



Heartwood
PO Box 352
Paoli, IN 47454

Stories of People Helping People Protect the Places They Love • Since 1991

Spring 2024

Direct Actions Hinder Construction of the Mountain Valley Pipeline

by Matt Peters



APPALACHIA – A series of direct actions in late January and early February blocked construction of the Mountain Valley Pipeline in the Jefferson National Forest. Braving not only the legal consequences but also the winter’s cold, mothers rallied under the banner Mountain Mamas locked themselves to equipment and stopped work for each day these actions took place.

The MVP have lost their construction permits many times over the last six years, but each time it has been reinstated with no real plan to protect the land, ecosystems, and communities in the pipeline's path.

Photos by Appalachians Against Pipelines



Above: Mama Julz of the protest group Mountain Mamas locks herself to a helicopter used to transport workers to a remote construction site on Poor Mountain, VA. “Without water there is no life,” stated Oglala Lakota land defender Mama Julz. “Violence upon our Mother Earth is violence against our sisters. These man-camps bring violence, all mothers everywhere need to stand up and join this movement.”

Right: Madeline Ffitch prevented Mountain Valley Pipeline from drilling under the Appalachian Trail in the Jefferson National Forest for nearly 8 hours.

“I take my cues from other mothers who make great sacrifices everyday to protect their children and families,” said Madeline. “I’m thinking right now in particular of mothers and families in Gaza trying to protect their children while the bombs are falling, knowing that no one in power is standing up for them and their families like they should. And I also have a huge amount of respect that Appalachian families, especially Appalachian women, have been pushing for years to make sure there is clean water and clean air for their children to drink and breathe in a place that is too often seen as a sacrifice zone. I think mothers have common sense, fearlessness, and a no-nonsense sensibility to bring truth to power.” Both Madeline and Mama Julz were held in jail for several days, denied bail although their arrest charges were misdemeanors.

Bottom photo: Solidarity rallies were held in several cities around the Heartwood region. Climate mourners dressed in sackcloth and ashes are part of a march and rally with about 50 people in Pittsburgh, PA at the headquarters of PNC Bank and EQT, major corporate funders of the pipeline. During the protest, a bouquet of helium balloons was released in EQT’s lobby, attached to a bluetooth speaker that played the sound of chainsaws destroying the forests of Appalachia.

See related story on page 18



photo by Matt Peters

Biden Administration Moves to Protect Old-Growth Forests

Environmental Groups Welcome Needed Action on Old Growth, Urge Future Action on Mature Forests

by Randi Spivak



WASHINGTON, DC — The Biden administration announced a proposed nationwide forest plan amendment to advance protections for the last remaining old-growth trees in US national forests. The announcement marked the beginning of a 45-day public comment opportunity that extended until February 2, 2024.

President Joe Biden has said these trees are critical components of the nation’s fight against the climate and extinction crises. The proposal, if adopted, would add new restrictions on logging and is a step toward fulfilling the promise of the president’s April 2022 executive order, which directs the departments of Agriculture and the Interior to address threats to mature and old-growth forests on federal lands as a natural climate solution and develop policies to conserve them.

Members of the Climate Forests Campaign, a coalition of more than 120 organizations working to protect mature and old-growth trees and forests on federal land, welcomed the announcement as an important step forward while urging the Forest Service to pursue steps to protect mature trees. Both old-growth and mature forests are essential to removing climate-warming carbon pollution from the air and storing it, safeguarding wildlife, and providing clean drinking water for our communities.

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Heartwood Prepares to Sue the Forest Service Over Salvage Logging in Hoosier National Forest

by Andy Mahler



INDIANA – Summer storms fueled by climate change sent three tornadoes through Orange County, Indiana in August 2023, damaging buildings in downtown Paoli – including the historic Orange County Courthouse, built in 1850 – and significantly affecting the nearby Hoosier National Forest. As a result, the Forest Service is proposing to conduct "salvage" logging on 138 acres of the 632-acre Paoli Experimental Forest damaged by the storms. The Pioneer Mothers Memorial Forest, an 88-acre fragment of original forest, was also affected by the tornadoes.

Protect Our Woods and Heartwood recently wrote joint comments on behalf of our members, with support from fifteen other organizations and more than one hundred individuals, including adjacent landowners, opposing the Forest Service plan to conduct “salvage” logging in the Paoli Experimental Forest.

Among the concerns expressed were ongoing site-preparation work being done prior to public comment, environmental analysis, or a final decision, and failure to disclose such financial and administrative considerations as timber targets and retention of timber sale receipts by the agency.

Foremost among these concerns is the presence of significant areas of mature and old-growth forest in the

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Heartwood welcomes any and all volunteer contributions to this publication from the grassroots community. Opinions expressed by the author are those of the author of that article. Deadline for fall issue contributions is on or about August 2 for publication September 1. Send us your campaign updates, photos, commentary, satire, art, poems, politics, polemics, rants, or recipes to info@heartwood.org

more info on our website:
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Power to the Possums!

Join the Heartwood coordinating council!

Help defend forests in your state or bioregion by helping Heartwood provide the member services and network support that has protected forests in the eastern US since 1991!

We welcome nominations for candidates to join the Heartwood Coordinating Council

We invite our member groups to nominate new candidates for the Heartwood Coordinating Council. This is the governing body of Heartwood, which maintains the essential work of the organization.

We provide guidance on strategy and tactics, and steward the Zero Cut vision for the forest and climate movement.

We meet once a month via zoom or conference call.

The Heartwood region includes the eastern hardwood forest region from Appalachia to the Ozarks, and all the rivers that flow between them. The issues of the day that affect our forests extend the scope of the Heartwood circle to include everyone who loves forests and wants to help protect and restore them.

There are many ways to help Heartwood grow. The coordinating council has several standing committees that focus on particular aspects of the work we do: Forest Watch, Publications and Media, Membership, Events, and Minigrants. Volunteer with one of these committees that suits your interests and skills.

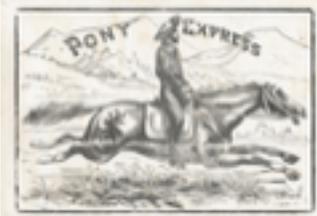
Send your nominations to info@heartwood.org.



There is a seat for everyone in the Heartwood circle!



HEARTWOOD
has a new
mailing address:



HEARTWOOD
PO Box 352
Paoli, IN 47454



Heartwood was conceived by a group of friends gathered around the kitchen table one winter night at the end of 1990, and born in May of 1991 when the first Heartwood Forest Council was held over the Memorial Day holiday weekend. Heartwood began as a network of a few small grassroots groups working on the common problem of how to stop logging in their nearby national forests. Heartwood quickly expanded to include most of the hardwood forest bioregion that covers eastern North America, from the Appalachians to the Heartland to the Ozarks.

Heartwood grew rapidly as an organization because it filled a need in the environmental community. Our commitment to a Zero Cut philosophy provides a simple, well-reasoned principle, grounded in good science and ecological sensibility. An end to commercial logging on public lands means maximizing their potential for providing low-impact recreation opportunities, the foundation for a sustainable economy in most states in the Heartwood region where outdoor tourism and recreation provides up to five times the number of jobs, and three times as much tax revenue as extractive industries, such as logging and mining combined. Zero Cut means letting Nature guide the “management plan” for public forests, not government agencies polluted with corporate interests. Zero Cut means letting our public forests grow old and regenerate naturally, sequestering carbon as they provide clean water, clean air, and a place to find solace and serenity.

Today, the Heartwood network includes people working to protect not only our national forests but also state forests, urban forests, forests threatened by pipelines and gas drilling and coal mining, and the rapidly expanding plastics industry. The Heartwood network includes citizen activists from all walks of life, as well as experts and professionals in their fields such as climate scientists, forest ecologists, policy experts, and environmental lawyers. It includes well-funded organizations with lots of staff, it includes small groups of citizens who haven't yet decided on a name. It includes the lone voice for the wilderness and offers a community of support to help protect these natural and wild places that we love.

The scale of these emerging threats to our forests requires us to respond with a coordinated, cooperative, inclusive movement that demands more than a halt to the madness. Heartwood seeks to provide a vision for genuine solutions, an alternative way of living in harmony with all the species that call this planet Home.



MEMBER SERVICES

Heartwood offers a variety of services and network support to our members and member organizations. This newspaper that you hold in your hands is perhaps our most tangible service. The power of this simple tool to build community is all but lost in an increasingly digital age. A copy is free with membership, and often free without it.

We invite individual activists and grassroots citizens' organizations to apply for our **Minigrants Program**, a great way to cover gas money for forest watch expenses, costs associated with a direct action campaign, or to help show a larger funder that you have support from a variety of sources. You can find more information about the program guidelines and how to apply online at <https://heartwood.org/minigrants/>.

Heartwood offers **fiscal sponsorship** to new and emerging grassroots organizations that need 501(c)3 status to be able to get grants from foundations and green corporate donors. Heartwood takes a small administrative fee for non-members and an even smaller fee for groups that have joined the Heartwood network as a member, and we are happy to join with you on collaborative grants to fund programs where we might play a more active supporting role.

Other membership perks include free column inches and advertising space in *Heartbeat*, and all the spiritual and emotional perks of being a part of the most passionate and visionary network of forest defenders and wilderness advocates in the US today.

Our minigrants program and other membership support services depend almost entirely upon the donations we receive from the grassroots community. We are proud to say that Heartwood is funded almost entirely by contributions from our membership. That is a powerful expression of the strength and connectivity in the Heartwood community. This is why we gather twice each year. This is why we rise together to protect the places we love. Please see the Center Page for information about this year's gathering. We'd love to see you there!

Dreams of Spring

Ripe seeds fall on moss covered land
 Rich black soil sifts through hands
 Flowers of the breeze lightly dangle
 Nodding from stems that are angled
 Dutchman's breeches hang in a row
 Trilliums quietly make a show
 Violets grow in the blue-eyed grass
 Dewdrops shimmer as if made of glass
 Splendid broad leaves twist and bend
 The unfurling ferns start to extend
 Bleeding hearts of love and respect
 Trout lilies with fishlike specks
 Shooting stars burst open with flair
 Whispers from fluted bells in the air
 Buttercups fill and start to pour
 Sweet William covers the woodland floor
 Spring beauties with slender tubes
 Patches of blossoms that enhance the view
 Jack in the pulpits stretch and yawn
 As songs of many birds greet the dawn

Teresa Harris
 Illinois



2023 Minigrant Award Recipients

Thanks to a year of generous contributions from our membership and other successful fundraising efforts, Heartwood was able to award five Minigrants at the end of 2023 to celebrate a successful year of campaigns and build connection and capacity in the forest defense community.

Awards were granted to each of the following organizations:

- 1. Appalachians Against Pipelines**, \$500 to help support a season of direct action campaigns to stop construction of the Mountain Valley Pipeline. See front page story.
- 2. Tennessee Heartwood**, \$500 for their work to stop salvage logging in the Land Between the Lakes under the guise of “emergency exemption”. Read more about this story in the Fall 2023 issue of *Heartbeat*.
- 3. Kentucky Heartwood**, \$500 to help pay for their latest lawsuit to stop logging in the Daniel Boone National Forest. You can read more about the Red Bird timber sale in past issues of *Heartbeat*, archived on our web site at heartwood.org/heartbeat/.
- 4. Coal River Mountain Watch**, \$500 to help pay for renovations at the Judi Bonds Center for Appalachian Preservation. Learn more about the Judi Bonds Center and their work to stop mountaintop removal on their web site, <https://www.crmw.net/projects/judy-bonds-center-for-appalachian-preservation.php>.
- 5. Buffalo Trace Preservation Group**, \$500 to support archaeological surveys along the Buffalo Trace in southern Indiana. These surveys identified 20 archaeological sites along the Buffalo Trace in the Hoosier National Forest that need to be protected from the massive logging and herbicide proposed by the US Forest Service in the Buffalo Springs project area.

Heartwood welcomes applications to the minigrants program any time of year. To apply, send us a Letter of Inquiry outlining your project to info@heartwood.org, or to our PO Box 352, Paoli IN 47454. More information can be found on our website, see heartwood.org/minigrants/.

Book Review

by Douglas Bevington

Smokescreen: Debunking Wildfire Myths to Save Our Forests and Our Climate

If you read only one book about wildfire issues, I recommend that it be *Smokescreen: Debunking Wildfire Myths to Save Our Forests and Our Climate* (University Press of Kentucky, 2021) by Dr. Chad Hanson. This book exposes how misinformation about fire is leading to bad policies that harm forests and increase global warming. *Smokescreen* then points the way to genuine solutions.

Dr. Hanson is a scientist at the forefront of fire ecology research. He is also the director of a grassroots forest protection organization, so he understands the on-the-ground implications of fire science. In *Smokescreen*, he interweaves his own personal experiences with exploration of many exciting scientific discoveries, making for an informative, accessible, and engaging read.

The central message of *Smokescreen* is that the timber industry, the US Forest Service, and their allies are using misinformation to push for more logging of national forests under the guise of fighting “catastrophic”

wildfires. However, more and more science is revealing that our forests have evolved with big, intense fires. Indeed, many animals and plants benefit from the great habitat created by these fires. In contrast, logging done under fire-related pretexts is the real catastrophe, destroying forests and imperiling wildlife.

In addition to causing ecological damage, logging under fire-related pretexts also damages our climate, releasing stored forest carbon into the atmosphere. In contrast, fire circulates forest nutrients, stimulating new growth and more carbon sequestration. *Smokescreen* shows how fully protecting national forests from logging is an integral part of an overall solution to the climate crisis. Just as climate justice activists who challenge public lands fossil fuel extraction declare that we must “keep it in ground,” likewise, when faced with public lands logging, we need to make parallel calls to “keep it in the forest.”

While debunking wildfire myths is crucial for saving our forests and our climate, *Smokescreen* shows it is also needed to save our communities. Communities built next to fire-dependent ecosystems are being falsely told that more logging will keep them safe, but the reality is that logging can actually increase fire speed and intensity. In contrast, non-logging actions directly in and around homes – such as installing low-cost vent screens to keep out flammable embers – can be highly effective in protecting communities during intense wildfires.

Dr. Hanson also devotes a chapter of *Smokescreen* specifically to the role of fire in the eastern US. Here he explains why many eastern land managers “mistakenly believe that historical fire frequencies were much higher than they really were. This leads to forest mismanagement, including the imposition of prescribed burns at rates that far exceed natural historical fire frequencies...”

By exposing fire myths and then presenting real solutions, *Smokescreen* ultimately offers a positive pathway. As Dr. Hanson wryly notes, “Now for the good news: you are being deceived. If everything you were told almost daily about forests, wildfires, and climate were true, there would be little hope. The truth, however, is that hope lies just beyond the falsehoods.”

This article was originally published in Heartbeat, Fall 2021.



Lawsuit Launched to Protect Rare East Tennessee Salamander

by Chelsea Stewart-Fusek



KNOXVILLE, TN — The Southern Environmental Law Center, on behalf of the Center for Biological Diversity, notified the US Fish and Wildlife Service it intends to sue over the agency’s denial of Endangered Species Act protections to East Tennessee’s imperiled Berry Cave salamander in February of this year.

“These special little salamanders can’t adapt quickly enough to the many threats they face, and they urgently need the Endangered Species Act’s strong safeguards,” said Chelsea Stewart-Fusek, an associate attorney at the Center for Biological Diversity. “The Fish and Wildlife Service’s poorly supported decision to deny protection to the Berry Cave salamander could spell their demise in the face of climate change and unchecked pollution.”

Despite the Berry Cave salamander’s dwindling numbers, in 2019, the Service removed the animal from a list of candidates for protection under the Endangered Species Act. This surprising decision disregarded the salamander’s precarious status and contradicted the agency’s earlier determinations that the salamander warranted protection as an endangered species.

At the time of the denial, prior regional leadership in the agency’s Southeastern office had directed staff to implement a quota system setting annual targets for denying species protections. This quota could have influenced the Berry Cave salamander decision and resulted in other, already-listed species being stripped of protection.

Rare West Virginia Salamander Proposed for Protection

by Will Harlan



CHARLESTON, WV — Following 13 years of advocacy by the Center for Biological Diversity and allies, the US Fish and Wildlife Service proposed to protect the West Virginia spring salamander as endangered in December 2023. The Service also proposed designating 2.2 miles of caves and streams in Greenbrier County as critical habitat for the endangered salamander.

The salamander lives in only one cave and stream system in Greenbrier County, and fewer than 300 of the animals remain.

“I’m thrilled that these critically imperiled salamanders are getting the protections they urgently need,” said Will Harlan, a senior scientist at the Center. “These unique Appalachian salamanders have been around for millennia, but now the single cave and stream where they survive is imperiled by increasingly severe flood events that threaten both salamanders and human communities.”

West Virginia spring salamanders have exceptionally large gray bodies with pale spots. They are one of the few cave salamanders to undergo complete metamorphosis from an aquatic larvae to a land-dwelling adult. After metamorphosis, adults are completely blind, yet they can feed on insects and other invertebrates in the stream flowing through their cave.

Logging and sedimentation threaten the health of their only stream. Logging causes sediment and runoff to clog the stream, which could make it uninhabitable for the salamander. The Service’s proposed critical habitat will help ensure that the salamander’s cave, stream, and surrounding forested habitat are protected.

The Center petitioned in 2010 to list the West Virginia spring salamander under the Endangered Species Act. Their populations, already reduced by overcollection in the past, have continued to decline in the past decade. In addition to major flood events, logging and stream pollution, climate change, agricultural pesticide runoff, and poaching also threaten the salamander’s survival.

West Virginia’s rivers and streams are global hotspots for salamander biodiversity. The state is home to at least 34 species of salamanders, and the Appalachian Mountains contain more salamander species than anywhere else in the world.

“Safeguarding West Virginia spring salamanders will also help protect drinking water for West Virginians, along with some of the most important aquatic diversity on the planet,” said Harlan. “By protecting this salamander, we are protecting ourselves too.”

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Coal River Mountain Watch files suit to stop illegal mine permit extensions



by Vernon Haltom

NAOMA, WV – Coal River Mountain Watch is celebrating our official 25th anniversary February 19. This past year has been a doozy, but a productive doozy in our mission to stop the destruction of our communities and environment by mountaintop removal mining (MTR), to improve the quality of life in our area and to help rebuild sustainable communities.

In July 2023, along with allies from Sierra Club and Appalachian Voices, we submitted a ten-day-notice request to the federal Office of Surface Mining, Reclamation and Enforcement to compel the West Virginia Department of Environmental Protection to cease their illegal practice of granting unlimited extensions of time to abate violations. In the egregious example we cited, WVDEP granted 25 extensions over two years to abate a violation issued July 29, 2021 to Lexington Coal Company’s Twilight MTR permit on Cherry Pond Mountain. The law allows 90 days with specific exceptions, none of which applied. OSMRE agreed with us and found that WVDEP granted the extensions “without requiring the permittee to establish clear and convincing proof that he is entitled to an extension... Also, WVDEP has not complied with the provisions of 38-2-20.2c...” WVDEP agreed, and began issuing fines of \$750 per day up to 30 days for failure to abate within the required time. So now Lexington has over a half million dollars in fines from a stack of \$22,500 civil penalty assessments across their many permits in West Virginia, none of which have been paid. Lexington also has a stack of delinquency letters.

You’d think, with so many letters threatening revocation of permits, that WVDEP would not renew permits that were in violation. Not so fast. Lexington’s Crescent #2 permit, contiguous with the Twilight MTR permit, was suspended in 2022 for multiple patterns of violations. The suspension was lifted when Lexington abated their violations. Then they immediately began running up more violations. They received eight cessation orders and civil penalties amounting to \$30,450 in 2023 and paid none of them. On December 14, 2023, WVDEP held an online conference for folks to voice their opposition to Lexington’s application to renew Crescent #2, and they received more than 30 emailed objections. On January 2, WVDEP sent the order to Lexington to show cause why they should keep the permit. On January 3, WVDEP issued another violation. On January 9, WVDEP issued another six civil penalty letters to Lexington for this permit, totaling \$115,641. On January 12, WVDEP renewed the permit.

CRMW continues to monitor Lexington’s permits in our backyard, and to keep an eye on what appears to be their death spiral.

In more updates, our site monitor Junior Walk posted 130 videos, mostly of MTR and other coal operations, including some glaring violations – like the Coal River running gray – at <https://www.youtube.com/@StopMTR>.

We also had major structural repairs done in 2023 to our solar-powered office and community center, the Judy Bonds Center for Appalachian Preservation. Anyone wanting to chip in to defray the costs may do so at <https://secure.givelively.org/donate/coal-river-mountain-watch/judy-bonds-center-building-repairs-2023>.

Please also consider following us on Facebook, Instagram, and X (Twitter).

South Wings' Flights Support and Protect Appalachian Forests and Communities

by Laura Early



ASHEVILLE, NC – Since 1996, SouthWings has provided pro bono flights by bringing together volunteer pilots, organizations, agencies, and decision makers to provide a one-of-a-kind aerial experience. The flights we arrange offer a perspective that fosters understanding of the scale and the relationship of cumulative environmental effects, helping to better understand and solve the most pressing environmental issues facing our region.

The Southern Appalachians harbor some of the most exceptional biodiversity in the world, yet the region is also an epicenter of extractive industries and other threats. Over the years, our flights have exposed the devastation of mountaintop removal coal mining (MTR) to the world, and we recognize increased threats from the proliferation of natural gas development, including numerous energy pipelines. In spite of these threats, we also recognize opportunities to safeguard remaining pristine landscapes, advocating for habitat connectivity to protect wildlife and bolster ecosystem resilience to a changing climate.

This past year, we worked with long-standing partner Coal River Mountain Watch (CRMW) to monitor active MTR sites in West Virginia and gain media attention on the issue. On a flight with ADR German radio reporter Julia Kastein, they observed what appeared to be a violation of sediment control at Lexington Coal Company's Crescent Mine site. CRMW used aerial photos to report this and other violations to the state agency and the federal Office of Surface Mining, Reclamation and Enforcement, resulting in hundreds of thousands of dollars in fines to Lexington Coal Company across their many permits in West Virginia.

For years, CRMW has used SouthWings flights as one of the tools in their toolbox to continuously advocate for the protection of the environment against the harms of MTR.

“Southwings flights have provided us a view of mountaintop removal sites that we wouldn't otherwise have. We've been able to see and share the ongoing violations ... supporting our actions to have the practice of unlimited extensions ended and significant fines assessed,” said Vernon Haltom, Executive Director of CRMW.

We were also able to support a new flight partner, Friends of Blackwater, with two flights over a 10-mile proposed highway route from Davis to Mackey, WV, known as Corridor H. Friends of Blackwater are concerned the route will damage Blackwater Canyon, and they are advocating that WV Department of Transportation consider alternate routes.

Photos from the flight were used in the organization's newsletter, and they intend to use photos to build grassroots support and engage WVDOT in discussion. In August, they flew to document a proposed clear cut in the Monongahela National Forest.

We also continue to support the effort to stop the Mountain Valley Pipeline. Last year, we flew photographer Kristian Thacker along a significant portion of the pipeline route to gather photos and help inform Bloomberg Green's article: “Fear and Anger Follow the Path of Joe Manchin's Mountain Valley Pipeline.”

SouthWings looks forward to continuing to support efforts to protect the forests, ecosystems, and communities of the Southern Appalachians.

To request a flight to support your work, visit www.southwings.org/request-a-flight



Above: Flyovers reveal two potential violations of sediment control or downslope spoil requirements at the edge of Lexington Coal Company's Crescent #2. Photo by Vernon Haltom, CRMW. Flight courtesy of SouthWings Volunteer Pilot Scott Simonton.

Below: Corridor H construction. Holly Meadows area looking Southwest. Photo by Mark Moody. Flight courtesy of SouthWings Volunteer Pilot Don Sutherland.



Bottom photo: Lexington Coal Company's Crescent #2 mountaintop removal permit, renewed by WVDEP on Jan. 12 in spite of serious violations and unpaid fines. Photo by CRMW/Junior Walk.



Appalachia, Ohio River Valley Targeted for Industrial Buildout of Hydrogen Hubs



by Colleen O'Neil

PENNSYLVANIA – In October 2023, the Appalachian Regional Clean Hydrogen Hub (ARCH2) announced details of establishing a gigantic hub for methane-derived hydrogen production in Appalachia. (Funded with up to \$925 million from the US Department of Energy).

