

SHOOTING THE BREEZE

A Publication of Bull Run Mountains Conservancy, Inc.

Life Depends on What's Beneath

by Michael Kieffer



M. Kieffer

The most diverse and most numerous life forms on land happen to live underneath our feet. As the great entomologist E.O. Wilson once wrote, "If I were to begin my life's work again, I would study life in the soil around the base of one tree." This from a man who spent much of his career studying ants, probably the most familiar soil critter to us all and the smallest of creatures in most people's minds.

Soil and its erosion were recognized as one of the first signs of land degradation by one of the founders of conservation, Aldo Leopold. In fact, it was his work in the Southwest and the serious erosion issues occurring there in the early 1900's that began to influence his thoughts and was an essential component to developing his "Land Ethic" based on the lands "integrity".

Soil is the upper layer of earth where the mineral world and the organic world become intertwined in a matrix of plant roots and fungal mycelium. In an average cubic meter of ground, there are

10,000,000,000,000 bacteria (that's 10 trillion); 10,000,000,000 protozoa; 5,000,000 nematodes; 100,000 mites; 50,000 springtails; 10,000 rotifers and tardigrades; 5,000 insects, myriapods, spiders, and diplurans; 3,000 potworms and earthworms; 100 snails and slugs; and one vertebrate. All kingdoms of life are well represented in this hidden world.

Soil formation begins with the breakdown of rock. All rock, no matter how hard, will succumb to the relentless forces of lichen, wind, water, topography, climate, and time. These forces break rock into smaller and smaller sizes eventually creating sand, silt, and clay sized particles. These particles make up the mineral components of all soil types and, depending on the percentage of each of these particles, a soil's texture is named. Equal contributions of sand, silt, and clay form a *loam* soil, *optimal for life*. A *sandy loam*, which is characteristic of the Bull Run Mountains, has less nutrients, moisture, and humus than a loam soil.

Lichens are the first visible signs of life on the earth's barren surfaces. These organisms begin a cascade of events that add to the connection between the mineral world and the organic world by combining and recycling both inorganic and organic components. Lichens, half algae and half fungus, have many advantages to begin life on rock, such as abundance and longevity (an individual lichen may live hundreds if not thousands of years). They can also produce acids unique to the kingdoms of life that aid the breakdown of rock. These pioneers pave the way for mosses, ferns, herbs, shrubs, and trees that take advantage of each other, as well as each bringing a myriad of life into the fold, including animal decomposers, detritivores, scavengers, herbivores, and predators. It seems that life has evolved to trap energy on land before its eventual loss to the sea. The more time nutrients from the soil cycle through living things the more time the natural processes that create new soil have to replace the eventual loss.

Bacteria and fungus do the bulk of the work to provide the minerals and elements that are the building blocks of all life. Solar radiation provides the energy that drives photosynthesis in autotrophic bacteria, lichens, and plants. Energy is stored in sugars that reciprocally feed the bacteria and fungus. The mammals, birds, reptiles, and amphibians, which are composed of the minerals from this matrix, add to the process by keeping the recycling process going. Many bring nutrients "back uphill" and away from the water as they decompose on land. This is a loop that is run over and over again, as players in the circuit evolve and go extinct, in a process that has produced the most fascinating results.

This all assumes the bedrock and mineral soil relationship is still intact—a situation that many who are living in suburban and urban landscapes no longer experience in their daily lives. Many homes are built on and then surrounded by fill dirt brought in from other areas. In addition, our farming practices, especially since mechanization, have led to not only the loss of tremendous amounts of soil, but rely on inputs, such as nitrogen, produced in factories.



M. Kieffer

To keep soils constant or even building in nutrient capacity takes soil nutrients moving through a diverse food web. Humans have passed on knowledge through language and writing for thousands of years and many have "discovered" the importance of maintaining natural communities that start with intact soils. However, as Aldo Leopold famously wrote, we continue to "...live on the land, but not by the land." Maybe it is time to heed those words.

Speaker Series June 2026

Exploring the Southern Ocean and Antarctica

Saturday, June 20th—2 p.m.

