

Tennes Sierran

SIERRA CLUB
TENNESSEE CHAPTER

Bi-monthly newsletter of the Tennessee Chapter of the Sierra Club

Volume 54, Number 4 – July / August 2021

SEED Solar Homes Empowering Social Justice

Page 4



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Vol. 54, No. 4 - July / August, 2021

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Tennes-Sierran
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Masthead photo ©Ron Shrieves. Coneflowers on Roan Highlands.

Cover photo: SEED trainer Wando Stacy stands behind his trainees, from left to right Marshall Hawkins, Journey Pirtle, and Jahiyawon Cody

Explore, Enjoy, and Protect

From Mac Post, State Chair

Conserving and Restoring America the Beautiful



During this pandemic year, with restrictions on congregating indoors, we went outdoors to parks in record numbers. Visits to national parks, state parks, and local parks provided opportunities to do something enjoyable with family and friends not available elsewhere, provided we stayed far enough apart. These outdoors places are treasures of the natural world that still remain in our increasingly manufactured world. Some are small, like the wooded part of an urban park. Others are large like the Great Smoky Mountains National Park and Cherokee National Forest. They play an important role for us beyond recreational destinations. They all, regardless of size, provide valuable ecosystem and landscape services crucial for life on Earth, including providing clean water, purifying air, resisting climate change, and maintaining biodiversity – crucial for life on earth.

The exponential growth of human consumption, global trade, agricultural expansion, pollution, and urbanization over the past 50 years has contributed to an unprecedented decline in Earth's resources. There

are three billion fewer birds in North America, or one-fourth fewer today than in 1970. Over 450 butterfly species in the Western U.S. have declined at a rate of two percent a year over the last 40 years. A comprehensive summary of 21,000 monitored populations of mammals, fish, birds, reptiles, and amphibians, including 4,400 species around world, show a decline of an average of 68% between 1970 and 2016. Elizabeth Kolbert argues in her book, *The Sixth Extinction: An Unnatural History*, that the earth is in the midst of a man-made extinction event comparable to the previous five in Earth's history that were the results of cataclysmic events.

To counter this current unfolding environmental cataclysm, we need to set aside land, rivers, lakes and oceans for maintaining wild nature and biodiversity. The eminent American biologist E.O. Wilson, in his book *The Future of Earth* (2002), argued that we must set aside about a half of the Earth. In his book, *Half Earth* (2016), he expanded on this concept and then established the Half Earth Project. Scientific analysis supports this concept (Allan et al. bit.ly/HalfEarthProject). And since 1.2 million kilometers of land that are available for conservation will be converted to intensive human land-use by 2030, nations, local communities, and industry need to act now to safeguard the remaining land areas critical for conserving ecosystem services.

Conceptual road maps and targets are being developed and set into international agreements, like the current Convention on Biological Diversity's vision of sustaining a healthy planet and delivering benefits for the world's populations. The goal of conserving 30% of land and water by 2030 (30x30) has become a benchmark to measure progress. So far 50 countries and 70 U.S. mayors have committed to the 30x30 goal. In the United States the broad strokes of a 30x30 plan are outlined in the "America the Beautiful" proposal (bit.ly/RestoreATB), which emphasizes collaboration among federal government, states, and tribal nations to preserve more marine and terrestrial wildlife habitat and create public spaces. The Sierra Club is redirecting several teams to build a wide community to attain 30x30 goals. If you are interested in helping in this effort and finding out more, contact Cris Corley driscorley@gmail.com, our Tennessee Chapter representative for this effort.

The Land and Water Conservation Fund (LWCF), reauthorized in 2019, already covers some funding, \$150 million, for the America the Beautiful proposal. TDEC's Recreation Educational Services administers the LWCF grants in Tennessee (bit.ly/TN-LWCF). These grants require a 50% match. The cut-off dates are May 31 and Nov 30. It is a lengthy process and points are awarded if you have a local parks board and a parks department with full time staff.

We have an opportunity through LWCF to set aside places now for nature to thrive and to enhance our own communities, especially underserved communities that largely lack parks and natural places. The best park is the one down the street from where you live. This is where we observe how plants grow, marvel at butterflies and fireflies, and find birds eating insects and bees pollinating flowers. It is where we learn, with family and friends, the ecosystem ingredients required for the natural world to conserve and restore America the Beautiful. So let's get with our neighbors, go to our local community park committees, advocate for nearby parks, and apply for LWCF grants.



Self-described "Litter Chicks" Joellyn Smith (left) and Emme Kob show off bags of litter they collected in Johnson County. The Chicks routinely pick up trash on the roadways and in parks after their regular working hours. Selfie by Emme.

