

M Mountain State Sierran

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Rare Bounty from Cleaning Up Toxic Waste?



Bull Run, north of Masontown in Preston County, runs orange with acid before it drains into the Cheat River. PHOTO BY STEPHEN LAWSON.

Bright orange streams are an all-too-common sight in West Virginia. Acid mine drainage (AMD) refers to the acidic water that forms when surface water and air are exposed to iron sulfides, like pyrite, a solid waste byproduct of coal mining. The chemical reaction creates sulfuric acid, which is highly corrosive. It breaks down surrounding rocks and causes toxic metals to enter and dissolve in the water. Could there be a financial incentive for cleaning up our toxic, orange streams?

Paul Ziemkiewicz, director of the WVU Water Research Institute in Morgantown, discovered that AMD sludge was full of rare earth elements. Rare earths are a valuable set of 17 elements needed to make everything from smartphones, fluorescent bulbs, and lasers to wind turbines and EV motors.

Because of their atomic structure, rare

earth elements make very powerful magnets. Magnetism can move electrons, which generates electric current. Powerful magnets improve computer efficiency. The world's first programmable, digital computer, ENIAC, weighed more than four elephants and had a footprint about two-thirds the size of a tennis court. Less than 80 years later, the



BY BETSY JAEGER LAWSON

ubiquitous smartphone, boasting far more computing power than ENIAC ever did, fits snugly in our palms. This miniaturization of electronic technology is due in large part to the exceptional magnetic power of the rare earth elements. As a result, global demand for these elements is skyrocketing.

The term "rare earth" is misleading because some of these metals are abundant in the earth's crust. But rare earth ores do not exist in seams, like copper or coal. Instead, they are sprinkled throughout the crust. China has a near monopoly on rare earth production now, while the United States has only one active mine, located near the Mojave Desert. Miners must excavate huge amounts of ore, subject it to physical and chemical processes to concentrate the rare earths, and then separate them. This transformation is energy-intensive and dirty, requiring toxic chemicals and often generating a small amount of radioactive waste.

In 2015, at the behest of the U.S. Department of

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VIEW FROM THE CHAIR:

Sierra Club Restructuring



BY JIM KOTCON

A lot is happening in the Sierra Club in West Virginia. Let me share some highlights.

Nationally, the Sierra Club is undergoing major staffing changes. The goal of these changes is to achieve significant budget savings while empowering chapters and volunteers. Many aspects of this are still being ironed out, but it will entail shifting staff from major campaigns such as the Beyond Coal Campaign to a regional field staff structure. It also is a step toward fulfilling the National Board goal of having a Chapter Director on staff in each chapter. That will mean a significant boost to the WV Chapter's activities, perhaps as early as this fall. Stay tuned!

New Opportunities to Get Involved

- The WV Chapter is seeking volunteers for some exciting new programs. One is our **Community Advocates Team**. This group will work with local governments such as city councils and county commissions to take advantage of major federal investments to fight climate change. Help your local community get solar panels, plant trees, or invest in energy efficiency—it saves taxpayer dollars and fights climate change. Your help also builds influence for the Sierra Club. For more information, contact me at jkotcon@gmail.com.
- Another opportunity continues to be the **Outings Program**. Lots of people want to go hiking, and serving as an outings leader is a great way to share your favorite spots, as well as see new ones. Contact Chris Craig at ccraig@laurelodge.com if you'd like to help.
- Our **Membership Committee** has been contacting new members with a membership survey, so if you are new to the chapter, please take this opportunity to let us know how you want to be involved.

Don't Be Fooled by Claims of "Advanced Recycling"

Proposals for so-called "advanced recycling" or "energy recovery" are really just promoting advanced forms of incinerators in disguise. Projects in Follansbee and in Jackson and Kanawha Counties have been announced. The details differ, but all share some form of "pyrolysis" or "gasification" as ways to dispose of waste, and often that includes out-of-state wastes. If you hear glowing promises of "clean" jobs, dig a little deeper to find out if the plastics are actually recycled into new products or if they instead just get burned. Various types of incineration all share the common problem of a very messy waste stream, meaning no single process can adequately handle everything. They leave behind a diverse array of "combustion residuals" (ash), which invariably are loaded with hazardous wastes. Often, they also emit significant amounts of hazardous pollutants into the air we breathe. All these processes emit greenhouse gases that contribute to climate change. The real solution to plastic waste is to stop generating it in the first place.

West Virginia Sierra Club Chapter Directory

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Term ends at first meeting of indicated year.

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Candice Elliott (L) and Jim Kotcon churn and serve ice cream for those lucky attendees at the WV Sierra Club picnic at New River Gorge in June. PHOTO BY JEN ROLSTON. Read more on page 8.

TOXIC WASTE | [CONTINUED FROM PAGE 1](#)

Energy, Paul Ziemkiewicz not only discovered that AMD had high concentrations of rare earth elements, but that it could easily be recovered from condensed sludge, so no rock grinding or intensive processing would be needed. As a result, its carbon footprint would be much less than a conventional mining and milling operation. Since new mines weren't needed, no ground would be disturbed, and it wouldn't produce radioactive byproducts like most conventional rare-earth mines. Even better, the main byproduct would be **clean water.**

By examining 120 AMD treatment sites throughout West Virginia, Pennsylvania, Maryland, and Ohio, the Water Research Institute team found that acid mine drainage could produce up to 2,200 tons of rare earth

elements per year in those states. Working with the WV Department of Environmental Protection, a pilot plant was constructed in 2016 at an existing AMD treatment facility near Mount Storm, which can treat up to 500 gallons of AMD per minute while producing nearly two tons per year of rare earths. This is done in a two-step process: The AMD is formed into a concentrate in a process similar to the settling ponds we see near strip mines. A second step refines and separates the concentrate into its elements.