The map of the projects shows two dots in Pennsylvania. One, in Fayette County, is EQT's planned natural gas-derived hydrogen facility. EQT's facility would turn some hydrogen into aviation fuel and sell the rest to a French company for ground transportation fuel. The other is KeyState Zero's project in Clinton County, a project that will drill gas onsite, produce hydrogen, ammonia and urea production, and sequester carbon.

West Virginia has several projects planned, ranging from ammonia production to carbon capture and storage.

Pipelines are not yet on the map, as the hub companies wanted to see where demand develops before building infrastructure.

ARCH2 states that "The process of hydrogen capture, utilization, and storage will allow the Appalachian region to enhance our communities, create jobs, lower emissions, and fight climate change."

But should we be more skeptical? What is hydrogen, anyway? And how can it be used in an economy transitioning toward clean energy? Let's wander into the morass together.

WHAT IS HYDROGEN?

Hydrogen is an odorless, colorless gas that emits zero carbon when it's used to create energy, either through combustion or in a fuel cell. Hydrogen is being marketed as a way to reduce fossil fuel use (the main cause of global warming) in heavy industry, building, and manufacturing. But creating pure hydrogen takes a lot of energy.

"Grey hydrogen" is produced mainly from natural gas, using a process called steam reforming, which brings together natural gas and heated water in the form of steam. The output is hydrogen, but carbon dioxide is also produced as a by-product.

"Blue hydrogen" is also created using fracked natural gas and methane, but the carbon emitted is captured and buried deep underground.

"Green hydrogen" uses renewable energy from wind and solar to create hydrogen through electrolysis, a method by which electricity is used to extract hydrogen from water. No carbon is emitted in creating green hydrogen, but this method is too expensive for wide-scale use.

ARCH2 would primarily produce blue hydrogen.

BLUE HYDROGEN IS NOT A SUSTAINABLE SOLUTION

Since blue hydrogen is created using fracked natural gas, it will create more demand for fracking. We know this extraction technique involves significant environmental and public health risks.

According to the Ohio River Valley Institute, the hydrogen hub would also do a poor job of capturing climate-warming carbon. Carbon capture, ORVI argues, does nothing to reduce the "upstream" emissions that are produced when natural gas is extracted and transported, and carbon capture technologies are only expected to capture a maximum of 90% of plant and factory emissions (pilot projects are known to capture even less than that).

BUILDING HYDROGEN HUBS IS EXPENSIVE

ARCH2 is funded with a huge chunk of money from the Department of Energy, but it won't be enough to build these large-scale industrial facilities. The project is banking on clean hydrogen production tax credits (up to \$3 per kilogram of hydrogen) and the carbon sequestration tax credits (\$85 per ton of CO₂ captured and stored).

But defining what "clean hydrogen" is has been controversial. In recent months, organizations like the Institute for Energy Economics and Financial Analysis (IEEFA) and the ORVI have argued that ARCH2 isn't "clean" enough.

ENVIRONMENTAL GROUPS WEIGH IN

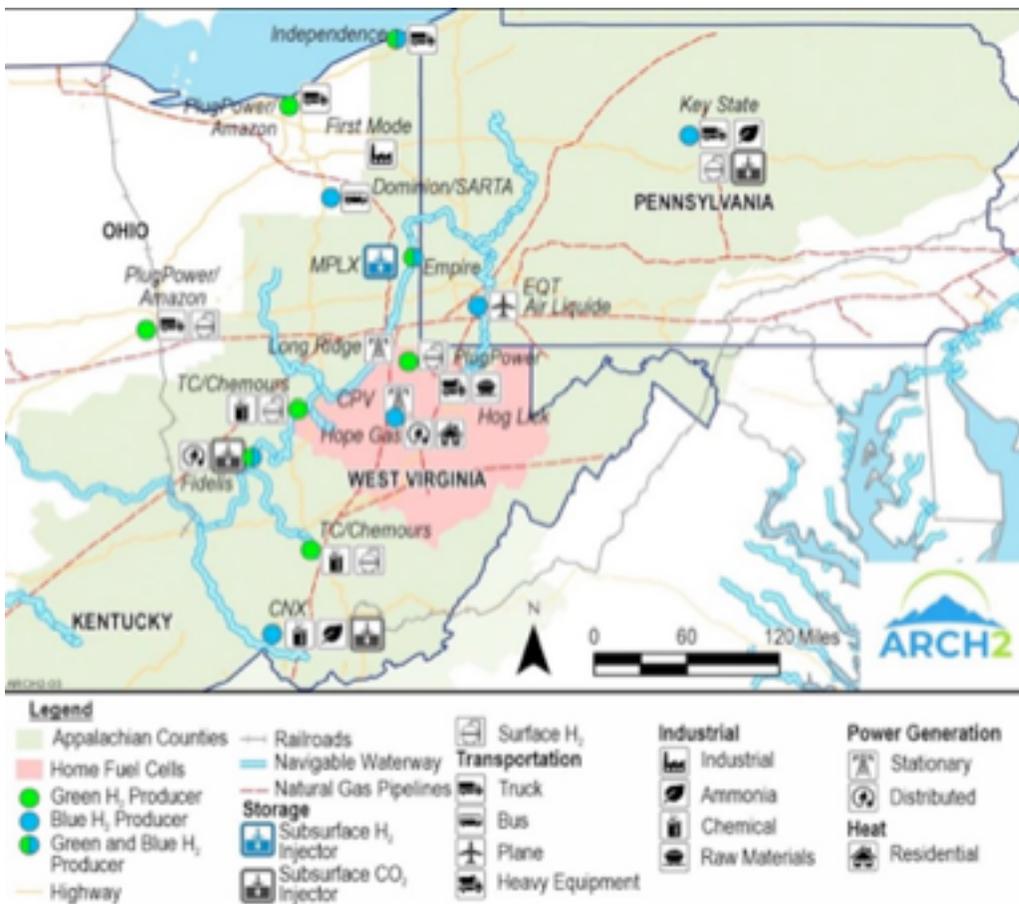
In a report released last month titled "Blue hydrogen: not clean, not low carbon, not a climate solution," IEEFA authors argued that the government has unrealistic expectations about the benefits of natural gas-derived hydrogen.

According to co-author and IEEFA analyst Anika Juhn, "there is significant risk that funding of blue hydrogen projects by the government and investors actually will make global warming worse by encouraging the building of projects that will emit large amounts of greenhouse gasses into the atmosphere for decades."

When federal funding was announced for ARCH2, the Ohio River Valley Institute wrote a pointed letter in response.

"As Appalachian natural gas production begins to plateau," the letter states, "and the region's largest gas-producing counties continue to lose jobs and residents, the prospect of generating economic prosperity through increased gas production and methane-based hydrogen development looks increasingly dim."

As this situation develops, Mountain Watershed Association will keep our communities updated on the movement of ARCH2 in Pennsylvania.



Hydrogen 101

A backgrounder on hydrogen and its uses in the Ohio River Valley.

Hydrogen's economic viability and carbon footprint depend on how it's produced:

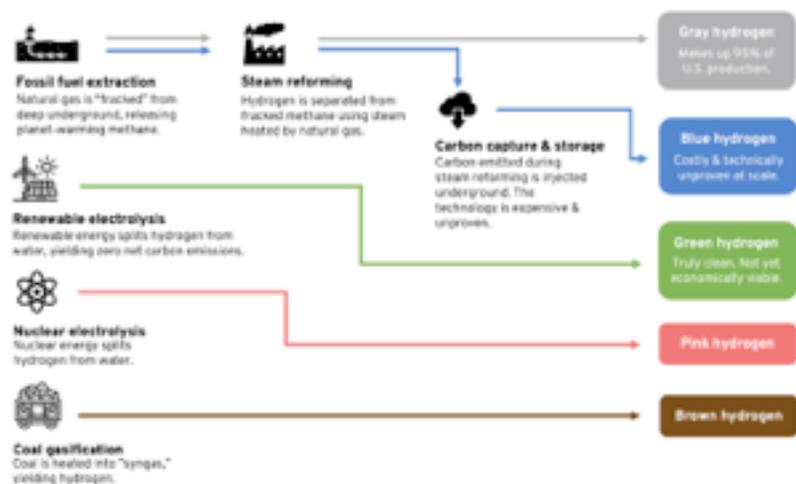
Gray hydrogen is made from fracked natural gas, a process that releases planet-warming methane and other pollution. The fracked gas is heated via "steam reforming," yielding hydrogen. Gray hydrogen makes up 95% of U.S. production.

Blue hydrogen is exactly the same as gray hydrogen, except that some carbon emitted during the steam reforming process is then injected underground in a process called carbon capture and storage (CCS). CCS is expensive and unproven on a large scale. It should be reserved for special cases, not used to justify more fossil fuel usage.

Green hydrogen is made from water and electrolysis powered by renewable energy, like solar or wind. The process is truly clean, creating zero carbon emissions. Only green hydrogen has the potential to meet demand cost effectively and eliminate CO₂ emissions. Programs outlined in the Inflation Reduction Act could make green hydrogen economically competitive.

Pink hydrogen is made using nuclear energy. It's not currently a major player in the Ohio River Valley.

Brown hydrogen is made by burning coal. It's not currently a major player in the Ohio River Valley.



What could hydrogen be used for?

- Heavy-duty, long-distance transportation
- Cement, steel, & other industrial applications

Clean, green hydrogen should be reserved for the few sectors that are hard to electrify. Hydrogen only has a climate benefit for those uses if it eliminates or drastically reduces greenhouse-gas emissions, which gray and blue hydrogen cannot do.

What should hydrogen not be used for?

- Passenger vehicles
- Utility-scale power generation
- Heating homes & buildings

Even green hydrogen should not be used for sectors where clean, renewable electricity is an easier and less expensive solution. Falling prices for renewable energy will outcompete many of hydrogen's possible applications.



Pennsylvania's Bad Bet

Why Shell Didn't Save Appalachia with Plastics



by Nick Messenger, Kathy Hipple, and Anne Keller



BEAVER, PA – In November 2022, more than ten years after Shell's first public announcement of site selection for the project and after five years of construction, Shell Chemical Appalachia Polymers opened its ethane cracker plant in Beaver County, Pennsylvania. The plant, which refines ethane, a natural gas liquid, into plastic pellets used to produce single-use plastics, was heralded as the beginning of a plastics industry renaissance in Appalachia. At least one local economic development organization estimated it would support nearly 600 direct employees and could generate 11,000 jobs in the Pittsburgh area.

Now, just over one year since production officially began, the plant has been mired in problems. The facility exceeded its allotted pollution limits within months of operating, and repeated flaring has deepened the air quality and health concerns of Beaver County residents. Furthermore, the plant seems to have fallen short in generating the economic benefits promised to residents, as Beaver County continues to trail the state across most economic metrics. This poor economic and environmental performance comes despite Shell receiving billions of dollars in state and local tax exemptions that carry an opportunity cost for taxpayers — namely, that alternative uses of the funds could have been used to grow the regional economy in more direct ways, such as to support small businesses, improve workforce development, or develop projects within industries in the region that already have a strong history complete with supply chains.

Why did Pennsylvania's leaders in the 2010s decide to bless Shell with such generous tax incentives? A deeply flawed economic impact study conducted by professors at the Robert Morris University (RMU) School of Business in 2014 and a follow-up study published in 2021, provided rationale for these tax incentives. The goal of this report is to offer a critique of these studies, which largely went unchallenged at the time. The first study was published nearly two years after the State Assembly passed two large subsidies for the project, and just before Shell completed its purchase of the site chosen years before. Both studies were used to justify an "investment" of billions of dollars in Shell's plan on the premise that the return-on-investment for taxpayers would be positive. It is, unfortunately, unlikely to be so.

Foremost, the circumstances in which the RMU team was solicited to do the economic study are murky. None of the authors' curriculum vitae list any previous professional experience with economic analysis work within the petrochemical industry. We will likely never understand Shell's choice of authors to evaluate the project, especially given that so many field experts would have been available from other major universities in Pittsburgh and throughout Pennsylvania.

The study was billed as an independent analysis by a university team and branded with RMU's logo, but the study is not currently published on RMU's website. Seemingly, no record of its release by RMU exists. Correspondence with two of the RMU authors revealed that the study is the property of Shell and, thus, could not be shared with the authors of this report. Indeed, the 2014 report cover page does note that the report was financed by and prepared for Shell. The study was widely cited in media outlets in 2014 but does not appear online despite considerable search effort.

The fact that the 2014 economic study was used to justify billions of dollars of public subsidy that had already been granted to the project by the Pennsylvania General Assembly over two years earlier, and is not easily accessible to the public, raises serious academic and ethical concerns. For instance, a follow-up study from an RMU team co-authored by two of the 2014 report authors was released in 2021. This 2021 report

does not adequately explain the methodology used to forecast tremendously positive benefits of the Shell petrochemical project, and instead, refers readers to their 2014 report — which is generally unavailable. At best, citing one's own private and publicly inaccessible work is academic malpractice equivalent to asking serious readers to blindly trust the authors. At worst, it is a purposeful omission designed to discourage valid criticism of the study — and there is plenty of valid criticism.

The criticism of the RMU studies can be divided into four categories:

1. It uses methodology that is not appropriate for long-term economic forecasting. The authors use commercially available economic modeling software from IMPLAN to conduct what is known as input-output analysis. While this analysis is widely used in industry, and can be valuable in some instances, it is inappropriate for long-term economic forecasting. The IMPLAN models make a series of inherent assumptions, some of which may be bad assumptions for this particular project which involves considerable pollution and external costs. Additionally, tax subsidies provide Shell with competitive advantages over other local businesses for workers and materials. In essence, the input-output model excludes prices — meaning that it wrongfully assumes that Shell's use of land, labor, and capital are readily available and do not impact other local businesses in the region. The assumptions of input-output models are more thoroughly detailed in Table 1 of this report.

2. The RMU study's impact analysis completely omits consideration of the costs of billions of dollars in public subsidy. It is untenable to conduct a fair cost-benefit analysis and not consider the costs at all. The Shell facility receives considerable exemptions from local property taxes — revenue that would otherwise go to public services such as schools. Additionally, Pennsylvania seemingly won the project over nearby states by creating a raw material tax credit that directly subsidizes the ethane inputs for Shell's facility. Having raw materials subsidized is a massive advantage for Shell, and this tax credit was likely needed to make the plant a profitable endeavor in the first place.

3. The authors of the RMU study used a non-standard 40-year timeline to project benefits, which is highly unrealistic within the petrochemical industry. The positive forecast for the regional economy thus, implausibly assumes no global market shifts, no consumer attitude shifts around single-use plastics, no political and regulatory changes, and no need to re-invest capital for upkeep or modifications to the facility for four

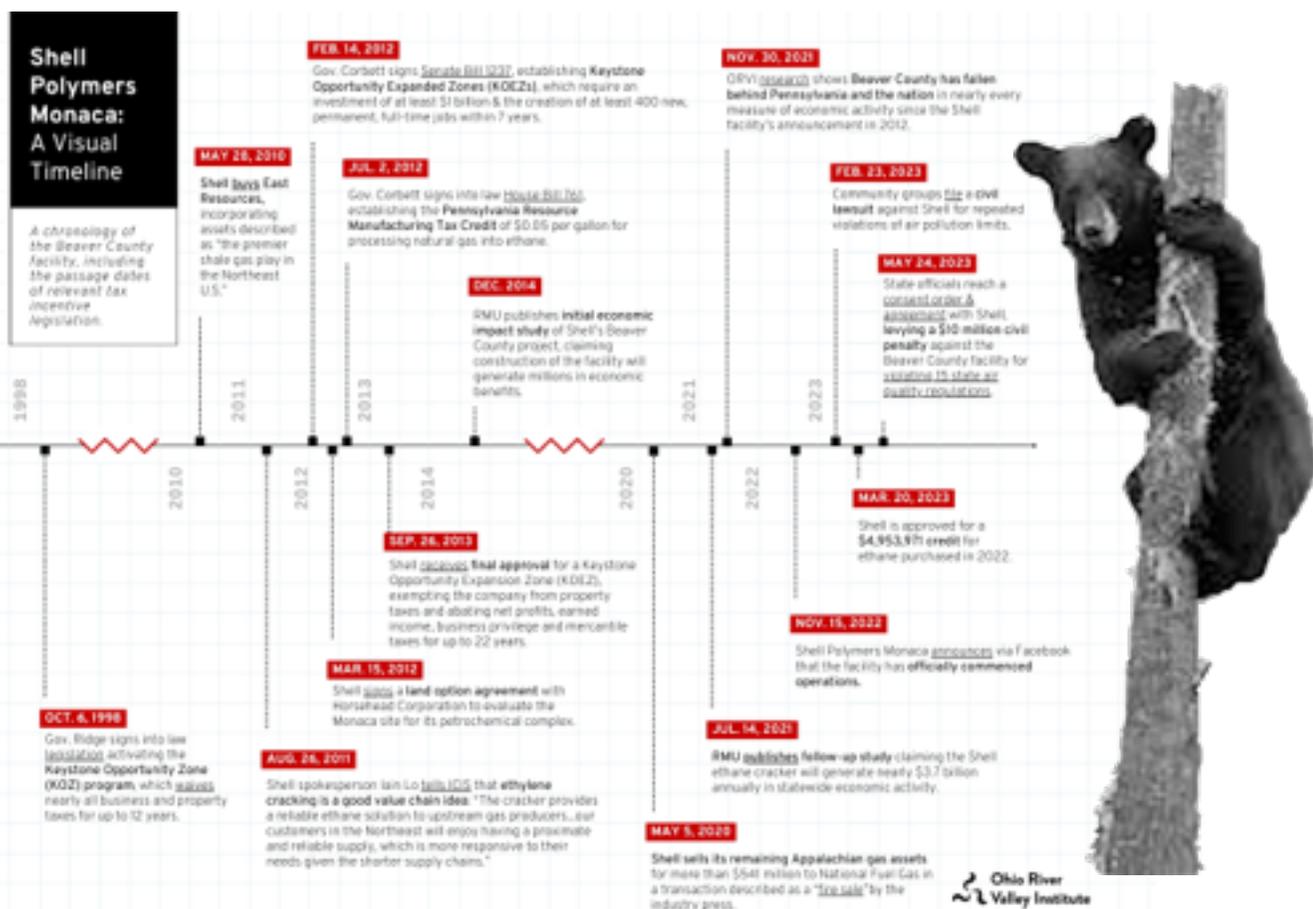
decades. Other ethane cracker facilities in the US have used 15-year timelines for projections and evaluation.

4. The RMU study utilizes incorrect industry classification codes for the project. Essentially, previous criticisms aside, even if both 1 and 2 were not valid criticisms, the RMU authors used the methodology incompetently. The code the authors used misclassified the Shell plant, as noted in a critique by Penn State Professor Emeritus David Passmore, which causes their economic model to use inflated parameters and thus, overestimate the economic benefits.

For a variety of reasons, this report finds that the RMU studies present residents of the region with an inadequate evaluation of the true economic prospects of Shell's plant. Hidden costs, including environmental degradation, chronic healthcare costs to residents due to air pollution, and declining home values near a large plastics plant, as well as the cost of what else could have been done with some of the subsidy money, are not considered. Nor does the study consider the offsetting impact of Shell's facility crowding out investment from other local businesses by driving up construction wages and material and land prices. As a result, the RMU study does not project a net benefit to the region's jobs — it presents an "all gravy" estimate.

This should be a cautionary tale for policymakers who are constantly presented with overly-rosy economic development projects by private companies using faulty methodologies. This is particularly true in Appalachian communities, where residents have been misled, forgotten, and fed false promises by extractive industries for the better part of a half-century. Better questions have to be asked by leaders before making decisions with public funds, and the onus to thoroughly demonstrate economic benefits should be on the company seeking tax incentives. It is not enough to take anyone's word for it without a deeper understanding of how companies and analysts arrive at their predictions. After all, as the adage goes, if something seems too good to be true, then it probably is.

In terms of economic growth, there are alternatives. Investments in workforce development, education, resident quality of life, environmental conservation, and high-multiplier small business activity, where more money remains local instead of in out-of-state corporate headquarters, have been shown to give regions a "bigger bang for their buck". It is the hope of this report that current and future policymakers will learn from the past and avoid making another bad bet.



Pennsylvania County Park Under Threat from Coal Mining

by Kara Kukovich



WASHINGTON COUNTY, PA – Let me share my favorite place to escape into nature from where I live in southwest Pennsylvania with you. It's a county park that boasts 2,600 acres of mixed-forest woodlands in a designated "High-Quality Watershed" and includes numerous trails of varying difficulty, several playgrounds, two large dog parks, historic buildings and bridges from the 19th century, a disc golf course, pickleball courts, and an observatory. I prefer to hike through one of the rustic trails (the longest of which is a 12-mile loop), but most visitors can be found bicycling or strolling along the 2.8-mile paved trail that skirts along Mingo Creek. Others come to fish in the trout-stocked creek, or to observe wildflowers or some of the 150 species of birds that reside here.

Over the past eight years, RAM Mining LLC (part of the Ramaco mining company headquartered in Lexington, KY) has been fighting to open an underground coal mine upstream near Mingo Creek County Park. They first applied for a permit from the Department of Environmental Protection (DEP) in 2015, but in 2023, DEP ultimately denied that application, citing Ramaco's failure to address or avoid anticipated environmental damage from the proposed mine. Pennsylvania's DEP is not wont to deny mining permits, the last denial occurring in 1994, but RAM LLC's application was egregiously lacking and short-sighted.

The proposed "deep mine" would cover 1,317.7 acres and is, at some points, operating only 50 feet from the surface. This means an increased risk for subsidence (ground sinking) and damage to structures, streams, and hydrological systems. If cracks form in this thin surface layer, it could drain the water from Mingo Creek or its tributaries. Additionally, RAM LLC proposes to pump their wastewater into the already-contaminated mine pool of an adjacent old, abandoned, underground mine without any additional treatment, which can lead to acidic waters ultimately reaching Mingo Creek. According to Fair Shake Environmental Legal Services, which has investigated the mining proposal, the project also fails to meet antidegradation requirements, has ignored the rights of public say in the process, has failed to meet code for their wastewater and sludge disposal, and (among other infractions) has failed to determine whether coal ash/dust will meet air quality laws.

The Pennsylvania Sierra Club's Allegheny Group is working with Center for Coalfield Justice and Protectors of Mingo Creek to follow the progression of the RAM LLC application, to support DEP in its permit denial, and to put a stop to this and any similar future dangerous coal mining projects in the area. To learn more or get involved, or arrange for a guided hike in Mingo Creek County Park, contact the Allegheny Group of the Sierra Club.



One of two covered bridges in Mingo Creek Park. Photo by Kara Kukovich.

Dangerous Carbon Disposal Plan Would Foul Our National Forests

by June Sekera

BOSTON, MA – For the first time ever, the US Forest Service is proposing to give carbon capture companies a right to "perpetual use and occupancy" of our national forests for carbon dioxide waste disposal. The Forest Service has published a new proposed federal rule that would allow carbon collected from factories and power plants to be stored on its lands. What this means — if the rule is indeed finalized — is that carbon capture and disposal companies would be able to build massive industrial infrastructure in and through our forests to transport and then bury highly pressurized, toxic carbon dioxide (CO₂) under our public lands.

The CO₂ would be transported into our forests by pipelines, resulting in tree clearance and disruption of forests for road building and pipeline construction. More trees would be cut down to make way for drilling rigs, injection wells, and well pads. Plus, because CO₂ is buried at extremely high pressure and can escape back into the atmosphere or migrate to contaminate our drinking water sources, the injection wells must be monitored, using even more machinery and equipment. This industrial equipment might remain in our forests perpetually.

Carbon capture and storage is being rolled out by policymakers, legislators, and fossil fuel interests who claim that this process can curtail the atmospheric buildup of CO₂, the prime driver of global heating that's causing the climate change disasters we are already seeing. The US government has enacted billions of dollars in subsidies, meaning taxpayers are financing this activity.

