

# Tennessee Sierran

SIERRA  
CLUB  
Tennessee Chapter

The Bimonthly Newspaper of the Tennessee Chapter of the Sierra Club

Volume 57, Number 2 - March / April 2024

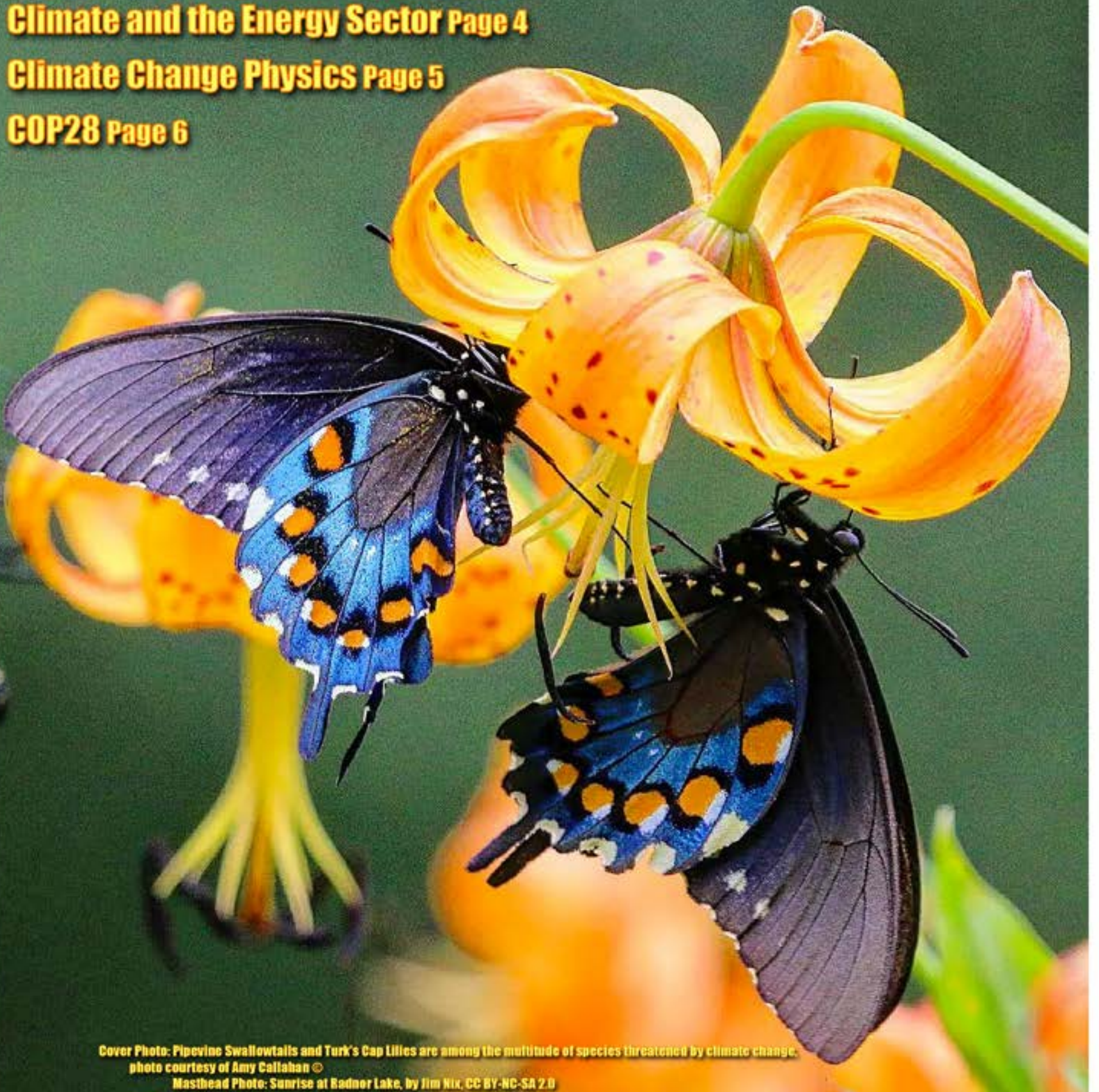
## The Fossil Industry versus the Planet

The People's Voice Hearing Page 3 Smashing Climate Records Page 3

Climate and the Energy Sector Page 4

Climate Change Physics Page 5

COP28 Page 6



Cover Photo: Pipevine Swallowtails and Turk's Cap Lilies are among the multitude of species threatened by climate change.  
photo courtesy of Amy Callahan ©  
Masthead Photo: Sunrise at Badner Lake, by Jim Nix, CC BY-NC-SA 2.0

Explore, Enjoy, and Protect!

## From Tennessee Chair Cris Corley

### Early Morning Thoughts: A Time for Everything



Arising this early morning, several hours before sunrise, I decided to brush up on some of my favorite writings of Solomon, King David's son. Many consider him the world's wisest, and since I barely score average on the standardized tests, reading a few words of a wise man can't hurt, especially when sitting on the porch awaiting sunrise and enjoying the above average February temperatures.

The last few weeks have been eventful — actually, life-changing. My father Bill had been slowing down considerably during the early autumn, and his sojourns down to sit by his favorite creek had become more infrequent.

My hometown, Alexandria, is situated in the most westerly portion of DeKalb County, less than an hour's drive east of Nashville. It is a small southern town of around one thousand

folks with a city limits sign that reads, "Home of the Finest Folks on Earth." Of course, no visitor remains a stranger long, no enquiring minds will dare allow a stranger to walk around the city square without saying hello and asking, "How's your mother?" The old town is quaint and very scenic. Numerous high hills surrounding the area provide vantage points to view expansive valleys and admire old growth hardwoods.

The Corleys are fortunate to have two clean-water streams flowing through our back pasture near the garden, creating a natural barrier that separates us from the adjoining farm. Growing up on these pristine creeks was a child's paradise. Seeing the fog slowly lifting in the early morning was magical. The huge bonfires were spectacular when camping with the neighborhood kids on a fabulous adventure.

As a child, my father had the same opportunities, exploring the creeks with friends for crawfish, minnows, and fast-swimming snakes. He was famous for pulling rubber snake tricks on the unsuspecting. You can begin to understand why my dad loved the forks of Goose and Hickman Creeks. He was born across the street from our home, about one hundred feet away in my grandfather's house. With the exception of volunteering for the Navy during World War II and a few years in college, my dad spent his entire life at the end of Goodner Lane.

My brother Mike and I were taught at an early age to care for the land, and we didn't dare think about throwing trash in the creeks. My parents made sure to have a Union 76 trash bag hanging from the cigarette lighter in our Chevrolet station wagon, especially as we explored the mountains on annual camping trips to the Smokies and Rockies. Oftentimes today, I see kids and adults throwing trash out of their moving vehicles without thought and I frequently say, "They weren't raised right."

