



The Highlands Voice

Since 1967, The Monthly Publication of the West Virginia Highlands Conservancy

Volume 56

No. 4

April 2024

WVHC, WV Rivers and Sierra Club Secure Historic Settlement to Restore Streams Harmed by Coal Mining Pollution

In a landmark victory, the West Virginia Highlands Conservancy, the Sierra Club, and the West Virginia Rivers Coalition have reached an [agreement](#) with the U.S. Environmental Protection Agency to address the long-standing issue of ionic toxicity pollution in West Virginia streams caused by coal mining.

Mountaintop removal mining and other forms of surface coal mining harm streams by producing high levels of ionic toxicity pollution. This pollution can increase the “conductivity” – or salinity – of freshwater streams, making the water too salty for aquatic life to survive and disrupting entire ecosystems. Ionic toxicity can also im-



The Lower Guyandotte River watershed.

pact communities by affecting drinking water quality and increasing water treatment costs.

The proposed consent decree, [published in the Federal Register on March 29](#), requires the EPA to develop Total Maximum Daily Loads (TMDLs) for ionic toxicity pollution for 11 high-priority West Virginia streams by January 15, 2025. A TMDL is a “pollution budget” designed to restore streams that are not meeting all of the uses protected by the Clean Water Act. In this case, the streams at issue are “biologically impaired” because of the effects of ionic toxicity on aquatic life in the streams.

continued on page 5

What's inside:

Thoughts From Our President	2	Background on EPA Settlement	5	A Good Idea Gone Bad	8
The Do-Nothing West Virginia Legislature	3	Friends of Cheat Snorkeling Successes	6	Toxic Water in Wolf Pen, West Virginia	9
Heritage Trees in Tucker County	3	Fun Spring Events	6	Upcoming DSWS Trainings	10
WVHC Store Catalog	4	A Walk in the Woods	7	Become a WVHC Member!	11

Visit us on the web at www.wvhighlands.org Find us on Facebook

Thoughts From Our President

By Marilyn Shoenfeld

As always, we think spring is coming to the Highlands, and then there is a blizzard warning for the first week of April (I am writing this on April Fool's Day, and it is no joke.)

The West Virginia Highlands Conservancy staff, board, and committee members have had a busy March. The West Virginia Legislative Session concluded at the beginning of March. There were some good bills, a lot of bad bills, and some in-between bills. Our lobbying team effectively blocked some of the worst and promoted some of the good. Many thanks to those who worked tirelessly to keep our public lands intact. You can read our Legislative Committee Chair Luanne McGovern's recap of the 2024 Legislative Session on the following page.

Here is more of what we've been up to:

Outings: Our Program Director Olivia Miller and Membership and Operations Director Crys Bauer have planned a series of outings for the late spring, summer and fall. This revives a program that the Conservancy had twenty years ago! Some of you may remember the West Virginia Mountain Odyssey Program: Outings, Education, and Beyond. Look in the Voice for details on joining a guided hike, bird walks, mushrooms, participating in tree plantings and much more.

The Nature Conservancy, Central Appalachian Spruce Restoration Initiative, and the Canaan Valley National Wildlife Refuge are hosting two tree planting events in April in Tucker County—on April 19 at Canaan Valley

State Park and April 20 along Freeland Road. WVHC provided the saplings that will be used as part of these two planting events. Head over to wvhighlands.org for more details on these Earth Day tree planting opportunities.

On May 12, Casey Rucker of the Brooks Birds Club will be hosting a Mother's Day bird walk at Blackwater Falls State Park at 10 a.m. Look for registration details coming soon on our website and through email. Big thanks to Casey Rucker for leading this hike for WVHC! We are very appreciative of his time and expertise.

Corridor H: In other news, we have been busy working with our partner organizations on a variety of issues. A meeting was held with the Interim Monongahela National Forest Supervisor and the Go North Alliance to share concerns about the proposed Corridor H construction between Parsons and Davis. We are grateful for the opportunity to have an open dialogue and engage in constructive conversations with the Monongahela National Forest.

I would like to sincerely thank all our members who responded to our action alert and submitted a comment on the Notice of Intent to prepare a new environmental impact statement for the proposed routes between Parsons and Davis for Corridor H. This highway construction will undoubtedly bring ecological consequences, and we need all our voices to ensure the route with the least environmental impact is selected.

Restoring streams: As you will read on the front page of this issue of the Voice, WVHC joined the West Vir-

Are you on our email list?

Signing up to receive emails from the West Virginia Highlands Conservancy is your gateway to staying actively engaged in conservation efforts and volunteer opportunities in West Virginia.

Staying informed with our action alerts will empower you to advocate for environmental policies that matter the most.

Sign up today at
bit.ly/WVHCemailsignup



ginia Rivers Coalition and the Sierra Club in a federal lawsuit against the Environmental Protection Agency for violating the Clean Water Act. An agreement has been made with the EPA, and we will need your support once again to comment on the proposed consent decree between the plaintiffs. Please be sure that you are signed up to receive our action alerts via email.

Protecting waterways: WVHC's Program Director Olivia Miller joined West Virginia Rivers Coalition and Elks Run Watershed Group on a trip to Washington, D.C., to discuss the value of our waterways in the Monongahela National Forest. Visits to the Capitol over the years is in the positive memories of many who have served on WVHC's board.

Stewardship in Dolly Sods: The Dolly Sods Wilderness Program folks have been busy planning for the up-

coming season. There will be a Cross-cut Sawyer and Trail Maintenance training on the weekends of April 13-14 and April 27-28. Solitude Monitoring will be conducted in May and June. On May 18, we will have a training for new Trailhead Stewards and our annual all-Stewards picnic. [You can sign up for a training on our website.](#)

Planning is proceeding on track for the initiation of our new Backcountry Stewards program. We are targeting late June or early July for a training and expect to have Stewards in the field during the summer and fall.

There are many ways to become involved with WVHC. We hope to see you at one of our many outings this summer. Please contact me if you wish to find out more about what we do and how you can be involved at marilyn.shoenfeld@gmail.com.

See you in the Highlands!

THE WAY THE VOICE WORKS

The Highlands Voice is the official publication of the West Virginia Highlands Conservancy. While it is the official publication, every story in it does not represent an official position of the Conservancy. While all of our members share the general goal "to promote, encourage, and work for the conservation—including both preservation and wise use—and appreciation of the natural resources of West Virginia and the nation," our members often have differing views upon the best way to do that.