Tennes-Sierran

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August Issue of the Chapter E-Newsletter by July 23

September Issue of the Chapter E-Newsletter by August 20

September / October Issue of The Tennes-Sierran by July 31

Request Submission Guidelines at tnsierran.editor@gmail.com

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W-O-O H-O-O !!!

The Sierra Club plans to start reopening on July 5 with outdoor in-person day trips / training !!!

Regional Conservation Committees

Contact information for conservation committees is on page 2. Meeting times are on page 8.

Watauga Conservation Committee (Johnson County)

by Dennis Shenikah

As reported in the last issue, members of the Watauga Conservation Committee, in upper northeast Tennessee, are excited to see their community stepping up to fight litter. A cry for a cleaner Johnson County is now coming from groups other than “those crazy environmentalists” who have been working for decades on issues that affect our clean air and public waters. In addition to various groups picking up trash from the roadways at a successful litter pickup in April, two friends continue to carry the anti-litter torch, and have come to embody the spirit of volunteerism. The self-named Litter Chicks, Joellyn Smith and Emme Kob, routinely pick up trash on the roadways and in parks after their regular working hours. They have been featured in the local newspaper and in online publications, and have set up tables at community gatherings, giving out supplies, information and stickers.

When we were young, Smoky the Bear and Woodsy Owl shared their message of stewardship. People need a spokesperson sometimes — children and parents alike. Bless the Litter Chicks for being our symbol of civic participation and inspiration to all.

Plans are still underway for the 12th annual Watauga Lake Cleanup (WLCleanup) scheduled for Saturday, September 18.

Clarksville-Montgomery County

by JoAnn McIntosh

As of Memorial Day, Clarksvillians were still awaiting appointments of members to the new Clarksville Sustainability Board. SC Clarksville-Montgomery County submitted member recommendations following the establishment of the Board by City Council resolution on March 4, and is eager to assist the Board with planning and projects for our community.

Our recent actions include participating in the Great American Cleanup, making sustainability presentations to local organizations, and alerting our membership in Montgomery and surrounding counties about TVA's May 10 announcement to close the Cumberland coal plant. Several news items have followed in middle-Tennessee media, including an op-ed written by SC CMC members Joe Schiller and JoAnn McIntosh on the unsatisfactory alternatives TVA is proposing for the plant site, and how the community can engage TVA going forward.

SC CMC has continued virtual monthly meetings, and is hoping to get back to in-person meetings at the public library in July. News and announcements can be found on Facebook at Sierra Club Clarksville-Montgomery County.

Tri-Cities

by Greg Kramer

Members of the Tri-Cities Conservation Committee attended an in-person Northeast Tennessee iNaturalist meeting Sunday, May 11, at Johnson City's Wing Deer Park about this year's successful “City Nature Challenge.” iNaturalist Coordinator, Mel Kelley introduced two guests: Cade Campbell, a local iNaturalist expert, and Connie Deegan, Johnson City Parks and Recreation Naturalist. They gave one-on-one training to those present who had never used the iNaturalist app. Everyone then went across the street to the Frisbee Golf and Mountain Bike Path parking lot to do our own iNaturalist practice. We found a very local variety of millipede whose range is Johnson City, and Cade explained about how localized millipede species can be. Plants we found were sweet shrub, wineberry, putty root, mayapple, little brown jug in flower, blood root, pale corydalis, dwarf larkspur, rattlesnake root, and more. We all had a wonderful time.

Care NET

by Bill Kornrich

After a one-year hiatus (due to COVID-19), CareNET is back at work on an exhibit on the Holston River, which transverses Hawkins County. In July and August work will be completed for “The Holston River: It's Your River, Hawkins County.” This exhibit will be on display in three different locations in the county for two weeks each. In conjunction with this locally produced exhibit, the traveling Tennessee Waters exhibit on Tennessee waterways and the many benefits that our rivers provide will also be on display. The traveling exhibit is organized by Humanities Tennessee, the Tennessee Historical Society, and the Albert Gore Research Center at Middle Tennessee State University.

Six panels with text, photos, and other graphics will examine the following aspects: history, recreation, misuse/abuse, flora/fauna, legal responsibility for protection of the river, and what can people do to keep the river clean. There will also be a booklet with additional text and articles on the river. The exhibit will be permanently housed at the Surgoinsville Area Museum and will be available for community use in schools and public events, such as at the CareNET booth at Hawkins County Heritage Days, the county's largest event. Exhibit production is possible with a grant from Humanities Tennessee.