In view of the aggressive role the US government and other governments have taken in fostering and subsidizing mechanical carbon capture, I began several years ago to examine these processes from the perspective of collective biophysical need — that is, are these methods meeting the needs of people and polities to curtail global heating? And what are the biophysical imperatives that cannot be escaped regardless of rhetoric? I led teams to seek answers to these questions.

Our research showed that mechanical methods of carbon capture and storage do not work as promised, in several ways. First, the amounts supposedly captured, which would be in the millions of tons a year, are so infinitesimal as to have no climate-relevant significance, given the billions of tons of CO₂ emitted every year globally — on top of the excessive level of CO₂ already in the atmosphere. Second, when you consider the biophysical realities, it turns out that the methods being subsidized in the US can actually emit more CO₂ than they capture and bury, as explained in published research by myself and a colleague.

Moreover, the highly pressurized CO₂ pulsing through the pipelines and forcibly injected underground is extremely dangerous and could have devastating impacts on people and wildlife. Compressing and highly pressurizing carbon dioxide turns it into an asphyxiant if it escapes. Nearby residents or wildlife or any people enjoying the forest in the vicinity of a leak, well blowout, or pipeline rupture could be sickened — even killed — by suffocation, because dense plumes of CO₂ displace oxygen. Indeed, one CO₂ blowout in Mississippi caused deer to suffocate. Another pipeline rupture in a rural area of the state left people unconscious and sent dozens to the hospital. In a pipeline rupture or well blowout, first responders may not be able to get to victims because gasoline engines cannot operate without oxygen, so the vehicles die.

Paradoxically, the proposed plan would bulldoze naturally carbon-sequestering trees to then "store" mechanically captured CO₂ in those same areas. In fact, biological sequestration via forests and other natural systems is vastly more effective, efficient, and less costly than mechanical methods we are subsidizing now, as shown in a study by myself and colleagues, published this year.

When the Forest Service several months ago quietly announced its proposal to allow this CO₂ waste dumping in our national forests, environmental advocates were alarmed. The groups circulated a petition, now signed by over 20,000 people, expressing their outrage.

Why would the US Forest Service be doing this?

For carbon capture and disposal companies, the appeal of using public lands like national forests for their waste dumping is obvious: they are facing tremendous opposition from private property owners, tribes, local governments, and communities all over the country who are fighting carbon pipelines and CO₂ waste disposal. The companies often engage in eminent domain battles to take land by force for pipelines and injection wells. Allowing the sacrifice of national forest land for this industrial waste disposal would be an end run around local towns and counties, and a much simpler and far less expensive route than having to deal with tens of thousands of individual landowners.

The US Forest Service plan is a proposed regulation; it is not yet final. The public comment period on the proposal closed on January 2 of this year.

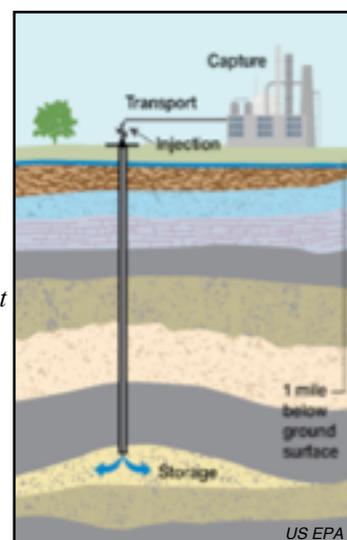
The research is clear: mechanical carbon capture, along with pressurized underground storage, is an ineffective method of reducing the excess CO₂ in our atmosphere. And it's dangerous to people and places. If you treasure national forests, let the US Forest Service know what you think about their plan. It's extremely important that the government hears from the public right now, before the rule is finalized.

Although the initial public comment period has closed, you can still write to express your concerns to the Director of Lands, Minerals, and Geology Management Staff, 201 14th Street SW, Washington, DC 20250

or via email through the Federal eRulemaking Portal at <https://www.regulations.gov>.

June Sekera is a senior research fellow at the Boston University Global Development Policy Center.

This article was originally published in Boston University's The Brink.



Forced Pooling Fracks Activist's Forested Home



by Randi Pokladnik

OHIO – Sadly, my family has learned that our precious forested property has been targeted by the industry for a forced pooling or mandatory unitization action. Ohio Revised Code § 1509.27 provides a mechanism to force Ohio landowners to participate in oil and gas development without their consent. Once again, this process favors industry profits over private property rights.

Forced pooling is defined as when a “person who has obtained the consent of the owners of at least sixty-five per cent of the land area overlying a pool or a part of a pool submits an application for the operation as a unit of the entire pool or part of the pool to the chief of the division of oil and gas resources management”. If approved, the application will force the remaining thirty-five percent of landowners to become part of the unit.

There are only three criteria to satisfy in order for the Chief of the Division of Oil and Gas at ODNR to approve a mandatory pooling application (see OHIO REV. CODE ANN. § 1509.27). They are: protecting correlative rights (those who have leased); providing for effective development and use; and promoting conservation of oil and gas. Any concerns over environmental harms or health effects are not considered.

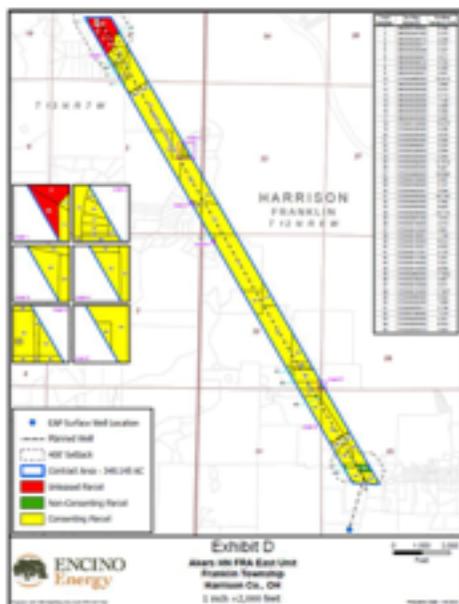
There have been many amendments to the original laws written in 1965. In 2010, amendments were added to prevent liability from attaching to nonparticipant owners. However, these amendments do not address one of the most critical aspects of the laws, the risk-penalty provision. Landowners subject to the order only have the choice between the following: (1) relent and become a participant in the drilling unit or (2) become a nonparticipating owner and pay a penalty of up to 200% of the reasonable costs and expenses of production. This penalty is a way to encourage non-consenting owners to ultimately lease, and helps the well operators from undergoing additional application fees and paperwork.

If we sign a lease, we can at least list the various stipulations that limit the drilling company from surface access to our land. This would prohibit pipeline construction, the use of hydrocarbon storage tanks on our land, and the drilling of injection wells to inject waste fluids.

It is a horrible choice for an environmentalist. We built our eco-log home from salvaged forest-fire-killed trees; we have an 8.4kW solar system on our garage; and we have a new geothermal heating system. We have tried to reduce our carbon footprint as much as possible, and now our land will be fracked.

In 2018, I was honored by being selected as the “Fractivist of the Year” by a grassroots organization fighting fracking. In 2020, that same group gave me another award, the “Passion for Justice award”. Those plaques hang on my wall as a constant reminder of why I keep fighting fossil fuel expansion. Unfortunately, the fight to save our property will not be won. The Muskingum Watershed Conservancy District leased 7300 acres around Tappan Lake to Encino Energy in June of 2022, which led to the mandatory pooling of our land. We recently received the notification that our land is no longer truly ours, but instead is now part of Encino’s Akers HN FRA NE Unit.

Encino’s monster horizontal laterals will snake under our land and steal our resources. But they cannot steal my resolve to continue speaking out against the harms of fossil fuels and the lack of democracy in Ohio’s government, which is no longer “of the people, by the people, or for the people.”



Muskingum Watershed Conservation District: Hypocrisy and Failure in Stewardship

by Randi Pokladnik



OHIO – The Fifth National Climate Assessment, released in November 2023, stated that new fossil fuel projects must be stopped to prevent climate impacts from worsening. “Humanity has opened the gates of hell, horrendous heat is having horrendous effects” warned UN Secretary-General Antonio Guterres. Nevertheless, at the COP 28 Summit, while other countries pushed for a phase-out of new fossil fuel projects, the US was poised to extract more oil and gas.

On November 15, 2023, Ryan Richardson, Stephen Buehrer, Matthew Warnock, Michael Wise, and Jim McGregor, the Oil and Gas Land Management Commission (OGLMC), paved the way for fracking Ohio’s State Parks. During the November 15 meeting, the Commission approved fracking leases for Salt Fork State Park, Zepernick Wildlife Area, and Valley Run Wildlife Area, even though over 100 Ohioans present at the meeting expressed their outrage.

No doubt, the OGLMC was influenced by the Muskingum Watershed Conservancy District’s (MWCD) March 1, 2023 presentation which focused on how much money could be made by fracking lands overlying Utica and Marcellus shale. Like the OGLMC, the MWCD’s prime concern is making as much money as possible from fracking. In fact, no one has benefited financially as much as the Muskingum Watershed Conservancy District; Ohio’s No. 1 beneficiary of drilling.

Recently, the MWCD had Cleveland State University’s Energy and Policy Center conduct a non-peer reviewed study, “Economic Impact of the Muskingum Conservancy District on the Regional Economy, 2014- 2022”. While this report tries to convince us that the MWCD has brought economic prosperity to the region, evidence shows a decline in population and local incomes. The 2020 census showed the “largest population drop among counties in Ohio occurred in Harrison County, which dropped 8.7% to 14,483.”

A February 12, 2021 study published by the Ohio River Valley Institute, a non-profit research center, found that “jobs, personal income, and population all declined between 2008 and 2019 in the 22 Ohio, Pennsylvania, and West Virginia counties that produce 90 percent of Appalachia’s natural gas.” This included the MWCD counties of Belmont, Carroll, Guernsey, Harrison, and Noble, which saw a net job loss of over 8% and a population loss of over 5%.

Additionally, the MWCD report was only concerned with economic impacts and did not include the health and environmental impacts from this development – i.e. from selling water for fracking, selling leases for fracking, and receiving royalties from fracking.

Peer reviewed studies as well as the citizens living in the 18-county region of the MWCD can provide data as to the impacts associated with fracking. The recently released 637-page report, “Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking and Associated Gas and Oil Infrastructure, Ninth Edition, October 19, 2023” says, “Our examination uncovered no evidence that fracking can be practiced in a manner that does not threaten human health directly or without imperiling climate stability upon which human health depends.”

Accident reports obtained from a Freedom of Information Act (FOIA) request to the ODNR illustrate that this industry is anything but safe. Just since 2018, the ODNR data has documented over 800 accidents considered serious enough to require inspectors, the Ohio Environmental Protection Agency, and hazmat intervention to remediate the sites. In addition, Ohio has one of the most lenient set-backs for a well pad: 150 feet from a property boundary.

Over 100 studies have documented hazardous and carcinogenic chemical compounds in the air around fracking sites. Evidence shows that compressor stations along natural gas pipelines are sources of air pollutant exposures that contribute to adverse human health outcomes. Oil and gas wells are the single largest source of human-caused methane gas emissions. Additionally, fracking produces millions of gallons of waste fluids containing heavy metals, salts, and radionuclides, which are injected into Class II injection wells.



Map of the Muskingum River Watershed. Wiki commons

MWCD might “shield the well pads from public view”, but those of us who live on or near MWCD property experience the negative impacts of fracking every day. We are losing forest acreage to well pads, infrastructure, roads, and pipelines. We hear noise pollution and see light pollution from flaring. Our roads are trafficked by hundreds of brine, sand, and chemical tankers. We are witnessing MWCD’s greed turn our rural landscape into an industrial zone, while our property values diminish.

The MWCD is quick to brag about their \$40 million dollar deal with Encino Energy or their \$6.5 million Marina at Tappan Lake, but the environmental damage that will occur to the local environment as the MWCD makes money from fracking is indefensible. They boast about all the economic benefits they bring to the area, but a drive through the local communities shows no significant economic “boom”.

Our family used to visit Tappan Park twenty years ago, but what the MWCD calls “improvements” look more like an attempt to create a high-end camping resort. The new camping areas, depicted on page 13 of the report, are now devoid of trees. Today there are only side-by-side concrete pads that will accommodate expensive RVs complete with satellite dishes and air conditioning. This is not the atmosphere that nature-lovers seek out. Much of the money gained from fracking will be spent on MWCD infrastructure improvements inside the parks. Most locals will never use these facilities, but they will experience the externalities resulting from fracking.

The definition of conservancy is: “a body concerned with the preservation of nature, specific species, or natural resources.” MWCD is not a conservancy. Real stewards of the environment do not embrace a process that contributes to climate change. They do not look the other way as fracking infrastructure destroys forested ecosystems. They do not ignore the volatile organic air emissions from fracking well pads, compressor stations, and pipelines, or the millions of gallons of surface water withdrawn for fracking fluids. Real stewards of the environment protect it, nurture it, and value the undisturbed beauty above and beyond any monetary value.

Protecting Old-Growth Forests: Point by Point



by Donald Winslow, Ph.D

INDIANA – The Forest Service is developing a plan to add an amendment to every forest plan on retaining and recruiting old-growth forest. Sounds like good news, and it mostly is, but they do envision using active management to accomplish these objectives. The proposal neglects to include meaningful protection for mature forests beyond the goal of “recruiting” them to old-growth.

In addition to amending forest plans to incorporate consistent policy on mature and old-growth forest, National Forests that are delinquent in revising their plans (> 15 years since a new plan) should be required to undertake an environmental analysis and revise their plans to reflect up-to-date understanding of forest ecology, climate change, and wildfire dynamics.

One of the objectives mentioned in the Notice of Intent, which is found at Federal Register 88(243):88042-88048, is to recruit future old-growth conditions. The best way to obtain old-growth forest conditions is to allow forests to grow old. For this and other reasons, the Forest Service should instead institute a moratorium on logging mature and old-growth stands on National Forest System land during the current climate change crisis.

An objective stated in the Notice of Intent (NOI) is to monitor mature and old-growth forests. This is important for understanding the mechanisms of forest ecology and the trajectories of our forests. Funds should be made available for independent researchers to investigate aspects of forest ecology, such as tree succession and regeneration, population trends of animals, and other forest organisms, soil nutrient cycling, and response to natural disturbances.

Another objective stated in the NOI is to foster long-term resilience of old-growth forests. Resilience implies changes rather than a steady state. We need to study these changes and think about them, but we should be patient as the forests are patient. Our understanding of forests advances rapidly relative to the lives of trees, but the actions we take now may have unintended consequences long into the future.

The NOI for this project states that fire is the biggest threat to old-growth forests, but “threat” is not defined the way we normally use the word. The term “threat” is defined in the NOI to mean a change in land cover classification without necessarily a change in ecological integrity or function. Since wildfire is a functional component of many forests, it does not follow that fire always threatens the integrity of forest ecosystems. Logging, in contrast, is not a natural component of forested ecosystems and can thus both threaten functional integrity of ecosystems and convert landscapes from one land cover class to another.

One objective stated in the NOI is to provide consistent national direction recognizing the role of old-growth in resilience of forests to wildfire. This is important to ensure that all forest plans prioritize the protection of old-growth rather than using fuel reduction as a rationale for cutting trees in these ecosystems. The NOI also states that science-based vegetation treatments can be used. Oftentimes, vegetation treatments are counterproductive to the goals of biodiversity protection, carbon sequestration, ensuring water quality, fostering resilience, and reducing fire risk, so they should be avoided. Vegetation treatments that are used should certainly be based on the best available science, however.

One vegetation treatment mentioned in the NOI is “restoring prescribed fire in fire-adapted ecosystems”. While it may sometimes be desirable to restore fire in fire-adapted ecosystems, it is not prescribed fire to which forest ecosystems are adapted — certainly not prescribed fire as it is practiced with modern techniques. Also, it is important that prescribed fire not be too broadly applied; not all forest communities can be considered to be fire-adapted, and fire should only be used when the ecological benefits outweigh the harm to organisms and air quality and the emission of greenhouse gases.

An objective stated in the NOI is to manage old-growth conditions for ecosystem diversity, habitat, recreation, aesthetics, and water quality. It is worth noting that these five values can often be achieved most readily by leaving old-growth forest alone.

The NOI notes that the Forest Service has for some time encouraged the development of forest plan language that provides for succession of young and mature forests into old-growth. There is certainly room for improvement in this regard, as many forest plans identify areas where tree harvest is considered appropriate. Instead, the amendments that are to be added to Forest Plans under this proposal should discourage cutting trees in young and mature forest to allow these younger seres to succeed to old-growth forest. As stated in the Purpose of the Amendment in the NOI, it is important to recognize when natural succession can achieve desired conditions.

Under the Purpose of the Amendment in the NOI, it is stated that units will be asked to create an Adaptive Strategy for Old-Growth Forest Conservation but would be allowed to adopt an “existing strategy that meets this intent”. If an existing strategy is to be used, it should not only meet the intent but also be likely to achieve the goals of protecting old-growth forest and allowing the recruitment of future old-growth conditions.

The last purpose mentioned in the “Purpose of the Amendment” section is “co-stewardship with Tribes and Alaska Native Corporations and collaboration with states, local governments, industry partners, and public stakeholders”. While co-stewardship is a worthwhile goal, collaboration with industry on National Forest System lands would not be necessary if commercial extractive activities, such as logging and mining, are not planned for mature and old-growth forest on National Forest System lands. It would, however, be worthwhile for the Forest Service to collaborate with industry partners by helping to identify and protect old-growth forest on private lands.

Under “Need for Change”, the NOI lists several important topic areas, but “redundancy of old-growth forest conditions” should not be a concern. In most regions of the United States, there is very little old-growth remaining, and redundancy is valuable for ensuring ecosystem and landscape stability and resilience. Perhaps the wording should read “lack of redundancy”.

Under “Substantive Provisions”, the NOI identifies CFR 219.8-219.11 as being the sections of the planning regulations relevant to the proposed amendment. Most of the other sections of CFR 219 are also relevant and should be considered. However, emphasis does not need to be placed on CFR 219.11 as stated in the NOI, as timber harvest does not need to be a part of this proposal.

In the description of the proposed action under “Desired Conditions”, mention is made of “proactive stewardship, including for retention and recruitment”. Active management is certainly not required for retention of old-growth, since active management would alter old-growth conditions. For recruitment, I would generally argue that the best way to recruit old-growth forest conditions is to allow forests to grow old.

Under “Standards for Management Actions Within Old-Growth Forest Conditions”, the NOI even mentions “percentage and proportion of forest interior”. Clearly, active management cannot increase forest interior area; it can only decrease it. The Tongass National Forest, which is of global significance for its extensive old-growth temperate rainforest, should not be exempted from standards 2 and 3 as stated in standard 4.

I am glad that the Department of Agriculture is undertaking this initiative and hope that protections for mature and old-growth forests will be as strong as possible. You can participate in the process by commenting on the Environmental Impact Statement that is to be developed later this year — there will be a 90-day comment period.

Climate Forests Coalition issues statement supporting Biden’s Initiative to Protect Old-Growth Forests



by Randi Spivak

WASHINGTON, DC – Protecting older trees is a critical, cost-effective solution to address both the climate and biodiversity crises. Old-growth forests are more resilient than younger forests but unfortunately, the vast majority of old-growth forests in the US have already been logged. Those that are left are largely on federally managed public lands. The Forest Service has approved numerous logging projects across hundreds of thousands of acres that target mature and old-growth trees, which store vast amounts of carbon.

The Climate Forests Campaign is a coalition of more than 120 organizations nationwide that advocates to protect the trees that serve as the greatest buffers against climate change.

Members of the coalition, including Natural Resources Defense Council, Center for Biological Diversity, Sierra Club, Environment America, Earthjustice, Heartwood, Oregon Wild, Standing Trees, and WildEarth Guardians, issued the following statement:

“We support the Forest Service’s goal to better protect and expand our old growth forests. The Biden administration recognizes the critical role these forests play in addressing the climate and wildlife extinction crises and must ensure the Forest Service prioritizes protection over commercial revenue.

“The Forest Service’s proposed plan sets important goals, and needs improvements to fulfill the vision of strong and durable protections for these climate-critical forests. The agency should listen to the clear public input calling for strong protections for both mature and old-growth trees and forests, and a complete end to commercial logging of old-growth trees on federal land.

“We further urge the agency to remove the proposed exception for the Tongass National Forest, the crown jewel of our national forest system. The Tongass, like all of our old-growth and mature forests, is more valuable for absorbing carbon and providing habitat for hundreds of species than it is for timber.

“We commend the Biden administration for initiating this process, and we will continue our work to demonstrate public support for protections that ensure that mature and old-growth forests can continue to store carbon, provide clean water, and support wildlife for generations to come.”



Biden Proposes Old-Growth Protections from page 1

The vast majority of old-growth forests have already been logged. Most that are left are largely on federally managed public lands. As of November 2022 the Climate Forests Campaign had identified numerous timber sales targeting at least 370,000 acres of mature and old-growth forests for logging on federal land.

In addition to storing huge amounts of carbon and keeping it out of the atmosphere, mature and old-growth forests also provide essential wildlife habitats and are the most fire-resilient trees in the forest. As the world experiences record-shattering heat and widespread climate disasters, protecting these forests is critical to prevent the worst consequences of climate change.

“Protecting our old-growth trees from logging is an important first step to ensure these giants continue to store vast amounts of carbon, but other older forests also need protection,” said Randi Spivak, public lands policy director with the Center for Biological Diversity. “To fulfill President Biden’s executive order and address the magnitude of the climate crisis, the Forest Service also needs to protect our mature forests, which if allowed to grow will become the old growth of tomorrow.”

“The Biden administration’s proposed plan to protect old-growth trees across the country is an important milestone for forest conservation and US progress in addressing the climate crisis,” said Earthjustice senior legislative representative Blaine Miller-McFeeley. “Even as it works to complete this proposal, the Forest Service must take steps to fulfill President Biden’s executive order by also developing protections for mature trees, which are our future old growth and exist in much greater numbers than old growth, storing vast amounts of carbon. We look forward to working with the Forest Service to help it safeguard mature and old-growth forests. Conservation of these forests goes hand in hand with addressing the threat of wildfires as older and larger trees tend to be the most fire resistant.”

“Americans love our forests. They’re natural playgrounds for people and wildlife alike. That’s why more than half a million people this summer asked the Forest Service to protect mature and old-growth trees and forests,” said Ellen Montgomery, public lands campaign director with Environment America. “Our mature and old-growth trees provide critical wildlife habitats, filter drinking water for communities, and absorb and store tons of carbon. We’re really pleased that the Forest Service has taken this unprecedented step and we urge them to take actions to protect mature forests. To have a future where we have more old growth, not less, it is critical to protect mature forests as well.”

“The administration has rightly recognized that protecting America’s mature and old-growth trees and forests must be a core part of America’s conservation vision and playbook to combat the climate crisis,” said Garrett Rose, senior attorney at NRDC. “This announcement is an important step toward meeting these goals. The Forest Service should move forward to develop the strongest possible safeguards for these forests.”

“Oregon Wild has been working to protect old-growth forests for 50 years. With today’s action, President Biden is taking a major step forward in protecting these national treasures,” said Lauren Anderson, climate forest program manager with Oregon Wild. “We look forward to working with his administration to implement this policy, and to ensure that mature and old-growth forests across the country are protected.”

“Our ancient forests are some of the most powerful resources we have for taking on the climate crisis and preserving ecosystems,” said Sierra Club forests campaign manager Alex Craven. “We’re pleased to see that the Biden administration continues to embrace forest conservation as the critical opportunity that it is. This amendment is a meaningful step towards averting climate catastrophe, safeguarding vulnerable ecosystems, and fulfilling President Biden’s commitment to preserve old-growth and mature trees across federal lands.”

“We applaud the Biden administration for taking a significant step towards increasing protections for our nation’s endangered old-growth forests,” said Zack Porter, executive director of Standing Trees, an organization that works to protect and restore public lands in the six-state New England region. “But the reality is that more than 99.9% of old-growth forests in New England have already been cut down. For the climate and biodiversity, the Forest Service must put an end to destructive mature forest logging that prevents the recovery and expansion of old-growth forests across the US. We are buoyed by today’s announcement and remain optimistic that the Forest Service will take further action to secure protections for America’s future old-growth forests.”