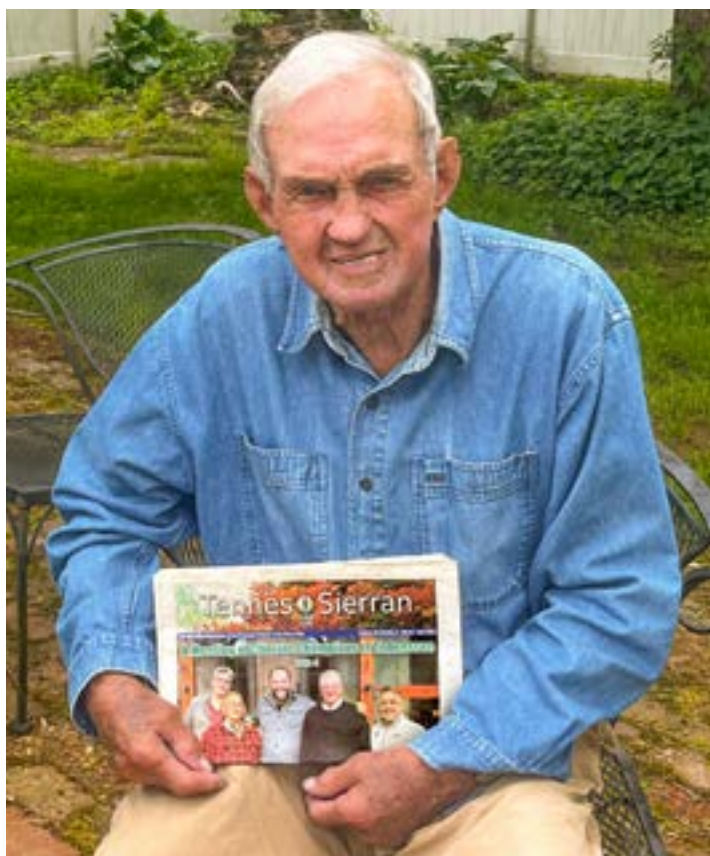
As a kid, I always tried to catch the weekly TV show, "Mutual of Omaha's Wild Kingdom," and the special feature show,

"The Undersea World of Jacques Cousteau." I will never forget dad gifting me one of Jacques' famous red toboggan hats — he worked for the show's sponsor, The Hartford. As a kid in elementary school, I imagined being mistaken for one of Captain Cousteau's deck hands on the Calypso. I couldn't wait for cold weather so that I could proudly wear the hat daily. No doubt my early childhood exposure to exploring and protecting the environment led to my love of scuba diving, hiking miles of mountain trails, and watching active volcanoes.

My dad's regular walks down to the creeks had become less frequent over the last several months. But, he would still invite guests and neighbors down to sit on the creek shore and view his little piece of heaven. A few days after his death, Mom told me that she had seen him in December sitting on the John Deere near his favorite spot on Hickman Creek, unable to sojourn from the house on his own two feet. This was probably my father's last trip to "The Creek." Bill Corley was able to faithfully enjoy the same tranquil and scenic spot on Goose and Hickman Creeks for almost 97 years.

The sun finally arose this morning and the fog lifted as I finished reading Solomon's wise verses in Ecclesiastes, aptly referencing life being similar to a mist or fog. My favorite verses make me think of Dad: "a time to be born, and a time to die; a time to plant, and a time to harvest what is planted; . . . a time to break down, and a time to build up; a time to weep, and a time to laugh; a time to mourn, and a time to dance."

I'm sure when my time comes, I will find him enjoying, exploring and protecting Jordan's shores. And no doubt he will be laughing as he tries to pull the fake snake trick on Saint Peter! Love you Dad, Cris



Bill Corley inspired his son Cris to love and protect planet Earth.

## Tennes-Sierran

The bimonthly newsletter of the  
Tennessee Chapter of the Sierra Club  
Volume 57, Number 2 — March / April 2024  
Digital Edition

### Change of Address

Email: [address.changes@sierraclub.org](mailto:address.changes@sierraclub.org)

Online: [MyAccount.SierraClub.org](http://MyAccount.SierraClub.org)

Snail Mail: Mail new address AND the mailing label on page 1 to:  
Sierra Club, P.O. Box 421041, Palm Coast, FL 32142-1041

Request no paper copy here: [http://bit.ly/Stop\\_My\\_Paper\\_Copy](http://bit.ly/Stop_My_Paper_Copy)

### Submission Deadlines

April issue of the Chapter E-Newsletter by March 22

May Issue of the Chapter E-Newsletter by April 19

May/June Issue of The Tennes-Sierran by March 31

### Chapter News Team

Communications Coordinator: Gary Bowers [sierra@totheforest.net](mailto:sierra@totheforest.net)

Tennes-Sierran Editor: Emily Ellis [tnsierran.editor@gmail.com](mailto:tnsierran.editor@gmail.com)

Tennes-Sierran Assistant Editor: Todd Waterman [jtoddw@gmail.com](mailto:jtoddw@gmail.com)

E-Newsletter Editor: Allie Stafford [enews.sierran@gmail.com](mailto:enews.sierran@gmail.com)

Poetry Editor: Alan May <https://alan-may.com/>

### TENNESSEE CHAPTER

<https://www.sierraclub.org/tennessee>

### Officers

Chair:	Cris Corley <a href="mailto:chapter.chair@tennessee.sierraclub.org">chapter.chair@tennessee.sierraclub.org</a>
Vice Chair:	Charlie High 615-500-5499 <a href="mailto:cahigh1722@aol.com">cahigh1722@aol.com</a>
Secretary:	Joanne Logan 865-310-1171 <a href="mailto:loganjojolo@gmail.com">loganjojolo@gmail.com</a>
Treasurer:	Craig Brandt 865-924-0597 <a href="mailto:brandtcctn@gmail.com">brandtcctn@gmail.com</a>
Conservation Co-Chairs:	JoAnn McIntosh 931-338-2530 <a href="mailto:mcijoann@gmail.com">mcijoann@gmail.com</a> Bill Moll 404-401-7899 <a href="mailto:whmoll@aol.com">whmoll@aol.com</a>
Outings Chair:	Ron Shrieves 865-924-8973 <a href="mailto:ronshrieves@gmail.com">ronshrieves@gmail.com</a>
Political Chair:	Joanne Logan 865-310-1171 <a href="mailto:loganjojolo@gmail.com">loganjojolo@gmail.com</a>

### Conservation Director/Lobbyist

Scott Banbury 901-619-8567 [scott.banbury@sierraclub.org](mailto:scott.banbury@sierraclub.org)

### National Beyond Coal Campaign staff based in Tennessee

Bonnie Swinford, Senior Organizing Representative

[bonnie.swinford@sierraclub.org](mailto:bonnie.swinford@sierraclub.org)

Amy Kelly, Field Organizing Strategist, Tennessee Valley Region

[amy.kelly@sierraclub.org](mailto:amy.kelly@sierraclub.org)

Emily Sherwood, Campaign Organizer

[emily.sherwood@sierraclub.org](mailto:emily.sherwood@sierraclub.org)

### GROUPS

Cherokee Group (Chattanooga region)

<https://www.sierraclub.org/tennessee/cherokee>

Chair: David Hoot 423-503-9482

[sierra.tn.cherokee@gmail.com](mailto:sierra.tn.cherokee@gmail.com)

Harvey Broome Grou (Knoxville region)

<https://www.sierraclub.org/tennessee/harvey-broome>

Chair: Jerry Thornton 865-719-9742

[gatwildcat@aol.com](mailto:gatwildcat@aol.com)

Chickasaw Grou (Memphis region)

<https://www.sierraclub.org/tennessee/chickasaw>

Chair: Rita Harris 901-497-5798 [rita2600@gmail.com](mailto:rita2600@gmail.com)

Middle Tennessee Group (Nashville region)

<https://www.sierraclub.org/tennessee/middle-tennessee>

Chair: Antoinette Olesen 615-498-2778

[middle.tn.group.chair@tennessee.sierraclub.org](mailto:middle.tn.group.chair@tennessee.sierraclub.org)