As a result, stories in The Voice often reflect different points of view. The Conservancy itself, however, only speaks through its Board. The only stories that reflect the official policies of the Conservancy are those reporting Board actions, including litigation positions we have taken, comments on proposed regulations, etc.

The Do-Nothing 2024 West Virginia Legislature

By Luanne McGovern

The 87th West Virginia legislature went out with a whimper on March 9, 2024. After introducing over 2,500 bills, a mere 279 bills were passed, a dismal 11 percent. Most of the especially bad social issues bills, which consumed untold hours of Legislators' time, died in the final hours. While this may be cause for celebration, it also highlights how little progress was made addressing the real problems that West Virginians face.

Our three main focus areas for 2024—Net Metering, Community Solar and Orphaned Gas Wells—made no progress this year. While good bills were introduced in both Houses, the coal, oil and gas interests were effective in making sure they went nowhere.

Almost every single bill that concerned renewable energy was stopped in committee. This was especially true of the House Energy Committee, where good bills go to die.

The lone renewable energy bill that was passed (HB 5528) would have allowed commercial renewable energy facilities to have capacities up to 100 MW. The bill, passed with large support in both Houses, was subsequently vetoed by the Governor. In a quote, Justice said: "It is very important that we are careful not to cripple our great coal-fired energy industry." This is in a state that relies on coal for over 90 percent of its energy production.

On the "positive" side, several really bad environmental bills were de-

feated, thanks to your support and advocacy.

- SB 688 would have allowed timbering in state parks under the guise of preventing wildfires. After passing the Senate, the public outcry and advocacy from across the entire state caused the bill to die in the House.
- HB 5018 would have restricted how citizen air monitoring data could be used against polluters. After much debate in the House, it was not taken up by the Senate.
- SB 618 would have centralized all forest carbon capture agreements under state control, taking away landowners' rights to engage in private carbon agreements. It, too,

was passed by the Senate but was stopped in the House.

Another cause for celebration is that the Senate Outdoor Recreation Committee, chaired by Senator Maynard, was especially ineffective this year. In total, the committee held six meetings, considered six bills (none of which passed), and received three presentations. I suppose we should be thankful for the low level of activity since fewer bad outcomes can happen that way.

Thanks again for all your calls, emails, and support during the 2024 legislative session. Your voice is being heard in Charleston. Please get out and VOTE!



January 26, 2024 3:42 PM

Heritage Trees in the Upper Cheat River Project Area

By John Coleman

There are now two state listed champion trees within the Forest Service's proposed logging in the Upper Cheat River area. We just learned that a hemlock we found is 3rd largest in the state. With surveys this winter, volunteers have so far found and measured 293 trees in the Upper Cheat River Project area that are greater than eight feet circumference. That included red, white and chestnut oaks, sugar maples, beech, tulip poplars, black cherries, hemlocks and basswoods.

Unfortunately, so far, we have made it to only three of the 120 stands proposed to be clearcut by the Forest Service. So, who knows how many more big trees there are out there.

We were gratified to find that 15 of the 221 large trees found this winter were Eastern Hemlocks in stand R45. Stand R45 really is a special place. The champion tree of the winter's surveys was one of those hemlocks, that we have since learned qualifies as the third

largest hemlock in West Virginia.

The West Virginia Division of Forestry visited the tree, verified our measurements and the state forester wrote that the tree tied for third place in the state's Big Tree Program. In conjunction with a 17-foot circumference Northern Red Oak that has been on the state list since 2015, there are now two state listed trees in or immediately adjacent to stand R45. With these two state listed champion trees, one inside and one very near Stand R45, we hope that the Forest Service will reconsider clearcutting stand R45.

Keep an eye on the Friends of Blackwater web page and the Speak-4Trees2 Facebook page this summer for announcement of hikes to these champion trees that overlook Camp Horseshoe of the Monongahela National Forest.

West Virginia Highlands Conservancy Online Store Catalog

Apparel

- **WVHC Cotton Hat (Black or Army Green):** \$22.50
- **WVHC Hemp Hat (Black or Green):** \$25.00
- **WVHC 100% Cotton T-Shirts (Coyote Brown, Kelly Green, Navy Blue, Black) Available in XS-XXL:** \$22.00
- **Black 50th Anniversary T-Shirt with "Celebrating 50 years" logo. Available in Small-XXL:** \$20.00
- **I Love Mountains T-Shirt Short Sleeve. Available in M-XXL:** \$18.00
- **I Love Mountains T-Shirt Long Sleeve. Available in S, M, L, XL:** \$22.00
- **I Love Mountains Toddler T-Shirts. Available in 18-months, 2T, 3T, 4T, 5/6:** \$20.00
- **Square Black Bandana:** \$5.00

Drinkware

- **WVHC Hydro Flask 20 oz. All Around Tumbler (Birch, Indigo, Black):** \$35.00
- **WVHC Hydro Flask 21 oz. Standard Mouth Flex Cap Water Bottle (Pacific, Mesa, Indigo):** \$45.00

Stickers

- **I Love Mountains Bumper Sticker:** \$3.00 for one, \$12.00 for 20

Books

- **Monongahela National Forest Hiking Guide, 9th Edition:** \$21.95
- **Fighting to Protect the Highlands:** \$15.95

To order by mail make checks payable to West Virginia Highlands Conservancy and send to P.O. Box 306, Charleston, WV 25321. Please indicate the item and relevant color and size if applicable. To view and purchase store items online, visit wvhighlands.org



BUMPER STICKERS

To get free I ♥ Mountains bumper sticker(s), send a SASE to P.O. Box 306, Charleston, WV, 25321. Slip a dollar donation (or more) in with the SASE and get two bumper stickers. Businesses or organizations wishing to provide bumper stickers to their customers/members may have them free. (Of course if they can afford a donation that will be gratefully accepted.)