“Mature and old-growth forests are an essential component of a broader climate-crisis solution — but only if we protect them from logging,” said Adam Rissien, rewilding manager with WildEarth Guardians. “Today’s announcement by the Forest Service establishes necessary and long-overdue protections for old growth forests, limiting when they can be cut and sold commercially. Taking the next step and developing a national rule covering both mature and old-growth would deliver on the Biden administration’s commitment to protect these trees once and for all.”



photo by Appalachians Against Pipelines.

North American LNG Export Terminals Existing



Export Terminals

UNITED STATES

1. Kenai, AK: 0.2 Bcf (Trans-Foreland)
2. Sabine, LA: 3.5 Bcf (Cheniere/Sabine Pass LNG - Trains 1-5)
3. Cove Point, MD: 0.62 Bcf (Dominion-Cove Point LNG)
4. Corpus Christi, TX: 1.44 Bcf (Cheniere - Corpus Christi LNG Trains 1, 2)
5. Hackberry, LA: 2.15 Bcf (Sempra-Cameron LNG, Trains 1-3)
6. Elba Island, GA: 350 MMcf (Southern LNG Company Units 1-10)
7. Freeport, TX: 2.13 Bcf (Freeport LNG Dev/Freeport LNG Expansion/FLNG Liquefaction Trains 1-3)

Biden’s Rampant Oil, Gas Drilling Approvals Continue to Undermine US Climate Commitments

Massive Fossil Fuel Expansion on Pace With Previous Administration

by Jeremy Nichols



WASHINGTON, DC — Federal data show the Biden administration approved 9,779 permits for oil and gas drilling on public lands in its first three years, nearly keeping pace with the Trump administration’s 9,982 drilling-permit approvals in its first three years.

The Biden administration’s policy of oil and gas expansion contradicts the clear climate science that fossil fuel growth must be stopped and governments must phase out fossil fuels to avoid the most catastrophic consequences of climate change. In December the United States and other countries agreed to a phasedown and ultimate phaseout of fossil fuel extraction.

“Given the urgency of the climate crisis and our nation’s pledge to phase out oil and gas extraction, the Biden administration needs to pump the brakes right now on issuing drilling permits on our public lands,” said Jeremy Nichols of the Center for Biological Diversity. “It’s time for the administration to show the world what true climate leadership looks like.”

The pace of new oil- and gas-drilling approvals stands in contrast to the administration’s action last week to temporarily pause new gas-export projects. While met with support, the pause is not permanent and does not stem new fossil fuel production.

“The temporary pause on new gas-exports projects is a good step, but for it to be meaningful, the Biden administration needs to make it permanent and stop rubberstamping more fossil fuel production,” said Nichols.

More than 6,000 of the drilling permits granted by the administration are on public lands managed by the US Bureau of Land Management’s New Mexico office, followed by 1,793 permits in Wyoming and several hundred each in Utah, Colorado, California, and North Dakota.

Scientific analyses show climate pollution from the world’s already producing fossil fuel developments, if fully developed, will push warming past 1.5 degrees Celsius. Avoiding such warming requires ending new investment in fossil fuel projects and phasing out production to keep as much as 40% of already developed fields in the ground.

The Biden administration has not enacted any policies to significantly limit drilling permits or manage a decline of production to avoid 1.5 degrees of warming. It supported Senator Joe Manchin’s demands to add provisions to the Inflation Reduction Act that will lock in fossil fuel leasing for the next decade.

The administration has also ignored petitions from hundreds of climate, conservation, Indigenous, and environmental justice groups calling for a phaseout of federal oil and gas production.

Coalition Calls on Congress to Step in and Halt US Deforestation

by John Talberth



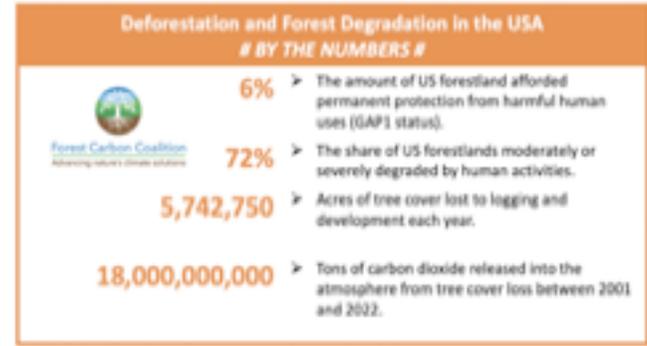
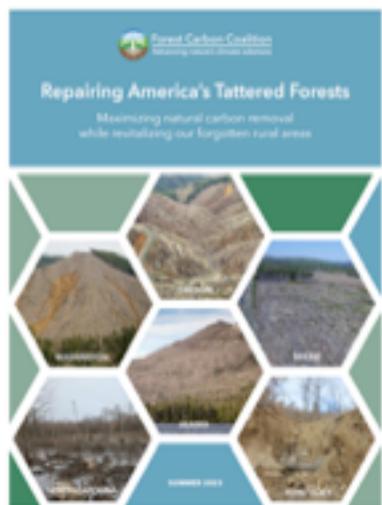
PORT TOWNSEND, WA – America’s forests and forest-dependent communities need help. Despite signing the Glasgow Leaders Declaration to end deforestation and forest degradation by 2030, the Biden Administration, Congress, governors, and statehouses throughout the US have failed to intervene to halt Big Timber’s assaults on the few carbon-rich, biodiverse forests that remain. Corporate logging practices like replacing real forests with monoculture tree farms, clearcutting, spraying of toxic chemicals, and converting forestlands to urban sprawl have accelerated. Because of these stressors, only 28% of US forestlands exist in their natural state of ecological integrity. According to *Global Forest Watch*, the US has a higher rate of tree cover loss (17% since 2000) than Brazil (13%). This is all bad news for climate, biodiversity, and the rural economy.

Progressive leaders have been largely absent from the struggles of rural, forest-dependent communities in the Southeast, Pacific Northwest, and other places where economic diversification is badly needed. This vacuum has allowed pro-timber politicians to jump on the bandwagon of Big Timber’s lies and deceptions and promote false climate solutions and economic narratives that keep these communities locked into endless cycles of poverty, social pathologies, and environmental degradation. The ‘resource curse’ associated with overinvestment in extractive industries is plainly evident in America’s impoverished timber towns. Current practices impose spillover costs on workers, families, and communities, keeping them poor and disaffected. Continuation of current practices will make things worse.

To help make the case to Congress and the Biden Administration, The Forest Carbon Coalition has updated and republished *Repairing America’s Tattered Forests – Maximizing natural carbon removal while revitalizing our forgotten rural areas*. The report is a portfolio of policy interventions that are long overdue, and badly needed now as the climate crisis spirals out of control and the plight of frontline forest communities worsens.

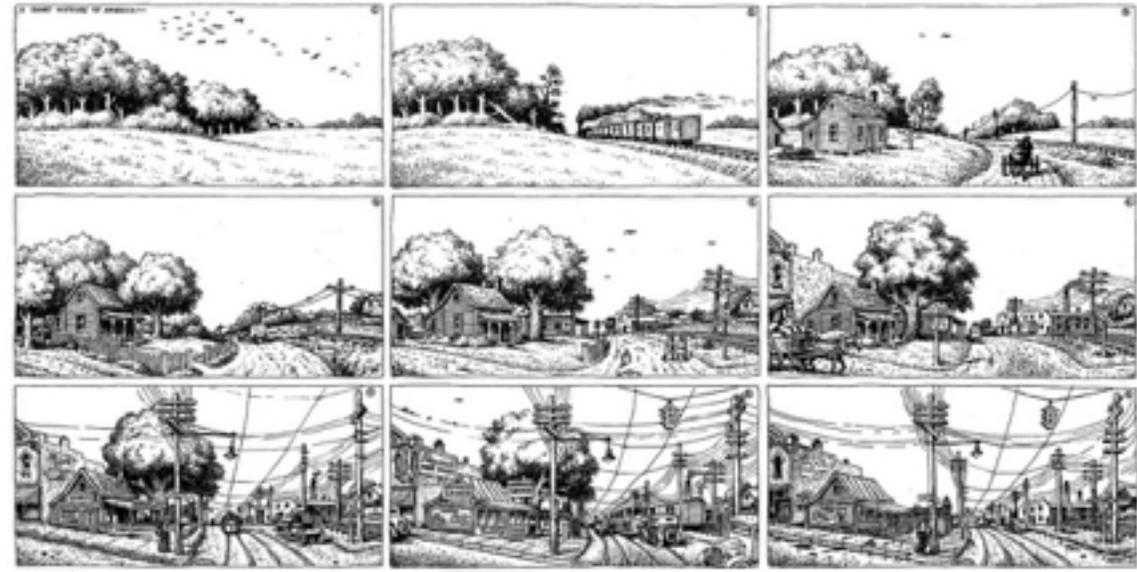
The policy interventions are grouped into six strategic goals, that include:

- Ending deforestation and forest degradation, for example, by establishing an interconnected network of forest carbon and biodiversity reserves on public lands and adopting a no-net-loss policy for forests and farmland threatened by development.
- Diversify and revitalize forest dependent communities and remedy environmental injustices by redirecting logging subsidies and reducing frontline community risks associated with wildfires, heat waves, water shortages and floods – all made worse by industrial scale clearcutting.
- Reduce forest ownership by short-sighted investors by closing tax loopholes and placing restrictions on ownership by Wall Street and foreign corporations.
- Reduce wasteful consumption of wood and paper products by, for example halting federal investments in new paper, biomass, or mass timber facilities and scaling up markets for less carbon-intensive substitutes like bamboo, hemp, and carbon-negative concrete.
- Reduce the climate impacts of industrial logging activities by including this sector in annual GHG emissions inventories, and using regulatory and market-based mechanisms to accelerate the transition to climate-smart alternatives.
- Fight Big Timber’s greenwashing and disinformation by forcing logging corporations to disclose climate risks to investors and by cracking down on false claims about the climate and economic benefits of industrial wood relative to non-wood substitutes.



The Forest Carbon Coalition – 100 members strong from communities across the US – invites you to join with us to explore how to implement as many of these interventions as possible as quickly as possible to get us on track to meet the Glasgow Leaders Declaration while bolstering natural carbon removal and bringing economic growth and prosperity to counties, cities, and towns who are missing out on the socioeconomic benefits of progressive policies.

<https://forestcarboncoalition.org/>



R.Crumb

\$30 Billion Logging Bill Undercuts President Biden’s Old Growth Protection Goals

by Josh Schlossberg



COLORADO – US Representatives Joe Neguse (D-Colorado) and Val Hoyle (D-Oregon) are co-sponsoring a bill to spend \$30 billion in taxpayer dollars to log and clearcut carbon-storing public forests across the West, a scientifically contested scheme that would undermine President Biden’s commitment to protect old growth forests on National Forest system lands, while ignoring proven strategies for guarding forest-edge communities from wildfire.

The House bill, companion to a Senate bill proposed by Oregon Democratic Senators Jeff Merkley and Ron Wyden, would “provide \$30 billion for hazardous fuels reduction, ensuring stable funding for land management agencies to expand wildfire risk reduction projects.”

However, independent peer-reviewed scientific studies conclude that logging does not stop large wildfires. In fact, tree-cutting can make fires burn hotter and spread faster by opening forests to sunlight and wind.

Indeed, the entire premise of logging to create “historical conditions” of parklike forests due to “overgrown” stands and “unusual” high-severity wildfire has been repeatedly challenged by numerous studies in peer-reviewed journals. Contrary to the industry/agency narrative, this science finds that western forests — including across Colorado and Oregon — prior to fire suppression, did grow densely and did experience high-severity wildfire.

The scientific consensus, including from the US Forest Service’s own Rocky Mountain Research Station Fire Sciences Laboratory, is that hardening homes — measures such as installing non-flammable roofs and maintaining defensible space 15-60 feet around structures — can save the vast majority from the most intense wildfires.

The Biden-Harris Administration asserts that “America’s forests are a key climate solution, absorbing carbon dioxide equivalent to more than 10% of US annual greenhouse gas emissions.”

Yet, Rep. Neguse and Hoyle’s unprecedented scale of logging not only ignores this executive order, it would spew gigatons of currently-sequestered carbon into the atmosphere, scuttling US CO2 emission targets for 2030. Meanwhile, studies show that even high-severity wildfires only release an average of 1-2 percent of tree carbon from burned forests.

Hoyle’s bill exploits a federal “emergency action” loophole under Section 40807 of the Infrastructure Investment and Jobs Act of 2021 that allows cutting of a targeted 45 million acres of National Forests without customary legal challenges merely by claiming “threats” from natural wildfires.

“In 2022, the town of Oakridge was evacuated due to the 127,000 acre Cedar Creek wildfire while the Willamette National Forest left 30-40 year old flammable tree plantations with fuel ladders down to the ground bordering residential properties,” says Shannon Wilson, Oregon Organizer for Eco-Integrity Alliance. “If it’s not commercial logging of big trees, the US Forest Service has little to no interest in ‘wildfire fuels reduction’.”

“Any meaningful climate action in the US would involve ending logging on public lands and preserving forests as climate reserves as part of a larger ‘Half-Earth’ strategy endorsed by the preeminent biologist E.O. Wilson,” says Josh Schlossberg, Colorado Organizer for Eco-Integrity Alliance. “Yet instead of protecting our best climate buffer, Rep. Neguse and Hoyle have emerged as the biggest pro-logging members of the House, with Colorado and Oregon as ground zero for the detonation of this devastating ‘carbon bomb’.”



Private Forest Owners and Grassroots Organizations Must Lead the Way in Forest Protections at State and Local levels

by Sonia Demiray



MARYLAND – We’re teetering on the brink of a dual climate and extinction crisis. Animal populations have plummeted by 69% (75% is considered a mass extinction) and according to the European Union’s Copernicus Climate Change Service, we just surpassed the 1.5° C self-imposed threshold of global average surface warming above pre-industrial temperatures. We’re in uncharted territory with best case scenarios now out of reach and events moving faster than expected.

But hope survives in our forests. While we work to reduce emissions as fast as we can, forests, especially mature and old-growth forests, remain our most important lifeline. The world came together in 2022 with the Kunming-Montreal Global Biodiversity Framework and committed to the protection of 30% of lands and waters to protect all life forms. Since 80% of all terrestrial life lives in forests, these are especially important lands to protect. The International Panel on Climate Change (IPCC), under Professor Moomaw, also calls for preserving forests (proforestation), while the International Union for the Conservation of Nature (IUCN) calls to halt deforestation. Also acknowledging the importance of our forests for carbon capture, carbon sequestration, and habitat, the Biden administration just moved to protect mature and old-growth forests on federal lands and called for amendments to all 128 forest management plans to conserve and steward old-growth forest conditions on national forests and grasslands. Much work still needs to be done to close loopholes, but it is an important step in the right direction.

Federal forests, however, are only roughly one third of all US forests. According to a 2021 Congressional Research Service Report, of the 756 million acres of forests in the US, the federal government manages 31% (238 million acres). State and local governments manage 84 million acres (11%) of U.S. forestland. The biggest ownership group are private non-corporate forest owners with 38% of US forest area (272 million acres). Of these, according to the American Tree Farm Systems, 19 million acres are tree farms. Finally, corporate forests account for 20% (156 million acres) which we’re assuming are mostly grown for timber. Timber is an important commodity which should be sourced from tree farms managed for this purpose, not from forest ecosystems. When we add the acreage of privately owned forests, not in tree farms, to the acreage of state and local government forests, more than half of the United States’ forested land appears not to be managed as tree farms or protected from harvest. These forests present a vital opportunity to mitigate climate change and preserve biodiversity.

Conservation vs. Forest Protection

Protecting our forests from logging is the best means to maximize carbon drawdown and sequestration. The pivotal, peer reviewed study by Nunnery and Keeton (2010 *Forest Carbon Storage in the northeastern United States: Net effects of harvesting frequency, post-harvest retention, and wood products*), clearly proves what the IPCC, IUCN, among others, endorse. This graphic, taken from Nunnery and Keeton, demonstrates that a no-forest-management option provides the most important ecosystem services, capturing and storing the largest amount of carbon by far.

Unfortunately, state and federal ‘conservation’ programs generally require active management plans that include logging. In most states, land ‘in conservation’ essentially means the land cannot be built on. It can, however, be clear-cut, heavily managed, sprayed, and/or replanted with a monocrop culture, etc. Many states have used this type of conservation to fill the international biodiversity pledges, yet that is not enough. Until these forest management agencies, at both state and federal levels, is extracted from the timber trade, the Forest Service remains in an impossible position when it comes to protecting the forests it is also asked to log.

Some limited management practices — such as mitigating invasive species, managing deer populations, assisting nature recovery, and improving forest connectivity, are necessary to restore dynamic biocomplexity. Once achieved, such as in old-growth and mature forest ecosystems, a forest should be left to self-regulate. As to the Forest Service, a new function may become assisted migration whereby trees from more southern hardiness zones are planted further north. That is, if Maryland’s climate will resemble Mississippi’s by the end of the century, today we should consider planting trees that thrive in Mississippi’s climate in Maryland.

Why we need to act

Because of the pressures on forest service, individuals and grassroots organizations need to stay alert and put restoration and protections over profit. For example, the recently published Maryland Climate Pollution Reduction Plan, states that the Maryland Department of Natural Resources must “enroll all Maryland forests in climate-smart forest management to enhance forest productivity, carbon sequestration in biomass, and the amount of carbon stored in wood products...” This sounds great to the layman, especially when coupled with the words ‘forest conservation.’ We know, however, that “enhancing productivity” (increasing the amount of wood removed from the forest) is counterproductive to carbon drawdown and sequestration. This is in part because logging itself is a massively polluting undertaking. To logging we must add the emissions from transport, manufacturing, loss of soil-carbon, arbuscular mycorrhizal fungi networks die-off, etc. and in the end, for each ton of CO₂ stored in wood products, we can emit up to 13 tons of CO₂. In addition, we’re eliminating the most effective carbon capture and storage systems (see chart above). It only gets worse when we burn the logged wood, such as woody biomass for energy. The Maryland Forest Stewardship Disalignment Report, co-authored by the Maryland DNR, warns that the “harvest allowances built into the stewardship plans may preclude forest landowners from participating in certain ecosystem markets.” In short, the stewardship plans and conservation programs put in place for private landowners, appear too aggressive to provide the ecosystem services we currently need. Managed forests are not reaching their maximum carbon capture and storage capacity or biodiversity habitat needs due to continued aggressive management.

Forest protection activists and grassroots organizations need to step in and educate the general public, especially forested land owners, about what ‘conservation’ truly means. We need to help people understand management options and forestry language. We must also demand forest protection programs and incentives at state and local levels to promote the preservation of mature and old growth forests. Finally, we need to hold our government accountable to the pledged 30% of land and water protections. Together, we can make a big difference by increasing forest protections to mitigate the extinction and climate crises.

Rural Action and United Plant Savers receive two-year grant to study Goldenseal propagation

by Susan Leopold



RUTLAND, OHIO – Rural Action and United Plant Savers received a grant from the USDA Ohio Specialty Crop Program to conduct research into multiple cultivation methods for the commercially valuable forest crop goldenseal, *Hydrastis canadensis*. Goldenseal is a high-value specialty crop; the root portion of the plant wholesales for \$60/dry pound and retails for over \$400/dry pound. Project leaders will compare goldenseal grown from seed, from rootlet (or rhizome), and from fibrous roots, and will grow the plants out in three environments.

The objective of the study is to provide farmers and members of the herbal products industry with guidance on best propagation practices that will support the sustainability of the goldenseal supply chain. Findings from the project will be shared through four hands-on workshops, presentations at the 2024 and 2025 OEFFA conferences, and published in the *Journal of Medicinal Plant Conservation*.

The project kicked off in the fall of 2023 with three planting sites: Troutville Farm, Sugar Bush, and the United Plant Savers Botanical Sanctuary. United Plant Savers was able to provide the necessary planting material from our “Hope for Hydrastis” project where we are cultivating several propagation sites on the sanctuary. We provided seeds that were collected, as well as root stock and fibrous roots for propagation experiments. We are looking forward to collecting data on these planting sites and sharing the data with the herbal community and forest farmers.



Hydrastis canadensis

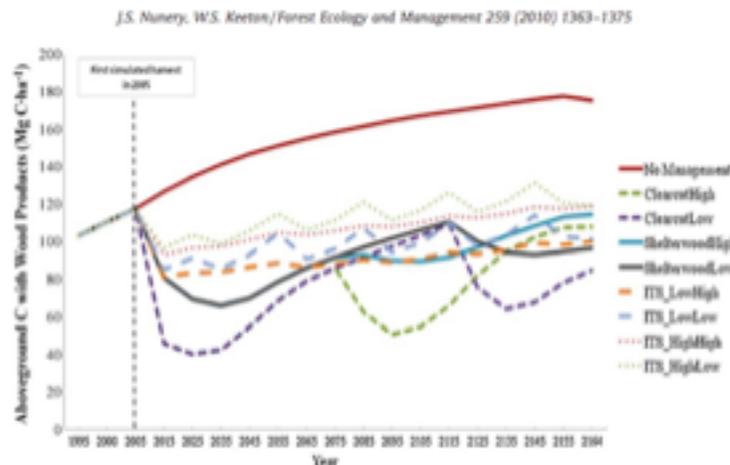
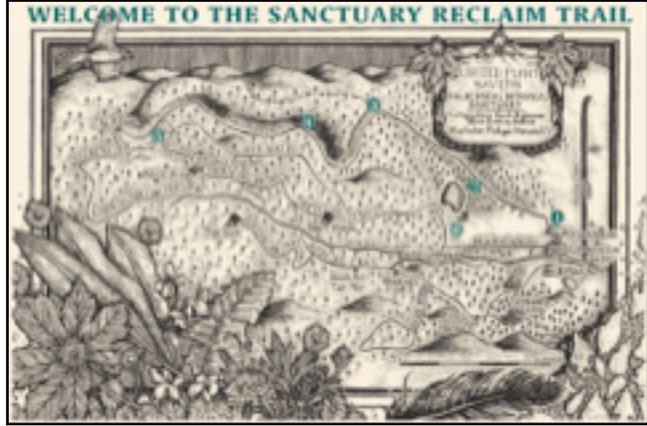


Fig. 2. Simulation output time series for the 9 different management scenarios (values represent 10 year mean of 32 stands C storage in aboveground live/dead biomass and wood products). Ten year means of C sequestration were used to create chronosequences to illustrate the temporal dynamics for each management scenario, however these values were not used in the overall statistical analyses and are presented here for illustrative purposes. Average forest growth was estimated for 1995 using 20 year mean predicted growth rates of all stands. Chronosequences starts from the estimated mean averages in 1995, all harvest cycles began at 2005 (noted with vertical dotted line). For management scenario descriptions refer to Tables 2 and 3.



medicinal herbs
ginseng



32nd Annual Heartwood Forest Council Natural Regeneration

Since 1991, the annual Heartwood Forest Council has been a forum where activists gather to forge the future of the forest protection movement. Each year we meet over the Memorial Day Weekend in a different part of the Heartwood region, to bring regional focus on local issues. This year we are holding the 32nd annual Heartwood Forest Council in southeast Ohio at the United Plant Savers land sanctuary.

The United Plant Savers is a center for the protection of native medicinal plants, fungi, and their habitats while ensuring renewable populations for future generations. United Plant Savers is a founding member of the Appalachian Forest Farming Coalition, providing resources for private forest landowners, and members of the Forest Carbon Coalition, a network of scientists, conservationists, and environmental justice allies working together to protect US forests from harmful logging practices that are driving climate change, and to restore one of the worlds's most vital carbon sinks to its natural capacity.



Schedule of Events

* Subject to change. visit heartwood.org/events or find our Event on Facebook for news and updates.