BRMC Mountain House, 17405 Beverley Mill Dr., Broad Run, VA 20137

Photographer and historian Mills Kelly recently journeyed to the Southern Ocean (South Georgia, Antarctica) on a photographic expedition and will be giving a talk about what it is like to spend time in a place of such ecological abundance. For example, on his trip they visited a King Penguin colony with approximately 150,000 penguins in one small bay. In addition to showing his images of wild landscapes, penguins, albatrosses, elephant seals, and whales, Mills will discuss the challenges the Southern Ocean ecosystem faces both from climate change and from human encroachment. Join us for an afternoon of inspirational photographs and discussion of Antarctica and its neighborhood.

SHOOTING THE BREEZE
is a publication of Bull Run Mountains Conservancy, Inc.

Board of Directors

President
Sandy Surabian

Vice-President
Mike Dow

Secretary
Susan Southard

Treasurer~Interim
P. Douglas Fout

Andrea Currier

Tim Dunn

Peter Fakoury

Kathleen Higgins

Jack Kotz

Helen MacMahon

Rita Morency

Counsel

John McBride

Staff

Executive Director

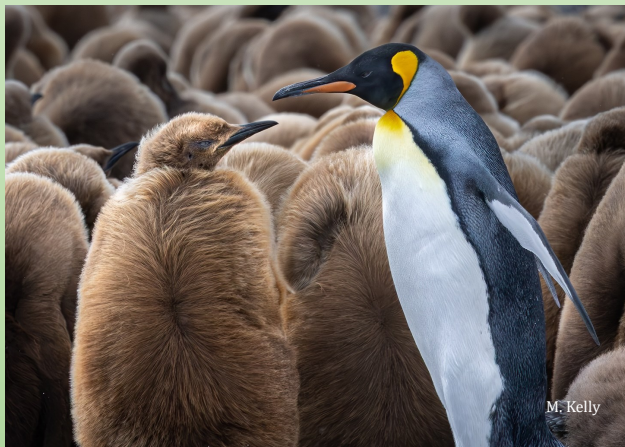
Michael J. Kieffer

Assistant Director

Matthew Frost

Caretaker & Development Associate

Kevin Dwyer



Can Mantis Shrimp See UFOs?

by Kevin Dwyer

I was recently reading Ed Yong's *Immense World: How Animal Senses Reveal the Hidden World Around Us*. It's a fascinating look at the many variations of animal, insect, and plant senses, and how the five senses are the foundation of any given species' understanding of reality. In other words, how we see, hear, touch, taste, and smell is central to interpreting and assigning meaning to what's happening around us.

While it's obvious, for example, that a dog's reality differs from a person's, Yong does an amazing job of getting across just *how* differently our realities are, and why. That dog smells things that its owner will never smell. But the owner sees that mailbox down the road more clearly than the dog he's walking does. Yong covers the gamut, from sea turtles, giant squids, and vultures to bees, fire beetles, and plants; each one perceives the world differently because each one excels and/or lags in one or more senses. One species that really stood out to me is the mantis shrimp, which sees more colors than any known living thing. It was fascinating—and humbling—to know that as I read about it, I was looking at a wide range of colors that I couldn't see.

All of this brings me to what I *really* wanted to write about: What's the deal with UFOs? I had never put much stock in the idea of little men in flying saucers visiting Earth, picking up a stray cow, and whooshing back to their planet. John Keel, author of *The Mothman Prophecies*, didn't either. Keel was a little out there, but I did find his idea about UFOs interesting. Unexplained lights in the sky, Keel wrote, are not real-time alien spaceships but rather the result of a temporary ability to see phenomena that are already there. (Who controls this? As I said, Keel was a little out there; when Michael isn't looking, I'll try to shoehorn that into a future issue of the BRMC newsletter.)

So back to that mantis shrimp. It's a fact there are countless things happening around us humans that we are oblivious of. There is heat radiating off your body right now. You can't see it, but a mosquito can, in its way. Who knows...maybe everyone who reports a UFO sighting isn't a crackpot, prankster, or conspiracy theorist. Perhaps for one fleeting moment, these flawed homo sapiens are able to see through the eyes of a mantis shrimp.

BRMC Public Programs~2026



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 through monthly naturalist walks on Leopold's Preserve: 16290 Thoroughfare Road, Broad Run, VA 20137.

Summer/Fall Schedule

Sunday, July 12th, 10-noon—Things That Fly!