### REGIONAL CONSERVATION COMMITTEES

Clarksville-Montgomery County Regional Conservation Committee

Chair: JoAnn McIntosh 931-338-2530 [mcijoann@gmail.com](mailto:mcijoann@gmail.com)

Care NET Regional Conservation Committee (Claiborne, Grainger,

Hancock, and Hawkins Counties) Chair: John Hoellman 423-272-

4997 [jhoellman@gmail.com](mailto:jhoellman@gmail.com)

Holston Valley Regional Conservation Committee (Sullivan, Wash-

ington, and Greene counties) Chair: Dan Firth 423-390-0882

[dan.firth.sierraclub@gmail.com](mailto:dan.firth.sierraclub@gmail.com)

Watauga Regional Conservation Committee (Johnson and Carter

Counties) Chair: Gloria Griffith 423-727-4798

[gla4797@embarqmail.com](mailto:gla4797@embarqmail.com)

# Winter Creeper, English Ivy, and Monkey Grass

Continuing our Series

Living Sustainably: Personal Choice and Citizen Action



by John Nolt, Harvey Broome Group

Last summer, my stepdaughter's partner told me of some trouble he was having with a plant he called "Hell vine." It was in the woods behind his parents' house in South Knoxville, where it had carpeted the forest floor and attached itself to tree trunks. It had climbed many trees and was threatening to overtop and kill them. Pulling it down was a struggle. Later, he took me into the woods to see it. The vine was woody with dark green elliptical leaves arranged in opposite pairs. I had no idea what it was. Back home, I pored through plant

identification books. It wasn't listed. Eventually, I resorted to the internet, and after much searching, I found it: winter creeper, *Euonymus fortunei*, a native of East Asia.

Then I noticed it in my back yard, just starting to creep up the hickories and oaks. The young vines were easy to pull off the tree bark, but they also trailed off through the grass. I pulled the ones that were obvious out by the roots but kept finding more through the summer and fall.

In December, I joined a Harvey Broome Group outing to remove invasive plants at Dean's Woods, a nature preserve adjacent to Knoxville's Martha Washington Heights. It is reputed to contain Knox County's largest display of wildflowers, but it is also heavily infiltrated by English Ivy and monkey grass — and, alas, winter creeper. About twenty of us pulled out truckloads of the ivy and the creeper, but couldn't do much about the monkey grass, which breaks off easily while its extensive underground runners remain lodged in the soil.

More recently still, I took one of my frequent walks in the Knoxville Urban Wilderness. Acutely attuned now to winter creeper, I couldn't help noticing both it and English ivy climbing trees along both sides of my favorite trail, Best Medicine, which rises to a lookout with a gorgeous view of the Tennessee Valley. Sometimes the creeper and the ivy were intertwined. I pulled or broke as many vines as I could, but some were too sturdy. On subsequent walks, I have armed myself with a stout knife.

I don't know when winter creeper became such a problem. The Tennessee Invasive Plant Council lists it as an *established* (not merely *emerging*) threat. But, however long it has been here, the problem seems to be worsening. It is appearing in new places, like my back yard.

English ivy has, of course, long been used as an ornamental; but, like winter creeper, it is not native to North America and, like winter creeper, its prevalence seems to be increasing. Both the ivy and creeper are dispersed by birds, which eat their fruits and leave the seeds in their droppings.

Monkey grass — also (and more alluringly) called "lilyturf" — is neither a kind of grass nor a lily, but a grass-like perennial plant of the genus *Liriope* native to Japan. When I bought my current house in 2000, it was there as edging for a wire mesh fence used to confine dogs. I dismantled the fence but, unaware of its invasiveness, left the monkey grass. That was a mistake. These days, it is all over my yard and nearly impossible to eradicate.

What do winter creeper, English ivy, and monkey grass have in common besides their invasiveness? You can find more online about the commercial interests that sell them and promote their cultivation.

*John Nolt, a long-time member of the Harvey Broome Group, is Professor Emeritus in Philosophy at the University of Tennessee and a Research Fellow in the Energy and Environment Program at the UT Center for Energy, Transportation, and Environmental Policy.*

Contact John at [nolt@utk.edu](mailto:nolt@utk.edu)

## Chattanooga Zero Waste Festival Returns in 2024

by Dave Hoot, Cherokee Group Chair

You're invited to Chattanooga's second annual Zero Waste Festival (ZWF) scheduled for Saturday, April 20th from 12:00-6:00 pm. ZWF was created by Sunrise Movement Chattanooga to spotlight problems with our waste stream cycle and to inspire and motivate Chattanoogans to contribute less to it. It is co-sponsored by the Sierra Club's Cherokee Group.

Last year's inaugural festival was an undeniable success, with hundreds of attendees, dozens of vendors, musical acts, and speakers. Perhaps the most satisfying thing about it was that, even with the hundreds of attendees and dozens of participants, the total final amount of trash fit into a typical plastic grocery bag!

Zero Waste Fest will again be held in the courtyard of Stove Works (1250 E 13th Street). A rain date is set for April 27th.

More about Zero Waste Festival: <https://zerowastechattanooga.com>  
Contact Dave at [sierra.tn.cherokee@gmail.com](mailto:sierra.tn.cherokee@gmail.com)

# The People's Voice: A Report on TVA's Energy Plan

*The organizing team of The People's Voice includes Appalachian Voices, Center for Biological Diversity, Climate Reality Project: Memphis & Nashville Chapters, Energy Alabama, Southern Alliance for Clean Energy, Sunrise Nashville and Vote Solar*

by Bri Knisley, Director of Public Power Campaigns, Appalachian Voices

January 25<sup>th</sup> was an amazing day of solidarity for people across the Tennessee Valley as we came together at Second Presbyterian Church in Nashville to envision a better future with our communities during The People's Voice on TVA's Energy Plan. We are incredibly proud of the work everyone contributed to this event as the group discussed pathways to a clean and more democratic energy future — a better future than what Tennessee Valley Authority is offering in its current plan. Some of the events that occurred over the day:

- Expert witnesses shared compelling testimony on TVA's Integrated Resource Plan process, energy source decisions, energy justice and how to put TVA on a path to 100% carbon-free energy.
- Several congressional representatives gave powerful statements on the need for TVA to clean up its power supply and include more public input.
- Tennessee State Representative Justin J. Pearson gave a moving speech about the harm TVA has caused to the communities impacted by its overreliance on fossil fuels.
- People from across the Tennessee Valley came together to share their ideas about TVA's long-term energy plan, build new relationships and strengthen existing ones.

Very good news is that Rep. Steve Cohen plans to introduce new legislation, the TVA Increased Rate of Participation Act, which will establish a new Office of Public Participation and require TVA both to involve the public in its energy planning and to take into account extreme weather, public health, and energy reliability in its plans.

We are truly grateful for everyone's participation throughout the day, and look forward to continuing to build this movement together.

Contact Bri at [brianna@appvoices.org](mailto:brianna@appvoices.org)

# Another Smashing Year! 2023 Sets Multiple Climate Records

by Melanie Mayes, Harvey Broome Group

2023 was just another year — of smashing climate records! Scientists at the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI) pinned 2023 as the hottest year yet. 2023 was the warmest year in NOAA's 174-year long record, and the 10 warmest years in the record have occurred in the last decade. Average global temperatures in 2023 were 1.4 degrees Celsius above the pre-industrial baseline (from 1850-1900). December 2023, in fact, was the warmest December on record, globally and in North and South America. 2023 was the warmest year in North and South America, and Africa; the second-warmest year in Europe and Asia; and the tenth-warmest year in Australia.