Friday: Welcome to the Land with UpS Executive Director Susan Leopold music and dancing with **Ugata Jamnasium**

Saturday: the Heartwood Morning Circle

Afternoon Workshops:

Concurrent Session Topics:

1. Fire in Eastern Forests
2. Urban Forests
3. Forest Ecology walks
4. False Promises in Extractive Industry
5. GE American Chestnut Fiasco: Why we need to keep GE trees out of the forests

Evening Keynote: Chad Hanson

Director of the John Muir Project

Late night campfire camaraderie

Sunday:

Hikes and Outings:

- Tour of UpS Land Sanctuary
- Wayne National Forest fire management tour

Workshops:

- Skilcraft: Baskets with Talcon
- Hemp cordage demonstration
- Tending the Fires Within: Activist Mental Health

Evening:

Sunday Night Live **AUCTION!** then *Talent Show*

Monday

closing circle then **ACTION**



This year, our keynote speaker is Dr. Chad Hanson, co-founder and director of the John Muir Project of the Earth Island Institute. The John Muir Project provides primary scientific research on forest ecology and fire, combined with a potent mix of agency monitoring and public education backed up by advocacy and litigation in the courts. In recent years Chad has turned his attention eastward to develop a better understanding of how fire plays a role in forest ecology and forest management in the deciduous broadleaf forest ecosystems found in the eastern US. You can read a review of his recent book, *Smokescreen*, on page 4 of this issue.

Dr. Hanson's study of fire and forest ecology, combined with the expertise and knowledge cultivated by the staff at United Plant Savers, offers a chance for a deep dive into Appalachian forest ecology over the course of our weekend together. The fear of wildfire has become the new excuse for enabling the wholesale logging of our national forests, with the same broad-strokes policy applied equally to forests in both the eastern and western continental US, ignoring essential ecological distinctions between these regions. Attempts by the Forest Service to justify the use of fire "because the Indians did it" ignores substantial differences between how indigenous peoples have used fire, and how agency misuse of fire is a means to promote logging on our public lands.

This theme of fire extends metaphorically to the nature of the major issues that Ohio and the surrounding region faces. We gather where the coal fields of West Virginia and eastern Kentucky meet the gas lands of Pennsylvania and New York. The upper Ohio River Valley region is targeted for a massive buildout of the petrochemical plastics industry, turning fossil gas into throwaway plastic. The scale of these threats to our region's forests requires that we gather and strategize and work together to build the sustainable alternative that we envision.

At the same time, we have before us some tremendous opportunities to permanently protect public forests. Proposals from the Biden Administration to identify and set aside Old-Growth and Mature forests from logging could mean historic new protections for habitat, recognizing the important role that these forests play in mitigating global climate change. A movement in southern Illinois to transform the Shawnee National Forest into the nation's first Climate Preserve has gained widespread support in the first two years of their campaign. Urban centers throughout the Heartwood region are recognizing the importance of urban forests as many city and county governments begin to write Climate Action Plans that offer a new way to protect canopy forests from development pressures and urban sprawl. The Heartwood Forest Council is our time together to connect and inspire a renewal of joyful resistance and natural regeneration of our spirits.

We invite activists and allies, forest lovers of all walks of life, to gather with us at the 32nd Annual Heartwood Forest Council in the hills of southeast Ohio.

More information and online registration at heartwood.org/events/. Register by US mail using the form below. Please pre-register before May 15th.



Registration Form

Pre-register before May 15 and mail this form to us with your payment, or pay at the gate when you arrive. This is especially important so we are prepared to feed you!

Remit form and check via USPS before May 15 payable to:

Name _____ Heartwood
Address _____ PO Box 352
_____ Paoli, IN 47454
Phone _____ Email _____ or register online at
_____ <https://heartwood.org/events/>

FULL WEEKEND: \$100 all meals, free camping. +\$20 for a cabin bunk
* Cabin bunks are limited this year, camping is encouraged!
Kids under 12 free! just tell us how many are coming: _____

TOTAL: \$ _____

PART WEEKEND: \$10 per meal plus \$20 day
Please indicate which meals you plan to share with us:

Friday ___ Dinner
Saturday ___ Breakfast ___ Lunch ___ Dinner
Sunday ___ Breakfast ___ Lunch ___ Dinner
Monday ___ Breakfast

TOTAL: \$ _____

___ I am interested in carpooling or rideshare. Please contact us at info@heartwood.org

LODGING

Unlimited camping is available, but the site has only a few beds and cots. BYO camping gear and bedding. Contact us at info@heartwood.org to inquire about arrangements for a bed or cot.

VOLUNTEER/COST REDUCTION OPPORTUNITIES

No one will be turned away for inability to pay.

We will need volunteers to help with many aspects of this event. Volunteers can earn credit against the registration fee at a rate of \$15 per hour, helping in the kitchen or with other aspects to make the event run smoothly. Contact us to make arrangements at info@heartwood.org, or call us at (812) 307-4326.

This year, alongside our featured program we are proud to partner with Rising Appalachian Warriors to provide a full slate of kids and youth activities. This will be a time to teach the next generation real-life activist skills, from writing a press release or letter to public officials, to the basics of organizing a successful public demonstration, featuring a street-theater skit written by the youths in attendance at this event. Visit risingappalachia.org for more.

The meals we share at Heartwood events are an expression of the values that we hold in common. Every effort is made to provide nutritious, wholesome, locally sourced, and lovingly prepared climate-friendly meals that are inclusive of all dietary types. Special thanks to the Mountain Watershed Association for underwriting a fair wage for the Kitchen Wizards and other kitchen expenses. Thank you to the local Athens food and farm community that produces such an array of bounty from the earth we live upon.



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Fire is becoming a scapegoat for justifying logging in our national forests, but the fact is that these “catastrophic wildfires” that make the news are made worse by logging activity. Forests in the eastern half of the continent play an outsized role in storing carbon and cooling the atmosphere. Federal forest management policy, however, seeks to impose the use of “prescribed” fire on the landscape, a misuse of ecological principles to provide logs for the timber industry. Join us as we explore the science and rekindle the magic that happens when we gather together in solidarity to protect the places we love.

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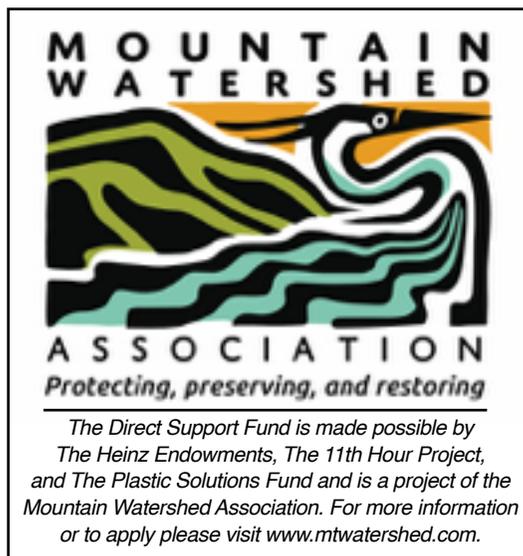
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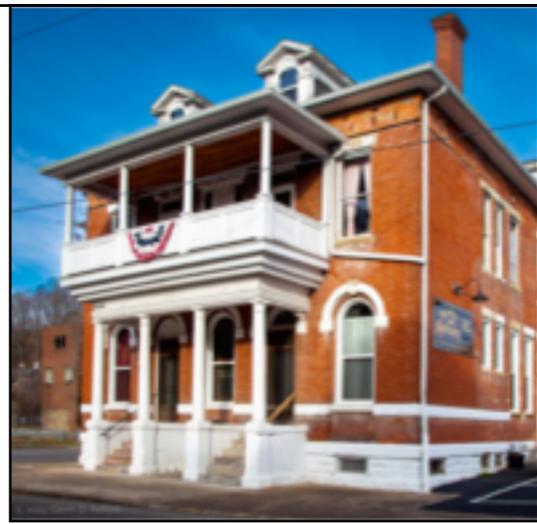
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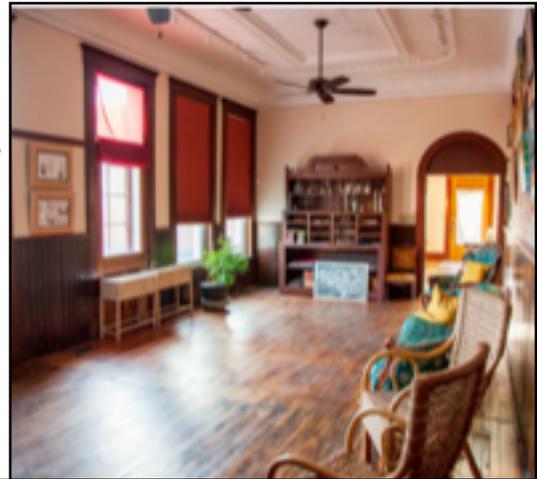
Originally a newspaper office, it later served the community as a wholesale grocery and, more recently, housed a much-missed restaurant. Acquired by United Plant Savers, this renovated gem now provides additional housing for guests, art fellows, and interns at their nearby botanical sanctuary.



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FBI, State Police Raid Activist Homes

by Sara Cohen



WEELAUNEE – It’s been more than a year since the Atlanta and Georgia governments decided they’d had enough of the Stop Cop City movement.

There were multiple factors impacting last year’s raid — fear-mongering about terrorists, militarized training, and political ruthlessness — that led to the death of young Tortuguita on the morning of January 18, 2023. As autopsies and an independent investigation now make clear, a police officer misfired on another officer, setting off a chain of panic leading to fifty-seven holes in Tortuguita’s body. Tortuguita was quickly framed to cover up the “accident”.

This was no accident. It was part of a deliberate escalation of violence against a movement that normal legal stonewalling and propaganda couldn’t defeat. That repressive violence is evident in the recent RICO indictment — which threatens torturous decades in prison for anyone associated with the Stop Cop City movement (now deemed a “terrorist organization”). It is in recognition of our power that the government and their corporate partners are willing to pull off their masks and reveal their brutality to silence our strength.

Whether it’s shutting down a successful mass legal petition for referendum, threatening the entire movement with the starvation and torture of prison decades, or murdering young activists — their ultimate goal is terror — to turn all Americans away from becoming a real threat to corporate power and racial domination. Their ultimate message is, go back to your families, your jobs, your phones. Stay quiet or you will end up like them — alone and sick, or dead.

Our answer to that terror is the answer of somatic practice to trauma — connection. The movement’s relational skills have brought together people of diverse backgrounds—from MLK’s daughter Bernice King, to militant black radicals, to Greenpeace, to Gen-Z anarchists, to south Atlanta neighborhood organizations, that refuse to denounce the other, instead focusing on what they share in common.

The latest repression struck on the morning of February 8th, when police broke into three houses allegedly associated with the Stop Cop City “terrorist organization”, confiscating movement fliers, stickers, and personal laptops — and arresting one activist accused of arson, and threatening to arrest more in the near future. These raids hit one day after a new Georgia bill, already approved by the senate, passed the house. This bill, the first of its kind nationally, entirely outlaws bail funds, including the Atlanta Solidarity Fund, a nonprofit organization which has been the backbone of the Stop Cop City legal infrastructure.

We are not afraid of their violence and intimidation, because of our connections to each other — even when they break into our houses and kidnap our friends. They are trying to provoke fear with their violence, and trying to make us feel powerless by taking away our legal protection. Their brutality, again, only reveals our strength. It’s telling that they are willing to use the police and legal system so openly to try to silence a movement. The movement to Stop Cop City is just one moment of connection in the coming decades of relationship-building to which we are called — toward *tikkun olam*, a concept in Judaism referring to actions that “repair the world”. There is no time to waste!

Democracy By and For People and Place

by Molly Jo Stanley



OHIO – I write from Athens County, Ohio – the ancestral home of the Shawnee, Potawatomi, Delaware, Miami, Wyandotte, and many other Indigenous Peoples. Where I am privileged to live is land taken through the 1795 Treaty of Greenville, and the forced removal of Tribes through the Indian Removal Act of 1830.

The foothills of my Southeast Ohio home are part of a once-contiguous ecosystem made up of some of the richest, most biodiverse and resilient forests and wetlands in the world. These lands were tended reverently by those who originally inhabited these places and understood that the health of the water, soil, and air is inextricably linked to our collective health and wellbeing.

The former grandeur of this place, from the towering old-growth forests of the Appalachian Foothills to the fifteen-hundred-square-mile Great Black Swamp – which spanned present-day northeast Indiana and northwest Ohio – was all but lost by the beginning of the 20th century. These places are now home to gerrymandered congressional and state legislative district maps.

Ohio’s people, places, and democracy have been fragmented for far too long, and this fragmentation is central to the story of extraction and exploitation that continues to sacrifice our communities – our people and ecosystems – for the monetary gain of industry.

Without a healthy democracy – one that is built upon equity and justice for real people – Ohio’s communities will continue to be sacrificed for short-term monetary profit, and this is simply unacceptable.

Right now, Citizens Not Politicians and volunteers across Ohio are gathering signatures to change the way we create our representative districts.

The Citizens Not Politicians Amendment aims to:

- Create the 15-member Ohio Citizens Redistricting Commission made up of Democratic, Republican, and Independent citizens who broadly represent the different geographic areas and demographics of the state.
- Ban current or former politicians, political party officials, and lobbyists from sitting on the Commission.
- Require fair and impartial districts by making it unconstitutional to draw voting districts that discriminate against or favor any political party or individual politician.
- Require the commission to operate under an open and independent process.

413,487 valid signatures of registered voters must be gathered by July 3, 2024 to qualify for the 2024 Ohio General Election Ballot. If you live in Ohio, please sign your name in support, and get in touch with groups like Common Cause and the OEC to learn more about the effort to end gerrymandering and halt future Ohio General Assemblies from continuing the trend of rigging the rules in favor of fossil fuels.

Intact forested ecosystems are infinitely beneficial to our economy and our lives, with benefits that fracking will never provide. An intact, healthy democracy, by and for the people – and our place – is crucial to a just, equitable future for Ohio. Together, we can acknowledge our mistakes and move forward toward justice for all.

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Lawsuit Seeks to Protect Nantahala National Forest From Logging



by Will Harlan

ASHEVILLE, NC — Conservation groups have sued the US Forest Service, arguing that the agency's plans to log a sensitive area of the Nantahala National Forest in North Carolina violate federal law.

The lawsuit, filed in federal court in late January, focuses on parts of the Southside timber project that aim to log areas near the Whitewater River in the Nantahala National Forest. The landscape boasts stunning waterfalls, towering oak trees, and critical habitat for rare and imperiled species.

Both the Forest Service and state of North Carolina have recognized the area slated for logging as an exceptional ecological community with some of the highest biodiversity in the state.

"The Southside timber sale shows that Forest Service leaders are more interested in logging than protecting rare and beloved landscapes," said Will Harlan, southeast director at the Center for Biological Diversity. "The public strongly opposes logging this ecologically unique forest beside a trout stream and waterfall, but the Forest Service wants to cut it down anyway. This is a clear and heartbreaking example of the conflicts we can expect to see under the new forest plan."

Because of the scenic beauty and ecological importance of the area, the Forest Service designated it as a 'special interest area' in the recently published Nantahala-Pisgah Forest Plan. Destructive projects like logging and roadbuilding are supposed to be significantly restricted in these areas, and the decision to allow logging contradicts the agency's own plan.

"Logging in this area is so harmful that it is inconsistent even with a forest plan that fails to protect the values that make the Nantahala National Forest exceptional," said Patrick Hunter, managing attorney of the Southern Environmental Law Center's Asheville office. "The Forest Service must scrap this reckless logging project in order to comply with federal law."

Released last year, the Nantahala-Pisgah Forest Plan falls short on many levels and fails to adequately protect the biodiversity of the Nantahala-Pisgah National Forest. As a result, more than 14,000 people objected to the plan.

"The Southside project is a case study of the Forest Service's reckless resolve to push harmful logging onto exceptional landscapes," said Nicole Hayler, director of the Chattooga Conservancy. "Logging in this area along the Whitewater River is a prime example of the root of the problem: deeply flawed, perverse incentives driving the Forest Service to hit mandated timber targets, which is why the entire Southside project should be dropped."

Limiting logging in the area subject to the lawsuit was one of the strongest parts of the Nantahala-Pisgah Forest Plan. Despite this, the Forest Service is poised to undermine the plan by plowing ahead with this reckless and unpopular timber project.

"For more than a decade, conservation organizations like Defenders of Wildlife have advocated for the Nantahala-Pisgah Forest Plan to establish clear standards and guidelines for the conservation and recovery of rare species," said Ben Prater, Southeast program director for Defenders of Wildlife. "While the plan falls short in many respects, we were pleased that a special interest area was designated for portions of the ecologically important habitats that were threatened by the Southside timber project. However, the Southside timber project is still being pushed forward and could damage the ecological integrity of this important area by affecting the habitats of rare species like green salamanders and cerulean warblers, as well as federally listed species like the northern long-eared bat. Allowing an egregious project like this to move forward erodes the public trust and signals that the Forest Service is unwilling to comply with its own plan."

"With both the Forest Plan and this Southside timber sale, Forest Service leaders have put commercial logging first and ignored federal law and overwhelming public support for conserving our most beloved natural areas and landscapes," said Josh Kelly, public lands field biologist for MountainTrue. "Pisgah and Nantahala National Forests are big enough to accommodate sustainable logging practices and create new early successional habitats for hunters without destroying an area that the Forest Service itself has deemed an 'exceptional ecological community' with 'features that are not found anywhere else in [...] the Eastern United States.' Unfortunately, it looks like it's going to take a public interest lawsuit to get the Forest Service to act responsibly and comply with federal law."

"Logging in this particular scenic and ecologically rich area, to supposedly accomplish management goals that can easily happen in more appropriate places, is exactly why we have longstanding concerns about the Forest Service's planning process," said David Reid, Sierra Club national forest issues chair.



City Poised to Make a Decision on Fate of Evans Spring Wetland and Woods

by Sherman Bamford

ROANOKE, VA — Evans Spring is a 150-acre tract of unprotected forest and wetlands in this Appalachian city of 100,000 people. It is the largest area of green space for northwest Roanoke and is not protected by park status. The springs, northwest of Tinker Creek and the Great Lick, are believed to have been a major water source for Native Americans in the Roanoke Valley prior to European colonization. Between 1955 and 1980, over 1600 homes, churches, and businesses were bulldozed in the name of "urban renewal", and displaced families moved to the Melrose-Rugby, Fairland, and Villa Heights neighborhoods adjacent to Evans Spring.

Now the City of Roanoke appears likely ready to permit construction of a \$55 million interstate interchange, a big-box store, and other sprawling development in this last oasis of green space in predominantly African-American northwest Roanoke. City Council held a testy meeting on Evans Spring on February 5. On February 12, the Roanoke Planning Commission voted 5-2 to approve a master development plan for the area, and City Council is expected to vote on the plan on February 20.

Nearby residents overwhelmingly oppose any development on the privately-owned tract and would like to see it converted into a city park. But despite efforts to do so, planners failed to fully involve the community in a way that fostered mutual trust before moving through with plans to build the mall and highway interchange.

Friends of Evans Spring and members of the local NAACP Youth Council spoke out against the development proposal earlier this month, asking, "Why would you insist on making Northwest Roanoke a concrete jungle?" They urged the city to instead protect the woods and forest canopy for wildlife and for people's health and well-being. RAISE, a chapter of Virginia Interfaith Power and Light, has spoken out for protection of Evans Spring, as has Blue Ridge Land Conservancy, which stated that "development in the Evans Spring area would likely force more stormwater more quickly into Lick Run, leading to more pollution from the city entering the Roanoke River," and making Northwest Roanoke more susceptible to the urban heat island effect.



Photo by Sherman Bamford.

Mountain Valley Pipeline Construction Obliterates Water Quality; Citizens Fight Back

by Sherman Bamford

ROANOKE, VA – Mountain Valley Pipeline (MVP) construction continues at a frenzied pace following an August 4, 2023 Supreme Court decision and following legislation in the unconscionable federal debt deal that allowed the work to continue with virtually no restraints. The Mountain Valley pipeline is a 303-mile long gas pipeline under construction from northern West Virginia to southside Virginia that has been the subject of citizen outrage and direct action protests for about a decade. The route traverses steep slopes, unstable soils, vital rivers, streams and wetlands, and countless family farms.

The cost has been high. The Virginia Department of Environmental Quality (DEQ) has been eerily non-responsive to new evidence of serious water quality violations since the work resumed in August 2023.

Red Terry, a landowner who sat in a tree for months to halt the project in 2018, reports that MVP is pumping sediment on a wetland on her land. She says, "Sitting up in those trees for that month, I endured hail, snow, and freezing rain. That was nothing compared to the apocalypse I am witnessing now." Near Newport, Virginia, citizens reported evidence that MVP breached a karst formation, dumped sediment into groundwater, and polluted Sinking Creek with no action taken by Virginia DEQ. Elsewhere, many people's water has been rendered undrinkable or has been compromised. Maury Johnson in West Virginia says, "My aunt and uncle are trying to stay alive, and they can't drink their own water because of this pipeline." These are but a few examples.

And it is reported that, of late, many of the brave people engaged in nonviolent protests to stop the pipeline, are receiving lengthy sentences – two to three months – and have been asked to pay exorbitant amounts of bail – up to \$10,000 to \$25,000 – for misdemeanors, all while MVP goes scot-free for its violations.

In spite of this, citizens are fighting back. Bank protests are ongoing or planned at the three largest banks bankrolling MVP (Wells Fargo, Bank of America, and Citibank). Nearby residents are looking at ways to engage the DEQ at hearings in Richmond, Virginia, to force them to do their job. And a new petition is asking the Virginia Attorney General to enforce a 2019 consent decree that MVP has violated and issue a stop work order.

Special attention is being paid to the Southgate extension to MVP in North Carolina, which would be re-routed, and new expansion of the existing Transco pipeline in the southeast that Southern Environmental Law Center calls 'really big', "an expansion on the order of the size of the Atlantic Coast or the Mountain Valley pipelines".

To learn more or to find out how to get involved, see <https://powhr.org>



“Issue the orders, sir,
and I will storm
the gates of Hell”

“Mad”

Anthony
Wayne

“Perhaps we should
try Stony Point first”

General George
Washington
1778



Top: Guy Cove in 2007 in Breathitt County, KY prior to Forest Restoration Approach (FRA) reforestation. Below: Guy Cove in 2019, after successful implementation of FRA practices. Photos courtesy ReImagine Appalachia.



Abandoned Mine Reclamation Should Include Reforestation

by Dana Kuhnline



In recent years, Congress has passed important support for the cleanup of hazardous abandoned mine lands (AML).

However, this funding typically focuses on the most dangerous sites and rarely includes full reforestation of mine sites, and does not apply to coal mines permitted after 1977.

There are over one million acres of non-forested, bond-released mined lands that could be reforested in the eastern US. The Appalachian Regional Reforestation Initiative (ARRI) was established in 2004 to improve reforestation and revegetation success on AML and modern mine sites. Its driving mission is to plant more high-value native trees, increase planted trees' survival and growth rates, and expedite the establishment of forest habitats through natural succession on mine sites.

A coalition of groups, including Appalachian Voices, ReImagine Appalachia, National Wildlife Federation, and the Appalachian Citizens' Law Center, have been working to increase funding for the Appalachian Regional Reforestation Initiative (ARRI) because of the need to reforest mine lands and the historic success of the program.

Last spring, more than 60 organizations submitted a letter to Congress supporting \$5 million in dedicated funding for the program. This funding would allow for ARRI to scale up its reforestation and revegetation program on coal mined lands, significantly improving the patchwork of funding currently available through private and state partnership that make up ARRI's budget.

The need to improve mine reclamation is more critical than ever, given recent concerns regarding flooding and other negative community impacts arising from unreclaimed or inadequately reclaimed mine sites. According to a recent study from OSMRE, compacted soil from large mining complexes makes downstream communities especially vulnerable to increased flooding. The study also states that healthy vegetation, especially on steep topography, can help restore the hydrologic balance and reduce flooding in communities near former mine sites.

Reforesting mined lands has many environmental, safety, and economic benefits including reduced soil erosion, improved water quality, invasive species suppression, improved wildlife habitat, carbon sequestration on reclaimed mined lands, reduce runoff from mined lands, stabilize land and streambanks, and reduce the impacts of flooding from extreme precipitation events in coal mining communities.

What's in a name? US Forest Service proposes name change for Wayne to "Buckeye" National Forest

by Molly Jo Stanley



OHIO – In August 2024, the US Forest Service announced a proposal to change the name of Ohio's only national forest, the Wayne National Forest, in response to requests from

Indigenous Peoples and local community members.