Plans are underway for an extraction facility at the Richard Mine east of Morgantown, which has been responsible for much of the bright orange color of Decker's Creek. The concentrate will be shipped to an as-yet-unbuilt refinery. And it was announced this

past April that Ziemkiewicz was awarded \$8 million from the U.S. Department of Energy, as part of President Biden's Infrastructure Law, to construct the needed refinery. Several sites in West Virginia are under consideration.

If this project works out, we could see a future in which cleanup sites send their AMD concentrated sludge to a central refinery to be processed and the elements separated. This likely won't be a get-rich scheme, but it could be enough to cover the costs of treating the acid mine drainage. Further, it could provide green jobs in former coal-mining industry communities. Clean streams, jobs, and a good reputation for West Virginia as a supplier of rare earth elements! This could be a triple win for West Virginia—a rare outcome indeed. 🌱

TRANSITION FOR PLEASANTS POWER STATION:

Questions Still Remain



BY ERIC ENGLE
PRESIDENT, MID-OHIO
VALLEY CLIMATE ACTION

The Pleasants Power Station coal-fired power plant in Belmont (Pleasants County), WV has been in financial turmoil for many years. In 2017, First Energy, the Ohio-based electric utility that owned the plant, tried to transfer ownership from their Ohio subsidiary to their West Virginia subsidiaries. Because this was an interstate transfer of ownership, the Federal Energy Regulatory Commission (FERC) had final decision-making authority on whether or not the sale would be permitted. FERC denied the transfer.

That plan would have burdened ratepayers for MonPower and PotomacEdison, First Energy's WV subsidiaries, with the costs of this uneconomical plant that sends its power to Ohio. When the plan fell through, the WV Legislature stepped in and gave the facility a \$12.5 million annual tax break to keep the plant operational.

That strategy bought the plant some time, but it still wasn't viable on an open, competitive energy market like the one in Ohio. Following a major bribery scandal in Ohio (see "Ohio Republicans accused of taking \$60m in bribes as corruption trial opens," The Guardian, Jan. 23, 2023), First Energy transferred ownership of the Pleasants facility to an organization called Energy Transition and Environmental Management (ETEM) based in Houston, TX.

ETEM was preparing to decommission the plant and shut it down, but Pleasant's employees and some local political leaders started trying to persuade the WV subsidiaries of First Energy to purchase the plant back from ETEM directly. It was essentially the same move that was tried in 2017, except the plant was under different ownership, and the final decision would fall to the WV Public Service Commission (PSC), a body staffed with appointees of coal baron WV Governor Jim Justice, who would likely go along with the plan.

The WV subsidiaries knew this plant wasn't going to be a good investment, but they also knew that the plant was conveniently located for coal shipments and had scrubbers to meet some

federal environmental regulatory standards that another coal-fired asset of theirs in the state did not. They asked PSC to consider a 12-month, \$36 million plan (once again on the shoulders of WV ratepayers) to keep the plant in a status where it could quickly be made operational again but would not actually generate energy for that full year. That would give them a year to decide whether or not to buy.

Then along came Omnis Fuel Technologies, a Santa Barbara, CA-based company that wanted to negotiate using the plant and an adjacent property to produce hydrogen for electricity, even as it produces graphite to be used in electric vehicle batteries. Those negotiations have concluded, and Omnis has finalized purchasing the facility with FERC approval.

On the one hand, a coal-fired facility will be closing down, over 150 jobs have been preserved, and the county and local municipalities won't be losing a substantial source of revenue. These are all good things. On the other hand, though, the facility will still be burning coal for 12-24 months while it is retrofitted for graphite production and a hydrogen production facility is constructed. Perhaps even more disturbing, the facility will be using double the amount of coal traditionally consumed at the site for its graphite and hydrogen production, and it will apparently be utilizing methane shale gas to fuel ultra-high-heat reformers that convert the coal to hydrogen.

Omnis projects a 95% reduction in greenhouse gas emissions when it comes to producing electricity at the site and estimates that roughly 60% of the coal mass would come out as graphite, yielding 3 million to 3.5 million tons of graphite per year, a very important component of EV battery production. But is this even realistic? And is it worth using twice the amount of coal as before and now utilizing methane gas from more and more fracking?

Sean O'Leary, senior researcher at the Ohio River Valley Institute, a Pennsylvania-based, pro-renewable energy nonprofit think tank,



ABOVE: A new use is in store for the Pleasants Power Station.
PHOTO COURTESY OF FIRSTENERGY RETIREES/DOMINION POST.

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PFAS IN WV WATER:

The Why, How, and What Now?



PFAS (per- and polyfluoroalkyl substances), commonly known as “forever chemicals,” are a group of human-made compounds first manufactured by 3M in the 1940s and later popularized by DuPont in products such as Teflon. PFAS are highly toxic and do not break down in natural conditions. There are thousands of PFAS chemicals, with over 600 used in the United States. Their non-stick, waterproof, and stain-resistant properties are favorable for use in nearly all industries and most consumer products. Examples of products containing PFAS include non-stick pans, firefighting foam, waterproof clothing, food packaging, and even dental floss.

Decades of heavy use of these forever chemicals has resulted in the contamination of water, soil, air, and animals in even the farthest corners of the world. Direct sources of PFAS contamination include industrial manufacturing facilities, military bases, and airports; indirect sources of contamination can include wastewater treatment plants, landfills, and the use of sewage sludge (biosolids) in agricultural practices.

Humans are exposed to PFAS through the consumption of contaminated drinking water and food, inhalation of contaminated air and dust, and exposure to consumer products. Exposure is widespread and associated with a variety of health issues, including immune suppression, neurodevelopmental disorders, and some cancers. The most well-researched PFAS chemicals, PFOS and PFOA (also known as C8), have been linked to testicular, kidney, liver, and pancreatic cancer, as well as reproductive problems, low birth

weight, and weakened childhood immunity.

