



The Highlands Voice

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Focus on Nature: Big Run Bog, A National Natural Landmark at Risk

By Susan Rogers Rosenblum

Big Run Bog, located in Tucker County, is a sometimes overlooked diamond in the crown of West Virginia. It is a beautiful place to experience a high mountain bog, breathe pure air, marvel at pure water, to gaze upon numerous rare plants and gather cranberries in the fall.

The National Park Service describes it as “a site that contains a high altitude northern sphagnum-red spruce bog far south of its normal range persisting as a Pleistocene relict community. It possesses a high degree of integrity and is thus a fine representative example of this fairly uncommon ecosystem in West Virginia.” (Clovis, Jesse F., Natural Landmark Brief, September 2009, U.S. Department of the



Big Run Bog sits tucked away within the Monongahela National Forest in Tucker County along Forest Road 17. (Photo by Frank Gebhard)

Interior, National Park Service, National Natural Landmarks Program)

But, what is a bog? What is a National Natural Landmark? And why are we choosing to focus on this one right now when it has been around since the Pleistocene geological epoch, or Ice Age, that lasted from 2.85 million to 11,700 thousand years ago?

Formerly known as Olson Bog and Kramer Swamp, Big Run Bog is located at 3,200 feet on Backbone Mountain in the Cheat Ranger District of the Monongahela National Forest at the headwaters of Big Run of the Blackwater River. The Right Fork of Big Run flows out of the bog and is protected as

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Thoughts From Our President

By Marilyn Shoenfeld

As the year continues to rush by, winter is finally here! Six inches of snow have replaced the autumn leaves, and folks are getting their skis and snowshoes ready for the season. The holiday season is here, and all of us at the West Virginia Highlands Conservancy wish all of you the best possible holidays and a very Happy New Year!

We would also like to thank all those who participated in Giving Tuesday by supporting WVHC for our first membership drive. **Together, we were able to raise \$2,957 and welcome eight new members to our community.**

Here is a reminder of what we stand for and what you are supporting: WVHC has been around since 1965 when threats to the Highlands of West Virginia proliferated, ranging from superhighways to pump storage projects to mountaintop removal. A quotation from The Highlands Voice states our mission:

“WVHC, per our bylaws, will promote, encourage and work for the conservation—including both preservation and wise use—and appreciation of the natural resources of West Virginia... Especially 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...”

Our goals are the same today as they were in 1965, and we need your support to carry on our work.

On the following page, you will find updates from the activities of our various committees in 2023. We hope you take a moment to read about all that the Conservancy is doing to protect our beautiful state and feel empowered to make a donation or become involved to help drive our mission forward even farther. Visit wvhighlands.org/donate-now to make a donation.

The 2024 West Virginia Legislative session is just around the corner and is scheduled for January 10, 2024, with an interim session on January 7-9. WVHC has developed, with the other partners of the West Virginia Environmental Council, a list of priorities that

we will advocate for during this session. They include net metering, orphaned gas well responsibility, community solar, ORVs, the West Virginia Scenic Rivers Act of 2024, and many other issues. Please read the article written by our Legislative Committee Chair and Senior Vice President on page five of the Voice.

Another proposal has been made by the United States Forest Service to store carbon underground in National Forests. The Conservancy is studying this issue and will comment at the appropriate time.

In other good news, we are proud to announce that Crys Bauer has been promoted to Membership and Operations Director. We look forward to great things from our team and are excited to be working with them.

Things to look out for in January:

On January 9, The West Virginia Rivers Coalition is hosting a Clean Water for All event at the Culture Center in Charleston commemorating the 10th Anniversary of the Chemical Spill in the Elk River. The event will take place from 5 to 9 p.m. and will feature live music, speakers, interactive art, food, and community.

The following day, on January 10, the Conservancy will be holding a Board Meeting at the Kanawha County Public Library, Rooms 308-309 at 10 a.m.

As always, comments and thoughts are always welcome. Please reach out at marilyn.shoenfeld@gmail.com.

Thanks for reading!

Save the Date: Clean Water for All

Please join us for “Clean Water for All: Reflecting on the 2014 Crisis and Shaping a Water Secure Future” on January 9, 2024, from 5 pm to 9 p.m. at the Culture Center in Charleston.

January 9, 2024 will mark 10 years from the day that a chemical leak on the Elk River left 300,000 people in nine counties throughout the Kanawha Valley region without safe water. This day was a turning point in our collective history, one that highlighted the precious nature of our shared water resources, activated new leaders, and led to legislative wins protecting drinking water quality.

To commemorate this historic event, please join us to bring together the stories of those impacted by the Elk River chemical leak and the stories of new advocates responding to current problems.

This free event will feature live music, speakers, interactive art, food, and community.

Please register for the event at <https://bit.ly/CW4A>

Help Us Plan Fall Review 2024

Well, the 2023 Fall Review is 'in the bag', and it was a good one. Now begins the planning for the 2024 Fall Review, and we could use some help. Would you like to be more involved? Do you want to know more about how these things are planned? Please consider volunteering with our experienced crew as we plan for October 18-20, 2023 at Cacapon State Park.

If you are interested, please contact Jackie Burns at 252-241-9184 or info@wvhighlands.org

2023 Year in Review: WVHC Committee Updates

As 2023 comes to a close, the West Virginia Highlands Conservancy would like to share the latest updates from our organization from the past year. 2023 has been another year of dedicated stewardship, tireless advocacy, and the continuation and start of new projects aimed at safeguarding the beauty and biodiversity of our beloved West Virginia highlands. We hope you feel empowered to donate to continue this work and keep West Virginia Wild and Wonderful.

Legislative Committee

The Legislative Committee had a successful start to 2023, with several key victories during the legislative session. They were instrumental in the passage of an amendment that prohibits new Off-Road Vehicle (ORV) systems in state parks, ensuring the preservation of these natural areas. Additionally, the PFAS Protection Act was passed, requiring action plans for community water systems with elevated levels of PFAS. There was also an increase in funding for the Office of Oil and Gas Inspectors and the defeat of restrictions on private forest carbon capture agreements. These achievements highlight the effectiveness of our legislative advocacy efforts and the importance of our work in protecting the environment. The Legislative Committee continued to support the West Virginia Environmental Council, donating \$9,000 to support the great work of our team of Legislative lobbyists. We are hoping to continue to bring light to the underpaid nature of our lobbyists and your donations would ensure that environmental lobbyists supporting causes important to the highlands are compensated.

Dolly Sods Wilderness Stewards

The Dolly Sods Wilderness Stewards have been working diligently to preserve and protect the Dolly Sods Wilderness area, a unique and ecologically significant region. Throughout 2023, our organization further expanded the capabilities of the Stewards by training a new Crosscut Sawyer team, who will be responsible for removing fallen trees and clearing trail routes without the use of motorized equipment, which is prohibited in Wilderness areas. Additionally, the Stewards established a Trail Maintenance team to ensure proper drainage and tread hardening on the trails, minimizing environmental impact and ensuring hiker safety. The Wilderness Trailhead Stewards continued to staff the most popular trailheads, as they have done for the past two years, staffing the most popular trailheads and providing valuable information and guidance to visitors on having a safe and low-impact experience in Dolly Sods. Furthermore, the Solitude Monitoring team conducted an enhanced survey to assess the number of other groups and people encountered on the Wilderness trails, providing valuable data for future management decisions.