Roster of Officers, Board Members and Committee Chairs

PRESIDENT: Marilyn Shoenfeld, Davis, WV
 SENIOR VICE PRESIDENT: Luanne McGovern, Charleston, WV
 VICE PRESIDENT FOR STATE AFFAIRS: Vacant
 SECRETARY: John McFerrin, Morgantown, WV
 TREASURER: George Hack, Bel Air, MD
 PAST PRESIDENT: Larry Thomas, Circleville, WV

DIRECTORS-AT-LARGE (Terms expire October 2024)

Jackie Burns, Davis, WV
 Cynthia D. Ellis, Red House, WV
 Randy Kesling, Bridgeport, WV
 Patricia Gundrum, Charleston, WV
 Buff Rodman, Oakmont, PA

DIRECTORS-AT-LARGE (Terms expire October 2025)

Andrew Young, Charlottesville, VA
 George Hack, Bel Air, MD
 Rick Webb, Monterey, VA
 Hugh Rogers, Kerens, WV
 Susan Rogers Rosenblum, Davis, WV

DIRECTOR EMERITUS: George E. Beetham Jr., Glenside, PA

BROOKS BIRD CLUB: Cindy Slater
 WEST VIRGINIA RIVERS COALITION: Vacant
 MOUNTAINEER CHAPTER TROUT UNLIMITED: Randy Kesling, Bridgeport, WV
 FRIENDS OF THE CHEAT: Sarah Hinnant, Masontown, WV

COMMITTEE CHAIRS

EXTRACTIVE INDUSTRIES COMMITTEE: Cindy Rank, Rock Cave, WV
 PUBLIC LANDS MANAGEMENT COMMITTEE: Larry Thomas, Circleville, WV
 RENEWABLE ENERGY COMMITTEE: Larry Thomas, Circleville, WV
 LEGISLATIVE COMMITTEE: Luanne McGovern, Charleston WV
 ENDOWMENT FUND COMMITTEE: Larry Thomas, Circleville, WV
 RIVERS COMMITTEE: Susan Rogers Rosenblum, Davis, WV
 HIGHWAYS COMMITTEE: Hugh Rogers, Kerens, WV
 CLIMATE CHANGE COMMITTEE: Vacant

MISCELLANEOUS OFFICES

WEB PAGE – DIGITAL PUBLISHING: Dan Radmacher, Roanoke, VA; danrad@mac.com

ADMINISTRATIVE OFFICES

MEMBERSHIP AND OPERATIONS DIRECTOR: Cristyn (Crys) Bauer, Kingwood, WV;
crys.bauer@wvhighlands.org
 PROGRAM DIRECTOR AND HIGHLANDS VOICE EDITOR: Olivia Miller,
 Morgantown, WV; (304) 704-2997; olivia.miller@wvhighlands.org

Send Us a Post Card, Drop Us a Line, Stating Point of View

Please email any poems, letters, commentaries, etc. to the Voice editor at olivia.miller@wvhighlands.org or by real, honest to goodness, mentioned in the United States Constitution mail to WV Highlands Conservancy, PO Box 306, Charleston, WV 25321.

WVHC, WV Rivers and Sierra Club Secure Historic Settlement to Restore Streams Harmed by Coal Mining Pollution

The consent decree comes after decades of advocacy and legal action by the Sierra Club and its partners to compel the EPA to fulfill its obligations under the Clean Water Act. Earlier this month, Sierra Club, West Virginia Highlands Conservancy, and West Virginia Rivers Coalition, represented by lawyers from Appalachian Mountain Advocates, followed up on a March 2023 warning to EPA that it was overdue in developing TMDLs for dozens of streams in the Lower Guyandotte River Watershed by filing a lawsuit against EPA in federal court in West Virginia.

“For years it has been painful for so many people living along streams polluted by coal mining operations to either have to move away or stay and live with the destruction and diminished water quality mining leaves behind,” said **Mining Committee Chair**

of the West Virginia Highlands Conservancy Cindy Rank. “After years of pleading, cajoling, reasoning with and finally turning to lawsuits to require appropriate cleanup plans to make whole again the waters that mean so much to so many, this agreement is a very hopeful step forward.”

“For far too long, West Virginia has failed to meet its obligations to protect our waters from coal mining pollution, willfully allowing the health of thousands of stream miles to continue to decline,” said **West Virginia Rivers Coalition Interim Executive Director Autumn Crowe.** “We are encouraged that this agreement will finally begin to get our damaged streams the help they deserve.”

“This is a monumental step forward in our ongoing fight to protect West Virginia’s precious wildlife and

natural resources,” said Sierra Club West Virginia Chapter Director Honey May. “By holding the coal industry accountable and ensuring the development of TMDLs, we are safeguarding the habitat of countless aquatic species and preserving the ecological integrity of our streams. And that means that generations of West Virginians can continue to enjoy fishing, swimming, and other recreation, while also protecting drinking water sources.”

“Today, we’re celebrating a big win for our streams and the life they support,” said **Sierra Club West Virginia Chapter Chair Jim Kotcon.** “With this agreement to set the first-ever rules for ionic toxicity, we’re not just cleaning up our waterways in West Virginia; we’re setting an example for the whole country. We’ve waited too long for clean, safe water, and it’s time to hold mining

companies responsible for their pollution.”

Editor’s Note: On March 29, 2024, the Environmental Protection Agency published a notice in the Federal Register of a proposed Consent Decree between plaintiffs and the agency to resolve some of the issues at the heart of this legal action. The notice can be found here: <https://bit.ly/49jjztF>

There is a 30-day comment period, and we expect opposition from the normal suspects. Please respond to the notice as indicated and/or be looking for Action notices to and from other environmental groups urging support for the proposal. These biologically impaired streams in the Hobet mining area of the Mud River and Big Ugly Creek in Lincoln County need all the help they can get.

Background on the Settlement with EPA

By Mike Tony, Charleston Gazette-Mail

Editor’s Note: This article was published in the Charleston Gazette-Mail on March 20, 2024. Over a week before the settlement was reached.

West Virginia conservationists have filed a federal lawsuit against the U.S. Environmental Protection Agency, saying the agency has violated the Clean Water Act in its oversight of a local watershed spanning roughly 100,000 people.

Three environmental groups sued the EPA Monday, contending the EPA has not calculated maximum pollution amounts in the Lower Guyandotte River watershed that would allow the watershed to meet water quality standards.

The Lower Guyandotte River watershed occupies most of West Virginia’s Cabell and Lincoln counties, as well as the northern third of Logan County

and small portions of Putnam, Boone, Kanawha and Mason counties. Major tributaries in the Lower Guyandotte River watershed include:

- Mud River
- Trace Fork
- Middle Fork/Mud River
- Fourmile Creek
- Big Harts Creek
- Big Ugly Creek

Pollution reduction targets not determined

The Sierra Club, West Virginia Highlands Conservancy and West Virginia Rivers Coalition say the EPA didn’t establish the watershed’s total maximum daily loads for ionic toxicity. Total maximum daily loads (TMDL) determine a pollutant reduction target and allocate load reductions for pollution sources.