The Forest Service held a 15-day public comment period. After reviewing public input, it will make a recommendation to Agriculture Secretary Tom Vilsack, who has authority to change the name.

A USFS staffer provided the following additional context to guide the comment period,

A short list of names was developed through consultation with Federally recognized Tribes with ancestral ties to Ohio, and "Buckeye" was ultimately chosen as the proposed name... because it is the state tree of Ohio and seems appropriate that the National Forest be connected to the state in such a way. The "ask" from the Forest Service is whether there's any reason that "Buckeye" is not acceptable.

Support for the change acknowledges that, in the words of Supervisor Lee Stewart,

The name 'Wayne' is associated with the US government's historic and violent genocide of Indigenous peoples and their cultures. More inclusive names can be drawn from Ohio's Indigenous and natural histories. We encourage continued engagement with Native American Tribes, and careful consideration of their voices in matters impacting federal public lands in their traditional homelands.

Supporters also acknowledge that, with many towns and places across Ohio, Pennsylvania, and Indiana sporting the name "Wayne", the current name does little to connect Ohio's only national forest with its place, or define and uplift that which makes this place so special and important.

Cursory review of the comments received indicates roughly equal numbers of those opposed; among them, Senator J.D. Vance, who wrote to the USFS in praise of Anthony Wayne and keeping the Forest in his name.

Anthony Wayne was a controversial figure in history, to say the least. After earning the nickname "Mad" Anthony for his daring ruthlessness in battle against the British during the American Revolution, he retired from military service to the life of a plantation owner in Georgia, holding 47 people in slavery to grow rice. He served briefly in the new Congress until he was expelled for "voter irregularities". After the plantation went bankrupt he then returned to the life of a professional soldier, leading the genocidal wars against the Shawnee, Mingo, Miami, Wyandotte, and other native nations of the Ohio country that culminated in the Battle of Fallen Timbers and the Treaty of Greenville in 1795. He was known as a boozier and a womanizer. Ohio has other heroes that we can look up to.

As the OEC wrote in our official letter of support, "Ohio's public lands should be welcoming to all. It is important to acknowledge and understand past injustices, and how the names of our public lands can either perpetuate exclusion and injustice or help heal those wounds."

The national forest was established in 1939 as a means to recover the ecological and economic devastation wrought by extractive practices introduced by European settlers. A new name does not inherently harm the legacy of Anthony Wayne – who remains the namesake of an Ohio county 100 miles away from the nearest borders of the National Forest. It could prove to play a role in the continued healing of this place and the recovery of its ecological and cultural wealth.

As Logan York, Miami Tribe of Oklahoma Tribal Historic Preservation Officer, expressed, "As we look back on history, today we all have increased knowledge that leads to greater understanding, and an excellent way to reflect that is not to forget the past but to change as we change as a people. Wayne might have been a hero to some but not to all, and national forests are for everyone to enjoy equally, and the name should reflect that."



Gloomy Day

by Kurt Kemp



INDIANA – I just returned from my beloved Owen-Putnam State Forest. It has been a gray, rainy day, which matched well with my state of mind.

My objective was to visit one of my favorite areas, which happens to be my best chanterelle mushroom hunting woods. Last summer, the state of Indiana conducted an industrial timber harvest in this compartment, and I wanted to assess the damage. I have been putting this trip off for a few months fully aware of what I would find. The logging company used a Feller-Buncher (a huge, destructive piece of equipment), as they had previously done in the Owen-Putnam. I know the carnage they leave behind.

Driving north on Fish Creek Road, I reminisced about how in my past, I was full of joy at the prospect of spending a day exploring the beauty of nature, with the belief that the forest would only grow more majestic as it and I aged.

The journey still holds the anticipation of the serenity we all seek in nature, although now it is tempered with dread of what atrocities I might discover – outrages perpetuated by those entrusted with the care of these special places, but who chose instead to make a mockery, not only of Mother Nature's plan, but also of the public trust.

Overwhelmed by what I saw, I left the recently brutalized area, walking a path along the creek, chosen because it meanders through an area of forest that has not been subjected to the treatment I had just witnessed. Not yet, anyway!

Making my way, I thought "Man, I'm tired." Yes, I'm getting older and recovering from a bout of Covid, but those weren't the only reasons I was feeling beaten down. As rain began to fall, I realized that I not only was carrying my usual gear, I also was burdened with a heavy heart-- a heart that grows heavier every time I witness another timber harvest proclaimed to be both beneficial and necessary for the "health" of the forest. Even I can tell neither is true.

My heart, even heavier with the prospect that at this point in time, the supposed best chance we have to stop this madness lies with glad-handing bureaucrats who I fear have more concern for their political advancement than for the health of our planet. I have as much faith in their words as I have that the Tooth Fairy will put a quarter under my pillow should I lose a tooth.

Though saddened, I will remain forever hopeful, gaining strength from confidence in the smart, dedicated people working endlessly to bring about much needed, meaningful change. Plus, I am too stubborn to give up! Who knows what the future will bring to our public forests? Will it be an ever increasing commercialization or a more enlightened, passive stewardship? Time and effort will make that determination.

Ready to Sue from front page

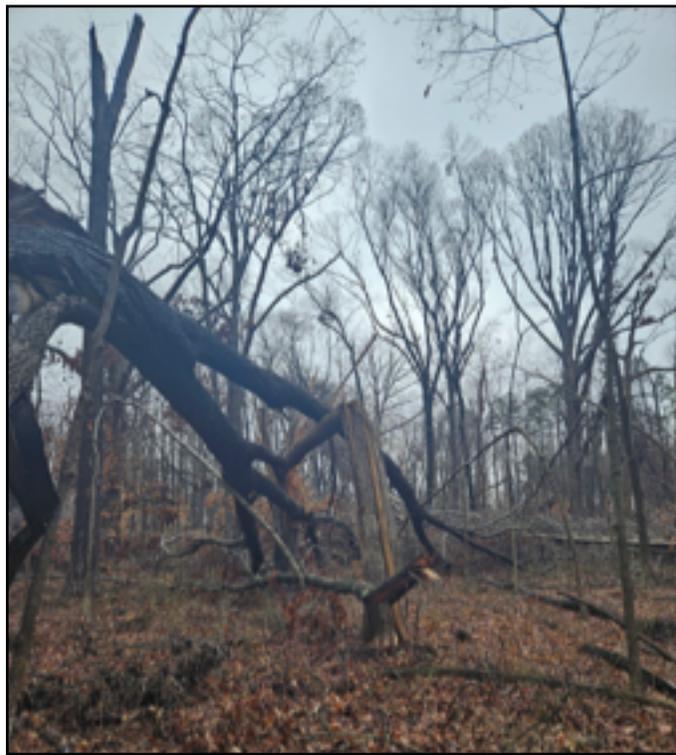
Paoli Experimental Forest and the harms to the many ecological and habitat benefits provided by this natural disturbance that would result from the proposed logging. The biomass of the fallen trees are an essential part of this ecological process; to remove them in the name of “ecological restoration” will do far more harm than good.

This proposal is authorized by the woefully out of date 2006 Forest Plan for the Hoosier National Forest. This is out of compliance with both the National Forest Management Act, which requires a new Forest Plan no later than every fifteen years, and the Congressional exemption to that mandate requiring a ‘good faith’ effort to initiate the process of developing a new Forest Plan. Many national forests in the Heartwood region are similarly operating with outdated Management Plans.

We have also raised this concern in objections filed for the Buffalo Springs and Houston South logging and burning proposals, both of which are currently being re-evaluated in light of the Biden Administration’s directive emphasizing the preservation of mature and old-growth forests. The proposed action appears to overlook the potential ecological significance of the Paoli Experimental Forest in fulfilling that mandate.

If the proposed 'salvage' operation, which is part of the Buffalo Springs project area, is approved, it would circumvent the NEPA process before a full Environmental Analysis for Buffalo Springs has been completed. We are still waiting for a ruling from the 7th Circuit Court of Appeals on an appeal by the Indiana Forest Alliance and several co-plaintiffs regarding the massive Houston South logging and burning proposal in the watershed of Lake Monroe, the drinking water supply for the City of Bloomington and over 100,000 area residents.

Heartwood and Protect Our Woods have retained the services of attorney Mick Harrison to protect the public interest in these matters. No action by the Forest Service is anticipated before the end of April but we want to be ready when the time comes.



Trees felled by natural events such as storms provide habitat, but the Forest Service proposes to “salvage” the timber, adding the impacts of logging to the stresses that the ecosystem must bear. Photo by Steven Stewart.

When 50 years is not enough: a new year calls for new biodiversity legislation

by Sean O'Brien



The 50th anniversary of the Endangered Species Act (ESA) — the most consequential environmental legislation ever created — shows how successful forward-looking legislation can be. As we welcome 2024 and celebrate the strides made in biodiversity protection, we know the problem remains, so let's draw inspiration from past successes to pass even more robust laws. Given the urgency of the biodiversity crisis, new legislation must match the immediacy of this threat.

It seems like it would be hard to miss the permanent loss of the plants and animals all around us. After all, everything is in your face these days. The ubiquity of cameras means we are witnesses to global events, both large and trivial. From massive wildfires and big-game hunting to individuals tripping while looking at their smartphone, we see it all.

What we do not see slowly unfolding is the extinction crisis. Yet, contrary to its seemingly gradual pace, species are vanishing 1,000 times faster than the natural background rate of extinction—a pace that surpasses even the aftermath of the comet that led to the demise of the dinosaurs. It's difficult to visualize the insect apocalypse, three billion fewer birds in North America, or the moment of extinction for the one million species at risk of disappearing from the planet in the next 50 years, but here we are in the United States with 34% of plant and 40% of animal species at risk of extinction.

The mass despeciation of nature will affect all of us. However, like climate change 30 years ago, the loss of species seems like a distant problem — until it isn't, and habitats start to collapse. Less diverse ecosystems are less resilient to environmental change, and humanity depends on ecosystems for the services they provide, such as water purification, pollination, genetically diverse medicines and food, and a variety of other social, cultural, and economic benefits.

As we celebrate the anniversary of the ESA, we must commit to being witness to the Sixth Extinction. The ESA set a precedent for states and countries by acknowledging the gravity of extinction at a time when this issue wasn't at the forefront of most people's minds. An inconceivable move in today's political landscape.

By providing a framework for protecting the rarest species in the United States, Congress and President Nixon saved thousands of species from extinction, including the Bald Eagle. While not always successful,

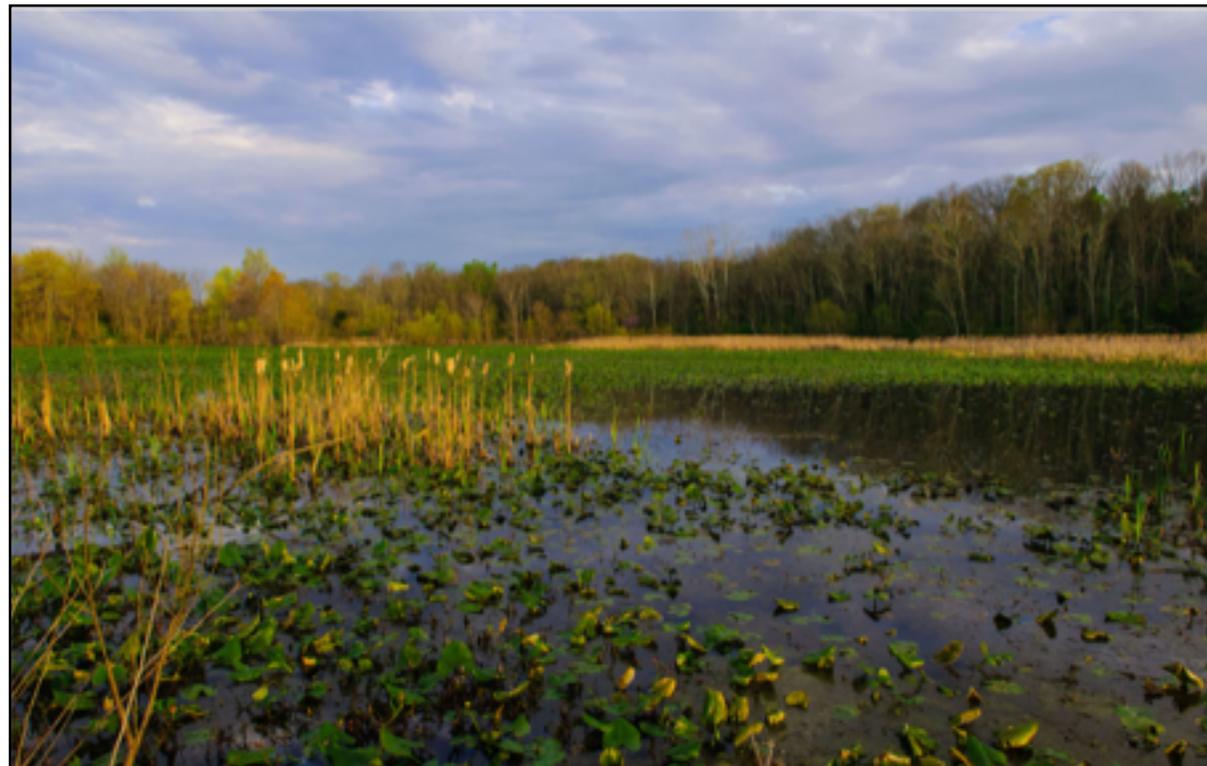
the fact we are identifying and working to save species is remarkable. Moreover, it's estimated that 99% of the species that do get listed are saved.

Though an audacious claim of success can be made, there are thousands of species at risk of extinction that are not included among the 1,670 species listed under the ESA. According to a replicable scientific analysis, 2,747 plant and 2,613 animal species are at high risk of extinction in the US. Unfortunately, getting species onto the Endangered Species List is as much a tedious political process as it is about science. Nevertheless, some of the rarest species have protection under state laws or have been saved through local or private action. But the vast majority do not have enough protection. We can and must do better to safeguard the diversity of life.

Even with the emergence of advanced technologies such as satellites, drones, smartphones, and AI, documenting an extinction remains challenging. While people dream about hearing the call of the Ivory-Billed Woodpecker—and it has been 60 years after the last verified sighting of the magnificent bird—we still will not declare it extinct. Witnessing change holds power, but species extinction occurs quietly in the background. This makes it that much more critical to have scientific evidence indicating we are experiencing a biodiversity crisis and are succeeding in saving species from extinction.

While the current Congress seems unable to pass meaningful legislation, we cannot wait to take action on extinction. The bipartisan Recovering America's Wildlife Act has the potential to be this generation's exemplar of forward-looking legislation that addresses the calamity we have caused and benefits both people and wildlife for future generations. When future generations look back at the history of extinction, let's not be the generation of leaders that ignored it as was done with climate change 30 years ago.

Species do not have to disappear in silence. We must leverage our voices to advocate for laws that safeguard the biological foundation of our natural world.



Wetland habitats are highly productive and diverse, covering just six percent of the Earth's land surface yet supporting 40% of all plant and animal species. The United States has lost more than half of its original wetland area since European colonization, posing a threat to numerous federally listed species dependent on these habitats.



Biological diversity is messy. It walks, it crawls, it swims, it swoops, it buzzes. But extinction is silent, and it has no voice other than our own.

Paul Hawken

The Endangered Species Act: 50 years of protecting America's biodiversity



The United States has one of the world's most powerful legal tools for protecting species at risk of extinction: the Endangered Species Act. Since it was passed by Congress in 1973 (on the heels of a 1967 precursor law), the Act has built up a stellar success rate, saving 99% of species it protects from extinction.

Three vital provisions give the Act its teeth. It's "citizen-suit" provision lets public-interest groups and individuals petition and sue sluggish federal agencies to make sure the Act protects species as it was intended to. Meanwhile its critical habitat provision — often enforced via the

citizen-suit provision — requires those agencies to protect the lands and waters that species need to survive and recover. And finally, the Act's consultation provision requires federal agencies to avoid jeopardizing protected species or "adversely modifying" — that is, damaging — their critical habitat in all actions they fund, permit, or carry out.

Although the Act works by protecting individual species or subspecies, at its best it provides landscape-level protection for complements of species and their ecosystems.

So far the Act has helped bald eagles, black-footed ferrets, gray whales, California condors, and Mexican gray wolves, to name just a few among hundreds of species whose status has improved dramatically under its protection.

More than 1,600 animals and plants are protected, or "listed," as endangered or threatened in the United States. But there are hundreds more waiting for protection under this crucial law. Unfortunately the process used to list species by the US Fish and Wildlife Service — the agency that's mostly in charge of carrying out the Act, with a few ocean species covered

by another agency called NOAA Fisheries — has been too slow, on average taking 12 years to protect species even though, by law, it's only supposed to take two.

When an agency lists a species, the Endangered Species Act requires it to designate critical habitat at the same time, as well as to draft a recovery plan, which is a roadmap outlining actions to be taken to help the species recover and, eventually, thrive in the wild.

As with listing species, the designation of critical habitat usually requires litigation — the federal government rarely takes this step on its own. And it often doesn't designate enough critical habitat to do the job, requiring even more litigation.

The Endangered Species Act periodically comes under heavy fire from industry-backed interests in Washington, where — according to the ebb and flow of lobbying influence in Congress and the White House — politicians are pressured to deauthorize or substantially weaken the Act. This happens most often in obscure, backdoor ways driven by vested interests, since the Act enjoys widespread popular support and is therefore difficult to attack directly.

The Center has played a central role over the years in fending off these insidious assaults. Sometimes that's by supplying policymakers with the scientific data they need to effectively defend the Act from ill-informed detractors, and sometimes it's by filing legal petitions and lawsuits. Our close watchdogging of the Fish and Wildlife Service has brought official corruption to light and, by exposing bureaucratic wrongdoing, catalyzed a large-scale reevaluation of unsound decisions that would hurt species.

Read more and get involved: <https://biologicaldiversity.org/campaigns/esa/index.html>

Lawsuit Seeks to Protect Candy Darter From West Virginia Coal Hauling

by Meg Townsend



WASHINGTON, DC — Conservation groups sued the US Forest Service today for failing to protect streams in the Cherry River watershed from the harmful effects of coal hauling in the Monongahela National Forest. Coal

hauling imperils the critically endangered candy darter as well as nearby habitat for other endangered species.

Filed in the US District Court for the District of Columbia, today's lawsuit faults the Forest Service for allowing a private coal company to haul oversized coal loads, coal mining supplies and equipment — including explosives — on gravel roads in the Cherry River watershed. This has led to sediments and other harmful pollutants entering the rivers and harming the candy darter.

The Cherry River watershed is one of the last strongholds of this vibrant freshwater fish, which is known as the "underwater rainbow" because of its bright green and orange stripes.

"I'm appalled by the Forest Service's blatant disregard for the candy darter and the Cherry River watershed," said Meg Townsend, senior freshwater species attorney at the Center for Biological Diversity. "These beautiful little fish are on the knife's edge of extinction, and they can't withstand any more harm from the coal industry."

The suit shows that the Forest Service violated the Endangered Species Act by allowing these activities without ensuring they won't harm endangered species. It also asserts that the Forest Service violated the National Environmental Policy Act.

In 2021 the Forest Service issued a permit allowing the South Fork Coal Co. to haul oversized coal loads and conduct extensive road clearing and construction. This includes tree cutting, regrading and widening the road, and removing and replacing culverts on FS 249, a gravel road on steep slopes above South Fork Cherry River and Laurel Creek. The permit also allows the company to haul mining supplies, equipment, and explosives on FS 223, a gravel road along a direct tributary to North Fork Cherry River.

These streams within the Cherry River watershed are designated as the candy darter's critical habitat by the US Fish and Wildlife Service, meaning any harm to the streams is likely to harm the fish.

Coal hauling has already resulted in harmful sediments reaching the darter's critical habitat. In March and April of 2022, the mining company was cited for violations

leading to excess sedimentation during a time of year when candy darters are spawning in South Fork Cherry River. Inspections by the Forest Service found that the company was not properly maintaining the roadways and documented sedimentation escaping the roadway and crushed and blocked culverts in tributaries to South and North Fork Cherry rivers.

The company was also cited in November 2023 for violations related to spreading raw coal on the roadway. Spreading coal in this manner and fugitive coal dust from coal trucks can lead to toxic chemicals and heavy metals such as selenium and lead reaching the rivers and harming the darter. Every day that there are coal trucks on the road increases the risk that an accident will spill large quantities of coal, which would be catastrophic for the candy darter.

Heavy coal truck traffic is also a potential threat to the endangered Indiana and northern long-eared bats, which rely on the area's streamside forests for roosting and feeding during summer months and are sensitive to noise and tree-cutting.

"The Forest Service has permitted these harmful activities without considering that they might destroy the Cherry River watershed forever," said Olivia Miller, program director of the West Virginia Highlands Conservancy. "Not only could they harm the endangered species in the streams and forests of the watershed, but they could also lethally contaminate surface and ground waters, harming all species that depend on clean water for survival — including people."

"Endangered species like the candy darter are the canary in the coal mines," said Erin Savage, senior program manager with Appalachian Voices. "Communities all along the Cherry River, and the Gauley further downstream, depend on clean water. The Forest Service needs to correct its mistake in letting this coal company run roughshod over the watershed for the sake of wildlife and people alike."

"The South Fork Coal Company should never have been permitted by the Forest Service to haul coal, supplies, and heavy equipment through the vulnerable Cherry River watershed, home of rare high elevation red spruce forest and precious, endangered species like the candy darter," said Alex Cole, senior organizing representative at Sierra Club. "Through multiple violations, South Fork has established a track record of environmental harm, and the Forest Service must remedy their mistake by revoking the company's permit as soon as possible."



Photo of Candy Darter by Todd Crail, University of Toledo.

Rare Alabama Fish Proposed for Endangered Species Protection

by Will Harlan



BIRMINGHAM, AL — Following 13 years of advocacy by the Center for Biological Diversity and allies, the US Fish and Wildlife Service today proposed to protect coal darters as threatened under the Endangered Species Act.

"Endangered Species Act protection for coal darters will save this little fish from extinction and protect drinking water for Alabamans," said Will Harlan, a senior scientist at the Center. "By protecting this fish, we're protecting ourselves, too."

As their name suggests, coal darters have dark blotches and a dusky coloration. Small freshwater fish who live near the bottoms of clean, flowing rivers over gravel substrate, they feed on insects and worms and are only found in the Mobile River Basin of northern Alabama.

Coal darters have already disappeared from half of their range and cling to survival in small portions of the Cahaba, Coosa, and Black Warrior river watersheds. They no longer survive in the mainstems of the Coosa or Black Warrior rivers and are only found in a few tributaries.

Threatened by dams, runoff from industrial poultry farms, climate change, development, and, ironically, coal mining, the three remaining populations are also at risk from logging and sedimentation. Despite this, the Fish and Wildlife Service exempted industrial logging from coal darter protections.

The Center petitioned for the species' federal protection in 2010. Since then all three populations have continued to decline steeply as their home waters became further impaired.

Alabama's rivers and streams are global hotspots of aquatic biodiversity. The state is home to 463 species of fish — more than any other state in the nation.

"Safeguarding coal darters will protect so many other irreplaceable aquatic plants and animals," said Harlan. "Alabama's waterways are a treasure trove of biodiversity, and any protection we can provide them will pay off in spades."