Highways Committee

Since the 1960s, the West Virginia Highlands Conservancy has been at the forefront of the fight against the proposed Corridor H highway. Over the years, we have successfully prevented the worst routes from being chosen, but there are still two remaining sections that could have devastating consequences for the environment and local communities. Within the heart of the West Virginia Highlands lays the state highway department's preferred alternative, which would permanently degrade the upper Blackwater Canyon and its historic district just west of Blackwater Falls State Park, and it

would also disrupt the greenway between Thomas and Davis. We have been actively advocating for an alternate route north of Thomas, and in August, the Federal Highway Administration agreed to study this option. However, we anticipate that further legal action may be necessary to protect the region from the construction of the highway.

Public Lands Committee

The Public Lands Committee continues to monitor proposed projects within the Monongahela National Forest, submitting comments and suggestions identified through our reviews. To date, the Conservancy has submitted comments and suggestions specific to fourteen projects and received various responses concerning our comments and suggestions from the Forest Service.

In addition, the Conservancy issued a letter of support for the Forest Service acquisition of a 450-acre tract of land located west of Cunningham Knob and east of the Laurel Fork South Wilderness, which provides opportunities for the Monongahela National Forest to increase efficient management of resources. This tract location will further and greatly enhance ongoing and future opportunities for land restoration, public access, and other conservation efforts. This year, members of the Public Lands Committee have been meeting monthly with members of the Forest Service to discuss plans and actions for the Dolly Sods Wilderness Stewards program, which has now completed its second year. The very popular outings program was continued with a Bird Outing at Blackwater Falls State Park, an Old Growth Forest Outing at Watoga State Park, and a Mushroom Foray at Canaan Valley State Park. An outing for youth with many great activities is planned for next year.

Rivers Committee

The Rivers Committee has been busy in the past year focusing efforts on a number of issues related to the future construction of Corridor H in Tucker County. It has partnered with West Virginia Rivers Coalition and Friends of Cheat to train and supervise

citizen scientists who monitor the water quality of the streams that are, or may be, affected by the highway construction. So far, 14 months of baseline data has been collected. In addition, these three groups are working together to plan and conduct a Visual Assessment Training for the public in early 2024. The goal of this training is to empower and educate the citizens that live near, or travel through, the Corridor H construction zones on how to record and report on any stream, river or other conditions that are of concern. We are hoping that more eyes on the project will encourage contractors to prevent environmental degradation and will catch any problems when they occur rather than after the fact. The Rivers Committee has also established a positive working relationship with the West Virginia Division of Highways (WVDOH) Environmental Inspector in relation to the core drilling associated with the highway construction and hopes to work together with WVDOH to prevent as much environmental impact as possible during planning and construction of this highway.

Extractive Industries Committee

The mining industry is the gift that keeps on giving. There are new mines, old mines, and not so old mines that are still polluting our lands and water. The Extractive Industries Committee takes its inspiration from a line in an old song: "Step by step, the longest march can be won, can be won" (from the preamble to the constitution of the first miners union in the United States, written in 1870. Later set to music by Pete Seeger). We continue the long slog of trying to make sure that mines fulfil their obligations under the law. We do this both at individual mines and by advocating that the system which seeks to assure the financing of the reclamation of old mines becomes solvent. 2023 saw the final approval of the Mountain Valley Pipeline; we (and our lawyers) went down swinging, fighting in court until the fight was over.

Grant(s) Committee

The Grant Committee might be

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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.)



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Please email any poems, letters, commentaries, etc. to the Voice editor at comms@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.

Department of Environmental Protection Proposes New Guidelines on Public Participation

By John McFerrin

Many decisions by the West Virginia Department of Environmental Protection either require or allow public participation. Typically, the Department announces what it is considering or what it wants to do and then sets up a procedure for receiving public comment.

Some of these are fated to leave the public frustrated. Sometimes, the Department has already made up its mind what it wants to do and how it wants to do it. The public can show up, say what it wants to say, etc., but the Department is just going through the motions, having already made up its mind.

Even when the Department was not just going through the motions, the procedures it used did not always

lead to productive public comment or participation.

Now, the Department has started an effort to improve its procedures. It has published a draft of West Virginia Public Engagement Guidelines. The West Virginia Highlands Conservancy, West Virginia Rivers Coalition, and others are cheering them on, applauding their first steps, and urging them on to do more.

One of the problems that members of the public have had in the past is that commenters are often shuttled into separate rooms or to separate tables in one big room. In some situations, agency staff is only authorized to receive comments, not respond to questions or provide information. This leaves members of

the public unable to hear what other people had to say. It also leaves them no better informed than they were when they got there.

The proposed guidelines move in the direction of more public meetings and question-and-answer sessions. This will give people a chance to hear what others have to say. It will give the public an opportunity to learn about the proposed project. If Department employees get to answer questions instead of just recording comments, they would have a chance to build trust.

The proposed guidelines also increase the use of virtual meetings or meetings with both an in-person and a remote option. When meetings that the West Virginia Highlands Conser-

vancy has been a part of in the past had a remote option, that option was beneficial. Our comments on the proposed guidelines reflected this.

The proposed Guidelines say repeatedly that flexibility is important and that the Department does not want to be rigid in its choices of meeting format, depending upon what is appropriate at the time. If the Department backslides into routinely deciding that the old, ineffective format is appropriate in most situations, the new guidelines will not make much difference. If, on the other hand, the Department is sincere in its desire to improve public comments, then its new proposed guidelines are a good first step.

Looking Forward to the 2024 West Virginia Legislature

By Luanne McGovern

The regular session of the 87th Legislature will kick off on January 10, 2024, and will run for 60 days. There will undoubtedly be many twists and turns, suspension of constitutional rules, and introduction of many concerning bills. In conjunction with the West Virginia Environmental Council and other partner organizations, we will be focusing on the following key legislative priorities in 2024:

Net Metering: Protect and preserve long-standing net metering rules to ensure all solar users are entitled to the existing fair market retail rate. For a detailed explanation, see the November 2023 Voice article by John McFerrin. To learn more, visit West Virginians for Energy Freedom.

Orphaned Gas Well Responsibility: Require bonds to be set before drilling begins to cover plugging costs for gas wells that are abandoned or orphaned. This is a huge issue across the state. You can learn more and take action here.

Community Solar: Promote access to affordable renewable energy through a solar facility subscription service. Customers can purchase an interest in a solar facility to use credits against their electric utility costs. Watch a webinar here.

State of West Virginia Rivers Designation: Urge legislators to adopt a West Virginia Scenic Rivers bill for our state's rivers. There is currently only one river in West Virginia with this designation – the Bluestone National Scenic River in the southern part of the state. To learn more about the National Wild and Scenic River System, visit The National Wild & Scenic Rivers System | Rivers.gov

In addition, we will be monitoring and acting on numerous other issues as bills arise:

- **Continuation of Off-Road Vehicle restrictions on public lands**
- **Any changes to the above-ground storage tank legislation**

- **Expansion of nuclear power in West Virginia**
- **New developments with the proposed Hydrogen Hub and carbon sequestration**
- **Working towards introducing a PFAS ban**

Want to get involved with the Legislative Committee? Contact Luanne McGovern, Legislative Committee Chair at info@wvhighlands.org

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 in West Virginia.