The groups say the TMDLs should have been triggered, in part, by the state Department of Environmental Protection not submitting to the EPA any ionic toxicity TMDLs for the watershed.

The lawsuit cites a 2017 federal court finding that because the DEP hadn’t submitted toxic maximum daily loads for waters biologically impaired due to ionic toxicity, the EPA had a duty to act. That 2017 court ruling noted that since 2006, the DEP had determined ionic toxicity was the stressor causing biological impairment in at least 179 streams but had stopped issuing TMDLs addressing biologic impairment regardless of the cause in 2012.

The ruling noted the DEP had contended it had insufficient information regarding pollutants and their associated impairment thresholds for biological TMDL development for ionic

toxicity-stressed streams.

The DEP had designated “mining” as the source of biological impairment for streams that had undergone a stressor identification process that identified ionic toxicity as a significant stressor as early as 2008, the ruling notes.

In their lawsuit filed Monday, the environmental groups say the EPA has failed to develop its own ionic toxicity TMDL for Lower Guyandotte River watershed streams where required despite a duty to do so after the DEP said it had suspended biological impairment TMDL development in its EPA-approved 2022 TMDLs for the watershed.

The groups have asked the court to order the EPA to develop ionic toxicity TMDLs for streams in the Lower Guyandotte River watershed for which

continued on page 10

Friends of the Cheat Finds Success With Their Immersive Snorkel Club Program



[Friends of the Cheat](#) (FOC) is a local nonprofit watershed group dedicated to the restoration, preservation, and promotion of the Cheat River watershed. The FOC Snorkel Club program was created in 2018 as a way to educate younger generations about the significance of local watersheds.

The goal of the FOC Snorkel Club is to inspire a sense of environmental stewardship while providing an unforgettable and hands-on learning experience. Snorkel Club events offer small, organized youth groups a perfect opportunity to learn about their communities' rivers firsthand.

Attendees get a chance to explore local underwater landscapes that are rich in biodiversity featuring fascinating fish, aquatic benthic macroinvertebrates or "stream bugs," and unique geologic features. Each snorkeling adventure becomes a living classroom, allowing FOC to showcase the delicate balance of these ecosystems and why it is important to care for them.

Due to program funding restrictions, FOC can only offer a limited number of Snorkel events each year. However, you can help support this vital educational endeavor by becoming a Snorkel Club Sponsor. If you are a teacher, educator, or organizer of K-12 activities and are interested in signing your group up for a snorkel event with FOC, please contact Lisa at lisa@cheat.org



PARTNERING
WITH



SPRING THE TRAIL

AN ANNUAL ALLEGHENY TRAIL EVENT

**APRIL 19-21
2024**

**SECTION 1
ALBRIGHT WV**



**JOIN WVSTA AND FOC FOR OUR
FIRST TRAIL EVENT OF 2024!!**

**NO EXPERIENCE NECESSARY!
TOOLS PROVIDED AND DINNER
ON SAT NIGHT!**

**REGISTER FOR THIS EVENT
UNDER THE VOLUNTER LINK AT:**

[HIKETHEALLEGHENYTRAIL.COM](https://www.hiketthealleghenytrail.com)

Birding at Blackwater Falls State Park: May 12

Join us for a Mother's Day bird walk at Blackwater Falls State Park on Sunday, May 12. This walk will be led by local bird expert Casey Rucker!

We will meet at 10 a.m on Sunday, May 12 at the Allegheny Trail trailhead by the bridge on Rt. 32 in Davis, WV (AKA River Road Trail). Overflow parking is available at the Shop 'n Save across the bridge. Please bring your own rain gear, water and snacks/lunch. If you have binoculars and books feel free to bring those as well, but they are not required. **Register here:** <https://bit.ly/3vGM7Qe>

Why A Walk in the Woods Is the Best Medicine

By Olivia Miller

Winter is officially behind us, and brighter, warm days on the trails lie ahead.

It has never been a question to me whether hiking (walking in nature) “works.” After a few miles on a trail, I experience my mind settling. A few miles more, and I have found a flow, with free-roaming, imaginative thoughts wandering through my mind. I am simply at ease. Hiking has always been meditative for me in a sense, and by the end of a good hike, I can think clearly and positively again. I am a better version of me.

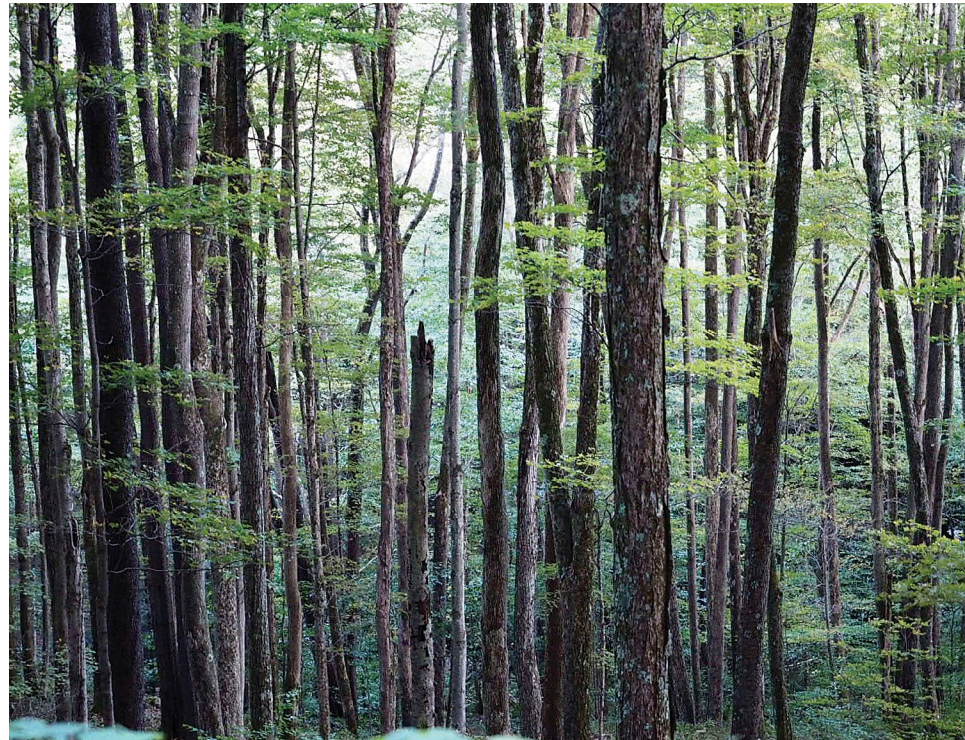
As part of the “anxious generation” plagued by a rise in stress-related ailments, to me, nature is our way out. Or rather, back to ourselves.