Global ocean heat content — a measure of the heat stored in the upper two kilometers of the ocean — was highest on record. Because the ocean absorbs 90 percent of the excess heat in the Earth system, heat storage is a key indicator of warming. The five highest values have each occurred in the last five years. Antarctic sea ice coverage was the lowest on record, and Arctic sea ice was within the 10<sup>th</sup> lowest since 1979. Wildfires in Canada spread smoke throughout Canada and the US — burning over 45 million acres, 2.6 times more acreage than the previous record. Nine atmospheric rivers drenched California with rain and snow, which did help mitigate a long-term drought, but also created devastation in the form of flooding and landslides.

Carbon dioxide levels, which are the leading contributor to the observed temperature rise, were 50% higher than in the pre-industrial era. There is no good news ahead — NOAA predicts a 1-in-3 chance that 2024 will be even warmer, and a 99% chance that 2024 will be among the five warmest years.

Source: <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/global/time-series> Reference: NOAA National Centers for Environmental Information, *Monthly Global Climate Report for Annual 2023*, published online January 2024, retrieved on January 31, 2024 from <https://bit.ly/NOAA-Climate-Report-2023>.

*Dr. Melanie Mayes is a geologist with over twenty years of experience researching heavy metal contamination, soil carbon and nutrient cycling, and how soils interact with climate. Contact Melanie at [mamayes5@yahoo.com](mailto:mamayes5@yahoo.com)*

# Chapter Awards Grants to Chattanooga Audubon Society and Others

by Jim Stewart, Chattanooga Audubon Society, and Craig Brandt, SC TN Chapter Treasurer

The Tennessee Chapter of the Sierra Club has awarded grants to Chattanooga Audubon Society (CAS), Cherokee Forest Voices (CFV) and Advocates of the Oak Ridge Reservation (AFORR). Earlier this year, the Chapter invited applications for grants from Tennessee residents and organizations that do significant work consistent with the Sierra Club's mission.

Chattanooga Audubon Society will use the funding to host senior residents of Chattanooga Housing Authority's Emma Wheeler Homes for a program at Audubon Acres which will include a nature hike, lunch, a tour of the historic cabin, and participation in events celebrating the birthday of CAS founder Robert Sparks Walker. CAS manages over 500 acres of natural areas that include the cabin, hiking trails, extensive wildlife, a Native American archaeological site from the 1500s, an island in the the Tennessee River, wetlands, forest schools, a mile-long, free-flowing stream, and a 360-acre forest.

CAS's grant-funded event is the first step in its 2024 priority to make these beautiful properties accessible to everyone in the community regardless of



physical or mental handicap, race, age, lack of transportation, and ability to pay the entrance fee. In particular, CAS is reaching out to underserved groups who may not have visited Audubon Acres before.

The Chapter also awarded a grant to Cherokee Forest Voices (CFV), which works to raise awareness of the ecological value of the Cherokee National Forest. The grant will be used to restore and preserve forest biodiversity, improving and protecting its fish, wildlife, plants, soil and water resources.

The Chapter awarded a third grant to the Advocates for the Oak Ridge Reservation (AFORR), to be used to help establish the Pellissippi Blueway, a system of paddle-craft landings, campgrounds, and other features along the Clinch River between Melton Lake Park and Melton Hill Dam.

The Chapter is excited to support the important work of these organizations. Information about possible 2024 grant opportunities will be released later this year.

Contact Jim at [jstewart@chattaudubon.org](mailto:jstewart@chattaudubon.org) & Craig at [brandtcctn@gmail.com](mailto:brandtcctn@gmail.com)

## Climate and the Energy Sector

by JoAnn McIntosh, Co-Chair, Conservation Committee



As I write this in late January 2024, Tennessee has just experienced a record cold snap, tornadoes in Middle Tennessee, and an autumn of extreme drought. Are these extreme weather events evidence of climate change?

It's tempting to conflate weather with climate, and folks on both sides of the climate crisis discussion often do so. To be clear, none of the extreme weather events in the past few months can be fully attributed to climate change — there will always be weather anomalies. But

we can consider these events in the context of broader trends.

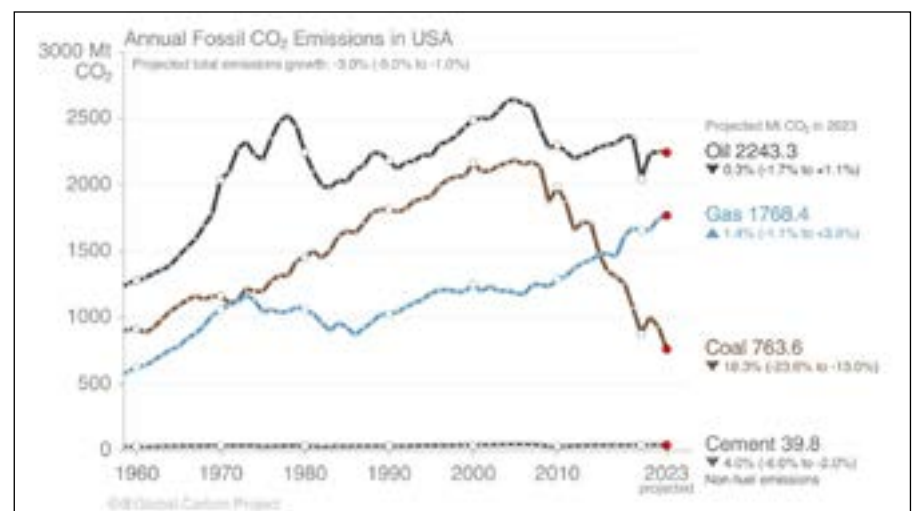
In 2023, the United States experienced a record 23 separate billion-dollar disaster events. Tennessee was impacted by 10 of those, as reported by WKMS FM radio (<https://bit.ly/wkms-2023-disasters>). The number and cost of these events have been increasing since 2020, as reported by the National Centers for Environmental Information: <https://bit.ly/NCEI-billions-TN>.

Some folks might not recognize this as a trend, but the insurance industry certainly does. Talk to Tennessee residents who were direct victims of these weather events — many were underinsured because of premium increases, which were, in turn, greatly due to record-setting claim payouts from previous and projected weather disasters.

Consider these other “non-disaster” trends: the National Oceanic and Atmospheric Administration (NOAA) verified 2023 as the hottest year on record, the 10 previous hottest years having occurred since 2010. Also in 2023, global average temperatures approached the 1.5°C cap advised at the Paris Agreement, and the ascent is accelerating; atmospheric carbon dioxide (CO<sub>2</sub>) measured 424ppm, well over the established safe level of 350ppm.

I'm preaching to the choir in this article, but readers take heart: an increasing majority of Tennessee residents now agree that global warming is happening *and that it is caused primarily by human activities*, based on a poll by Yale University: <https://bit.ly/Yale-climate-poll>.