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

Sign up today at bit.ly/WVHCemailsignup

Big Run Bog, A National Natural Landmark at Risk *continued from page 1*

By Susan Rogers Rosenblum

a Tier 3 water, which indicates high-quality waters as evidenced by exceptionally healthy benthic macroinvertebrate communities and/or naturally reproducing trout streams. The National Park Service describes the location of the bog as “an amphitheater-shaped valley head” with “surrounding slopes that are forested with second-growth stands of beech-maple and mixed oaks creating a buffer zone, which protects the watershed of this important wetland. Red spruce and hemlock occur in patches in the bog and on its periphery.” (Clovis)

The bog overall is a 731-acre tract that contains a 50-acre northern sphagnum bog that has peat deposits reported as seven to nine feet deep and features highbush blueberry, cranberry, sundew, pitcher plants and grass-pink and rose-pink orchids as well as other rare plants. A survey conducted by Robert Hunsucker, Dorothy Simpkins and Thomas DeMeo in 1994 and 1995 for the Northeastern Forest Experiment Station of the United States Forest Service reported that six species of rare vascular plants were found in a total vascular flora of 194 species. Many of the rare plants are at the extremes of their range, and “The diversity of habitats from mixed oak and beech-maple forests to northern sphagnum-red spruce bog makes this area valuable as a refuge for a large variety of biota.” It is a very special place.

Recognizing the unique nature of this bog, the Department of the Interior designated it as a National Natural Landmark in December 1974. A National Natural Landmark is a site that contains “outstanding biological and geological resources. Sites are designated by the Secretary of the Interior for their condition, illustrative character, rarity, diversity, and value to science and education.” (nps.gov/national natural landmarks) Despite being designated as a national treasure, ownership of a National Natural Landmark is not acquired by the Department of the Interior, and title and control of the site remains with the landowner. In this case,

the federal government owns Big Run Bog National Natural Landmark as part of the Monongahela National Forest. Therefore, the protection and conservation of Big Run Bog rests with the Monongahela National Forest.

So, what is a bog? A bog is a type of wetland called a peatland. Peatlands are formed by peat-forming plants, such as mosses, that are waterlogged and decompose slowly, forming a thick vegetative mat below the living plants on the top. Sphagnum-dominated bogs such as Big Run Bog are typically “located in a frost pocket in the headwaters of small mountain streams.” (Wieder, et al. Vegetational Analysis of Big Run Bog, A Nonglaciaded Sphagnum Bog in West Virginia, Department of Biology, West Virginia University) A bog forms above the water table and receives water and nutrients from rain and runoff from the surrounding watershed. It may also receive groundwater which gives it characteristics of a fen. Often, there is an intermixing of the two. The water in a bog is naturally highly acidic and the pH in the surface waters of Big Run Bog were reported by Hunsucker, et al. as having an average pH of 4.02. This pH is consistent with the pH readings that are being taken monthly by citizen scientists on the Right Fork of Big Run, which drains out of Big Run Bog.

Why are we so interested in Big Run Bog National Natural Landmark at this time? If you have ever had the good fortune to visit Big Run Bog or drive along Forest Road 17 to the Olson Fire Tower, or have even climbed the tower, you will understand how the Big Run Bog watershed drops off to the south of the road and that the watershed for Slip Hill Mill Run, another Tier 3 water, drops off to the north of the road. The road runs along the spine of Backbone



Dead red spruce captured in a beaver pond at Big Run Bog. (Photo by Frank Gebhard)

Mountain. Theoretically, if you pour your water bottle out on one side of the road, it flows into one, out the other side, it flows into the other. Despite the fragile nature of the ecosystems on either side of Backbone Mountain, The West Virginia Division of Highways has planned its preferred route for Corridor H (ROPA) to travel along this spine. It has been described by our own Hugh Rogers as “threading the needle.” It is hard to conceive of a road any larger than Forest Road 17, let alone a highway, being able to be constructed without having a large destructive impact on either watershed, particularly Big Run Bog.

Currently up for approval is a permit for core drilling in the Monongahela National Forest in the Big Run and Slip Hill Mill Run watersheds to collect core samples along the ROPA to determine the geologic make-up of the soils and rock of the area and thus inform the design of the highway. Core drilling on private land along the ROPA has commenced from Mackeyville to the Tucker County High School, where it has stopped, presumably until a determination is made between a northern alternative or the ROPA, which

would diverge at that point. **However, the separate permit for the core drilling in the Monongahela National Forest has not yet been approved by the Department of Environmental Protection.**

A virtual informational meeting and hearing will take place on Tuesday, December 19 from 6-8 p.m. The public will be able to register to attend and submit questions that they would like to ask. The concern of West Virginia Highlands Conservancy is that the fragile nature and beauty of the ecosystems will be damaged if the core drilling is not done with care and the least impact as possible. It is our understanding that the Monongahela National Forest has not yet approved of this drilling permit.

If you are concerned about the impacts of the construction of Corridor H on Big Run Bog National Natural Landmark, please consider registering and attending the meeting on December 19. The formal notice containing information on the hearing, the comment period and a link for registration is also in this edition of The Highlands Voice.

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Big Run Bog, A National Natural Landmark at Risk *continued from page 6*

By Susan Rogers Rosenblum



Top down view of Big Run Bog. (Photo by Frank Gebhard)

If you are interested in learning more about Big Run Bog and are perhaps considering a visit, I encourage you to read Big Run Bog-An Unexpected Road Trip at bit.ly/47xsJ63. It features good information regarding the nature of visiting a bog and wonderful photographs of some of the rare

plants that you may see. In addition, Friends of Blackwater has produced a beautiful YouTube video featuring the Insect-Eating Plants at Big Run Bog bit.ly/3Rl5uWV.

Virtual Public Hearing: Corridor H

The West Virginia Department of Environmental Protection is holding a virtual public hearing for Greenman-Pedersen, Inc.'s application for an WV NPDES Water Pollution Control Permit Modification (No. WVR112141 MOD-2).

The proposed modification involves adding 11.2 acres of earth disturbance to the existing permit for access roads, drilling pads, and lay down areas associated with Phase 2 of the Parsons-Davis (Corridor H) Core Boring Project, and will discharge treated stormwater into an unnamed tributary of Roaring Run, Slip Hill Run, Mill Run, Big Run, Tub Run, the North Fork of the Blackwater River, Pendleton Creek, and Beaver Creek.

A virtual public hearing on the draft application will be held on Tuesday, December 19, 2023 from 6 to 8 p.m.

Pre-registration for the hearing is required. To register, please complete the registration form at: <https://forms.gle/S1yDK-gpE8qHPcwmJA> or call Terry Fletcher at 304-926-0499 ext. 49720 by 5 p.m. the day of the hearing. Registrants will receive a separate email with the link and call-in number for the virtual hearing once the registration deadline passes.

Written comments can also be submitted via email to DEP. Comments@wv.gov or regular mail to: Director, Division of Water and Management, DEP ATTN: Sharon Mullins, Permitting Section 601 57th Street SE Charleston, WV 25304-234

Corridor H Construction Plans Available Online



The Allegheny-Blue Ridge Alliance's interactive web maps provide mapping for construction plans, sensitive ecosystems, and other sites of significance along the routes from Parsons to Davis and Wardensville to the Virginia state line.

Visit abralliance.org to learn more.

Hydro in the Highlands: Third Time the Charm?

By Hugh Rogers

Seen from Snowy Point, Canaan Valley's northern half is a wetland mosaic unbroken by human landmarks. Turn around, and they appear in every direction. To the northeast, the giant Mt. Storm power plant reaches up in tall plumes from its stacks and reaches out in cables strung east, west and south. Farther north, another stack rises beside a coal preparation plant. To the southeast, highwalls bound the Stony River Reservoir. Nearby are grassy "reclaimed" strip mines. Along the western horizon, forty-four wind turbines palisade Backbone Mountain. (The Highlands Voice, November 2002).