In recent years, chemical and product manufacturers have replaced PFOS with PFBS and replaced PFOA with GenX chemicals. These two replacements, PFBS and GenX, have shorter carbon chains and were initially believed to be less toxic. However, animal studies have shown GenX to also be associated with cancer, as well as effects on the liver, kidney, and immune system. Similarly, PFBS has been linked to reproductive and developmental effects. In March 2023, EPA proposed legally enforceable drinking water standards for six PFAS: PFOS, PFOA, GenX, PFBS, PFHxS, PFNA.

Here in West Virginia, industrial facilities, military installations, and airports are known sources of drinking water contamination. Most notably, the Dupont (now Chemours) manufacturing plant in Parkersburg that severely contaminated the drinking water 40 years ago continues to discharge high

BY MARIA RUSSO
WATER CAMPAIGN COORDINATOR
AND
JENNA DODSON
STAFF SCIENTIST, WV RIVERS COALITION

levels of PFAS into the Ohio River. Between September 30, 2018, and March 31, 2023, Chemours exceeded their permit limits for PFOA and GenX 69 times, with exceedances up to 32 times the permit limit. Chemours has been issued consent orders by both EPA and WV Department of Environmental Protection (WVDEP). Sources of groundwater contamination include the Shepherd Field Air National Guard Base in Martinsburg and military activities at the Yeager Airport in Charleston, where firefighting foam migrated through the groundwater and contaminated community water supplies.

A recent United States Geological Survey (USGS) study of water supplies in West Virginia revealed that 130 of 279 water systems had unsafe levels of PFAS in their source water. Contamination was statewide, with the highest levels concentrated in the Ohio River Valley and Eastern Panhandle (Morgan, Berkeley, and Jefferson counties). A follow-up study is currently underway to test for PFAS in the treated water. Of the 37 systems recently tested, 19 systems had detections above EPA’s proposed drinking water standards. Sampling continues, and there will be more results released in the coming months.

During the 2023 legislative session, the West Virginia Legislature passed House Bill 3189: The PFAS Protection Act, which took the first steps of addressing PFAS at the source. This legislation requires the WVDEP to develop and implement PFAS Action Plans, which will identify sources of PFAS in raw water sources and outline steps to address contamination, while minimizing impacts on public water systems. The first 37 action plans will be completed by July 1, 2024, with the next 50 action plans being completed by December 31, 2025. The remaining action plans will be completed by December 31, 2026.

At the state level, WVDEP is working with utilities that have contaminated water to receive

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West Virginia Environmental Council Launches 2024 Legislative Campaigns

The West Virginia Environmental Council (WVEC) is gearing up for the 2024 legislative session with several crucial campaigns, and we need your support to make a real impact. You can play a role in protecting our state by joining these campaigns, whether by writing op-eds or letters to the editor or by engaging with legislators.

**BY LUCIA VALENTINE
WVEC LOBBYIST
AND
JILLIAN WELSH
WVEC COMMUNICATIONS COORDINATOR**

A top priority for the WVEC and other groups across the state is preventing and plugging orphaned gas and oil wells. In partnership with the West Virginia Chapter of the Sierra Club, we have launched our Energy Campaign, which focuses on developing grassroots support for legislation addressing unplugged wells. Orphaned wells left behind by the oil and gas industry often leak dangerous emissions, like methane, which pollutes groundwater, threatens public health, and contributes to climate change. The state legislature must pass legislation to prevent additional wells from being abandoned in order to take full advantage of available federal funds for plugging wells. HB 2852, the Orphan Well Prevention Act, introduced by Delegate Evan Hansen (D-51), will be reintroduced in 2024. This legislation requires drilling companies to set aside money upfront

to plug their wells should they orphan them, preventing taxpayers from footing the bill.

WVEC, in partnership with West Virginians for Energy Freedom and others, is also working together on a Community Solar Campaign. Community solar was one of our top legislative priorities in 2023, and we are working year-round to garner strong support for a community solar bill in 2024. Community solar, a local and low-cost energy source, is currently available in 22 states, but it is still not accessible in West Virginia. By opening the door for community solar programs in the Mountain State, we can lower energy costs, create thousands of local jobs, and promote energy freedom right here at home. Community solar offers the benefit of solar to those who can't or prefer not to install solar panels at their homes or businesses.

Enabling community solar in West Virginia will expand solar access to low- and moderate-income households. It's also the perfect option for renters and owners of condos and apartments who want to use clean, renewable energy and save money.

With both campaigns, we want to emphasize the importance of citizen involvement. Your participation is critical to our cause. Lawmakers must hear directly from their constituents on the issues that matter most. Your unique voice can help us gain the momentum we need before the next legislative session begins. Year-round outreach is crucial.

Please join one of our many volunteer initiatives by completing our survey, at wvecouncil.org/volunteer. We'll match you with meaningful opportunities based on your interests and availability.

MARK YOUR CALENDARS!

WVEC will host its Annual Meeting November 3-5 at Tygart Lake State Park, Grafton, WV. This gathering of volunteers from WVEC, the Sierra Club, and other WV environmental groups promises to be an inspiring weekend as we come together to set our legislative priorities for 2024, strategize for the future, and enjoy some fun outdoor activities. It's the perfect opportunity to connect with like-minded environmental enthusiasts and make a significant contribution to the future of West Virginia! For more info and registration, please visit wvecouncil.org/annual-meeting.



An Ecotherapist Deals with Climate Change

Speaking up and taking action on climate change has its challenges. As agents of change in West Virginia, our presence and actions can make people uncomfortable, leading us to feel isolated. While I cannot speak for everyone, I can share my experience as an activist and Licensed Professional Counselor.