In the United States, the principal contributing human activity is the burning of fossil fuels, and the transportation and energy sectors are the principal actors. These industries are leaders in the production of greenhouse gas (GGH) emissions trapped in our atmosphere, not only increasing global levels of CO<sub>2</sub> concentration, but also creating and compounding a greenhouse effect with conditions that result in more frequent and more intense weather events. In Tennessee, the major player in the energy sector is the Tennessee Valley Authority (TVA). This public power provider proclaims as



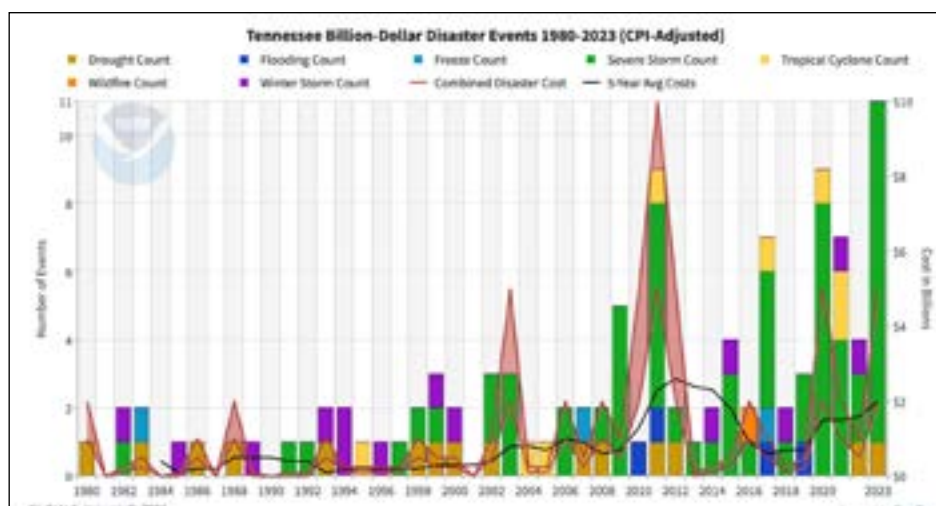
part of its mission, “to pursue new ideas and innovative solutions to ... improve the quality of life for the approximately 10 million people we serve.” To their credit, TVA has announced initiatives to decarbonize their energy portfolio, but they are out of step with decarbonization goals set by the Biden administration, lagging behind other power providers in the Southeast, and do not include deployment of many of the “innovative solutions” that current renewable energy technologies offer. TVA's arguments against renewable energy solutions focus on cost and reliability factors, both of which have been largely disputed and refuted by Sierra Club and other clean energy advocates. For instance, TVA's cost analyses don't really consider long-term “externalities” from climate change, and their reliability analyses don't incorporate new storage technologies for variable renewable energy. TVA's decarbonization plans are more aspirational and placating than effective — essentially extending a 10-foot rope to someone drowning 20 feet away.

So what do we do? Obviously this is no time to bury our heads in the sand or throw up our hands in despair and helplessness, although a little grief now and then is certainly justified — and in fact, can be motivational. I know I'm privileged — I grew up in the 1960s, when environmental concerns were being addressed by the general public and government initiatives, and before these concerns became so deeply and self-destructively misrepresented by increasingly polarized factions. I experienced our beautiful blue planet in a way that still makes me say *Thank You!* every day, and I want to pay that gift forward. Every loss that we face now diminishes our gift to our children — and frankly, that pisses me off.

So we turn our grief/anger into action. We communicate, we reach out, we avail ourselves of opportunities and resources from the Sierra Club and others. We make a noise in public, and on social media. We attend events and rallies, sign petitions, submit public comments, vote. We contact TVA and our local power companies directly, attend their meetings and speak at their listening sessions and open houses. We learn about grant funds that are being ignored and share these opportunities with our local and state governments. Do a little or do a lot — we all have lives. And so do our children.

Ready to act? Find your local Sierra Club group or regional committee on page 2. Contact the Chapter Energy Committee or one of the other Conservation Committees on page 7. The Chapter network of volunteers and staff are ready to help.

Contact JoAnn at [joann.mcintosh@tennessee.sierraclub.org](mailto:joann.mcintosh@tennessee.sierraclub.org).



# Jacob's Nature Park in Johnson City Gets New Bridge

by Bill Kornrich, Care NET Regional Conservation Committee

After Jacob Nature Park's "bridge" over Sinking Creek — a fallen sycamore tree with ropes for rails — was washed away in January of 2023, Johnson City decided the Minga Path Loop needed a better way to cross over. Sierra Club members Greg Kramer and Dan Firth stepped up to design a new bridge.

Johnson City's 28-acre Jacob's Nature Park offers several hiking trails, a living roof pavilion, a wetland area, and an abundance of wildlife including fish, frogs, salamanders, many species of birds and a native tree arboretum. In 2018, the National Wildlife Federation recognized Jacob's Nature Park as a certified wildlife habitat. The Park is named in memory of Jacob Francisco, who tragically passed away in 2004 at the age of six. Jacob's father William



Volunteers building Jacob's Bridge over Sinking Creek in Jacob's Nature Park, Johnson City, Tennessee.

Francisco has played a key role in developing and maintaining the Park.

The bridge would require a large number of black locust logs stripped of bark (harvested when permissible), lots of pressure treated wood, and rebar. "Getting these half-ton logs across the stream was a very arduous type of endeavor and we had so many people show up," Kramer said. "It went across so easily, we were amazed. I had planned for so many contingencies that I didn't have to use."

The bridge needed to be water resistant and



Jacob's bridge built by volunteers over Sinking Creek in Jacob's Nature Park, Johnson City, Tennessee.

at least two feet above the flood plain so that when it floods — which it does frequently — trees and logs in the flood waters wouldn't take out the bridge. "The black locust is good for 20 to 40 years. Decking may need to be replaced in 10 or more years, but the bridge will last well past my lifetime," Kramer said.

Volunteers from Francisco's law office, Holston Valley Unitarian Universalist Church, the Tennessee Eastman Hiking Club, the Boone Watershed, and community members, plus Johnson City's Naturalist Connie Deakins, built the bridge. Centrally involved were members of the Sierra Club's Holston Valley Regional Conservation Committee, which regularly works to maintain Park trails and preserve the natural environment, cutting back invasive species.

The acreage is primarily a wetland, much of which is in the flood plain, with two entrances on high ground (King Springs Road and Miami Drive) connected by a trail and some boardwalks installed by the city at the north end of the Park.

For more information, go to: <https://bit.ly/JacobsNaturePark>  
Contact Bill at [bkornrich@gmail.com](mailto:bkornrich@gmail.com)

# The Elementary Physics of Climate Change

by Axel Ringe, Chapter Energy Committee

Climate change is increasingly in the news these days, with seemingly daily reports of various "natural" disasters ranging from wildfires to floods to droughts to unprecedented heat waves. Even climate change skeptics are beginning to acknowledge that maybe our blue planet isn't as healthy as it once was. But debate prevails about what specific phenomena are being caused by climate change, what the future effects of climate change are likely to be, and what, if anything, can be done about it.

The changes happening now to our climate and to the environment through which we experience them are extremely complex. That's why researchers use complex computer models (which are understood mainly by them) to attempt to replicate virtually what is happening now and predict what will happen in the future, based on different scenarios of temperature rise.