But the scientific, information-oriented side of my brain needs to understand why this happens to me and to so many others who are frequent hikers. How is it possible that simply walking in nature could deliver such profound physical and mental health benefits?

Fortunately, there is a growing body of literature—currently amounting to some 43,000 studies from around the world—that explains how and why walking in nature works to rejuvenate our bodies and minds. I will not be able to summarize all of these studies in this article, but I’d like to cover a few that are particularly interesting to me.

A large chunk of these studies come from South Korea and Japan, where Shinrin-Yoku, or forest bathing, is part of the public health system. It can be considered a short, casual visit to the forest. I just adore the term forest bathing.

One such [study](#) took place in Japan in 2005 and set out to understand the effect of forest bathing trips on human immune function. The study participants got a pretty sweet deal: A three-day overnight trip to a forested area in exchange for their blood and urine samples. The samples were collected the day before the trip as a control, on days two and three, and again



on days seven and 30 after the trip.

Importantly, when we visit a forest, we breathe in what are called phytoncides. Phytoncides are oils released by trees, and there are thousands of them. They contain natural antimicrobial and insecticidal properties that protect trees from harmful bugs, bacteria and disease. We are most likely to get a good whiff of D-limonene, Alpha-pinene, Beta-pinene and Camphene on our forest visits.

Scientists have discovered that when humans inhale phytoncides, miraculous things happen in our bodies.

In the case of the experimental forest bathers in Japan, the urine and blood samples taken from day two revealed an increase in Natural Killer Cell activity as a result of phytoncide exposure. Natural Killer Cells are a type of white blood cell that destroy infected and diseased cells. These cells fight viruses and tumors in our bodies. They are critical to the function of our immune system. The researchers found that this increase in Natural Killer Cell activity remained for thirty days after the trip. In contrast, visiting the city as

a tourist did not increase Natural Killer Cell activity.

Further studies on the topic have found that forest bathing trips significantly decrease scores for anxiety, depression and anger. [Researchers have also found](#) that a mere 20-minute walk among trees can substantially lower salivary cortisol levels, the primary stress hormone.

Beyond the immune boost, a walk in nature actually alters our brain function. Researchers have tied this to our evolution and, oddly enough, to our vision.

As humans evolved from four feet to two, we began to walk upright and much more efficiently. As we began to walk and entertain ourselves with more productive pursuits, the prefrontal cortex in our brain began to expand.

The prefrontal cortex is the part of our brain responsible for discerning thought. It allows us to understand the relationship between our actions and consequences, and it is the region that is most consistently impacted by depression. This explains why when we walk at a normal pace, the prefrontal

cortex is activated. When we put one foot in front of the other, we are naturally able to do more discerning thinking. It is no surprise, then, to hear that esteemed thinkers like Beethoven and Van Gogh, or naturalist Henry David Thoreau, all walked to develop their ideas.

Another fascinating explanation for the positive effects of nature can be found in fractals. Fractals are commonplace in the natural world. They consist of patterns that recur on finer and finer scales and build in immense complexity. Fractals are the repeated patterns you see in a fern, in tree rings, the petals of a flower, a pinecone or droplets in water.

Even more captivating is that our retinas are also made up of these never-ending patterns. So, when our eyes meet fractal patterns in nature, an almost instant, beautiful congruence begins to happen, and this congruency creates alpha waves in our brains.

Alpha waves are produced when we are relaxed. They have a positive effect on concentration and attention span and are linked to many mental health benefits. [Researchers have found](#) that looking at a fractal can reduce stress levels by 60 percent.

Seeing these patterns registers as a sense of belonging, and we begin to recognize our kinship with nature. Which may explain the feeling of “reconnection” after we’ve spent a good deal of time outdoors.

Our bodies and minds have not changed that much in the last 10,000 years, but our lifestyles and the stimulus around us have. Hiking is our reconnection. As we navigate the complexities of modern existence, I find solace in knowing how simple it is to restore and rejuvenate our bodies and minds underneath the canopies of trees.

I hope I’ve inspired you to get out on the trail. WVHC is planning several group hikes this summer to old-growth forest tracts around the state, and we would love for you to join us. Check out the [events calendar](#) on our website.

Multiflora Rose:

An Invasive Species, A Cautionary Tale, and A Good (?) Idea Gone Bad

By John McFerrin

It seemed like a good idea at the time. Hybrid roses needed a sturdy root stock to graft desirable varieties onto. Asia had a sturdy, common rose variety that fit the bill. So, in the 1860s, we imported the multiflora rose.

The multiflora rose can grow anywhere. It prefers sunshine but, in a pinch, it can get by in deep forest. It thrives in poor soil and spreads prolifically. It can grow into dense thickets that neither animals nor people can penetrate.

With these attributes it is a natural candidate for, what else, a living fence. From the 1930s until at least the 1950s, the United States Department of Agriculture promoted the multiflora rose as a “living fence.” The idea was that a farmer could plant multiflora rose along edges of farm fields. It would grow into an impenetrable thicket that would confine livestock with no post-holes to dig, no wire to string, etc.

A 1950s United States Department of Agriculture Bulletin describes it this way, “LIVING fences of multiflora rose are used on more American farms every year. Only recently have farmers come to realize the many advantages of this plant. Chief among these is the fact that it will make a living fence that will keep both your livestock and your soil within its boundaries.”

The Bulletin describes a living fence as a “thing of lasting beauty.” It recommends planting 1,000 plants to produce 1,000 feet of living fence. This

will be the result: “Unlike other fences that must be repaired or replaced, multiflora rose fences last a lifetime and will continue to serve your children.” According to the Department, the multiflora rose “provides an excellent living fence for pastures where horses, cattle, sheep, and goats are grazed.” The Bulletin points out that it will also prevent trespassing.