Snowy Point remains a Zen garden of white sand and rock islands at the tip of Cabin Mountain, ten miles north of Dolly Sods. Added to its view since 2002 are a hundred and thirty-two wind turbines strung along twelve miles of the Allegheny Front. They were planned when I wrote. What's proposed today, directly below the Point, is an entirely different project.

This is the third attempt in five years to bring hydropower to the highlands.

The first, the Big Run Pumped Storage Hydro Project, would have placed a 1,200-acre impoundment on Backbone Mountain very near the proposed alignment of Corridor H. Both projects have encountered the same difficulty: avoiding the watersheds of Big Run Bog on one side and Tier 3 protected streams on the other. Big Run Bog is a National Natural Landmark containing many rare species of plants and animals. As such, it is protected by the National Park Service as well as the landowner, the Monongahela National Forest.

Speaking for the Park Service, the Department of Interior wrote, "the proposed Project will use more electricity than it generates, will eliminate more than 1,500 acres of carbon-sequestering forest, and [the lower reservoir] will dam and flood the valleys of at least four Cheat River tributaries." To the claim that the Project could be built without damage to the environment,

the department recited impacts to fish and wildlife, migratory birds, and threatened and endangered species, in addition to Big Run Bog.

For its part, the Forest Service refused to grant a special use permit for core drilling and other preliminary studies, saying the project could not be made compatible with the Forest's management plan. The Federal Energy Regulatory Commission (FERC) then denied the application for a preliminary permit.

In its reply to critical comments filed by the West Virginia Highlands Conservancy and other organizations, the applicant, FreedomWorks, maintained that it had considered numerous potential sites in West Virginia, and only Big Run was suitable. As if to prove that point, it submitted a second proposal, titled Ulysses Pumped Storage Hydro, that was so misplaced it had to be redesigned within a couple of months.

Its upper reservoir occupied the entire watershed of Mill Run, a tributary of Stony River below the Mt. Storm power station in Grant County. This proposal affected private landowners, and they were enraged. A local church that would have been taken became a meeting place for the resistance.

The lower reservoir, seven miles distant, would have flooded Falls Gap just downstream from Greenland Gap, an area of natural, scenic, and historic interest. It, too, is in private ownership but includes a Nature Conservancy preserve.

The Department of Natural Resources filed comments right away: the

project likely would eliminate the trout fishery in two affected streams, could impact numerous rare species, and would be constructed in an area that contains known caves. The Highlands Conservancy sought more information and meanwhile asked to participate in the proceedings as an intervenor.

A question was raised among board members whether our opposition had become automatic. The majority considered skepticism to be justified in this case, given the obvious problems with the Tucker County proposal and the flawed design of the second one. Moreover, both county commissions had seemed willing to give their go-ahead based on little more than the magic word, "jobs". Due diligence had to come from private associations.

As it happened, the Ulysses project was defeated by overwhelming public opposition. A straw poll of landowners showed practically all would refuse to sell to the developer. Without the possibility of using eminent domain, Freedom Works was blocked. Shortly afterward, it withdrew the pre-

liminary permit from FERC.

In his report on ill-fated Ulysses in the Voice (April 2020), David Johnston neatly summarized the pros and cons such proposals would face going forward.

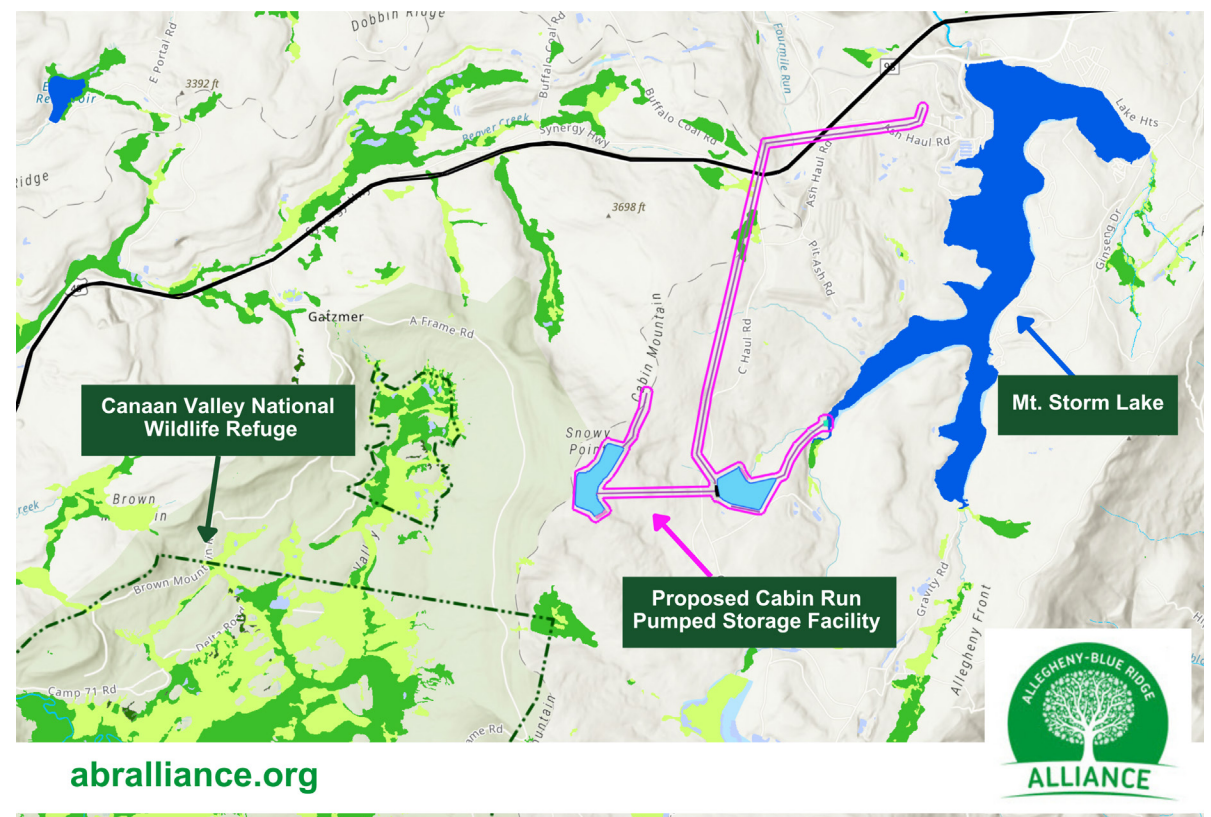
Pro: "the potential to replace fossil fuel-generated peak demand electricity with energy generated by renewables."

Con: "their large reservoirs . . . unavoidably will have large impacts on environmental, scenic, and recreational values, and on the people with ties to the affected land."

Now comes the Cabin Run Pumped Storage Project. Its proposed site is owned neither by the public nor private individuals; it's the property of Laurel Run Mining. Presumably, that corporation supports the project.

Also, unlike the previous proposals, this one does not require large reservoirs. Everything about it is compact. The surface area of the upper and lower reservoirs is 60 acres,

continued on next page



abralliance.org

Mining Matters

By Cindy Rank

Together with co-plaintiffs and the support of public interest lawyers from Appalachian Mountain Advocates and Public Justice, West Virginia Highlands Conservancy has successfully challenged any number of deficient coal mining regulations, permits and careless mining operations over the years.