While walking yesterday I saw the first leaf beginning to change color. After a chaotic summer, I was looking forward to the relief that fall brings. Instead, I felt a twinge of anxiety. The cycles of earth that I could always count on are no longer consistent. Tears came to my eyes, but I had to prepare for work. I told myself, “I’ll process these emotions later.” This is a defense mechanism known as compartmentalization—temporarily burying thoughts and emotions for another time so that you can proceed with the matters at hand.

Defense mechanisms are responses that protect us from deep emotions. Sometimes they are conscious choices and sometimes not. Countless articles have been written about defense mechanisms, and they are a huge part of Sigmund Freud’s legacy. I could write a book about the defense mechanisms I have seen as reactions to climate change: denial, blame, avoidance, distraction. The list is endless.

One defense mechanism is for anxiety and anger to act as inhibiting emotions that can prevent our deeper core emotions from surfacing. Anxiety keeps us alive by telling us something is wrong and we should pay attention. Anger provokes us to take action against that wrong. While threats to our continued existence should cause anxiety and anger, these can also be inhibiting other, uncomfortable feelings. For me, those would be sadness and fear.

Humans need community. We need support from each other to face challenges, especially an existential crisis like climate change. But what if no one wants to face that challenge with you? Until recently I felt that isolation, and it ignited both anger and a flight response. But, this summer changed everything. The nation has been so impacted by changing weather patterns that huge numbers of people let go of their defenses. I started getting calls from people looking for a climate-aware counselor. I also had the opportunity to gather with other ecotherapists in the redwood forests of California, and that chance to grieve and share in community with others was the most healing experience of my life.

Grieving has helped me to accept that things will not return to how they were before. We are transitioning to a new world. And while this is terrifying, there is also hope. When we accept the monumental challenges facing us, we can support each other as we move forward.

Too often, contemporary culture glorifies individualism and views raw emotion as a character flaw. But we cannot heal without community and vulnerability. In the coming months I hope to offer opportunities for gathering—to grieve but also to generate hope through change. Let’s form a community here in West Virginia to be honest about climate change and work for our collective future.



BY ADRIENNE EPLEY BROWN

PICTURED ABOVE: Marly Hazen Ynigues (L) and Adrienne Epley Brown at the ecotherapy class “Connects to Your Local Watershed,” at the Friends of Deckers Creek Outdoor Learning Park.

PLEASANTS | CONTINUED FROM PAGE 4

has some reservations. O’Leary told Mike Tony of the Charleston Gazette-Mail, “H₂ [hydrogen] doesn’t have much of a future in the power generating sector...that is unless, like Omnis, you’re simply stuck with [a lot] of the stuff and need to make the most you can out of it.” Hydrogen is extremely expensive to produce and will likely be sold at a loss to offset or recover as much of the manufacturing cost as possible, according to O’Leary.

O’Leary also called Omnis’s planned level of graphite production “one hell of a stretch,” given that a Canadian government estimate found that global total consumption of graphite only reached 3.5 million tons in all of 2021. Is one production facility really going to produce graphite tonnage equivalent to total global consumption annually? I’d agree with O’Leary that such a conclusion is highly questionable, even with the current and near-future growing demand for graphite due to increased production of EVs.

Only “green hydrogen,” hydrogen derived from an electrolysis process splitting water molecules powered by renewable energy, is remotely environmentally sound. This process will also undercut the costs of fossil fuels-based hydrogen production in the very near future, given the resources required for hydrogen derived from fossil fuels. Also, green hydrogen’s use should be reserved for decarbonization of hard-to-decarbonize parts of our global economy like aviation, international shipping, and steel- and cement-making. It should also be used for energy storage systems itself. We should not be eyeing it for energy generation.

We need graphite. We need hydrogen. It’s great that a coal-fired plant will no longer be spewing the worst of the worst of heat-trapping and air-and-water-poisoning emissions. But we have to make sure “greener” solutions are, in fact, greener, safer, and better. I’m not sure that what Omnis is promising is any of those things.

WV Sierrans Gather at New River Gorge National Park and Preserve



TOP AND RIGHT: Many of those attending the WV Chapter picnic in June joined the pre- or post-picnic hikes and were treated to area rock formations and dazzling New River Gorge views. PHOTOS BY CHRIS CRAIG.

On June 10, about 45 Sierrans gathered at the Grandview section of New River Gorge National Park and Preserve for a WV Chapter picnic.

Though haze from Canadian fires clouded some of the views, attendees still were treated to the glorious overlooks that give this area its name, as well as plenty of camaraderie and good food.

Park Ranger Jacob Hartsog gave a brief address during the picnic. Hartsog, who grew up in the area, stressed the unique development of the park, which incorporates widespread areas of a previous National River, a National Recreation Area, and multiple WV State Parks. The “Preserve” in the name is a rare addition among National Park nomenclatures and hints at the inclusion of areas open to hunting and fishing within the park’s boundaries.

Former Chapter Chair Aileen Curfman’s faithful leadership and endless hard work on behalf of the chapter was recognized during

the picnic with a certificate and gift card for a native plant vendor. Curfman and her husband Dave recently moved out of state to Boonsboro, Maryland, though she remains on the chapter executive committee for now. Mary Dailey of southern West Virginia entertained attendees with both her own and traditional songs, sometimes accompanying herself with guitar or spoons. Outings leader Chris Craig led both pre- and post-picnic hikes that featured the best park overlooks as well as interesting rock formations.