The Bulletin goes on to give useful tips on selecting plants to plant, soil conditions, when to plant, etc. The living fence was not the only application for multiflora rose. It was also widely planted to control erosion.

That was then; this is now.

At West Virginia University there is an ongoing research project that seeks to determine whether drones can detect multiflora rose. Fortunately, the goal of the research project is to test and improve drone technology, not detect the presence of multiflora rose. We already know where multiflora rose is: **it's everywhere.**

It is in every state east of the Mississippi, including every county in West Virginia. According to a map published by the National Invasive Species Information Center of the United States Department of Agriculture, there are only



2003 © Peter M. Dziuk

eight states where one could go to escape it. Fleeing to Canada is not much better; it is found throughout eastern Canada, too.

From its beginnings as a living fence or an erosion prevention tool, the multiflora rose has gone on to choke whole farm fields, crowd out native species, and bedevil landowners everywhere. It has even been shown to benefit ticks, the ones that spread Lyme disease.

Once established it is devilishly hard to eradicate. The recommended method is catching it when it is small and ripping it out by the roots. Failing that, it is recommended that it be cut off at the ground and an herbicide applied to the stump. It is possible to eradicate by mowing although it takes repeated mowing to discourage it enough that it will give up and die. Goats will eat it, although deer will not.

A single plant can produce up

to a million seeds per year which are spread by birds who eat the seeds. A seed can remain viable for up to twenty years while it waits for the right conditions to sprout.

Those who first imported multiflora rose to North America are long gone. There is no record of who first came up with the living fence idea. Since promotion of the multiflora rose as a living fence began almost a hundred years ago, the originator of that idea is gone as well. Yet we still have it, a curse upon our fields and woodlands, a good idea gone bad.

Giving the devil his due: the multiflora rose is a favorite habitat of mockingbirds who eat its fruits and nest within the protection of its brambles. So, there's that.

The West Virginia Highlands Conservancy is a non-profit corporation which has been recognized as a tax exempt organization by the Internal Revenue Service. Its bylaws describe its purpose: The purposes of the Conservancy shall be to promote, encourage, and work for the conservation—including both preservation and wise use—and appreciation of the natural resources of West Virginia and the nation, and especially of the Highlands Region of West Virginia, for the cultural, social, educational, physical, health, spiritual, and economic benefit of present and future generations of West Virginians and Americans.

Coal Companies Point Fingers as Local Residents Contend With Flood and Home Damage

By Dan Radmacher, Appalachian Voices

There are strange things happening near Wolf Pen, West Virginia, about seven miles north of Welch.

Geysers of water have shot up out of the ground in some places. Elsewhere, wells have gone dry. Building walls have cracked. Strange slime has shown up in streams. A dead buck with no apparent wounds was found partially submerged in a creek.

The most dramatic strangeness occurred on Feb. 21, 2023, when Jamie and Tina Christian woke up to a yard flooded by a geyser erupting behind their double-wide trailer. A similar geyser was jetting up out of the ground just down the road.

The West Virginia Department of Environmental Protection sent an inspector to look into what was happening. He concluded the water was being forced out of the ground by internal pressure — known as “artesianing” — because of what was then an unauthorized discharge of coal mine water from the nearby Pinnacle Mining Complex into an inactive underground mine. Underground mines in this area require constant pumping to keep from flooding.

The inspector issued an “Imminent Harm Cessation Order” directing Pinn MC Wind Down Company, known as the Pinnacle Mining Company prior to a 2018 bankruptcy, to stop all mining operations and take all necessary actions to prevent discharges from the mine.

When the company failed to take action, DEP took them to court in March 2023, asking the judge for a preliminary injunction ordering the company to deal with the situation.

After nearly a year of back-and-forth in court, little action has resulted and the case is still pending. Jamie Christian put in his own drainage pipe running from where the water was gushing out from the ground to Indian Creek behind his home. Eventually, the court ordered Pinn MC Wind Down to put in a rock-lined drainage ditch that



Water continues to bubble up from a well near the Christians' property. A drainage ditch now channels the water to Indian Creek due to a court order. (Dan Radmacher)

runs from the geyser down the road into the same creek, and obtain a water pollution permit for the discharge.

Pinn MC Wind Down Co., has repeatedly denied responsibility, arguing that most of the Pinnacle Mine Complex had been purchased by Bluestone Resources, a company owned by West Virginia Gov. Jim Justice's family. But DEP has yet to transfer the accompanying permits, leaving responsibility for the mines in limbo.

Bluestone, in turn, argued that the discharge was coming from a portion of the Pinnacle complex that was sold to Contura, which merged with Alpha Natural Resources in April 2018.

“This case really shows how the modern mine reclamation system is failing local communities,” says Matt Hepler, Central Appalachian environmental scientist for Appalachian Voices, the nonprofit organization that publishes *The Appalachian Voice*.

“Coal companies point their fingers at each other and even when regulators try to hold someone accountable, it can be almost impossible when the coal companies are in bankruptcy. In the meantime, communities live with the consequences.”

In addition to confusion caused by bankruptcy, companies' failure to secure transfer of permits and other issues, the area's long history of mining

also makes determining accountability difficult. It can be very hard to pinpoint the exact cause of problems like this.

Sometimes, the only thing that does seem clear is that people living nearby pay the price.

“The coal companies don't care about people like us,” Jamie Christian says.

Jamie and Tina Christian have nine grandchildren between them. For months after the yard flooded, they kept them away.

“When the water first went under our trailer and in our front yard, we didn't know what was in it, so we told the kids to keep the grandkids away till we knew it was safe,” Tina Christian says. “That was really hard on us. We're used to seeing them almost every day.”

The Christians worry about what's flowing into the creek behind their house from the mine drainage.

“That creek used to be full of fish,” Tina Christian says. “My kids and grandkids caught fish all the time. They're gone.”

Jamie Christian and family friend Richard Altizer, who's had his own issues with property damage he attributes to coal mining under his home, spend a lot of time traveling the area and trying to make sense of what's happening.

Altizer regularly posts lengthy vid-

eos on social media, highlighting various mysteries and inconsistencies with the explanations from DEP and the coal companies. They have theories about what's causing the artesianing — Altizer believes the water is flowing from Alpha Natural Resources mines through a barrier breach. But solid answers are hard to come by.