Holding industry accountable through this type of litigation involves both correcting the problem to stop the pollution and assessing civil penalties for each violation. Federal law (the Clean Water Act and/or the Surface Mining Act in these cases) sets forth prescribed levels of monetary fines. If settlements can be agreed to by all parties involved and approved by the Court, some level of civil penalties can be directed to support of some third party's related environmental protection work preferably close to the area where the damage has been done.

Whatever pollution and violations are involved and despite settlement agreements and court approved consent decrees constructed with the best of intentions, there is one common theme that runs through them all.

The "final" resolution is never quite 'final'.

Whether due to poor planning, inadequate resolve and resources, bankruptcy, or just plain obstinacy, compliance is hard to come by and follow-through often requires constant

vigilance, sometimes over the course of several years.

Two recent Court Orders out of the United States District Court for Southern West Virginia are examples of just how tenuous resolution in these legal actions can be.

KEYSTONE WEST VIRGINIA

On October 4, 2023, Judge Joseph Goodwin issued an Order in litigation that involves a complex of Keystone strip mines and valley fills that border Kanawha State Forest and discharge into nearby streams.

In the early 2000s Tom Scholl Mining initiated permits in the Rush Creek area that have troubled nearby residents and visitors to the forest for the past two decades.

The mines have a long record of violations and have been the object of comments, citizen complaints, and heated hearings through permit applications, renewals, change of ownership from Scholl, to Revelation Energy, then revocation by West Virginia Department of Environmental Protection, on through bankruptcy, and most recently reinstatement by DEP and transfer of ownership back to Scholl's Keystone West Virginia.

West Virginia Highlands Conservancy, Sierra Club, and Appalachian Voices joined the Kanawha State Forest Coalition, a volunteer organization formed in 2014 to stop mountaintop

removal mining on the Kanawha State Forest perimeter, in a lawsuit alleging Keystone Mining violated the Clean Water Act and the Surface Mine Act at its Rush Creek mines, allowing unpermitted discharges, discharging acid and other pollutants into nearby streams and failing to meet the monitoring and reporting requirements that are part of the mining permits.

In his Court Order Judge Goodwin agreed with much of the complaint and has granted civil penalties for those violations. The final assessment of penalties will be determined by the number and severity of the violations.

LEXINGTON COAL

On November 17, 2023 Judge Robert Chambers issued an Order in litigation filed in August of 2019 involving several Lexington Coal operations in Mingo County just West of Gilbert.

West Virginia Highlands Conservancy, Ohio Valley Environmental Coalition, Appalachian Voices and Sierra Club filed a complaint regarding selenium and ionic pollution August 6, 2019.

The Court found Lexington liable for the alleged violations of the Clean Water Act and the Surface Mining Act in March of 2021 and the back and forth since then has been somewhat futile including the Judge having to find Lexington in Contempt for not complying with Court orders on sev-

eral occasions.

In the words of the Court, the record in this case presents "the disappointing chronicle of Defendant Lexington Coal's environmental harm and failures to comply with the orders of this Court."

Instead of Lexington Coal attempting to comply with its obligations in good faith, the company "appears to be looking for shortcuts and simply hoping disaster does not result."

All are strong words from a judge who has been quite patient and restrained in light of the company's contemptuous behavior.

In the November Order the Judge once again found Lexington to be in contempt, fined the company an additional \$50,000 and set forth new and explicit directions setting forth specific deadlines and admonishing the company to cooperate with the Special Master appointed by the Court to oversee Lexington's development and implementation of plans to control the pollution from the mine sites.

Endnote: Selenium and ionic pollution at issue in these and several other cases continue to impair some of the finest headwater streams in West Virginia. The tapestry of a healthy water rich West Virginia is unravelling with every stream that's affected.

Hydro in the Highlands: Third Time the Charm? *continued from page 8*

By Hugh Rogers

one-twentieth as large as Big Run's or Ulysses'. The vertical drop is just 500 feet, less than half as much as theirs, and the penstock runs less than a mile. It's close to existing transmission lines. Annual output is estimated at 671,000 megawatt-hours, roughly a sixth as much as Big Run.

A lot we don't know and can't predict may come to light during the FERC process. How would construc-

tion affect the geology and chemistry of previously mined areas? How would "fill or refill" of the reservoirs affect Mount Storm Lake? Stay tuned.

Although the project is located on Cabin Mountain, "Cabin Run" doesn't appear on any map. The tributary affected by the project is Red Sea Run. Perhaps the applicant wished not to be thought of as a Moses parting its waters into reservoirs.

Note: Readers may recall the proposal to flood much of Canaan Valley for the Davis Power Project. That was the first attempt to bring hydro to the highlands (and the Highlands Conservancy played a major role in its defeat). But that was fifty years ago, before many government inducements for renewable energy.

Protecting Our Appalachian Legacy: The Fight to Save the Candy Darter

By Andrew Young

South Fork Coal Company has an extensive track record of non-compliance with the water protection requirements of Surface Mine and Reclamation Act (SMCRA) across all of its permitted facilities in the South Fork Cherry River and Laurel Creek watersheds. Most recently, at the end of October 2023, South Fork Coal Company was issued a third successive Notice of Violation (NOV) for spreading raw coal, a toxic pollutant, across the surface of Haul Road #2, which then drains to candy darter critical habitat. This NOV for spreading raw coal was the third time since April that South Fork Coal Company was issued a violation for the same thing, and as of the last inspection in November there was still coal on the road. This pattern shows the unacceptable lack of professionalism and the superficiality with which the regulators and the company take their obligations under the law.

The manifest harm that the candy darter has suffered due to coal industry pollution underscores the need for the mine operator, West Virginia Department of Environmental Protection, Office of Surface Mining and Reclamation Enforcement (OSMRE), and Fish and Wildlife Service to fashion and effectively implement appropriate Protection and Enhancement Plans (PEPs) and species-specific protective measures (SSPMs). At this time, however, more than 30 months after the issuance of the 2020 BiOp, West Virginia DEP has taken no action to initiate the process of developing PEPs for the candy darter and its designated critical habitat for any SMCRA permitted operation affecting the species in the South Fork Cherry River or Laurel Creek watersheds. This is both surprising and unacceptable because South Fork Coal Company is the only coal company actively operating in candy darter critical habitat, yet none of the company's relevant SMCRA permitted facilities have PEPs in place for this species.

The “no jeopardy” determination in the 2020 BiOp was premised on state regulatory agencies and mine



Looking down on a coal stockpile area within the Rocky Run Surface Mine. This mine is adjacent to the Monongahela National forest and only a handful of miles south-west from the Cranberry Glades. (Photo courtesy Allegheny-Blue Ridge Alliance Pipeline Airforce)

operators complying with the SMCRA regulations—in particular, the regulations requiring PEPs and SSPMs, and that mining activities not jeopardize listed species—which the Fish and Wildlife Service assumed OSMRE would enforce through its oversight role in states with primacy. Indeed, one of the reasonable and prudent measures (RPMs) in the incidental take statement is that “OSMRE will use its authorities to minimize impacts to listed species through oversight of State... programs.” The fact that OSMRE has failed to ensure that every SMCRA permitted operation that “may affect” listed candy darters have appropriate PEPs in place is a direct violation of the agency’s duties under the 2020 BiOp.