Our thanks goes out to all the folks who organized and worked to make the chapter picnic a success, including Candice Elliott, Aileen and Dave Curfman, Chris Craig, Bob Griffith, Mel Waggy, Jim Kotcon, Mike Attfield, and Dave Sturm. Thanks also to those who attended and brought food. Good people gathering to enjoy and celebrate our public lands is what the Sierra Club is all about.

BY CHRIS CRAIG



New River Gorge National Park Ranger Jacob Hartzog (above) and singer Mary Dailey (left) shared their knowledge and talent at the WV Chapter picnic in June. PHOTOS BY JEN ROLSTON.



Experiencing West Virginia's Wilderness Areas: Five Fabulous Finds



BY AILEEN CURFMAN

The last issue of the Mountain State Sierran featured West Virginia's most popular wilderness areas, Dolly Sods and Otter Creek. If you seek further adventures, these five lesser-known areas may appeal to you.

Roaring Plains West

contains 6,800 acres of wilderness adjacent to Dolly Sods, and its Flatrock Run Trail offers four additional miles of trail through similar terrain. From Canaan Valley, follow WV Rt. 32 south to Laneville Road (County Rt. 45/4) and turn left. To access the trail, travel 4.4 miles to Bonner Mountain Road, turn right and go 0.5 miles to the trailhead parking located on your right just before the bridge over Red Creek. The trail is 0.2 miles west on the left side of Bonner Mountain Road.



Big Draft Wilderness

offers 5,144 acres of mixed forest near White Sulphur Springs. Its three trailheads provide 14 miles of trails, offering a choice of rigorous climbs or gentler streamside hikes. To get to South Boundary Trailhead from White Sulphur Springs, head southwest on E. Main St toward Mountain Ave. Turn right onto Big Draft Rd/State Route 36/1 (6.4 mi). Trail access is on the left. To get to the Blue Bend Loop Trailhead from White Sulphur Springs, follow WV 92 for 9.2 miles to Anthony Rd (WV Rt 16). Turn left onto Anthony Road and go 3.8 miles to Hopkins Mountain Road. Turn left and trail access is across the swinging bridge. From Lewisburg to Anthony Creek Trailhead, head southeast on W. Washington St. toward N. Jefferson St./Seneca Trail. Turn left at US-219 N/N Jefferson St./Seneca Trail (9.6 mi). Turn right onto Anthony Rd/State Route 21/2 (4.2 mi). Across the bridge, parking and access to the trail will be on the right.



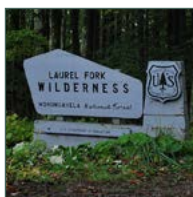
Established in 1983, Cranberry Wilderness

is a 47,815-acre tract that provides much of the scenic backdrop for the Highland Scenic Highway. As the largest Forest Service wilderness area in the Eastern U.S., Cranberry is home to a wide variety of wildlife and is a black bear sanctuary. It includes much of the drainage for the Williams and Cranberry Rivers. Seventy miles of ridgetop and streamside trails provide opportunities for loop hikes at altitudes up to 4,600 feet. From I-79, take Exit 57, follow U.S. 19 south to Rt. 55 east, to Rt. 150 (closed when icy or snow-covered in winter). From I-64, take exit 169 and follow U.S. Rt. 219 north to Rt. 39 west to Rt. 150.



Laurel Fork North and South

, also designated as wilderness areas in 1983, had been devastated by logging before being rehabilitated by the Civilian Conservation Corps. Native trout tempt the angler who is skilled enough to cast without getting tangled in thick streamside brush. Birding is said to be excellent in the Laurel Forks, where open meadows provide the forest edges preferred by many species. Mixed hardwoods and lush meadows provide 18 miles of trails, much of it following the Laurel Fork of the Cheat River. The trails are noted for challenging stream crossings. Trail use is light, and some bushwhacking may be necessary. Take U.S. Route 33 east from Elkins for 15.6 miles and turn right (south) on Middle Mountain Road (Forest Road 14). This road is the western boundary of both Laurel Fork Wildernesses. From Harman, take Rt. 33 west for 7.5 miles and turn left (south) on Middle Mountain Road.

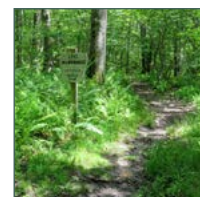


Spice Run has 6,030 acres and is managed as a trailless wilderness. Pockets of rhododendron thickets can make for a beautiful but tedious

day (or weekend) of bushwhacking. Just getting to Spice Run is an adventure requiring a four-wheel-drive vehicle with high clearance. Do not attempt this drive in an ordinary passenger vehicle. From Marlinton, take Rt. 39 east for 9.6 miles to Rt. 21 (Beaver Creek Rd.). Follow Rt. 21 south for 15 miles to Spice Run. From White Sulphur Springs, follow Rt. 92 for 9.3 miles to Whites Draft. Turn left onto Rt. 16 (Anthony Rd), and follow Rt. 16 for 10.7 across Anthony Creek, onto Little Creek Rd., and eventually to Spice Run across the stream from the end of Rt. 21.



In addition to the above areas that all lie within Monongahela National Forest, the Jefferson National Forest is home to the 8,324-acre **Mountain Lake Wilderness**. This wilderness straddles the Virginia-West Virginia border and 2,721 acres are in West Virginia. The area's 21 miles of trail include about 5 miles of the Appalachian Trail.



PHOTOS COURTESY OF WIKI COMMONS

LEARN MORE HERE:

Monongahela National Forest Hiking Guide, by Allen de Hart and Bruce Sundquist, for West Virginia Highlands Conservancy

<https://tinyurl.com/mss-wilderness>

Wilderness— Know Before You Go

BY AILEEN CURFMAN

What makes a designated wilderness area different than other spaces set aside for ecological preservation? What is the experience like for visitors?