Join us for a walk focused on things that fly including the colorful birds, flutterbies, dragonflies and damselflies.

Wednesday, August 5th, 7 p.m.-8:45 p.m.—Bats & Bugs

Join us to observe bats flying to catch their dinner while learning more about them and their food.

Sunday, Sept. 20th, 10 a.m.-noon—Birds & Blooms

Join us to enjoy and learn about the fall bird migration and early fall blooms!

Sunday, October 25th, 10 a.m.-noon—Fall Ecology

Join us to marvel at the fall colors as we focus on the life cycles of trees!



WHITE HOUSE
FARM FOUNDATION

PLEIN FAMILY FOUNDATION

BRMC'S 27TH HALLOWEEN SAFARI!

Friday, October 16th & 23rd
7:00p.m.—8:00p.m.

Follow your guide along the trail at Leopold's Preserve and see native "wildlife" perform fun natural history skits. Then enjoy live music by the bonfire!



Reservations \$10/person in advance

Pre-registration at www.brmconservancy.org

HOMESCHOOL PROGRAMS—for youth and adults

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

BRMC invites you and/or 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.

Birds & Blooms

Tuesday, September 15th—age 15 –adult—10a.m.-noon. Join us to enjoy and learn about the fall bird migration and late summer blooms!

Wednesday, September 23rd—all ages—10a.m-noon. Join us to enjoy and learn about the fall bird migration and late summer blooms!

Fall Ecology

Tuesday, October 13th—age 15-adult—10a.m.-noon. Join us to marvel at the beauty of autumn! We will be focusing on the life cycles of trees and fall color.

Wednesday, October 21st—all ages—10a.m.-noon. Join us to marvel at the beauty of autumn! We will be focusing on the life cycles of trees and fall color.

Old Homes & Succession

Tuesday, November 10th—age 15-adult—10a.m.-noon.

Explore the cemeteries, foundations, and vegetation that tells the story of the Thoroughfare community!

Wednesday, November 18th—all ages—10a.m.-noon.

Explore the cemeteries, foundations, and vegetation that tells the story of the Thoroughfare community!

Winter Survival

Tuesday, December 1st—age 15-adult—10am-noon. Learn what mammals do to survive winter!

Wednesday, December 9th—all ages—10am-12pm. Learn what mammals do to survive winter!

HIKE WITH A NATURALIST

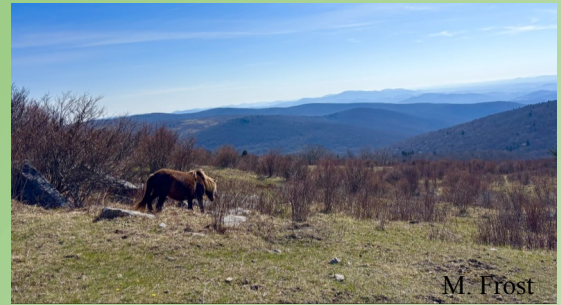
Wednesday, June 3rd, 10 am (& every 1st Wednesday of the month)

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. *Pre-registration is preferred.*

Venturing to Grayson Highlands

by Matthew Frost

Going 75 down 81, we squeeze our way through 18-wheelers and oversized loads on a five-hour journey to the southernmost tip of Virginia to visit Grayson Highlands. On the way there, after endless gas stations and truck stops for hours on end, you notice a sudden shift when nearing the park. The Wawas vanish for multi-functional, family-owned general stores, and the expansive cattle farms transform into Fraser fir farms, where our Christmas trees are shipped from.



Finally arriving at the park, I found a greeting silence that is difficult to come by in Northern Virginia. The stark contrast between NOVA's local parks, where a copse of pines barely hides highways, and this place offers a compelling look at what it means to truly "get away." Here, one can hear and appreciate the birds, noticing every shift in their song and the soft susurrations of falling leaves. You can even hear yourself think!

As we began ascending through patches of spruce and firs, hearing the pine siskins' explosive calls, stumbling over exposed roots, and passing thickets of rhododendrons not yet in bloom, we finally arrived at the balds. The balds are high-altitude open grasslands that offer panoramic views of the Blue Ridge Mountains and are home to the park's main attraction, the wild ponies.