The West Virginia DEP has failed to fulfill its roles with regards to the coordination, PEP, and SSPM requirements of the 2020 BiOp to pro-

tect the candy darter for every SMCRA facility that affects the species listed critical habitat. Pursuant to the 2020 BiOp, OSMRE is the authority charged with the enforcement of coordination, PEP, and SSPM requirements against the states. However, based on the publicly available information, OSMRE has failed to utilize enforcement measures against West Virginia or any of the noncompliant SMCRA permits affecting candy darter critical habitat. Consequently, OSMRE has failed to ensure that West Virginia has gotten PEPs approved for SMCRA facilities in these two watersheds before allowing mining activities to move forward that may affect the candy darter or its designated critical habitat, as the 2020 BiOp requires.

OSMRE has failed to insure against jeopardy and adverse modification for listed species and critical

habitat via compliance with the substantive provisions of the 2020 BiOp and incidental take statement. Indeed, as explained, to the extent that the 2020 BiOp is able to provide any means to protect the candy darter from jeopardy and adverse modification, it does so via the coordination process described in the BiOp, which is premised on the development of PEPs with SSPMs that OSMRE can enforce. Therefore, in order for the 2020 BiOp to protect listed species, OSMRE must ensure that the coordination process of the 2020 BiOp is being implemented, with the end result of adequate PEPs and SSPMs produced for each permit that needs them. The failure to do so is a blatant abdication of the agency’s duties under the 2020 BiOp, and thus a clear violation of its duty to ensure against jeopardy, as

continued on next page

Protecting Our Appalachian Legacy *continued from page 10*

By Andrew Young



Candy Darter (*Etheostoma osburni*) in the Gauley River. (Photo T. Travis Brown)



Becky Run just below the National Pollutant Discharge Elimination System Outlet 032 for the Lost Flats Strip Mines. Outlet 032 is a prolific violator of permitted iron limits. Becky Run is now listed as an impaired stream for iron.

the Endangered Species Act requires.

Furthermore, due to West Virginia's failure to effectively implement SMCRA and the 2020 BiOp within its border, OSMRE is under a duty to initiate its SMCRA enforcement procedures against the West Virginia DEP per the

terms and conditions of the 2020 BiOp for all relevant mining facilities in candy darter habitat that are lacking Appendix A coordination, PEPs, and SSPMs. Due to the chronic nature of noncompliance in West Virginia, OSMRE may need to substitute its enforcement powers for that of the States', or, in light of the chronic nonfeasance documented herein, it may need to withdraw its delegation of SMCRA implementation authority altogether.

In sum, by failing to comply with the oversight and enforcement provisions of SMCRA, OSMRE has undermined the provisions of the 2020 BiOp that the Fish and Wildlife Service explicitly relied upon to make its no jeopardy determination and provide safe harbor to SMCRA activities in the states. Thus, OSMRE has failed to fulfill its duties to ensure against jeopardy and adverse modification for the candy darter, in violation of Section 7(a)(2) of the ESA.

With no valid take coverage for

the candy darter, OSMRE, West Virginia DEP, and South Fork Coal Company may be subject to liability under Section 9 of the ESA for any take of candy darters. As discussed above, failure to comply with the terms and conditions of the 2020 BiOp and incidental take statement expose the agencies and any private actors to liability.

Here, none of the parties have complied with the terms and conditions of the 2020 BiOp, as they have failed to develop and implement an adequate PEP for the candy darter prior to authorizing or commencing actions that harm the candy darter. West Virginia DEP has failed to provide a timely proposed PEP to FWS; FWS has failed to timely review or help finalize any candy darter PEP from WV DEP; and OSMRE has failed to oversee and enforce proper implementation of Title V of SMCRA by West Virginia DEP. These facilities should be shut down until they can be shown to comply with the law.

In Sum

Ultimately, when you get down to it, there should be no coal mining in this area at all. The restoration and preservation of these watersheds is simply too important for the candy darter and our collective futures to let South Fork Coal Company pillage, pollute, and then run away.

To quote a hero of mine, Judy Bonds, "God made Mountaineers. Man – and greed– made coal [companies]... But we were Mountaineers long before we were coal miners, there was a love and connection to this land long before they went in there and set blasts and dug coal...My mother was never one to shut up about an injustice. My mother

always spoke up. My family comes from Scots-Irish heritage – scrappy people– and we don't shut up. Going back centuries, we fought for our existence... And I'm going to let a coal company destroy that? Why would I do that? We Won't Shut Up."

Breaking the resource extraction-based extinction cycle here in the South Fork Cherry River and Laurel Creek can start by all of us Mountaineers choosing to fight for our way of life and a just future that is deeply rooted in the historic defense of place and people. It's not simply about the mountains or the streams, it's about our collective existence and moral responsibility to one another as human beings. It's about speaking truth to a corrupt power that is, and always has been, determined to beat us down as people and destroy the world around us while the money flows away to shareholders in far-off cities. We cannot sit idly by and watch while one coal company poisons the people and creatures below and around them. If we do not fight back when we see this kind of injustice, we are no different than the people at South Fork Coal Company doing the poisoning.

Again, extinction is forever, but it is a choice and we have the means to stop it. We can change the path we are on, although the hour is getting late. For this to happen, the responsible agencies must finally embrace their moral and legal responsibilities above the wishes of a rogue coal company focused on the almighty dollar. But once the laws are enforced as they should be, the agencies will almost certainly realize this area is unsuitable for coal mining, as it can't be done within the requirements of the law.

The right thing is for the land to be given back to the American people as part of the Monongahela National Forest. We won't shut up until that day comes, and we are going to fight tooth and nail for the places, people, and culture that we love. It's in our blood.

Read part one and two in this series in the October and November 2023 issues of The Highlands Voice.

Paeon to West Virginia Backroads

By Bonnie Thurston

Geography is our glory, but road building's a challenge. Always has been. Still is. This contributes to our tendency to isolate, to be by nature suspicious. Why not? Incomers have raped our mountains, carried off our resources like spoils of a war we lost.

Winding down a narrow state road, I was struck by the recent addition of signs ("Copperhead Drive," "Hummingbird Lane") by previously anonymous strings of little houses that wind up hollars to which UPS can now deliver junk from China.

This mountain's mama has a predilection for anonymity, a fiercely protective gene that prefers unnamed backroads, that don't warn strangers "here be serpents," or "that next curve's a killer," that don't invite outsiders to the magic of hummingbirds in wild honeysuckle.

A West Virginia Native Species Lost

On Nov. 16, 2023, the United States Fish and Wildlife Service officially declared the tubercled-blossom pearly mussel (*Epioblasma torulosa torulosa*)—a freshwater mussel once abundant in large eastern rivers from south Ontario in Canada to Alabama—as extinct.

The last documented tubercled-blossom was collected from the Kanawha River below Kanawha Falls in West Virginia in 1969. The shell of the tubercled-blossom was smooth and shiny, traced by beautiful brown and golden-hued rings.

Living their lives at the bottom of riverbeds, freshwater mussels constantly filter water as they breathe and feed. According to the Center for Biological Diversity, they actually improve water quality by filtering out bacteria, algae and pollutants, but in doing so they accumulate contaminants in their bodies.

Freshwater mollusks are the most endangered group of organisms in the United States because of their delicate sensitivity to water pollution. The Fish and Wildlife Service named pollution from strip mining, coal washing, dredging, logging, farming, road building, industrial-related pollution and dam-building as the main contributors to their decline.

The Highlands Voice: It's Not Just for Reading Any More

The Highlands Voice is the main way that the West Virginia Highlands Conservancy communicates with its members. But we would like to communicate with more than our members. We have a valuable perspective and information; we would like to communicate with everybody. We still offer electronic delivery. If you would prefer to receive it electronically instead of the paper copy please contact Crys Bauer at membership@wvhighlands.org. With electronic delivery, you will receive a link to a pdf of the Voice several days before the paper copy would have arrived.