Work also continues on long range projects, including communicating with Hawkins County School board and staff; promoting the electric school bus; creating a revised recycling brochure for the counties served by CareNET; and presentation of the Black Lives Matter quilt (in conjunction with a CareNET/Sierra Club information display) after successful events at Central Baptist Church in Kingsport and the Juneteenth celebration in Morristown.

The Group Scoop

Group contact information is on page 2. Meeting times are on page 8.

Cherokee Group (Chattanooga) by Kate Anthony

Cherokee group continues to meet only virtually. But we have been working to generate interesting and engaging content that way. We had a virtual Earth Day celebration with music, poetry, and readings that turned out to be quite moving and inspirational. We continue our monthly educational programs. Most recently we heard from the Director of Reflection Riding Arboretum and Nature Center about the work they are doing for conservation, including outreach efforts to reach a more diverse population. Bill Moll attends the Wednesday conservation calls. We are planning to be able to host the October Chapter Retreat, which we expect will be in person (yay!!).

We have moved the location from Pickett to the more accessible Booker T. Washington State Park. Originally named Booker T. Washington State Park for Negroes, it was one of only two that African Americans were allowed to enter for a long time. The facilities were constructed in part by New Deal-era agencies like the Tennessee Valley Authority (TVA), the Works Progress Administration (WPA), and the Civilian Conservation Corps (CCC). The Park has tons of interesting history and is in a beautiful natural setting. We look forward to seeing everyone there.

Chickasaw Group (Memphis) by Charlie Belenky

Chickasaw Group has continued our monthly program meetings. April was, of course, an Earth Day program, and in May, Shenee Simons, one of our newer members, presented on women in the State Park system. In June, we focused on the LBGQT+ community and their engagement with the environment.

Our conservation committee has also been very active in opposing the Byhalia pipeline, in engaging on the possible departure of Memphis from TVA and on a host of other issues. Of course, outings are on hold.

Chickasaw's other exciting news is that a student at Rhodes College will be interning with us. We hope to expose her to the panoply of issues Sierra Club engages in, as well as get her assistance with membership outreach.

Harvey Broome Group (Knoxville) by Jerry Thornton

HBG is looking forward to resuming outings after July 4, even though SC's national office has not announced a resumption of outings or in-person programs. Nonetheless, Outings Chair Joan Tomlinson has been preparing a new schedule, beginning with late July, which will be posted on the HBG web site as soon as we get the go-ahead from National. It will be a mixture of day hikes, backpacking treks and canoe/ kayak trips, running right through December. Check the HBG website in early July.

HBG continues its effort to create a third edition of *Hiking Trails of the Cherokee National Forest* (CNF), last updated in 2005, with Will Skelton as editor. Will, Don Barger and Joan Tomlinson have organized a crew of hikers to re-hike all 192 or so trails in the CNF and provide updates regarding trail conditions, with GPS start and end points. More volunteer hikers are needed to spread the workload. Contact: Will, whshome@bellsouth.net, 865-523-2272, or Joan Tomlinson, joanptomlinson@gmail.com, 865-567-8051.

HBG continues its focus on environmental issues in and near Knoxville. We mobilized members to attend TVA's May 27 Virtual Open House addressing the proposed closure of the Cumberland coal plant and to comment urging TVA to replace the plant's electricity not with natural-gas-sourced electricity, but with renewables and storage, which is also the cheaper option. We are trying to influence TVA, the City of Knoxville and the Knoxville Utility Board (KUB) to be more proactive on clean energy and environmental justice issues, including KUB's rate structure and a possible community benefits agreement regarding the impacts of the new baseball stadium and commercial district planned for Knoxville. We also have our critical eye on the proposals by the U.S. National Park Service to build a new road into the Great Smoky Mountains National Park between Wears Valley and Metcalf Bottoms, and new bicycle trails within the road corridor. We continue to monitor efforts by the U.S. Department of Energy to build a new hazardous and nuclear waste facility in Oak Ridge and we are working with the Bull Run Neighbors citizens' group addressing justice for the workers harmed by the clean-up of coal ash at the Kingston spill site and the fate of coal ash at the Bull Run coal-fired generating plant that will close in 2023.