If we have a good grip on factors influencing climate change and its effects,

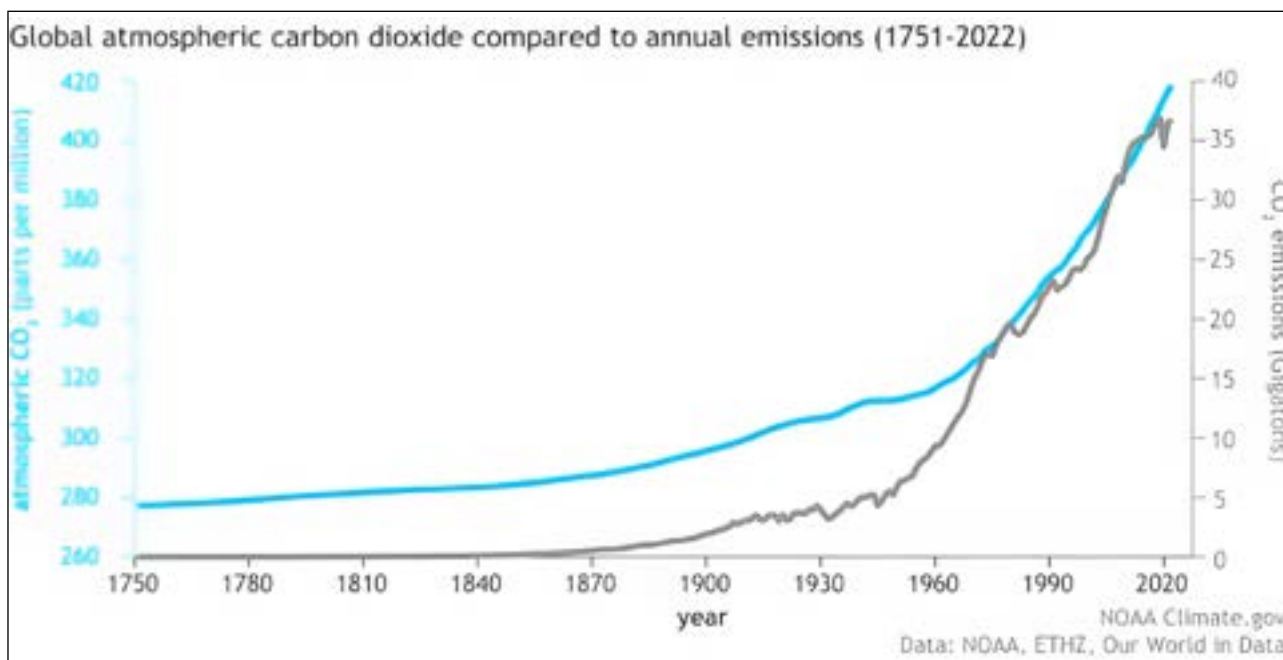
governments and private interests who have economic reasons to maintain the *status quo* aren't able to peddle misinformation. But climate change can be easily understood in general terms by focusing on the basic physics that underlies what is happening. The phenomenon of climate change is also known as "the greenhouse effect," because the atmosphere acts like glass in a greenhouse. It lets the shorter-wave radiation from the sun, which contains most of the energy, pass through and impinge on the Earth's surface. Much of that is directly absorbed and converted into heat. The rest is reflected back into the atmosphere as infrared radiation. The carbon dioxide,

methane, and other greenhouse gases (GHGs) emitted into the atmosphere by human activities absorb the heat and the atmosphere warms up. The more GHGs in the atmosphere, the more the atmosphere is heated. And CO<sub>2</sub> is a very stable molecule — it stays in the atmosphere for hundreds of years.

Heat is energy. The more energy put into a system more or less in equilibrium, the more unbalanced the system becomes, resulting, in the case of climate change, in hurricanes, torrential rainstorms, heatwaves, and many

secondary effects. Most researchers think that if the global temperature increase exceeds 1.5 degrees centigrade, climate-related feedback loops will start to kick in and the environmental impacts of a warmer planet will make life untenable.

You may be asking yourself what all this has to do with water quality in Tennessee, since I am the Chapter's water quality chair. It goes back to the effects of increased energy levels in the planetary system. These include more severe storm systems causing flooding and erosion; warmer water temperatures affecting aquatic organisms that require cold water habitats with high oxygen levels; and warmer water that



The amount of carbon dioxide in the atmosphere (blue line) has increased along with human emissions (gray line) since the start of the Industrial Revolution in 1750. Emissions rose slowly to about 5 gigatons — one gigaton is a billion metric tons — per year in the mid 20<sup>th</sup> century before skyrocketing to more than 35 billion tons per year by the end of the century. NOAA Climate.gov graph, adapted from original by Dr. Howard Diamond (NOAA ARL). Atmospheric CO<sub>2</sub> data from NOAA and ETHZ. CO<sub>2</sub> emissions data from Our World in Data and the Global Carbon Project.

encourages the growth of algae and bacteria.

One of the basic principles of ecology is that everything is connected to everything. Climate change may seem an abstract global threat, but its effects are here and now. What you can do to help reduce CO<sub>2</sub> emissions — for example, supporting the work of the Sierra Club — will in real terms protect and improve the water quality in your own neighborhood.

Contact Axel at [onyxfarm@bellsouth.net](mailto:onyxfarm@bellsouth.net)

# Tennessee Chapter Tests & Finds High Levels of Toxic PFAS

by Dan Firth, Solid Waste and Mining Conservation Committee

In a test of a sample of sludge from a Northeast Tennessee wastewater treatment plant for per- and polyfluoroalkyl substances (PFAS), the Tennessee Chapter of the Sierra Club found extremely high concentrations of toxic PFAS. Previous testing of surface and drinking waters in the same area revealed high levels of PFAS. Test results are here: <https://bit.ly/SC-NETN-PFAS-Reports>

PFAS – a class of long-lived and toxic chemicals that pollute water and food across the planet – are an ingredient in a wide variety of commonly used household products such as stain-resistant clothing, carpeting, furniture, and food wrappers, and are used in industrial applications such as food-processing aids, fire-fighting foams, and metal plating. Known as “forever chemicals” because they are virtually indestructible, they accumulate in the water, sediments and food crops. As products are used and discarded, PFAS are directly discharged into the environment, or indirectly discharged through wastewater treatment plants and landfills. Discarded items in landfills break down, releasing PFAS and other contaminants.

At wastewater treatment plants, the wastewater (influent) is treated and then discharged as effluent (liquid waste or sewage) to our surface water, and in sludge, commonly applied to land as fertilizer. Unfortunately, the treatment process is far from perfect. It’s no surprise that nearly everyone has PFAS in their body.

Sadly, we do not know the extent of the contamination and its impact because the wastewater and sludge are not tested for PFAS and other toxic contaminants. This lack of understanding is a real problem that places Tennesseans at risk. The longer it is ignored, the greater the harm.

We must end the unnecessary use of PFAS; update National Pollutant Discharge Elimination System (NPDES) permits to require pretreatment of contaminated discharges; and temporarily end land application of sludge contaminated with high levels of PFAS. Tennessee has the authority and must begin testing industrial discharges and wastewater – both influent and effluent; begin requiring industries to end the use of PFAS or treat discharges; and end the land application of sludges until it is proven safe. Contact Dan at [dan.firth.sierraclub@gmail.com](mailto:dan.firth.sierraclub@gmail.com)

# Pressured to Choose Between Saving the Planet and Saving the Fossil Fuel Industry, COP28 Chooses Both

by Todd Waterman, Tennes-Sierran Assistant Editor

COP28, the 28th Conference of Parties of the United Nations Framework Convention on Climate Change, epitomized the crippling stalemate between climate science and the fossil fuel industry. There’s overwhelming evidence that fossil fuels threaten not just our environment and our economy, but life as we know it. Yet the fossil fuel industry (the world’s most profitable of all industries) has for decades stalled climate progress with history’s most destructive propaganda war – a slick, billion-dollar-a-year deluge of climate lies. The U.S. was no less corrupted. Even as the Biden Administration bragged of unprecedented legislative and regulatory renewable energy incentives, the U.S. was setting world records for oil production, natural gas production, and liquid natural gas (LNG) exports.