No matter how you receive it, please pass it along. If electronically, share the link. If paper, hand it off to a friend, leave it around the house, leave it around the workplace. It's not just for reading. It's for reading and passing along.

Methane Leaks and ARCH2: A Problem Not Yet Solved

By John McFerrin

If we don't get methane leaks under control, the Appalachian Regional Clean Hydrogen Hub (ARCH2) will be a failure.

Introduction

The Appalachian Regional Clean Hydrogen Hub is not a single facility but a series of about fifteen facilities scattered around West Virginia and adjoining states. What these facilities all have in common is that they involve the use or production of hydrogen as a fuel or as a raw material for other manufacturing. They also have in common that they will be subsidized—at least initially—by the United States Department of Energy. In West Virginia alone, the Department of Energy has dedicated almost a billion dollars to this effort.

The justification for this public expenditure is that hydrogen can be valuable in reducing carbon dioxide emissions. There are several areas of the economy that are hard to decarbonize. These include heavy-duty transportation as well as steel and chemicals manufacturing.

If we can use hydrogen for some of these purposes, industries that are currently major emitters of carbon dioxide can become near-zero carbon dioxide emitters. The United States Department of Energy estimates that the Hydrogen Hubs all around the country will result in “Greenhouse Gas Reduction of 25 million Metric Tons Per Year.” Office of Clean Energy Demonstrations presentation, October 23, 2024. This is for all seven Hubs around the country, not just the one centered in West Virginia.

The facilities that make up ARCH2 are just proposed. They have not been finally approved and may never be. Lots of ideas never work out, whether from bad planning, a change

in market conditions, or dozens of reasons large and small. Who can forget the \$84 billion that a Chinese firm was going to invest in a “natural gas hub” in West Virginia. In 2017, Governor Justice was doing a happy dance about “the largest investment in our state’s history.” Since then, nothing. And who can forget Hyperloop, another “game changer.” That had Governor Justice doing another happy dance in 2020. Nothing came of that either.

That nothing beyond the announcement of these, and many other projects never materialized may not be anybody’s fault. They just illustrate the uncertainty of any project. ARCH2 could be a great success; it could end up on the same scrap heap.

All we can say for certain is that the future of the ARCH2 is uncertain. Nobody knows all the stumbling blocks that will appear along the way and how well we will be able to overcome them.

There are, however, two stumbling blocks that we know are there. If we don’t figure out how to overcome them, ARCH2 will never meet its goals.

Stumbling Block Number 1: Carbon Capture and Storage Does Not Work

Most hydrogen comes from either water or natural gas. In a process called electrolysis, water can be split into hydrogen and water. Using different processes, methane can also be divided.

Most of the projects that make up ARCH2 involve taking natural gas, which is mostly methane, and splitting the methane into hydrogen and carbon dioxide. Putting that hydrogen to useful purposes is one of the goals. The other is to do something with the carbon dioxide so that it is not released into the air. Since reducing emissions of carbon dioxide is one of the goals of ARCH2, it cannot be a success unless it uses the

hydrogen and avoids releasing the carbon dioxide into the air.

The current plan for avoiding releasing carbon dioxide is carbon capture and storage. It is only theoretical. According to the theory, it should be possible to keep carbon dioxide out of the atmosphere by capturing it and injecting it deep underground. In practice, nobody has ever done it, at least not on the scale and with the level of success that ARCH2 contemplates. A future Highlands Voice article will discuss in more detail the potential and pitfalls of carbon capture.

Stumbling Block Number 2: Methane Leaks

Methane is the main component of natural gas; it is the gas that would be used by ARCH2 to produce hydrogen.

Methane is also a potent greenhouse gas. Although carbon dioxide lasts longer in the atmosphere, over the next 20 years methane is 80 times more potent as a greenhouse gas than is carbon dioxide. The point of ARCH2 is to reduce greenhouse gas emissions by converting methane into cleaner-burning hydrogen. If, in the course of converting methane into cleaner-burning hydrogen, we allow methane to be released, the increase in greenhouse gases will soon overwhelm any savings that result from burning hydrogen rather than natural gas. One pound of methane leaked anywhere in the hydrogen production process will offset as much as 80 pounds of carbon dioxide that might be saved by using hydrogen as a fuel instead of natural gas.

The calculations by the United States Department of Energy are that, nationwide, the Hydrogen Hubs will result in a reduction of 25 million tons of greenhouse gases per year.

The calculations assume, how-

ever, that the natural gas and the methane that makes it up will somehow jump out of the ground and make it to the Hydrogen Hub for processing with very few leaks.

This assumption is unrealistic. Methane leaks all along the natural gas supply chain. It leaks at the well head; it leaks along the pipelines; it leaks at compressor stations. Because methane is colorless and odorless, leaks are not always detected. The U.S. Environmental Protection Agency estimates that 1.7% of the methane produced by the natural gas industry is leaked. This is almost certainly a low estimate. Researchers at Stanford University have published data which suggests that in some areas 9% of a well’s production is leaked. There are other estimates lying between these two extremes. If methane is 80 times more potent as a greenhouse gas than is carbon dioxide, the greenhouse gas emissions from leaks could overwhelm any greenhouse savings that may come from extracting hydrogen from methane and using that as a fuel.

Fortunately, this is a fixable problem, at least to some extent. There are new detection technologies being developed all the time. There are operational and maintenance steps that gas companies could take, although they haven’t yet. Taking all of these would not stop all leaks and may or may not stop enough to make Hydrogen Hubs worthwhile. If the steps are not taken, however, the Hydrogen Hubs are not going to be effective in addressing global warming. Even if we solve the problem of disposing of carbon dioxide, ARCH2 will never help slow climate change so long as it leaks the much more potent greenhouse gas: methane.

Note: to learn more about the ARCH2 project, go to arch2hub.com

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.

Bird Banding at Dolly Sods Resumes After Year-Long Hiatus

Brooks Bird Club, headquartered in Wheeling, has been supportive of the West Virginia Highlands Conservancy since our beginnings. Chuck Conrad, administrator of Brooks Bird Club for decades, was one of nine signers of our articles of incorporation. So, we are happy to report on an updated effort connected with the folks at Brooks Bird Club.

After a year's hiatus, the Allegheny Front Migration Observatory (AFMO) bird banding station reopened on August 26, 2023, and closed on October 12, 2023. Lead banders Lejay Graffious and Bob Dean were assisted by many other volunteers to revitalize the research project near Red Creek campground at Dolly Sods. Of the 2,716 birds banded this year, 57 species were tagged, predominately warblers. Newer protocols have been initiated, which do even more to protect the well-being of the birds during capture, data collecting and release.

The Allegheny Front Migration Observatory is North America's oldest continuous bird banding station.

The West Virginia Highlands Conservancy made sure to include a field trip to Allegheny Front Migration Observatory at our 50th reunion and has recently made a contribution to the station.

Other groups and individuals who wish to donate may do so with checks directed to The Brooks Bird Club, PO Box 4077, Wheeling, WV, 26003, with "AFMO donation" on the check memo line.

To learn more about Brooks Bird Club and the Allegheny Front Migration Observatory, visit brooksbirdclub.org



Become a Dolly Sods Wilderness Steward!