Natural Climate Solutions



by Rae Schnapp, Ph.D.
Wabash Riverkeeper

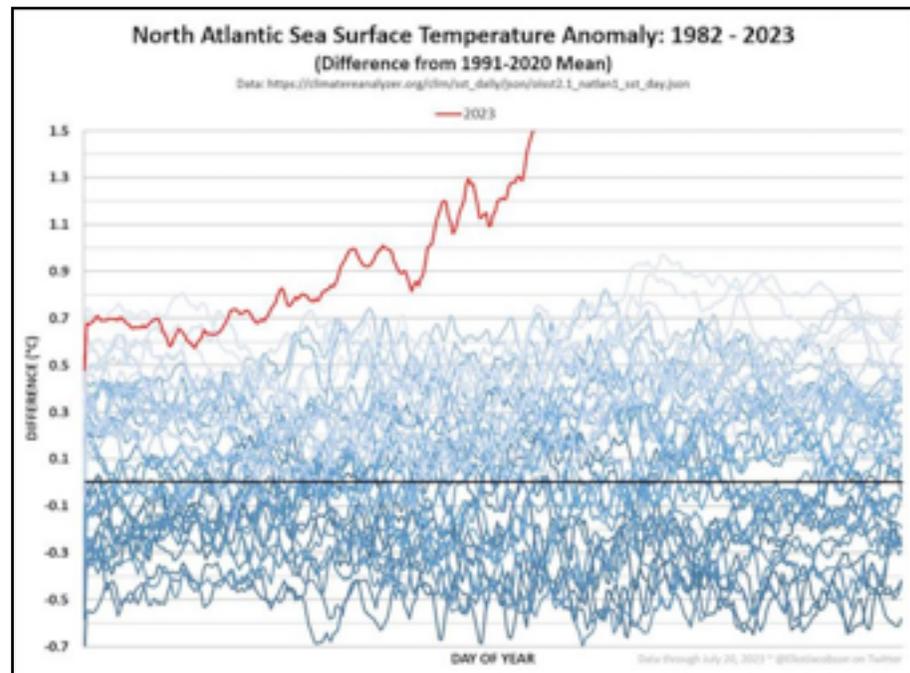
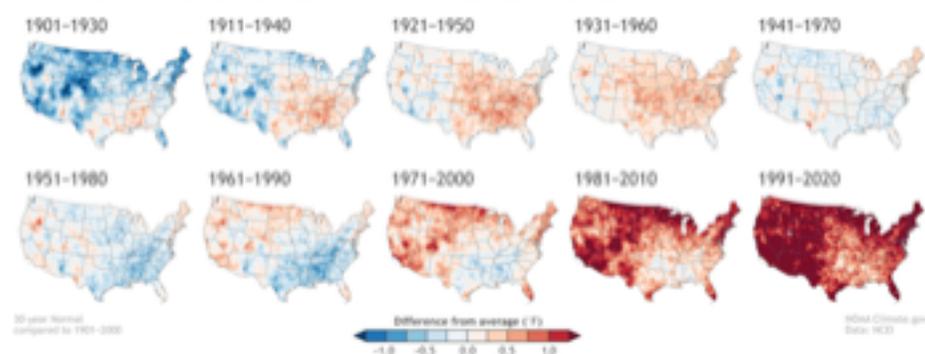
Globally, forests remove around a quarter of the CO₂ that humans add to the atmosphere each year, keeping climate change from getting even worse. Forests are natural carbon sinks – for millennia, they have been capturing and storing more carbon than they release. Forests sequester carbon through photosynthesis, the process that green plants use to convert carbon dioxide (CO₂) and water into sugar and oxygen. While scientists are exploring new high-tech ways to store carbon, those methods are untested and expensive. Photosynthesis is the best technology we have for storing carbon and the only proven means of removing carbon from the atmosphere at a scale that can actually impact climate. Forest carbon ends up in wood, leaves, roots, and ultimately, in soils. Even when there is a forest fire, most of the forest carbon stays put, because it is stored underground.

A recent report on Mitigation of Climate Change from the Intergovernmental Panel on Climate Change calls for urgent action to drastically reduce carbon dioxide emissions AND accelerate removal of carbon dioxide from the atmosphere in order to keep climate change within bounds of 1.5°C increase over average historical temperatures. Some industry sectors will find it more difficult to eliminate carbon emissions than others. For example, right now, air travel results in unavoidable carbon emissions. The solution for these industries is to “offset” unavoidable emissions through carbon capture. Carbon markets allow industries to offset emissions through a formal framework, and forests provide one of the most straightforward ways to capture carbon. Carbon markets may not be a perfect system, but they offer tools for making progress toward net zero emission goals.

The need is urgent. Climate change is happening now. The eastern half of the US is already experiencing warmer winters, more high heat days in summer, and more extreme precipitation events. Summer heat waves are associated with increased deaths, especially among young children, the elderly, and those with pre-existing health conditions like asthma. More pronounced effects often occur in urban areas, because the concrete and asphalt tend to absorb and hold heat, giving rise to “urban heat islands”. As winters become less severe, we also face increasing pressure from invasive species and pest populations, like mosquitoes and ticks, that historically have been killed off by longer cold periods. Reducing carbon emissions and expanding forests can begin to reverse these trends immediately.

Carbon markets provide new incentives for protecting existing forests and planting future forests with very specific protocols. The rate of carbon capture and storage in a forest is influenced by forest age, health, tree species, and environmental influences such as air temperature. There is a common misconception that older forests do not sequester as much carbon as young forests, but protection of mature forests is key to the climate fight, because half of the forest carbon in the world is stored in the largest 1% of trees. In 2022, President Biden directed federal agencies to “develop new policies to institutionalize climate-smart management and conservation strategies that address the threats facing mature and old-growth forests on federal lands”, but this policy has not yet been implemented. However, carbon markets are beginning to recognize the value of forests as natural climate solutions and may offer forest advocates new tools for forest protection.

U.S. ANNUAL TEMPERATURE COMPARED TO 20th-CENTURY AVERAGE



Natural Asset Companies rule withdrawn by SEC

by Alice Melendez

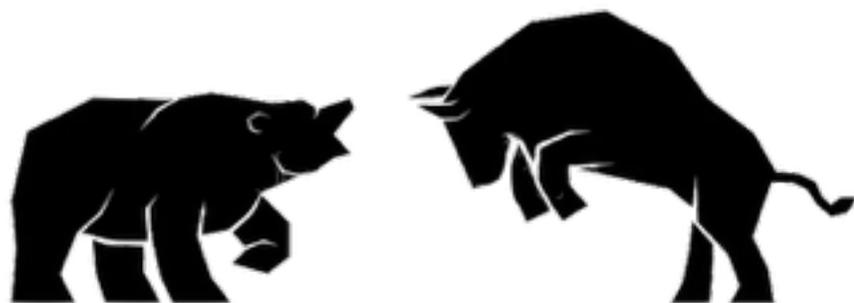
October 4, 2023, the Securities and Exchange Commission (SEC) published a proposed rule that would create a new investment vehicle, the “Natural Asset Company (NAC),” assigning tradeable monetary value to ecosystem services like water filtration and global climate regulation. They opened a 21-day comment period which was extended until January 18th after American stewards and allied Western politicians raised holy hell. On January 17th, with just shy of 4,000 comments submitted, at least 97% against, the New York Stock Exchange and their partner Intrinsic Exchange Group withdrew the rule and publicly traded Natural Asset Companies were forestalled for a time.

Other pieces of this agenda are, however, moving through Exchange Traded Funds which can divide up (fractionalize and tokenize) and trade privately held stuff and businesses. Trading on natural assets should be considered part of a whole package of transformations to the economic system which ultimately protects the position of the people steering the game today: a package which includes digital currency, ubiquitous biometric digital ID, a “drivers license for the internet”, and distributed ledger technology (DLT) which carries bets and assets, including “smart contracts” for literally anything — for example, the life-giving processes of the natural world.

Round one of this fight featured Western libertarians as victorious enemies of executive overreach, creating the appearance that supporters of extractive industry defeated environmental protection. But in actuality, Natural Asset Companies are not blocked from extracting resources from the areas they legally manage, as long as they “seek to replenish the natural resources being used”. The only penalty for resuming “unsustainable” activities, including mining, is delisting, which means that as soon as the price of minerals in a locality is worth more than the chosen form of conservation, the NAC can be dissolved. And scarcity of natural “goods” and/or speculation can drive the value of the protected assets up, creating other perverse incentives.

The goal here is to continue the massive concentration of capital in a world where increasingly broke consumers cannot generate enough debt-money to keep the growth party going. Financializing and enclosing the commonly held life support systems of our planet will create trillions of dollars in new assets delivered to corporate insiders with lawyers who can jump through the required regulatory and verification hoops. Promoters of these investments claim they will bring the value of nature fairly into economic calculations, but they don't increase the costs of doing ecosystem-destroying business. This doesn't “internalize the externalities” as we might assume. Instead, it creates a new flow of assets which can back more debt, which can fund more consumption. In his book *Sacred Economics*, Charles Eisenstein asks why the market couldn't value intact forests and gold that stays in the ground. Maybe it's a reason for why he moved to Costa Rica, where the Rockefeller Foundation celebrates “Government of Costa Rica working with IEG to develop the first NAC.” Does he worry that when private equity takes charge of conservation, it will be like buying the nursing home, firing the nurses, and cheapening the food while quadrupling the share of revenue that goes to off-site management? Healing land takes people who love the land, and the devil in financial contracts is always in the details.

More at [AliceEm Right Through the Looking Glass <https://aliceem2de3u.substack.com/>](https://aliceem2de3u.substack.com/)



False Solutions to Climate Change: Forests and so-called “Nature Based Solutions”



by Anne Petermann

Excerpted from *Hoodwinked in the Hothouse* booklet (climatefalsesolutions.org)

Forest carbon offsets have long been a favorite false solution perpetuating fossil fuel use. Forestry offsets are the basis for so-called nature-based solutions (NBS). With the current political push to increase voluntary carbon markets for corporations and governments to achieve so-called “net-zero emissions,” land-based offsets from forests and agriculture are center stage. Emissions from forestry combined with emissions from industrial agriculture are massive, estimated around one quarter of global greenhouse gas emissions. There is potential to reduce emissions as well as to protect livelihoods and biodiversity by changing how we grow food and exist with forests. Changing our relationships with land has gained a lot of attention recently, but unfortunately, there are many false solutions that may sound nice, yet on closer examination only serve to entrench unsustainable and unjust practices.

There is great appeal to the notion that changing how we treat the land, forests, and soils will provide solutions, but the basic premise of the argument that soils and trees can permanently and endlessly store carbon from extracted fossil fuels is flawed. Carbon cycles between the oceans, soils, and the atmosphere in a long-established balance to which life is adapted. But carbon from combusted fossil fuels cannot be endlessly absorbed by living carbon. Yet, this flawed notion is the foundation upon which soil, forest, agriculture and conservation offsets and many other land sector false solutions are based.

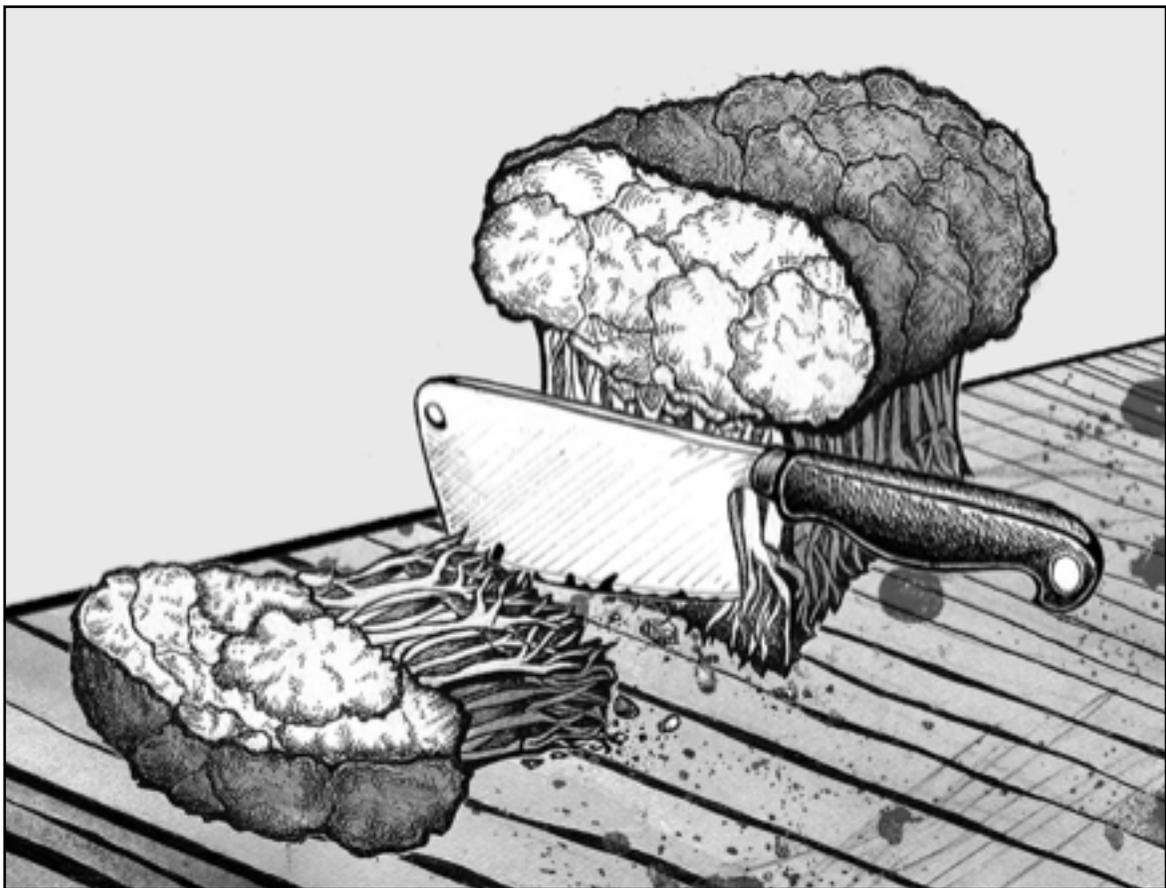
The timber and forest products industries have worked to spread false mythologies aimed to convey ideas about forests and climate that support their goal to expand profitable logging and the replacement of natural forests with industrial tree plantations. First and foremost, the industries strive to confuse and confound the distinction between natural forests and tree plantations – industrial monocultures grown in rows using various chemicals for short rotation (5-20 years) harvests. But plantations fail to provide habitat for biodiversity, deplete water, and are reliant on toxic chemical fertilizers and pesticides.

To bolster support for logging and industrial tree plantations, the industry claims that younger trees are better at sequestering carbon than older trees, lending support to the abominable practice of logging old-growth forests and replacing them with short rotation plantations. Yet old-growth forests store more carbon in the active carbon cycle in the wood and soils than tree plantations. Logging proponents claim that forests “need” thinning to maintain health and prevent wildfires – yet logging practices damage soils, injure trees, introduce pests and pathogens, and create favorable conditions for wildfires. Industry claims that the use of wood in construction or for other durable wood products should be subsidized as “carbon sequestration” just as biomass burning is subsidized as “renewable energy”. Now some even promote using wood to produce cellulosic biofuels.

Researchers are genetically engineering trees for “enhanced photosynthesis” which they claim will sequester more carbon for use as “offsets.” The impacts of human tinkering with something as fundamental to trees as photosynthesis simply cannot be anticipated, and GE traits could escape and contaminate wild forests and damage ecosystems and biodiversity. Ground zero for many GE tree experiments are the eastern forests of the US.

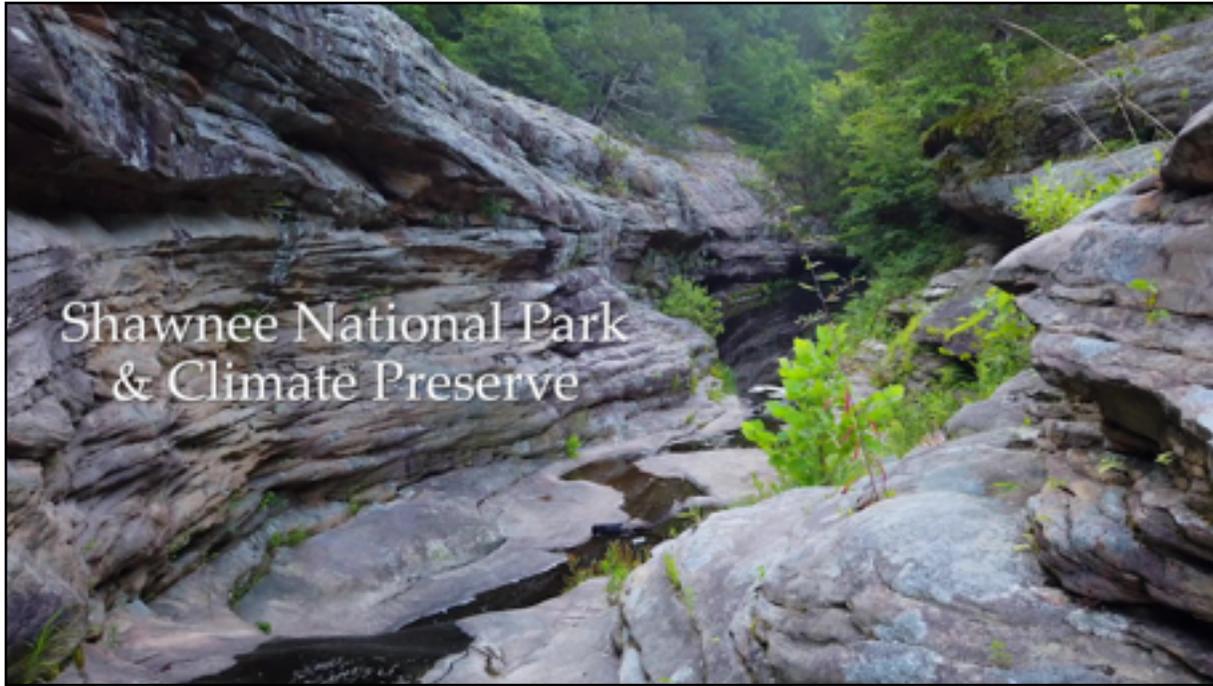
Increasing demand for wood products while simultaneously promoting standing trees and forests for offsets is not only illogical, it is precisely antithetical to the goal of reducing deforestation and forest degradation, and mitigating climate change. Further, the industry claims the wood will be sustainably harvested, but when the scale of demand itself is unsustainable, certification standards cannot deliver sustainability. Forests are rapidly dwindling under excessive logging, demand for land (especially for livestock), the impacts of climate change, and introduced pests and pathogens. Protecting and restoring natural forests require that we address the root causes of deforestation, not introduce vast new demands for wood.

Using forests as offsets designed to enable polluters to increase emissions will further drive climate change that will in turn destroy more forests.



Jakarundi Graphics





Shawnee National Park & Climate Preserve

Climate Emergency, Agency Priorities Behind Push for National Park and Nation's First Climate Preserve



by John B. Wallace

ILLINOIS – A study published in the Proceedings of the National Academy of Sciences journal (PNAS), January 2024, by J. Aaron Hogan, et al., “Climate change determines the sign of productivity trends

in US forests,” makes it clearer than ever how important mature eastern deciduous forests are at helping to slow climate change. The paper not only recognizes the significant role that forests have made to the global land carbon sink through sequestration and storage of atmospheric carbon, but it also examines how different US forests have been removing CO₂ emissions.

Forests sequester carbon through the process of photosynthesis. This recent study focused on the rate of photosynthesis or “productivity” in US forests and whether productivity has been increasing or decreasing, due to the effects of climate change. Most research on forests and climate change mitigation have focused on western forests, which is likely because more of the larger tracts of forests, especially old growth, are found in the western states. The authors of this paper found that even though most eastern forests are younger and not as large as western forests, their role in battling climate change today is no less important.

“From ~1999 to 2020, forest productivity increased in much of the eastern United States, where mild warming was accompanied by mild increases in precipitation. In contrast, forest productivity decreased in much of the western United States, where warming was more severe, and precipitation declined.” J.A. Hogan, et al., *Climate change determines the sign of productivity trends in US forests* (PNAS, 2024).

Climate change has lengthened growing seasons and increased moisture for eastern forests, which in turn has improved overall growth. In most western forests, however, climate change-driven heat, drought, and in many locations wildfire, have contributed to slowing forest productivity and carbon sequestration.

Since the best examples of mature eastern deciduous forests in the central hardwoods region are found on public land, these integral climate forests need to be protected from exploitation and not commercially logged nor repeatedly burned.

Unfortunately, industrial timber operations have begun on a new Shawnee location in Jackson County, in Southern Illinois, known as the Sharp Rock area. The project area is adjacent to Kinkaid Lake, the water source for the City of Murphysboro and for thousands of rural water district customers. Kinkaid Lake and the surrounding national forest are also treasured recreational destinations.

Since the mission for the USDA Forest Service includes productivity (unfortunately not ecological productivity) and since Congress sets timber targets for the agency, it cannot veer away from the outdated and unpopular practice of providing below-cost wood fiber to the timber industry. There is frankly very little economic pressure and no actual need for logging on national forests in the heartland, so the agency must rely on the ruse of logging for forest health or forest restoration to continue subsidizing the logging industry, which produces a large amount of the nation’s total greenhouse gas emissions.

Back in the Shawnee, the contributions by African Americans in the history of the area that is now a national forest, remains largely an untold story. The first constitution of the state of Illinois, a proclaimed “free state,” contained a clause allowing slavery in a portion of Gallatin County for salt production from a few salt springs, now located on the Shawnee near the ironically named town of Equality. At the time, the use of slavery by the salt industry provided one third of the fledgling state’s income.

Miller Grove in Pope County was a community of free African Americans founded in 1844 and nearby, fires on the summit of Crow Knob were used to signal individuals fleeing slavery. Sand Cave, a secluded shelter cave in the vicinity, also provided an important rest stop for previously enslaved people seeking freedom along the Underground Railroad.

Contraband camps were established in the City of Cairo, at the confluence of the Ohio and Mississippi Rivers. They were encampments for many previously enslaved people, freed during the Civil War. These African Americans were considered to be “contraband” at the time.

And in the 1930s, Camp Pomona was an African American unit of the Civilian Conservation Corps located on land that became the Shawnee in Jackson County. Remnants of the above-mentioned sites are almost all gone, but what little remains of this important history is largely hidden and the stories of these brave Americans remain untold. The National Park Service is masterful at rebuilding and highlighting such sites and telling the important stories of the people and the sacrifices they made.

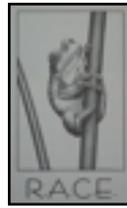
Shawnee Park and Climate Alliance has been reaching out to civic organizations, government, and educational institutions for endorsements of the Shawnee National Park and Climate Preserve (SNP&CP) initiative. It has recently received support from Rend Lake College, the Carbondale Branch of the NAACP, and the organization known as Between the Rivers, Kentucky and Tennessee.

Almost 4,600 letters of support for the SNP&CP proposal have been sent to congressional leaders. This campaign was sponsored by the Progressive Democrats of America via the Action Network.

For more information on the initiative to establish Illinois’ first national park and the nation’s first Climate Preserve, see www.shawneeforestdefense.org and www.ShawneeNtlPark.org.

Growing Up with a Forest

by Bob Hughes



ILLINOIS – As a kid growing up, I loved hunting and fishing trips with my dad and uncles. I learned to love and appreciate Nature at an early age.

Decades later, back when I worked as an underground coal miner and lived in a small town, I noticed strange discolorations and dumping of cinder blocks in the water of a creek running through our property. Eventually figuring out that it originated from an upstream business and getting no help from the local government, I contacted an organization I had seen in the newspapers and on local television who were raising hell about commercial below-cost clearcutting on my beloved Shawnee National Forest. As a coal miner I was a little leery about reaching out to “tree huggers,” but no one else had been any help with my complaint about the polluted water. So, I contacted a man named Mark Donham, identified in the media as president of the Regional Association of Concerned Environmentalists (RACE).

I cautiously became affiliated with this group and with their guidance, got the pollution situation corrected. During that process, I came to realize that I, too, am an environmentalist. Eventually after many a twist and turn of life, I ended my working career by retiring from the US National Park Service.

We used to have RACE and, later, Heartwood meetings at what is now the War Bluff Valley Wildlife Sanctuary. Back then it was the home of Drs. Richard and Jean Graber, both Ph.Ds in Ornithology at the Illinois Natural History Survey Wildlife Ecology Center. They eventually bequeathed their home and almost 500 acres to the Illinois Audubon Society, which made it a sanctuary.

More than 25 years ago, the late Dr. Jean Graber mentioned to me and a friend (who now resides as caretaker of the sanctuary) that one of the main keys to forest health resided in the mycorrhizal fungi in forest soil. In recent decades, research by Dr. Suzanne Simard, Dr. Chad Hanson, and many others have proven Dr. Graber’s analysis was true.

Since those days when I wandered the woods with my dad, so much has changed. In the past few decades, the parts of my beloved Shawnee National Forest which were left to the forces of nature, such as Wilderness Areas, are healing and becoming healthier. Biodiversity has increased, water quality has improved, a little more forest soil has accumulated, and the place is more gorgeous than ever. Human litter remains a problem, but one which can be mitigated through the work of public education and human hands.