COP had drawn scathing international criticism for its hosting by petro state United Arab Emirates (UAE); for UAE’s appointment of Sultan al-Jaber, the CEO of its huge state oil company Adnoc, as COP president; and for its 2400-plus fossil fuel lobbyists. Al-Jaber himself was caught making behind-the-scenes oil deals during the conference, and was quoted promoting climate denial: “Show me a roadmap for a phase-out of fossil fuel that will allow for sustainable socioeconomic development. Unless you want to take the world back into caves. There is no science out there or no scenario out there that says that the phase-out of fossil fuel is what’s going to achieve 1.5 [maximum degrees Celsius of warming by 2100].” Industrialized nations pledged \$700 million to a climate “loss and damage” fund to compensate

poorer nations. But, the U.N. had estimated those damages would be almost \$400 billion a year, 571 times that.

In the conference’s final days, a draft final agreement that omitted any mention of fossil fuels drew heated opposition. OPEC had urged its member countries to reject any agreement that mentioned fossil fuels. Saudi Arabia had said it would block any agreement that did. Yet, after going into an all-night overtime, COP28 concluded with a surprise, historic compromise, a behind-closed-doors agreement, reportedly, between the U.S. Climate Envoy John Kerry, COP President Sultan al-Jaber, and Saudi Arabia. For the first time, the Saudis would allow language “phasing down” (though not “phasing out”) fossil fuels. All parties agreed to “transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science;” “accelerating efforts towards the phase-down of unabated coal power;” and “tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030.”

Though the agreement was hailed as unprecedented progress, it left open many loopholes, and had no enforcement mechanism. That’s progress not nearly fast enough to catch up to still *increasing* global greenhouse gas emissions, leaving us on track to a devastating three degrees C (5.4 F) of warming.

Contact Todd at [jtoddwaterman@gmail.com](mailto:jtoddwaterman@gmail.com)

# Kingston Observes the Coal Ash Spill 15th Anniversary and Honors the Workers Who Died Cleaning It Up

by Todd Waterman, Harvey Broome Group

December 22, 2023, was the 15th anniversary of the Kingston coal ash spill. In a ceremony in Kingston, Tennessee, Roane County commissioners proudly proclaimed that day and each December 22 to come a Day of Remembrance for the hundreds of workers who cleaned up the largest industrial spill in United States history. It had been a long time coming – too late for the 60 some workers who had already died after being forced by TVA and its clean-up subcontractor Jacobs Engineering to work without any respiratory or skin protection; too late for the hundreds more with debilitating and ever-worsening health problems. Both TVA and Jacobs knew how toxic coal ash’s respirable particulates, carcinogens, heavy metals, and radionuclides were. Yet both denied and covered up the coal ash’s dangers, telling workers it was harmless. Many of them, after working unprotected for years of 10-to-14-hour days, seven days a week, found themselves unable to work, or to support their destitute families, or to pay their mounting medical bills. Jacobs, found negligent, paid out an undisclosed settlement to over 200 cleanup workers and their families who sued. TVA, also found negligent, hasn’t given them a cent.

Clean-up workers, workers’ families, supporters, media (and 60-some silent ghosts) packed the ceremony, hosted by the Roane County Commission in Kingston’s county courthouse. Bagpiper Kelly Shipe opened the ceremony. Commissioner Ben Gann read the proclamation. Betty Johnson and Janie Clark, both recently widowed clean-up workers’ wives, together lit a chalice. Clean-up workers and their families were acknowledged – one helped to his feet by a fellow worker.



After the ceremony, Betty Johnson shows WATE and WBIR a 2020 photo of her husband Tommy, on right, at Kingston with his best friend from the cleanup Ansol Clark. Both men are now dead.

Then, Kingston survivors took the podium, sincerely thanking the commissioners and all of us, and sharing their experiences, and their signature coal ash maladies. Janie Clark showed a photo of the Kingston Worker Memorial Cross her late husband Ansol had erected at the spill site, before which lay Ansol’s work boots. Betty Johnson held up a photo of her own deeply missed husband Tommy with his fellow clean-up driver and best friend Ansol.

Then came reporter Jamie Satterfield, whose award-winning investigations for the Knoxville News Sentinel had exposed Jacobs’ and TVA’s negligence. She’d resigned, over unobjectively caring too much, too publicly. “(But) the last act I was able to do was to report the truth, all of it: every agency in this country failed these workers.”

Brenda Edmonds listed her husband’s crippling afflictions. Jason Williams said he is a coal ash survivor “for now.” He recalled passing out 14 times in one day at Bull Run. “But, I want to appreciate the ladies,” he said. “If it wasn’t for the ladies, we wouldn’t be here.”

Jessica Waller described losing her father and also her mother, who had cleaned her husband’s ash-laden clothing. The bagpiper marched out, playing. But then Julie Bledsoe wanted to speak. Her COPD-crippled husband had been too sick to come, she said. And now she has cancer.

It’s starkly clear TVA is responsible for illnesses like COPD, rare cancers, chronic pain, and fatigue suffered by its workers and their families. And that TVA is responsible for the poisonous coal ash it hopes to abandon in place at many of its coal plants, contaminating our communities and our waters forever.

Contact Todd at [jtoddwaterman@gmail.com](mailto:jtoddwaterman@gmail.com)

## Defending the Environment: *Oh So Close!*



Susan Johnston, Defenders Chair

Hats off to our fabulous Sierra Club Defenders, who are supporting our lobbyist, Scott Banbury, in his important work with the Tennessee legislature. We set a rather ambitious goal of \$15,000 for 2023, and we are currently at \$14,474 and counting! Many, many thanks to those who have contributed. And if you meant to, but just haven't gotten around to it yet, it's not too late.

Two ways to donate:

Online: <https://sc.org/TNDefenders> OR mail a check payable to TN Chapter Sierra Club with "Defenders" in the memo line to: TN Chapter Sierra Club, P.O. Box 113, Powell TN 37849.

### Thanks to these members who are defending the environment with these recent contributions.

David Bordenkircher	Nickola Kuhn
Kay Bradford	Sandra Kurtz
Dr & Mrs Richard S. Carter	Richard and Sherry Loller
Bill and Dorothy Devan	Dana & Michelle Loseke
Linda Dunton	Robert Matthews
Steve Ferguson	Sandra McCrea
Thomas Flowers	Gale Moore
Wilbert & Gloria Griffith	Barbara Morrison
John Hoffelt	Carl Richards
Charlotte Icardi	Joann Tumey
Susan Johnston	Cyndy Whitt
Toby Koosman	Cynthia Willett

### Want to Have More Impact? Join a Committee!

Conservation Committees each focus on one issue and work on it year round. To learn more about what these committees do or to join one, please contact the chair listed.

Land Management: Virginia Dale [virginia.dale4@gmail.com](mailto:virginia.dale4@gmail.com)

Solid Waste and Mining: Dan Firth [dwfirth@gmail.com](mailto:dwfirth@gmail.com)

Energy: JoAnn McIntosh [joann.mcintosh@tennessee.sierraclub.org](mailto:joann.mcintosh@tennessee.sierraclub.org)

Water: Axel Ringe [onyxfarm@bellsouth.net](mailto:onyxfarm@bellsouth.net)

Transportation: Kent Minault [kminault@gmail.com](mailto:kminault@gmail.com)

Forests and Public Lands: Davis Mounger [wdmounger@yahoo.com](mailto:wdmounger@yahoo.com)



Reserve your trees now through March 4 for Tennessee Tree Day 2024! Join thousands of Tennessee residents in planting more than 100,000 native bare-root tree seedlings in all 95 counties during the weekend of March 16.

