memorialize or honor a loved one; or share as a meaningful gift for a birthday, anniversary, etc. In recognition of contributions to the fund, we will install a personalized plaque on one of our four bluebird boxes for just \$500. Your plaque will remain for the lifetime of the project.

If you are interested in sponsoring a box, you can email us at info@brmconservancy.org. We will only be installing four boxes to begin with, so it will be on a first come first serve basis with the potential to be waitlisted for when we expand the project.



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Yes, I would like to become a member of Bull Run Mountains Conservancy.

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Please make your tax-deductible contribution to:
Bull Run Mountains Conservancy, Inc., P.O. Box 210, Broad Run, VA 20137

**Bull Run Mountains Conservancy is a
donor driven organization.**

Become a donor today and support our programs and protect the Bull Run Mountains region. Your contribution provides BRMC necessary funds to operate and shows our foundation and corporate supporters that the public values and appreciates this resource.

Membership Benefits:

- Support environmental and historical programs for all ages
- Support research on and around the Mountains
- Discounts on all public programs and camps
- Quarterly newsletter including our program calendar