The ponies were introduced specifically to maintain this unique ecosystem by grazing after the area became parkland in the '70s. Now, the ponies roam free to their hearts' desire and are unbothered by the millions of visitors who stand in awe watching them languidly go from shrub to grass and nap in the warm sun before doing it all again. In total, we saw 27 ponies, with 5 possible repeats.

Further on our hike, as the suspense of not seeing ponies wears off and turns into a quiet appreciation, the surrounding landscape takes center stage. It felt almost like a fantasy, where the vastness of the mountains was put into perspective so clearly, especially when peering out at the blue horizon and seeing specks of people ascending the undulating hills like ants.

Watching the "ants" from afar and realizing the sun had begun to dull, we descended back down the path, resisting the urge to continue venturing on other trails. We made our way back to the now-bustling parking lot, where the sounds of children screaming and car doors slamming had begun to encroach on the tranquil air, as if Northern Virginia had sent its restless entourage to call me back home.

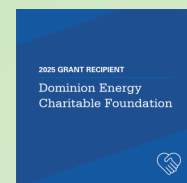
Town & Country Nature Walks *Hopewell Sanctuary!*

Join BRMC as we explore the geologic and history of Hopewell Sanctuary (private), while taking in a fantastic fern display. Take a stroll with Michael Kieffer, BRMC's Executive Director, as we enjoy this wonderful property located in the historic Hopewell Gap on the Bull Run Mountains.

Saturday, May 23rd~10a.m.-noon



Sponsored by:



Wind River
Fund

BRMC Youth Outdoors Naturalist Camps Summer 2026!



Registration is open for all camps & workshops at www.brmconservancy.org or at

HERPETOLOGY CAMP*

Session I: June 22nd-June 23rd, 10a.m.-3 p.m.

Session II: June 25th-26th, 10 a.m.-3 p.m.

Herpetology is the study of reptiles and amphibians. BRMC invites your child to spend two days hiking and handling, searching and observing salamanders, frogs, lizards, snakes, and turtles on Hopewell Sanctuary (Private) and Leopold's Preserve.

Ages 7-14. Limited to 15 participants.

Register today! Fee: \$100 early registration before March 1, 2026/ \$150 after March 1, 2026



BUDDING NATURALIST CAMP*

July 6th—10th, 10:00am-12:30 pm

A parent/guardian is welcome to accompany their child or children

At this week-long camp, young children will be exposed to the outdoors and wildlife, as they explore life on and around the Bull Run Mountains through a series of discovery hikes, frog and salamander searches, snake viewing, and stream exploration. *Ages 4-6. Limited to 6 participants.*

Register today! Fee: \$125 early registration before March 1, 2026/ \$175 after March 1, 2026

SUMMER NATURALIST CAMPS*

Session I: July 13th-17th, 10:00am-3:00pm

Session II: July 20th-24th, 10:00am-3:00pm

BRMC invites your child to spend an adventurous week interacting with the natural world. Each day we will focus on different groups of plants and animals on and around the Bull Run Mountains. Campers will add to their understanding of natural systems through hikes, stream walks, frog and salamander catching, bird watching, butterfly and insect collecting, and games. *Ages 7-14. Limited this to 15 participants.*

Register today! Fee: \$250 early registration before March 1, 2026/ \$300 after March 1, 2026

Chesapeake Watershed Workshop*

July 27th—July 30th, 10:00am-3:00 pm

Join us for a workshop focused on the conservation of streams that flow into the Chesapeake Bay. We will explore headwater seeps on the Bull Run Mountains and go downstream on Catharpin Creek, Little Bull Run, and North Fork. At each location participants will perform stream monitoring, vegetation analysis, and stream habitat and riparian buffer evaluations. *Ages 15-18. With support from the Chesapeake Bay Restoration Fund, 6 full scholarships are available for this workshop!*

Register/apply today! Fee: \$200 early registration before March 1, 2026/ \$250 after March 1, 2026

**Our host properties will include Hopewell Sanctuary (Private), Leopold's Preserve, and Silver Lake Regional Park. All of these private/public lands are located within 5 miles of each other. Further information on each camp will be provided to participants.*

BRMC reserves the right to cancel a day of any camp due to severe weather. However, we do not anticipate issues with the time window of the camp hours.



**Bull Run
Mountains
Conservancy**

Education · Research · Stewardship



M. Kieffer



M. Kieffer



M. Kieffer