Middle Tennessee Group (Nashville) by Antoinette Oleson

The Middle Tn Group has been busy. Our new program chair Stephanie Perry has done a great job in revitalizing our Zoom program presentations in May “How To Be A Naturalist” and June's Program on “Electric Vehicles,” both of which were well attended. Our July 8 program “Keep It Wild...(Your Yard)” will be presented by Richard Hitt from Wild Ones, Middle TN group, speaking on native trees and creating your own native garden design and landscape that benefits pollinators, wildlife and our environment. Our programs from August forward are going LIVE again! All are invited. Friday, August 13 at 5:30pm we will meet at Radnor Lake Visitor Center for an optional hike around the lake with Charlie High as our official hike leader, followed by an informal new member welcome with refreshments. Starting at 7 pm, Randy Hedgepath will give a program presentation, “A Tribute to Mack Prichard.” Hope to see you there but if you can't make it in person, our program will be live online as well — stay tuned for details.

On the local side, Inspiring Connections Outdoors is up and running and has added a second River Kids program July 8 at Couchville Lake and July 15 at Long Hunter State Park.

For more good news, after a long bitter legal battle Nashville's Solid Waste Board has again denied landfill expansion in Bordeaux, the largely African-American suburb northwest of downtown. The landfill currently takes in 90% of all construction waste in this rapidly growing city.

Solar Powered Homes Come to the 'Hood



Groundbreaking ceremony for the first solar home built by Socially Equal Energy Efficient Development (SEED). J.D. Jackson is third from left. Photo by Todd Waterman.

by JD Jackson, Chief Operating Officer of Socially Equal Energy Efficient Development (SEED, Knoxville, Tennessee)

Building a solar-powered home has become more expensive because of the Covid-19 pandemic. The residential construction industry has seen a sharp increase in the price of lumber and building materials. SEED will need help to absorb some of the cost of new construction, but the potential return on investment for the community is enormous.

First, there is the possibility of a low-income family receiving a newly built home in their own neighborhood — the same neighborhood that is presently being sold out to wealthy businessmen and affluent residents for gentrification. The goal is to keep these properties in the hands of local folks who embody the authentic community that only comes from decades of living in these neighborhoods. SEED, in Knoxville, Tennessee, believes in **development without displacement**, by helping low-

income residents obtain a piece of the American dream of homeownership in their own community. With homeownership, we will change their trajectory and mindset from generational poverty toward generational wealth. We will be positioning the working poor to build equity that will be available to their descendants. They also gain the emotional equity and pride that comes with finally having a home they can call their own.

Secondly, there is the impact of young people from marginalized communities gaining a **career path out of poverty** and into the construction industry. These SEED cadets have the opportunity to gain firsthand knowledge in every aspect of building a new home from the ground up. This develops apprenticeship skills in a myriad of trades that can propel them into a career path of their choosing. We will afford them access to an accredited program that will not only train them, but give them the certification that is needed to take them from a laborer, to an apprentice, to a journeyman, to a foreman, and ultimately to a general contractor with entrepreneurial aspirations.

"Nothing stops a bullet like a job."* The lack of opportunities for these young people can lead to hopelessness, despair, and discontentment, and a sense that there is no way out of their circumstances; this can make gangs and crime seem like the easiest way to be accepted and to make money. Our impact on the community is to give these at-risk youth hope, aspiration, and the means for a better way to obtain a livable wage and a career that will take and keep them out of poverty.

Lastly, this home will help **decrease the carbon footprint** by using energy-efficient systems, introducing the benefits of living an environmentally-friendly lifestyle. We will install solar panels on the roof, a battery energy recovery system, micro-circuit for power outages, tankless hot water system, and the most advanced energy efficient materials to ensure less energy waste and lower utility costs. The estimated savings will take between 60%-80% off their utility bill, making it more affordable for the home dweller. We want to show the neighborhood that they do not have to settle or take a back seat when it comes to having healthy, affordable, modern, and efficient homes located in their communities.

*Said by Jesuit Priest Gregory J. Boyle, Founder and Executive Director of Homeboy Industries.

Donate at seedknox.org. Contact JD at unvainlike7@gmail.com.

Global Freezing: A Stark Nuclear Wakeup Call

by Todd Waterman, Harvey Broome Group

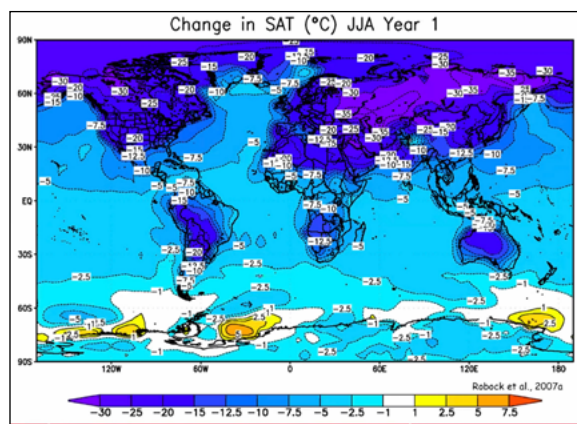
Rutgers climate scientist Alan Robock's specialty is the impacts of particles in the upper atmosphere on climate, whether injected by volcanic eruption or by smoke from fires that would be ignited by nuclear war. On May 18, via Zoom, he told Friends of Oak Ridge National Laboratory, "A nuclear war between any nuclear states, using much less than one percent of the current nuclear arsenal, would produce climate change unprecedented in human history."