Though its dated language lacks inclusivity and ignores prior use of these areas by indigenous and other people, the 1964 Wilderness Act still makes clear that in wilderness areas nature is prioritized over human exploitation: “[Wilderness is] an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain...retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed to preserve its natural conditions...”

To maintain this character, mechanical and motorized equipment are not permitted by law. Bicycles and game

carts may not be used, and trail maintainers may not use chain saws or other power tools. Signage is permitted at trailheads and intersections, but it is kept to a minimum. Small rock cairns may show the way, but they are often unreliable because hikers may move them or build their own. Trails may shift a bit when visitors step around obstacles that natural processes have created. Bridges are only built where they are necessary to protect a fragile stream bank, so hikers should expect to ford streams and to revise their route if a crossing is unsafe.

Visitors should take special precautions when visiting a wilderness area. You may be only a few miles from a farm or village, but don't develop a false sense of security. Unwise actions can leave you in a predicament, and you will need to get yourself out. You won't be able to phone for help, and your GPS may not be accurate. You need a topographic map and a compass and the ability to use them. Carry more food, water, and clothing than you expect to need. Rain gear is essential, because unpredictable cold rains can chill you quickly even in midsummer. Some of the most appealing water sources are laden with bacteria, so purify or filter your drinking water to avoid a miserable end to your trip. Tell someone where you are going and when you will be back. Give them contact information for the ranger district where you will be hiking. It's also helpful to contact the ranger district office to ask about trail conditions and safety issues.

Know the Forest Service's rules for visitors to wilderness areas and follow the seven Leave No Trace principles. Groups should be no more than ten people, and you must camp more than 200 feet away from water sources and trails. Hunting is allowed, subject to state regulations, so it is wise to wear a blaze orange hat or vest during hunting season. Target practice or other use of firearms is not allowed, and they should be left at home when not hunting. While horses are permitted, riding is impractical or unsafe in many areas. Campfires are discouraged, although dead and down wood may be burned in an existing fire ring.

Altogether, these regulations are designed to enhance the wilderness experience for you and for other visitors in the same area. For seasoned hikers, they quickly become a way of life. Following them will put you in a frame of mind that allows you to experience and enjoy your surroundings more fully.



Dave Curfman takes it easy at Roaring Plains Wilderness Area, Monongahela National Forest.

PHOTO BY AILEEN CURFMAN.

TO LEARN MORE:

- <https://www.fs.usda.gov/managing-land/wilderness>
- <https://lnt.org/why/7-principles/>

PFAS | CONTINUED FROM PAGE 5

Bipartisan Infrastructure Law funding to either upgrade their water treatment plant or extend water lines to customers that currently rely on wells contaminated with PFAS. In the FY2024 round of funding, these utilities include the City of Glen Dale, Lubeck Public Service District, and Claywood Park Public Service District.

Federal and state agencies recognize the need for further action. Earlier this year, EPA proposed to designate PFOA and PFOS as hazardous substances, which would increase transparency and help hold polluters accountable to clean up contamination. According to EPA's PFAS Strategic Roadmap, the PFAS drinking water standards should be finalized by the end of this year, and draft human health criteria for PFOA and PFOS will be published by Fall 2024. Once published, policymakers will be able to leverage human health criteria to limit industry releases of PFAS into drinking water supplies.

Additional needs and policy gaps remain. It is critical for federal and state agencies to address unresolved aspects, such as treating contaminated groundwater, updating fish consumption advisories, providing resources for people who source their drinking water from wells, and scaling up technologies for PFAS destruction. By addressing PFAS at the source, we can start to disrupt the PFAS cycle and begin a clean-up process that prioritizes the health and wellness of all.

West Virginia Rivers Coalition will continue to provide transparent information to help inform and involve West Virginians on this issue. This fall, be on the lookout for PFAS action alerts and our PFAS White Paper, aimed to serve as a blueprint for WVDEP's PFAS Action Plans. In the meantime, you can visit our webpage at wvivers.org/PFAS and sign-up to receive updates, information, and actions you can take on PFAS in West Virginia. Combining both individual and policy actions, we will be able to further advance and protect our communities from the harms of PFAS.

Berkeley County Stormwater Program Presented to Eastern Panhandle Group



BY MAGGIE LOUDEN

Eastern Panhandle Sierrans and others learned about Berkeley County’s stormwater program at a May presentation in Martinsburg. David Billmeyer, MS4 program professional for the Berkeley County Public Service Stormwater District, shared his program *Upstream, Downstream, and Everything in Between*.

Stormwater can soak into the ground or become surface runoff. If the rate of the water falling exceeds infiltration, or if there are impervious surfaces such as parking lots, roofs, or roadways, stormwater becomes runoff—and this runoff may also carry pollutants that can contaminate waterways and endanger wildlife and people who use the waterways for recreation. A big job of the Public Service Stormwater District and its personnel is to prevent pollution of our waterways.

Through its MS4 program (Municipal Separate Storm Sewer System), Berkeley County follows a stormwater management plan that includes:

- Public education and outreach to residents, businesses, and others through programs, social media, and tree-planting at schools and businesses.
- Encouraging public participation through events and publications.
- Detecting illicit discharges and eliminating them.
- Controlling construction-site runoff through site inspections, enforcement of ordinances, and by assuring that stormwater plans are in place.
- Controlling post-construction runoff by minimizing impervious surfaces, preserving ecologically sensitive areas, reducing the alteration of the natural flow of water through landscapes, and by protecting trees. This requires ongoing site inspections.
- Pollution prevention by training Berkeley County employees about proper operation and maintenance of county vehicles.



Billmeyer answered various questions from the audience, including how and why a “rain tax” is collected by the county. His presentation was well-received. If you would like to learn more about the stormwater policies and efforts in your areas, contact your local public service commission, county officials, or agricultural extension office. Get involved with preventing or lessening stormwater-related problems through the Sierra Club and other environmental organizations.