“I think DEP is happy to let Pinnacle take the fall,” Altizer says. “They're bankrupt anyway.”

The Indian Creek Community Church next door to the Christians' property hasn't seen the same kind of flooding, but cracks have been showing up in the foundation and there are problems with interior doors and walls. Jerry Morgan, a church deacon, believes the site is experiencing mine subsidence — when the surface begins to sink into underground voids created by mining.

“It's been going on three or so years,” Morgan says. “Every time you come in, you see something else.”

In addition to the visible cracks in the foundation, there are also signs inside that the church is settling and twisting — drywall panels pulling away, door frames askew, bows in the ceilings.

“If something isn't done, it's just gonna fall in,” Morgan says.

The church has talked with state regulators, but hasn't gotten any satisfactory answers.

“They won't give you a straight answer about anything,” Morgan says.

Nearly a year after the flooding, the Christians are still dealing with the consequences.

The flooding ruined their heat pump, which they haven't been able to replace. They're seeing mold grow in their home as well as signs that their home is also settling.

Meanwhile, the court case between DEP and Pinn MC Wind Down continues with no clear resolution in sight.

“People like us are the ones who get hurt,” Jamie Christian says.

Mine Reclamation Fund Board Gets Environmental Rep After Participation Concern

By Mike Tony, Charleston Gazette-Mail

An advisory council established to ensure the stability of a state fund key to the reclamation of abandoned mine lands is fully seated after the exit of a statutorily required member representing environmental organizations.

The West Virginia Senate approved nominations by Gov. Jim Justice to the Special Reclamation Fund Advisory Council this month that included the chairperson of the West Virginia Chapter of the Sierra Club, four months after state Department of Environmental Protection officials [told the council's longtime environmental group](#) representative he was no longer a council member.

Jim Kotcon of Morgantown, the Sierra Club state chapter chair, was one of five appointees named by Justice to the council in a March 9 letter to the Senate.

Kotcon's appointment follows DEP officials telling longtime environmental representative John Morgan he was no longer a council member on a call with DEP officials on Oct. 31.

DEP spokesperson Terry Fletcher said Morgan was removed because he isn't a West Virginia resident. Fletcher pointed to a December 2017 email from Justice's office to Morgan indicating he could no longer serve on the council because he wasn't a state resident.

A Lexington, Kentucky, resident, Morgan noted his name and address have been listed along with those of other council members in the council's annual reports to the Legislature since 2017.

Neither the Governor's Office nor the DEP responded to requests for comment on their statutory basis for determining non-state residents may not be council members.

"This should have been handled in a way to allow environmental groups to participate," Mike Becher, a senior attorney with Lewisburg-based Appalachian Mountain Advocates, told the Gazette-Mail in November.

Chapter 22, Section 1, Article 17 of state code establishing the Special Reclamation Fund Advisory Council doesn't include residency requirements.

West Virginia Senate Communications Director Jacque Bland said in a November email that, generally, when a section of state code is silent, "there's no requirement either way."

West Virginia environmental groups recommended Morgan, Kotcon and Delegate Evan Hansen, D-Monongalia, for the open environmental representative position following Morgan's ouster.

Kotcon, a longtime associate professor of plant pathology at West Virginia University, said he appreciates the chance to serve in the role and recalled a 2021 state Legislative Auditor's Office report finding lawmakers and environmental regulators risked letting the state's mining reclamation program slip into insolvency through gaping holes in statutory and permitting oversight.

"I hope to call attention to these needs, and thereby help protect both our taxpayers as well as the land and water threatened by unreclaimed mine sites," said Kotcon, whose term ends June 30, 2029.

A note from Cindy Rank

Created several years ago in response to a citizen lawsuit re: inadequate bonding for coal mine operations, the West Virginia Special Reclamation Fund Advisory Council has always been a bit less than what we plaintiffs had hoped for. Fortunately, WVHC and co-plaintiffs proposed and supported Kentucky-based coal engineer, and oft-times expert witness in our court proceedings, John Morgan as our representative on the Council for his knowledge, experience, ability and willingness to challenge the incorrect assertions and assumptions often proffered by other members of the Council. His unexplained expulsion from the Council is a loss.

On the bright side however, the Governor has appointed WVHC friend and ally Sierra Club Chair Jim Kotcon to be our new representative on the Council. No doubt Jim will rise to the occasion with his clear thinking, to-the-point questioning, and ability to discern factual accuracy—i.e. He can cut through the crap as well as anyone.

We wish him the best.

More Background on the Settlement with EPA

continued from page 5

such TMDLs are required.

An EPA spokesperson deferred comment Monday to a U.S. Department of Justice spokesperson who declined to comment.

The EPA has identified over 1,600 miles of waterways throughout the state the agency has said should be added to a DEP list of waters for which pollution controls aren't enough to meet state water quality standards.

In June, the EPA partially disapproved West Virginia's list of those waters, finding the DEP failed to provide a "technical, science-based rationale for not using existing and readily available data and information" in developing its Section 303(d) list of waters. The list is named after the section of the federal Clean Water Act authorizing the EPA to help states list impaired waters.

An EPA spokesperson said last

month the agency was evaluating stakeholder comments on waters the EPA proposed adding to the list.

Dolly Sods Wilderness Stewards Trainings To Be held in April and May

Training for new and current members of the Dolly Sods Wilderness Stewards program kicks off in mid-April. If you are interested in becoming a Dolly Sods Wilderness Steward, you are not required to make any specific time commitment. Some people may live close to Dolly Sods and thus be able to participate more often or fill in on short notice, but even if you live far away or can only join in the project occasionally, your involvement is welcome.

Trailhead Stewards Training for New and Current Stewards: May 18 at Seneca Rocks Discovery Center

The Trailhead Stewards are our signature program and have helped thousands of visitors have a successful, low-impact experience of Dolly Sods. We are well on our way to having the busiest trailheads staffed with volunteer Stewards during weekends and holidays. We can always use new volunteers who enjoy interacting with visi-

tors and sharing advice on routes, what to expect and how to Leave No Trace in our special wilderness.

Guided Hikes, just for Stewards:

Last year, we started offering special day hike for continuing education and experience in certain areas of Dolly Sods. The hikes are led by Dolly Sods "veterans" and naturalists, and provide an opportunity to learn more about the natural history and features of the wilderness, and we do a little trail and campsite cleanup along the way. These were popular, and we will be expanding them during the coming season.