See tree types and pick-up locations near you, and reserve your trees here: <https://www.tectn.org/tennesseetreeday.html>

The trees are yours to plant on your property and will enhance our environment and communities for generations to come! Seedlings are available for a donation of \$0.99 - \$4.99/tree. This event is organized by Tennessee Environmental Council.

## The Wilderness Trail

by Jesse Graves

For Chloe

1.  
Winter arrived in the night  
and hung heavy in yellow pines.  
No one knew it was coming,  
so I woke up with expectations  
of canned pineapples and toast,  
a dark trudge to catch the schoolbus.
2.  
The morning had fallen white  
and I went out to find animal prints,  
a feathered tomahawk humming  
in the belt loop of my blue jeans.  
I had left the expedition and the outpost  
to find what only Boone would recognize.
3.  
I walked past the barn and my father's  
David Brown tractor under the loft,  
into the woods and back through time.  
Wind twisted and I curled inside my jacket—  
I looked around and saw nothing human,  
nothing made, two long centuries elapsed.
4.  
Sparrows and jays skittered under the cedars,  
and I followed a trail through the soft  
underbrush, setting out for the far horizon,  
two biscuits with bacon tucked in my pocket.  
The long shadow of Cumberland Mountain  
hiding the deep trace of Cumberland Gap.

Jesse Graves grew up in Sharps Chapel, Tennessee, an hour north of Knoxville. He is the author of four books of poetry, including *Merciful Days*, and a collection of essays, *Said-Songs: Essays on Poetry and Place*. He teaches at East Tennessee State University in Johnson City. "The Wilderness Trail" was first published in his poetry volume, *Tennessee Landscape with Blighted Pine*.



**Save the Date**  
 CUMBERLAND TRAILS CONFERENCE  
 presents  
**Wildflowers & Wonders**  
 ART AUCTION  
 APRIL 13 2024

**Cumberland Trails Conference invites you to Wildflowers & Wonders Art Auction, April 13 at Trinity Chapel, 240 1st Avenue in Dayton. Your \$50 ticket includes hors d'oeuvres, wine, beer, and good company. Come dressed in your finest cocktail casual attire, ready to have a wonderful evening. Save the date and secure your ticket for a night of art and community.**

**Register:** <https://bit.ly/CTC-WWAA2024>

**The First Unitarian Church of Memphis (The Church of the River)**

*Invites you to:*  
**A Lecture and A Workshop by**  
**The Reverend Dr. Patricia K. Tull**

**“Let Justice Roll Down”  
 Faith and Environmental Fairness**  
 Friday March 1, 7:00pm  
 Scientists measure and communicate the depth of our environmental problems, but the problems and the solutions are at root spiritual ones.

**Healing a World of Wounds**  
 March 2, 10am to 3pm  
 Climate change is real. We live in a moment ripe for both modeling changed actions and for speaking up for these changes. Join Rev. Dr. Tull for a discussion of how we each can promote environmental and human healing. Lunch included with this free workshop.  
 Registration required:  
[info@churchoftheriver.org](mailto:info@churchoftheriver.org).

292 Virginia Ave. W., Memphis  
 901-526-8631

*The Rev Dr. Tull is an Environmental Theologian and author of Inhabiting Eden: Christians, the Bible, and the Ecological Crisis.*



**Be a champion for the environment. Join today for \$15.**

From TVA's planned methane gas plants to species extinction to climate change to coal ash to drilling for dirty tar sands, the threats to our environment have never been greater. Your support is absolutely essential to preserving our most precious natural resources - join the nation's largest and most effective grassroots movement today.

We'll thank you with this free insulated trail cooler tote (limited time!) and these exciting Members-only benefits:

- One-year subscription to Sierra magazine
- Worldwide Members-only outdoor trips
- Automatic membership in your local Chapter and Group
- Discounts on Sierra Club calendars, books, and other merchandise.



Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_  
 Zip \_\_\_\_\_ Phone (\_\_\_\_) \_\_\_\_\_  
 Email \_\_\_\_\_

Check enclosed. Please make payable to Sierra Club.  
 Please charge my:  Visa  Mastercard  AMEX

Cardholder Name \_\_\_\_\_  
 Card Number \_\_\_\_\_  
 Exp. Date \_\_\_\_/\_\_\_\_/\_\_\_\_  
 Signature \_\_\_\_\_

Membership Categories	Individual	Joint
<b>Special Offer</b>	<input type="checkbox"/> \$15	
Standard	<input type="checkbox"/> \$39	<input type="checkbox"/> \$49
Supporting	<input type="checkbox"/> \$75	<input type="checkbox"/> \$100
Contributing	<input type="checkbox"/> \$150	<input type="checkbox"/> \$175
Life	<input type="checkbox"/> \$1000	<input type="checkbox"/> \$1250
Senior	<input type="checkbox"/> \$25	<input type="checkbox"/> \$35
Student/Limited Income	<input type="checkbox"/> \$25	<input type="checkbox"/> \$35

Contributions, gifts and dues to Sierra Club are not tax deductible; they support our effective, citizen-based advocacy and lobbying efforts. Your dues include \$7.50 for a subscription to Sierra magazine and \$1 for your Chapter newsletters.

**Enclose a check and mail with this full ad to:**  
 Sierra Club  
 P.O. Box 7059  
 Merrifield  
 Virginia 22116-7059

**Or click JOIN on our website:**  
[sierraclub.org/tennessee](http://sierraclub.org/tennessee)  
**F94QB43001**

RETREAT SCHEDULE		
	LOCATION	DATES
Spring 2024	Fall Creek Falls State Park	May 3-5
Fall 2024	Fall Creek Falls State Park	October 18-20
Winter 2025	Cedars of Lebanon State Park	January 17-19
Spring 2025	Fall Creek Falls State Park	May 2 - 4
Fall 2025	Natchez Trace State Park	October 24 - 26

UPCOMING MEETINGS		
Group Program Meetings		
Group	Date	Time
Cherokee (Chattanooga)	Mon 3/25, 4/22, no May meeting	6:00 PM
Chickasaw (Memphis)	Tue 3/19, Tue 4/23, Wed 5/15	6:00 PM
Harvey Broome (Knoxville)	Tue 3/12, 4/9, 5/14	7:00 PM
Middle TN (Nashville)	Thu 3/14, 4/11, 5/9	7:00 PM

Group Business Meetings		
Group	Date	Time
Cherokee (Chattanooga)	Mon 3/4, 4/1, 5/6	7:00 PM
Chickasaw (Memphis)	Wed 3/6, 4/3, 5/1	6:30 PM
Harvey Broome (Knoxville)	Tue 3/26, 4/23, 5/28 *	7:00 PM
Middle TN (Nashville)	Mon 3/18, 4/15, 5/20	6:30 PM

\* Date may change. Check with Jerry at [gatwildcat@aol.com](mailto:gatwildcat@aol.com)

Regional Conservation Committee Business Meetings		
Committee	Date	Time
CareNET (Rogersville)	Thu 3/28, 4/25, 5/23	6:30 PM
Clarksville	Tue 3/12, 4/9, 5/14	6:30 PM
Holston Valley	Tue 3/19, 4/16, 5/21	6:00 PM
Watauga (Mountain City)	Sun 3/10, 4/9, 5/14	2:00 PM