Sign up today at bit.ly/DollySodsWildernessStewards

Leave a legacy of hope for the future

Remember the Highlands Conservancy in your will. Plan now to provide a wild and wonderful future for your children and future generations. Bequests keep our organization strong and will allow your voice to continue to be heard.

Your thoughtful planning now will allow us to continue our work to protect wilderness, wildlife, clean air and water and our way of life.

Plugging Orphaned Oil and Gas Wells

By John McFerrin

The problem

Orphaned gas wells are everywhere. There are about 6,500 gas wells in West Virginia that are no longer producing and need to be plugged. West Virginia currently has a program to plug these wells and a stream (or a trickle) of money to pay for it. The difficulty is that West Virginia's program is only big enough to plug a couple of handfuls of wells each year. At a rate of a couple of handfuls per year, it will take a long time to get to 6,500.

The Bipartisan Infrastructure Investments and Jobs Act, passed by Congress in late 2021, gives West Virginia a boost toward solving this problem. It provides money to plug these old wells.

None of the state efforts, even with the support of federal grants, would be enough to solve the problem of old wells. This is particularly true if we continue to allow wells to be drilled for which no one is able or willing to be responsible. To get out of the hole we are in, we must first stop digging.

A part of the solution

In 2021 the legislature considered the Orphan Oil and Gas Well Prevention Act of 2022; it will almost certainly consider similar legislation this year.

West Virginia already has thousands of oil and gas wells that are no longer producing and need to be plugged. Many of the abandoned wells are leaking methane, a greenhouse gas, as well as other toxic materials. There are additional dangers when the abandoned wells are close to a well where hydraulic fracturing [fracking] is going on. The fracking can push oil or salty water up unplugged wells.

While the Orphan Oil and Gas Well Prevention Act would not plug those wells that are already abandoned, it would prevent any more wells from being abandoned. If these thousands of orphan wells are a hole what West Virginia finds itself in, the Orphan Oil and Gas Well Prevention Act is an attempt to stop digging.

The Act approaches the problem through requiring that operators set aside the money to plug the well as the well is being drilled. As part of the application for a permit to drill a new well, the operator must establish an escrow account with the West Virginia Treasurer. As the drilling continues, the operator is required to pay into the account in an amount determined by the West Virginia Department of Oil and Gas. The Department of Oil and Gas sets the rate at which operators must pay into the account, considering such things as the cost of plugging the well, estimates of inflation in plugging costs, and production of the well. When the Department of Oil and Gas determines that the well has been plugged, it can return the money in the escrow account to the operator.

The process is straightforward for new wells. The Act also accounts for other phases in the life of an oil or gas well.

While the gushers we see in movies occur only at oil wells and in the movies, it is true that production is usually strongest early in a well's life. It diminishes over time until it stops altogether or becomes so low that it is not profitable. The Act addresses wells at various stages of their lives.

As wells proceed through the stages, they are often transferred from one operator to another. The Act addresses this. It requires that the company which transferred the well keep the responsibility for plugging the well until the company which bought the well establishes an escrow account to pay for future plugging. The Act also address wells that are a problem at the time of transfer. If a well is causing air, surface, or water pollution the previous owner must plug it if the new owner does not.

Gas wells routinely reach a stage in which they no longer produce gas in what the Act calls paying quantities. Even without considering the cost of drilling the well, some wells produce so little gas that its value is less than the cost to produce it. The Act requires that

any operator who has a well that produces gas in paying quantities pay into an escrow account to pay for its plugging.

The Act also addresses the question of what to do when a newer well drains gas from an area where there are already existing gas wells. This would typically occur when a hydraulic fracturing well is proposed to be drilled in an area where there are already conventional wells. In such a situation, the Act requires that the operator of the new well plug the existing wells.

Isn't this just another form of bonding?

Establishing an escrow account for future plugging with the West Virginia Treasurer sounds similar to requiring that the operator post a performance bond to assure plugging. This is the model the coal mining industry uses. While the mining industry bonds have their problems, that is one model.

The bonding model only works if there are insurance companies who are willing to insure the risk of a mine being unreclaimed. Typically, mining companies pay insurance companies to post the bond. If the mine is unreclaimed and the bond is forfeited, the

insurance company pays.

In the oil and gas business, insurance companies are reluctant to post bonds. Because of this reluctance, bonds to assure plugging are not a good solution. Requiring an escrow account is an alternative.

Note:

This article originally appeared in the December 2022 issue of The Highlands Voice. As a testament to the magnitude of this problem, the issue of plugging orphaned oil and gas wells is once again a priority for West Virginia environmentalists.

In 2023 HB3110 (Funding for the Office of Oil and Gas in the Department of Environmental Protection) was another closely watched bill that was finally passed on day 60. It will provide increased annual funding to hire more inspectors and properly manage oil and gas wells. The bill doubled the Office of Oil and Gas funding, increasing the number of inspectors from ten to around 20. This is a positive step in the right direction (building on SB480 from last year) and hopefully can be improved even further in 2024.

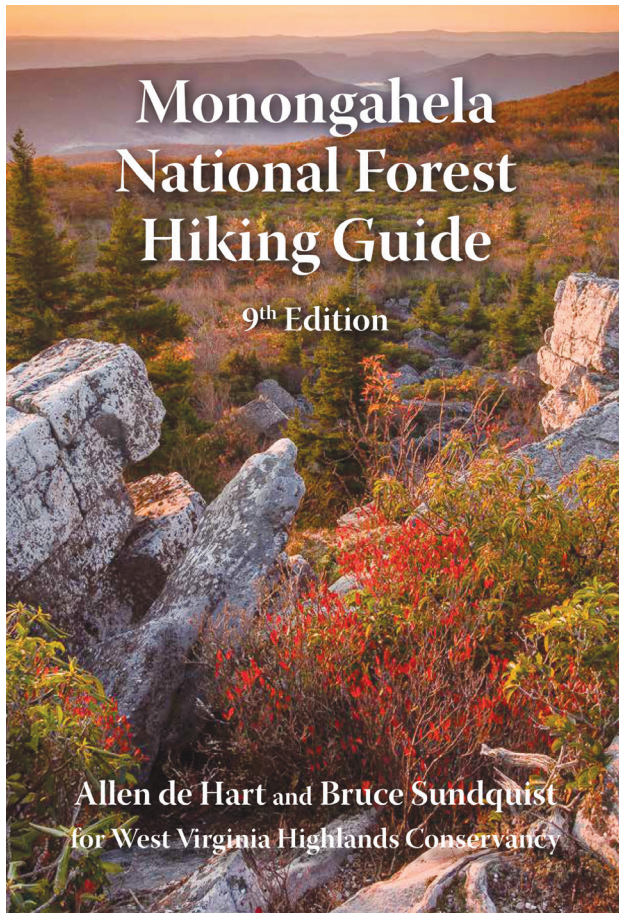
2023 Year in Review: WVHC Committee Updates *continued from page 3*

young, but it is mighty! Since its development in early 2023, the Grant Committee has already seen a lot of success. Specifically, we were awarded a recent grant from the Appalachian Forest National Heritage Area to develop a Highlands Creatures coloring book, which aims to get children involved in protecting and preserving the Appalachian Highlands. The Highlands coloring book project funded by AFNHA is just one example of our commitment to engaging the next generation in en-

vironmental stewardship.

Our committees are at the heart of driving the Conservancy's initiatives and campaigns forward. We are always looking for volunteers to join committees. Send an email to director@wvhighlands.org if you are interested in joining a committee in 2024 and helping advance our mission!

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.

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