Annual all-Stewards Picnic: May 18 at Seneca Rocks Picnic Pavilion

Held right after the Trailhead Stewards training, all Dolly Sods Wilderness Stewards are invited to share their experiences, meet other Stewards, and get recognition for all they have done to support Dolly Sods. Food and beverages are pro-

vided, and we are working on a program for entertainment and learning.

Crosscut Sawyer Team Training: April 13-14 at Seneca Rocks and in the field

Last year, we formed a Crosscut Sawyer team, and new members are welcome! Sawyers clear trails and campsites of fallen trees, brush and vegetation using traditional, non-power tools compatible with the wilderness. We hold scheduled projects through the spring and summer in Dolly Sods and other nearby wilderness areas. The full weekend training covers the planning and tactics, safety, tools, and techniques for bucking trees and includes a full day of practice in the field, leading to certification as an A or B Sawyer. Basic first aid and CPR are required, and the Forest Service can provide training.

Trail Maintenance Team Training: April 27-28 at Seneca Rocks and in the field

We formed this team last year, and

new members are welcome! The trails in Dolly Sods are challenging and purposely primitive, but they need a lot of work to protect the wilderness environment by keeping water off the trail and people on the trail! We use various tools and specialized techniques to make the trails compatible with wilderness. Scheduled projects are held through the spring and summer. The weekend training includes classroom instruction on tools, methods, and safety and a day of fieldwork. Here's your chance to make a positive difference for the Dolly Sods trails.

If you would like to register for a training, please sign-up at <https://bit.ly/4316h8A>. You will receive more detailed information on each training after registering.

The best way to be sure you see further updates as these programs develop (and on anything new we might come up with) is to [add yourself to the Dolly Sods Wilderness Stewards](#) on the Conservancy website.

BECOME A MEMBER

Name _____

Address _____

City _____ State _____ Zip _____

Phone _____ Email _____

Membership categories (circle one)

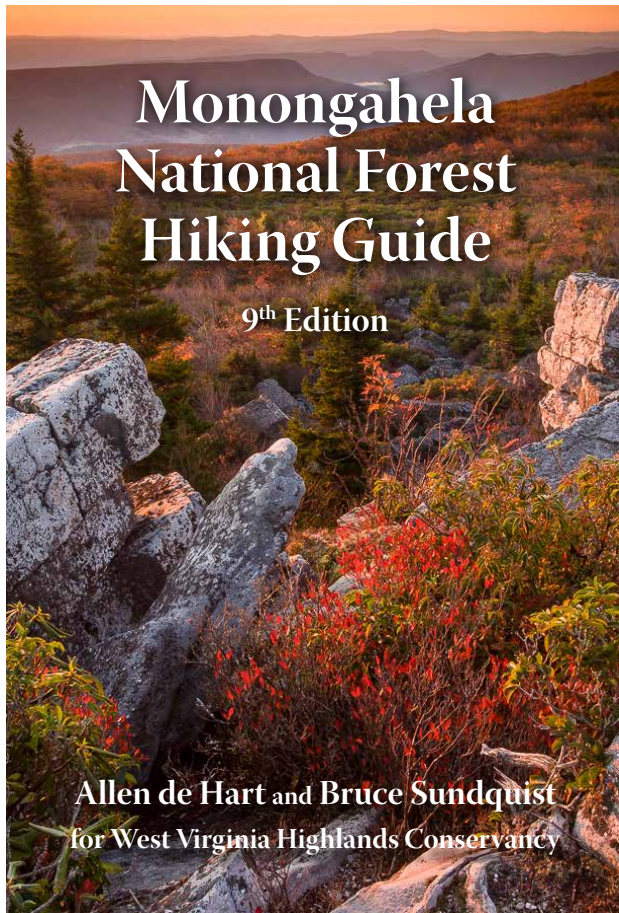
	Individual	Family	Org.
Senior	\$15		
Student	\$15		
Introductory	\$15		
Other	\$15		
Regular	\$25	\$35	\$50
Associate	\$50	\$75	\$100
Sustaining	\$100	\$150	\$200
Patron	\$250	\$500	\$500
Mountaineer	\$500	\$750	\$1000

Mail to West Virginia Highlands Conservancy, P.O. Box 306, Charleston, WV 25321

West Virginia Highlands Conservancy
Working to Keep West Virginia Wild and Wonderful

You may also join online at www.wvhighlands.org

Hit the trails with our Mon National Forest Hiking Guide



Celebrating the 50th anniversary of the West Virginia Highlands Conservancy, the new edition of the treasured guide to every trail in the Monongahela National Forest features brand-new topographic maps and Kent Mason's gorgeous photos, all in color.

The Guide has been updated with the cooperation of National Forest District Rangers and Recreation Specialists to reflect changes in the past ten years:

- newly designated wilderness areas
- new trails near campgrounds and sites of special significance
- a new complex of interconnected trails on Cheat Mountain
- rerouted and discontinued trails
- ratings for difficulty, scenery, access to water, and much else

The definitive guide to the Mon adds a wealth of information about history, wildlife, and botany; safety, preparation, and weather; horseback and mountain bike riding and cross-country skiing; as well as sources of further information on the Forest and its environs.

The Monongahela National Forest has long been known as a 'Special Place.' The hiking, backpacking, and cross-country skiing opportunities it provides are among the best in the eastern U.S. New wilderness and backcountry trails have been added to the outstanding areas we have appreciated for decades – Otter Creek Wilderness, Dolly Sods Wilderness, Flatrock Plains, Roaring Plains, Blackwater Canyon, Spruce Knob, North Fork Mountain, Shaver's Mountain, Laurel Fork Wilderness, Cranberry Wilderness -- and there are lesser-known gems to be found in between.

Profits from the sale of these guides support a wide variety of worthy environmental projects for the West Virginia Highlands Conservancy.

Send \$18.95 plus \$3.00 shipping to: West Virginia Highlands Conservancy, P.O. Box 306, Charleston, WV 25321 OR order from our website at www.wvhighlands.org

Get your I ❤️ MOUNTAINS and WVHC gear at our online store!

Show your love for the mountains with our range of bumper stickers, cotton tees, hats, onesies, toddler tees and Hydro Flasks. Shop now at wvhighlands.org



www.wvhighlands.org

  @wvhighlandsconservancy

info@wvhighlands.org