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If you have named Sierra Club or your Chapter as a beneficiary or would like to discuss doing so, please contact us today

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2023 CALL FOR NOMINATIONS FOR THE West Virginia Chapter Executive Committee

The West Virginia Chapter needs candidates to serve on the Chapter Executive Committee. Three seats are open for the two-year term starting in January. The monthly meetings are either in-person or by Zoom. Since executive committee members represent all chapter members, they should have the time to attend most, if not all, of the meetings. Service provides a closer, more detailed, look at the West Virginia Chapter and valuable experience for leading a statewide organization.

Nominate a person who loves the great outdoors and wants to protect the environment. That description probably is true for you, so feel free to nominate yourself. To make your nomination(s), contact Jim Kotcon at jkotcon@gmail.com.

2023 CALL FOR NOMINATIONS FOR THE Monongahela Group Executive Committee

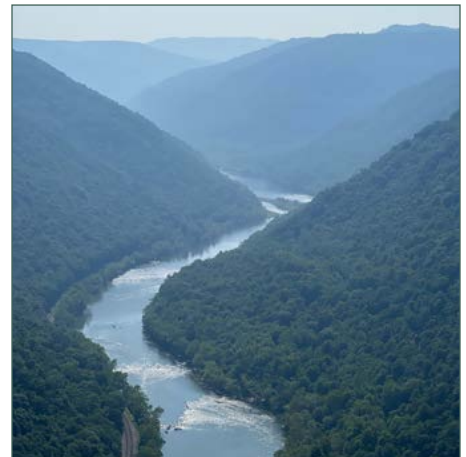
The Monongahela Group, comprised of Sierra Club members from Harrison, Marion, Monongalia, Preston, and Taylor counties, is seeking candidates to serve on the Executive Committee. Three seats will be open in December to serve a two-year term. Monthly meetings are either by Zoom or in-person. Nominate yourself or a friend and become part of a group of people who love the great outdoors and are activists for the environment. We are also seeking volunteers to join one of our three campaigns: Green Belt, Environmental Education, and Property Owners' Rights. Contact Jim Kotcon at jkotcon@gmail.com.

EPSC Changes

After the loss of several board members due to illnesses, moves, or other commitments, the Eastern Panhandle Group may be changing its structure to a less formal entity called a network. This change would still enable us to take on causes, activities, and events as volunteers come forward. Starting in September, monthly meetings will be held—initially on Zoom—to discuss these possibilities.

The West Virginia Chapter will be discussing this potential restructuring at a future meeting, but if you would like to share your ideas or ask questions about it, contact Aileen Curfman (acurfman@gmail.com).

In the meantime, please join us for a pot luck picnic at 6 p.m., Tuesday, August 22, at the Kester Pavilion, Poor House Farm Park, Almshouse Road in Berkeley County. Bring a dish to share; we'll provide the drinks and tableware.



The New River Gorge as seen from Grandview. PHOTO BY JEN ROLSTON

The **Mountain State Sierran** is published quarterly by the West Virginia Chapter of Sierra Club and distributed to all paid members—in print (when requested) or electronically. \$1 of each member's annual dues helps offset the cost of producing this newsletter.

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**DEADLINE FOR THE 2023 WINTER ISSUE:
NOVEMBER 4, 2023**

Opinions expressed in the *Mountain State Sierran* are those of the contributors and do not necessarily reflect the opinions of the Sierra Club.



Outings

Saturday, September 23, 2023

DAY HIKE: Tuscarora Trail, Sleepy Creek WMA, Berkeley County, WV

Our exploration of the Tuscarora Trail in West Virginia continues with this hike from Hampshire Grade Road to Upper Campground, on Sleepy Creek Reservoir. This hike is on rolling, forested trail and old roads. It crosses streams and offers views of rock outcroppings. It will involve a shuttle, so please reserve your space and let us know well ahead of time if you must back out. It is suitable for those in reasonable shape and able to handle hills and uneven terrain. There is no charge for the hike, but contributions are welcome.

Distance/ 5 miles
Difficulty: MODERATE

Duration: 3 hours

Bring: Water, lunch, and protection from sun and bugs, especially ticks. Hiking poles or staffs may be helpful for stream crossings and uneven terrain.

Meet: 10am, Hampshire Grade Road at the Tuscarora Trail. Take WV 45 to Glengary, turn right on CR 7, and go 4.5 miles to Shanghai. Turn left on Hampshire Grade Road (WV 7/13) and go 4.5 miles up the mountain. There is parking along the shoulder. We will shuttle in some of the vehicles to the start of the hike.

Leader: Chris Craig
 ccraig@laurellodge.com
 304-433-1260

Nearest town: Glengary and Shanghai, WV

Cancellation policy: We will carry on in light rain but cancel if downpours are expected.

Saturday, October 7, 2023

DAY HIKE: Appalachian Trail, Ashby Gap to Manassas Gap, VA

After cancelling this event in July due to hot weather, we'll continue our exploration of the AT in Northern Virginia with this hike rugged but rewarding section. Going through Sky Meadows State Park and other public land, it features expansive views from open pasture land, interesting rock formations, and a rich variety of flora, including orchards, forests, and wildflower meadows. This hike is suitable for individuals in good shape. It will involve a shuttle, so please reserve your space and let us know well ahead of time if you must back out. There is no charge for this hike, but contributions are welcome.

Distance/ 11.8 miles
Difficulty: MODERATELY DIFFICULT

Duration: 7 hours

Bring: Water, lunch and snacks, protection from sun and bugs, especially ticks.