The many places in the Shawnee National Forest which were logged, burned, and the soil otherwise disturbed show a stark contrast. In those places, various non-native species have proliferated and ugly scars remain visible on the land. Soil was compacted and eroded from these disturbances while much carbon from the forest floor was released into our atmosphere.

Research regarding a mycorrhizal fungi network in the soil has shown that trees, shrubs, and other vegetative components of intact forest ecosystems are in constant communication with each other. This system extends to plants of the same species and others. Older “mother trees” form nodes which are connected by threads of fungal mycelium in the soil. This underground network allows mother trees to send warnings of impending danger such as insect or disease outbreaks and also allows mother trees to send necessary nutrients to just the plants in the network which need the most help at any given time.

When my dad introduced me to the wonders of the forest and when I did the same with my own daughters, we had no idea that we were surrounded by trees parenting their own offspring at the same time.

We cannot continue to abuse the land with heavy equipment, unnatural fire, aggressive commercial logging, and synthetic chemicals without a corresponding loss of the things we value most about this planet. We are just now learning about what actually constitutes a natural forest. True wealth consists of what we are able to save and preserve, not what we are able to extract and spend.

Nature is working around the clock to achieve the best possible natural forest under current and future conditions at no cost to the soil, mother trees, or taxpayers. We have learned a lot despite the efforts of industry, the US Forest Service, and complicit Big Green organizations masquerading as environmentalists.

There is new research proving the interconnectedness of the forest and the soil, and this must be incorporated into healthy forest management by the US Forest Service. These findings only validate what Native Americans have known for centuries, the Earth is alive and all life is connected.

Bob Hughes is a retired National Park Service employee, longtime Heartwood member, and founder of SNAG (Shawnee National Area Guardians).

Sharp Rock: Insult to Injury

by Mike Garrison

ILLINOIS – The first time I saw Kinkaid Lake was the day the Columbia space shuttle took off for the first time back in 1981. My own exploration of the area began as a twelve year old living on Lake Hill Road. Now I show my own grandson places in that watershed and smile as I watch him discover his own favorite spots and make his own memories of enjoying the public land there. He is the fourth generation of my wife's family to have that pleasure.

But recently we watched as a threat to the lake, land, and the public's use of it rolled past our house. Heavy equipment, including massive logging machines, have moved into the area, some under cover of night as part of a planned 3,500 acre "restoration" conducted by the US Forest Service and their accomplices. It is called the Sharp Rock Oak Habitat Project, but neither the plentiful existing oaks in that forest nor the neighbors nearby knew anything about it until the decision was made and tools of destruction were in place.

When I was a kid, and more recently, with my grandson, I watched that forest grow and get better with each passing decade. We hike, hunt, fish, and explore the area. This is how public land should be used. It is restoring itself and Mother Nature will continue to do so, round the clock, at no cost to taxpayers.

Contrast that to Forest Service plans to "shelterwood harvest" over 2,000 acres and use "commercial thinning" on over 300 more. As illustrated on their own website, the innocent sounding term "shelterwood" is actually a two-stage clearcut and "commercial thinning" that involves cutting existing large oaks as corporate welfare to the timber industry paid for by taxpayers.

My own work experience around Kinkaid Lake began in 2008 hauling rock on Possum Road. Before I retired from the Jackson County Highway Department, I helped maintain roads around the Lake for public access. That was a pleasure as it took me down memory lane and did some good for people who enjoy boating, fishing, hunting, horseback & mountain bike riding, and other recreational activities. The land can sustain use like this. It can only suffer from the logging and burning which the Forest Service plans.

I have seen and read about evidence regarding similar "restoration" projects on the Shawnee National Forest. None of them have produced the results which were promised. All have retarded real restoration and caused the healing of the land to be set back. This failed strategy and these destructive tactics should not be allowed to happen in the forest which forms the watershed of such a popular place. Or anywhere else on public land.

To add insult to injury, one of the phony reasons for the Sharp Rock Project is to control erosion. Anyone who has ever seen a large logging site after rainfall and winter freezes & thaws knows this is nonsense. Logging roads and skid trails rip open the soil and compact it. Runoff continues for years down steep hillsides and into feeder streams carrying sediment into the Lake. No one is fooled by the deceptive language of "restoration," "shelterwood," and "oak habitat". These terms and slogans are intended to mislead people into thinking this project is good for the land.

This forest is already full of young oaks and all the wildlife they help support. Running over them with heavy equipment and burning afterward to cover up the crime is not going to benefit the forest or its inhabitants. On other sites, after the timber is tortured and the land is scorched to "let the sunshine in", the exposed forest soil quickly allows a carpet of invasive, non-native species to flourish. This gives an excuse to spray synthetic chemicals through the forest to rid it of these invaders. Runoff from those poisons is good for the chemical industry but not the Lake.

This project is a loser from start to finish. Along with trees, animals, and people who love this area, the Sharp Rock Waterfall and adjacent forest would suffer. The only people who would benefit are the timber industry and the government bureaucracy in charge of this fiasco. That is not a good enough reason to do it.

Don't believe cherry-picked science about oak decline or erosion control that must be remedied by cutting the trees themselves and ravaging the soil. The only known cause of oak decline is chainsaws, and one sure way to increase erosion is with heavy equipment. For anyone who believes that the Sharp Rock area needs to be logged, burned, and poisoned for the health of the forest, I invite you to come look at this area yourself. I can show you a beautiful area getting nicer with every passing year. Please help us stop this project now, before the trigger is pulled.

I see now why people want to remove this land from the Department of Agriculture Forest Service and change it into Department of Interior National Park & Preserve property. That makes more sense than the current plan.



Friends of Bell Smith Springs: Dedicated to Protecting Heaven on Earth

by Sam Stearns

ILLINOIS – Over thirty years ago, I and others formed Friends of Bell Smith Springs, a disorganization dedicated to preserving and sharing a little piece of heaven here in Southern Illinois.

I grew up in a small coal mining community near Harrisburg which depended on the mines to support families and communities there. As a kid, hiking, hunting, and riding my bike throughout the coal mine spoils where we lived, I never knew any downside to fossil fuels. Their production and use was what we knew as normal.

On most weekends, my coal miner father took me to places in the nearby Shawnee Hills which are now recognized as ecological, scenic, and historical treasures, like Burden Falls, Sand Cave, Garden of the Gods, and of course Bell Smith Springs. I loved those places then and still do, although I did not appreciate them then like I do now.

As a child I read about other places around the globe and thought, "If it is this nice here in the Shawnee Hills, it must be REALLY nice everywhere else." Much of the public land then, over 60 years ago, was young forests. The few places which have been allowed to grow and mature have only gotten better and better.

Through the decades, though, some of those forests have become commercially valuable for extractive industry; and they are now being logged at an alarming rate.

One of our most important tourist draws, the River to River Trail, is being used as a logging road and adjacent forest – just a couple of miles from Garden of the Gods – is being patch clear cut. This is because the mission of the current Forest Service managers is resource extraction and to provide corporate welfare for destructive industries – which we know is not sustainable. This is why Southern Illinois, the Shawnee, and our whole region need the National Park Service at this moment. The Park Service could preserve forest resources while benefiting our region economically.

As a young man I attended forestry school, worked underground in coal mines, and even worked on offshore drilling rigs in the Gulf of Mexico which were experimenting with fracking. After that, I had the good fortune to mostly work in the health & wellness fields. That allowed me to escape industries which are detrimental to health, the environment, and a sustainable economy.

I look at the world and Southern Illinois differently now than when I was that kid on a bike riding through coal mine wastelands.

In the intervening years I have traveled extensively around this country and numerous others and have never found any place I like better.

When it became time to raise a family, my wife and I left active duty military and government service jobs to have a home back in the Shawnee Hills. We live here not because we have to, but because we choose to.

I am available to take individuals, groups, or organizations on free tours of the Shawnee. We can visit some of the most beautiful places in the world here, and if you wish, I can also show you places on public land which are threatened by mismanagement and extractive industry influence.

Now that we do know the downside of fossil fuels and industrial forestry and watch the devastation and decline which they brought to our local economy in the past, we know we must seek another solution to benefit the people here and the land on which we live.

Whether it is Bell Smith Springs, Buffalo Springs in the Hoosier, or the passion which springs from the hearts of people who are OF the Earth, not just ON it...we share the Heartwood bond of people protecting the places we love.

Sunrise over Bell Smith Springs in the Shawnee National Forest. Photo by Phil Broxham.



Protection And Connection: Reasons for an Appalachian Ecosystem Protection Act



by Steven Krichbaum, Ph.D.

Current public lands' management in the US is in many ways not just a disgrace to science and reason and democracy, it's a manifestation of a basic disdain for the Creation, and a sneering contempt for the intelligence of any American with more than two neurons to rub together.

The defenders of this unholy trajectory of dozer- and chainsaw-driven business-as-usual (many of whom financially gain from it and are the beneficiaries of its subsidies — follow the money), would actually have you believe that since they do not have logging and dozers and chainsaws inflicted upon them, then the world's parks, refuges, wilderness areas, World Heritage sites, and Biosphere Reserves are all unhealthy. Who are you going to believe, the corporate PR minions and their government lackeys and enablers? Or your own eyes and the countless scientific studies that reveal the incomparable majesty and irreplaceable necessity of these protected sanctuaries of life?

“Protected” Lands

Today, relative to America's overall landscape, truly “protected” lands (e.g., Wilderness Areas) are few in number, small in area, and isolated. They are tiny islands in a sea of human disturbance and as such are a grossly inadequate approach to maintaining/recovering healthy ecosystems.

Across America, there is a big discrepancy in what is “protected” and where. Present “nature reserves” are primarily located at areas with the least productive soils, and are found predominantly at mid-to-high elevations [1]. This pattern has been termed the protection of “rocks and ice”. In other words, the most productive and species-rich sites are not well represented in truly protected reserves.

In the US, most large protected areas are in the West, whereas one of the places of greatest species richness, endemism, and vulnerability is the Southeast [2]. One of the nine priority areas that Jenkins and colleagues identified is the Blue Ridge Mountains. They pointed out that though this area has substantial biodiversity, National Forests (NF) inadequately protect it.

The current system of truly protected nature reserves fails to be representative of the natural variation found in the United States. All ecosystem types need to be well represented, not just rocks and ice. The small wild areas that are currently protected on NFs and Bureau of Land Management (BLM) lands must be augmented and integrated into expansive ecological reserves. Unlike the surrounding human-dominated and -fragmented landscape, these public lands can still provide the large expanses, wild habitat complexity, ecological functionality, and security of remoteness formed over the past millennia.

It's imperative to realize that our George Washington (“GW”) and other National Forests are simply not essential for functioning as the nation's tree farms, feedlots, drilling pads, or recreational thrillcraft areas. There are other parts of the country that are more appropriate landscapes in which to practice these activities, like private lands. Quite simply, the highest value of a forest such as the GWNF is as an ecological preserve. It truly is (or at least can be) the George Washington National Ark.

Avoiding Extinction

Biota exhibit four basic responses to environmental change, be it from climate change or habitat destruction/alteration: 1) plasticity or acclimatization (phenotypic response), 2) evolutionary adaptation (genotypic response), 3) movement to another area (behavioral response), and 4) extinction (disappearance without descendants). Except for the last one, these responses can be considered as multiple modes of “rescue”, in other words, the avoidance of extinction. And, except for extinction, these responses are not mutually exclusive.

In the context of the applied science of conservation biology, the appropriate question that we must act upon is: What must we do to preclude/reduce the likelihood of the extinction response? In other words: How do we best provide for potential evolutionary rescue via adaptation as well as range shifts and in situ plasticity?

For long-term viability, large populations are essential, which in turn require habitat in large amounts and high quality for all life stages [3]. Large populations are more likely to provide the high amounts of standing genetic variation needed to facilitate both phenotypic plasticity and genetically adaptive responses [4].

Therefore, to decrease extinction risk, we must provide for or increase population abundance by providing expansive habitat area and natural habitat quality (including that of the surrounding matrix), and reduce functional isolation of populations, i.e., allow for dispersal/gene-flow [5-7].

So, just as we must PROTECT, we must also CONNECT. “Protected area networks need to be expanded, interconnected and better managed to conserve biodiversity in a changing climate.” [8] Expansion of the areas that are actually “protected” means not just purchasing and designating new sites (such as lands for a new National Park in Maine). Even more importantly, it is essential that we raise the protection level of the lands already in the public domain, such as NFs and BLM lands — emphasizing ecosystem protection and low-impact recreational visitation over extractive uses. This managerial improvement is the motivation behind such visionary efforts as converting the Shawnee NF in Illinois into the Shawnee National Park & Preserve. In the nomenclature of the US Geological Survey, this actual protection entails upgrading the protection level of the lands in our NFs to GAP 1 and GAP 2 status where biodiversity protection is the overriding objective, such as in Wilderness Areas and National Parks. The great majority of NF lands are currently considered GAP 3 and GAP 4 lands open to intensive/extensive extraction/exploitation, so are not actually “protected” [9]. Such improved management also restores forest health through natural processes and by

ensuring that dispersal/colonization abilities of biota are not impaired. The resultant Biodiversity and Climate Strategic Reserves will recover old-growth forests and support biodiversity, while at the same time providing the extraordinary benefits of sequestering carbon and mitigating climate change.

In periods of past climate change, such as the recent ice ages, many plants and animals shifted their ranges to escape the conditions that would kill them if they stayed put [10]. And then, when conditions improved, moved back to their former homelands. Indeed, be it worms, wood turtles, sugar maples, or moose, all that glorious flora and fauna that we love so much in a lot of the northern US moved there in the very recent past — as and after the ice-age glaciers receded. But now, with much of the landscape altered and fragmented by development and roads (around 5 million miles in the US), opportunities to move in response to contemporary climate change are greatly impeded. Unlike Jack Kerouac, for me and many other organisms, both literally and figuratively, life begins at the end of the road.

The Web

The standard methodology to increase the size, quality, and connectivity of habitat, thereby improving the overall context within which populations exist and move, is implementation of a conservation network model consisting of

Core Reserves <—> Stepping-stones <—> Corridors [w/ Buffers]

that protects the ecological integrity of entire landscapes. Corridors and stepping-stones help sustain viable populations not only by providing for movement, but also by serving as temporary habitat (think of them as hotel rooms for travelers) and even permanent habitat for populations of smaller fauna and flora. Though small in area, stepping-stones can provide refuge for species such as pollinating bees that can have vitally significant effects across large expanses outside of the stepping stones.

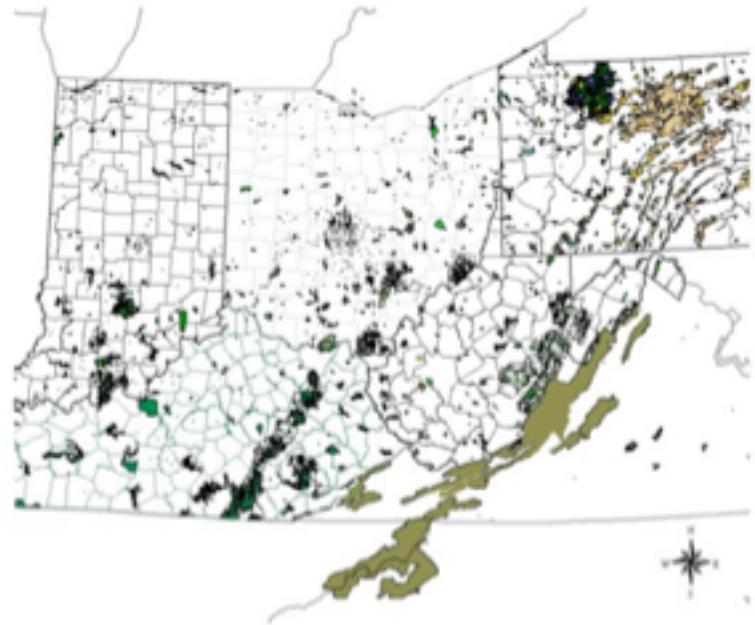
A critical aspect for achieving real connectivity and effective corridors/stepping-stones is the necessity of making the nation's road system much more “wildlife friendly”. Hotspots of natural travelways used by fauna and flora, as well as dispersal bottlenecks wrought by human development, have been and can be identified [11, 12]. Improving these sites by putting up fencing and providing underpasses and overpasses for animal movements can bring enormous benefits to both individuals' survival and population viability [13]. Doing this systematically and comprehensively across the nation would be one of the most important public works projects in America's history. The corridor/connectivity issue is finally getting some of the public/political attention and funding it deserves [14]. For instance, in my home state of Virginia, I'm happy to report that the state Senate recently held a hearing on SB 455 which would create the Wildlife Corridor Grant Fund. [see 15 for more on connectivity advocacy/issues in VA]

Large storehouses of genetic material, the building blocks of ecological restoration and sustainability, are values that only large contiguous blocks of natural land can provide. And, because gene flow via dispersal is a key evolutionary process [16], connectivity allowing dispersal of organisms can be essential for maintaining viable populations [17]. Dispersal presupposes that there is something that can move, thus it is crucial to maintain sources of the individuals (propagules) doing the dispersing — we must protect large populations and expansive habitats [18, 19]. In addition to contributing to the high standing genetic variability that may be necessary for potential adaptive evolution, connectivity for dispersal/gene flow also allows for the tracking of suitable habitat in response to climate change (such as by providing elevational contiguity in protected areas).

Since, for multiple reasons, we need to facilitate the ability of organisms to traverse landscapes, it is essential to address and nullify habitat fragmentation — we must connect populations and habitats. Organisms with limited capacities of mobility, such as turtles or salamanders or flightless invertebrates, are particularly vulnerable to recovery or recolonization problems associated with habitat fragmentation, as are habitat specialists and those with large home ranges. In this age of mass extinctions, climate change, and ubiquitous multi-scalar habitat fragmentation, connectivity is particularly crucial so as to permit many populations and communities of wild organisms to remain viable as they track the moving locations of their preferred climate zone. Resiliency to climate change demands an interconnected network of protected areas — with longitudinal, latitudinal, and altitudinal pathways, both within and between reserves. For an example of such a network for the Eastern US, see The Wildlands Network, Eastern Wildway, available online at: <https://wildlandsnetwork.org/wildways/eastern/>.

In the face of future/ongoing climate change and the resultant reorganization of biotic communities, and the vast uncertainties involved with these, it is imperative that we retain as much genetic diversity as possible (the storehouses of opportunity for adaptation) — not just for those species or populations “desired” by managers (oftentimes for commercial/economic reasons). We have no exact idea what could be important in the future, how or where. There's a vast amount of uncertainty and indeterminacy. We have to admit our great ignorance, there is so much we don't know. With this reality, it is crucial to take the “precautionary approach”. Retaining genetic and population diversity are needed now more than ever — for resiliency to respond to climate change and other human disturbances. The Forest Service has no idea what is being lost at logging sites. Be it individual tree genotypes, or elements of the virtually unknown ecosystems high in the canopy, or the complex mycelial-mediated communities on and under the ground.

In recognition of this pro-active and precautionary necessity, we need to apply this R-C-S webwork across America — large core Reserve areas, connected by Corridors and Stepping-stones (smaller habitat islands). Elements of the web can and should include not just federal lands, but also some state lands (such as state forests, parks, and wildlife



Public land holdings at the state, federal, and county levels.
Map by John Knouse

management areas) as well as relatively smaller private land holdings, such as the Arc of Appalachia preserves in southern Ohio, Audubon Sanctuaries (such as Corkscrew Swamp in Florida), and The Nature Conservancy's lands. In some places, such as Pennsylvania and New York, state lands provide the majority of sites that can serve as the large core reserves.

Part of the reason that the proforestation/R-C-S methodology must be implemented nationwide is the fact that regardless of the location, no matter the state, physiography, climate, soils, ecosystem, forest type, or biota present, the Forest Service's "management prescription" is always the same, nationwide: "There's too many big old trees out there; we need more trees with diameters greater than their height" [i.e., stumps].

More Than the Northern Rockies or the Central/Southern Appalachians

The proposal to develop an AEPA is based on the Northern Rockies Ecosystem Protection Act that has already been introduced in Congress. The NREPA would protect over 20 million acres of National Forest lands in the Northern Rockies. The protection/connection that would be conferred by management under an AEPA or NREPA is precisely what is necessary to recover and protect the natural ecological and evolutionary conditions/processes at these areas, including populations of rare and vulnerable species such as the Grizzly Bear, Wolverine, Wood Turtle, and salamanders, as well as entire old growth forests. The Central & Southern Appalachians and Northern Rockies, however, are not the only two landscapes in need of such protection and recovery.

Some of the aggregations of federal public lands that can serve as focal anchors, core reserves of true protection of ecosystems in regional webs in the eastern USA include:

- the heartland National Forests — Ohio's Wayne, Indiana's Hoosier, and Illinois' Shawnee, plus KY's Land Between the Lakes NRA = ca. 0.9 Million acres for the Heartland Ecosystem Protection Act ("EPA") [20].
- the Mark Twain, Ozark, and Ouchita NFs in southern Missouri, northwestern Arkansas, and eastern Oklahoma (only ca. 4% is currently designated Wilderness), plus the Ozark National Scenic Riverways — 4.5 M acres for the Ozark EPA.
- the Adirondack Forest Reserve in NY, managed under the state's maxim and policy of "forever wild" (6 M acres), connected with the Green Mountain (VT - 385,000), White Mountain (NH - 700,000), and Allegheny (PA - 500,000 acres - with only 25,000 acres in "inventoried roadless areas") NFs (1.6 M) and the proposed Maine Woods National Park and Preserve (3.2 M) — using the Appalachian Trail as connector/backbone: 11M acres for the Northern Appalachian EPA [21].
- the Hiawatha, Huron, Manistee and Ottawa NFs in Michigan, the Chippewa and Superior NFs in Minnesota, and Wisconsin's Chequamegon and Nicolet NFs — total ca. 7.2 M acres for the North Woods EPA.
- the Appalachianicola, Ocala, and Osceola NFs (1.15 M), St. Mark's & other National Wildlife Refuges, and Everglades NP and Big Cypress Preserve (ca. 2.5 M) in Florida — ca. 3.8 M acres for the Florida EPA.

One salient fact is clear and cannot be overemphasized: In the face of the multiple crises we face today, the standard National Forest management regimes of the past & present are now obsolete.

Steven Krichbaum, Ph.D, a herpetologist and conservation biologist who lives in VA, has worked with grassroots groups for over 30 years seeking protection of wildlife and public lands. He's never met a turtle he didn't like.



A giant hemlock on Shenandoah Mountain in the George Washington National Forest in Virginia.
Photo by Steven Krichbaum

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creating a resilient autonomous community:
Triangle Mutual Aid



<https://www.patreon.com/trianglemutualaid>

<https://savebernheimnow.org/>



We the People

of the United States of America

Being the sole legitimate source of decision-making authority for its government,
Recognizing that the essential feature of a nation
is the relationship between its people and the land, and
Acknowledging the clear and growing scientific consensus
on the importance of leaving publicly owned forests standing
as a low-cost, high-benefit measure to address the

Climate Emergency

currently facing our nation and our planet,
insist that the federal government, including the
USDA Forest Service and other administrative agencies,
safeguard federal public forestland from logging,
mineral extraction, and other activities that
contribute to planetary warming.

Protect Public Forests

Stop Cutting Them Down

Protecting public forests from logging - including so-called “*restoration*,”
will help to mitigate the impacts of a dramatically changing climate
with its cascade of unprecedented weather extremes and catastrophic losses
while addressing the global biodiversity crisis by safeguarding
critical habitat for rare and endangered native plant and animal species
and providing critical ecosystem services and important public benefits such as:

clean water and air

healthy soils

scenic beauty

outdoor recreation opportunities for public health and well-being

preservation of cultural and historic sites

scientific research, public education and increased understanding

It will also provide substantial economic benefit to adjacent communities from such things as
crop pollination, tourism, and enhanced quality of life, all at little or no cost to taxpayers



and help to secure unto ourselves, our posterity, and
all the other creatures with whom we share this land
the blessings of a Livable Planet.