Meet: 9am, AT Trailhead parking off VA 725, 0.1 miles north of its junction with VA 55. From I-66, take exit 13 onto VA 55 at Linden, VA.

Leader: Chris Craig
 ccraig@laurellodge.com
 304-433-1260

Nearest town: Linden, VA

Cancellation policy: We will carry on in light rain but cancel if downpours are expected.

Saturday, October 14, 2023

DAY HIKE: C&O Canal Towpath, McCoy's Ferry to Fort Frederick, MD

This hike is open to all. It is an easy hike on level ground. We will start at McCoy's Ferry parking lot on the C&O Canal. We will walk on the canal towpath to Fort Frederick State Park. Once at the state park, we will be able to explore the rebuilt French and Indian War fort. The park will have a Civil War Living History demonstration on this day. Our hike is free, but donations are welcome.

Distance/ 4.5 miles

Difficulty: EASY

Duration: 3 hours

Bring: Water, snacks, and footwear appropriate for the conditions.

Meet: 10am, McCoy's Ferry parking lot, McCoy's Ferry Road, Clear Spring, MD.

Leader: Ken Kendall
 kekendall65@gmail.com
 304-433-9537

Nearest town: Clear Spring, MD

Cancellation policy: We will cancel for heavy downpour or thunderstorms.



In May Sierrans (L to R) Richard Reed, Ken Kendall, and Tammy Vincent enjoy the view from Annapolis Rock on the Appalachian Trail near Boonsboro, MD.

PHOTO BY ED WHEELLESS.

FAR LEFT: Outings leader Ken Kendall overlooks Maryland from Black Rock on the Appalachian Trail.

PHOTO BY ED WHEELLESS.

Saturday, November 4, 2023

DAY HIKE: Buzzard Rock Trail, George Washington National Forest, VA

This hike is described as rugged and steep, with rocky terrain. It has an elevation gain of approximately 940 feet. We will have views of Passage Creek Gorge and Fort Valley, over 700 feet below the overlook. We will also have a couple of stream crossings. Trekking poles or a hiking stick are recommended.

Distance/ 4 miles
Difficulty: MODERATELY DIFFICULT
Duration: 3 hours

Bring: Water, snacks, and footwear appropriate for the conditions. Poles or a hiking stick recommended.

Meet: 10am, Buzzard Rock parking lot. From I-66, take exit 6 to US 522 South 1.4 miles. Turn right onto VA 55 for 1.5 miles. Turn left on VA 621 and a slight right as it becomes VA 660. After 1.5 miles turn left on VA 615 and in 2 miles left onto VA 619. The parking lot is on your right in 0.6 mile.

Leader: Ken Kendall
 kekendall65@gmail.com
 304-433-9537

Nearest town: Front Royal, VA

Cancellation policy: We will cancel for heavy downpours or thunderstorms.

Saturday, November 11, 2023

DAY HIKE: Shannondale Springs Trail

This loop trail is in Shannondale Springs Wildlife Management Area, along the Shenandoah River in Jefferson County, WV. It's a popular trail for birding and exploring a riverside forest. With 488 feet of elevation gain, the hike is appropriate for anyone capable of hiking rolling terrain on a trail with uneven footing. There is no charge for the hike, but donations are welcome.

Distance/ 5.4 miles
Difficulty: MODERATE
Duration: 3 hours

Bring: Water, a snack, and protection from ticks.

Meet: 10am, Public River Access lot, Shannondale Springs WMA. From US 340 in Charles Town, take WV 115 east. Cross the Shenandoah River and turn right on Mission Road. After 2.2 miles, turn right on Shannondale Springs Road. Arrive at the parking lot in 0.4 mile. (Note the US 340 closure near Harpers Ferry this time of year. You may also access WV 115 from WV 9 near Hillsboro, VA.)

Leader: Chris Craig
 ccraig@laurellodge.com
 304-433-1260

Nearest town: Charles Town, WV

Cancellation policy: We will carry on in light rain but cancel if downpours are expected.

Saturday, December 16, 2023

DAY HIKE: Tuscarora Trail, Sleepy Creek Reservoir, Morgan County, WV

Cancelled in February for ice and in May for thunderstorms, we'll hope that the third time is the charm for this moderate out-and-back hike on a rolling but rugged trail. We will walk forest roads and trails, with Meadow Branch alongside some of the way. There are several small stream crossings. While we should be able to keep our feet dry, both the hike and the drive to the trailhead are vulnerable to wet or icy conditions. Stay in touch with the hike leader for potential cancellations or alterations. It is suitable for adults and children (accompanied by adults) in reasonable shape. Well-behaved dogs on leashes are welcome. There is no charge for this hike, though contributions will be welcome.

Distance/ 5.4 miles
Difficulty: MODERATE
Duration: 3.5 hours

Bring: Water, lunch, and snacks if desired. Poles or a walking stick may be helpful, especially at stream crossings.

Meet: 10am, Sleepy Creek WMA Lower Campground parking. From WV 9, take Back Creek Valley Road (CR 7) south 7.3 miles. South of Jones Spring, turn right (west) on CR 7/9 for 6 miles, passing Sleepy Creek WMA office and registration point. At the Y intersection, go right 1.8 miles to the end of the road, within view of the dam.

Leader: Chris Craig
 ccraig@laurellodge.com
 304-433-1260

Nearest towns: Hedgesville, WV

Cancellation policy: We will cancel or change plans if substantial rain, snow, or ice is expected and if prior weather results in very muddy trails.



Sierra Club

West Virginia Chapter

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FALL 2023



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Chapter ExComm Meeting

The next meeting of the WV Chapter of Sierra Club Executive Committee will be held online at **9:30 am – 12:30 pm, Saturday, November 4.**

Email sierraclub.wv@gmail.com or call 304-314-2709 for more information or to receive the link.

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