Robock discussed the pivotal 1983 climate modeling paper by Richard Turco et al. (including Carl Sagan) which coined the term "nuclear winter." The radical drop in surface temperatures over most of the globe caused by dust and soot lofted into the atmosphere by a major nuclear exchange, causing, the paper's abstract said, "even in summer, subfreezing land temperatures for months." Turco et al. had concluded, "When combined with the prompt destruction from nuclear blast, fires, and fallout and the later enhancement of solar ultraviolet radiation due to ozone depletion, long-term exposure to cold, dark, and radioactivity could pose a serious threat to human survivors and to other species."

A year later Robock's own modeling had found the feedback effect of snow and ice cover reflecting sunlight back into space would prolong Nuclear Winter for years. He joined Sagan as a passionate, lifelong advocate for nuclear disarmament. When presented with the science of nuclear winter from both U.S. and Russian scientists, President Reagan soon concluded, "such a war could just end up in no victory for anyone because we would wipe out the earth as we know it." Gorbachev concurred, and with Reagan agreed to end the nuclear arms race.

Robock said his more recent research finds nuclear war, say between India and Pakistan, involving only 100 Hiroshima-sized weapons (0.03% of the world's arsenal) would cause persistent global average temperatures colder than in the Little Ice Age. After a full-scale nuclear war between the U.S. and Russia, reductions in average surface temperatures caused by airborne soot in June, July, and August — lower in some places by 35° C (63° F) — would make growing food crops impossible in most of the world. Prolonged famine, unfiltered UV, and other prolonged impacts would kill most of the world's 7.9 billion people. "The world as we know it could end any day as a result of an accidental nuclear war between the United States and Russia."

Even today, "If one Hiroshima-sized bomb were dropped every two hours from the end of World War II to today, it would still not use up the current arsenal." We quit building bomb shelters, quit teaching children to crouch under their desks, and forgot about nuclear holocaust. We know no one in their right mind (continued on page 6)



Alan Robock's modeling found airborne soot from a full-scale nuclear war between the U.S. and Russia would reduce Surface Average Temperature (SAT) by up to 35° C (63° F) in June, July, and August (JJA), causing catastrophic crop failures and famine. Image from Alan Robock's slideshow.

A Visit to the Tennessee Climate Office

by Bill Kornrich, CareNET Conservation Committee

Joanne Irvin and Bill Kornrich, members of CareNET, a Sierra Club conservation committee, met with Tennessee State Climatologist Dr. Andrew Joyner and Assistant State Climatologist Wil [one I] Tollefson on April 23. They founded, and are, the Tennessee Climate Office (TCO),

They are the Tennessee Climate Office (TCO), operating out of the Department of Geosciences Building at East Tennessee State University. This year the office has been officially recognized by the American Association of State Climatologists, after having been designated as an "acting" climate office since 2016.

Both Andrew and Wil were very interested in telling us what TCO does and its plans for the future. In short, they do a lot. They encourage us to tell our members to use the services of the Climate Office.

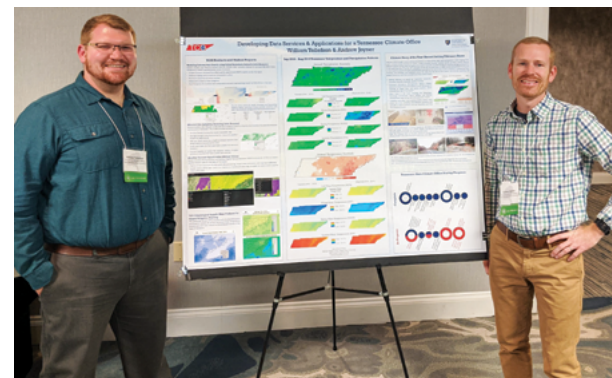
There are two areas of primary concern, though these often intersect: hazard mitigation and climate data.

The office works directly with city, county, or state governments to develop their plans. If, for example, Hawkins County wanted a hazard mitigation plan (which includes natural as well as manmade events), the office would do it. Grant funding would pay for 75% of the costs, with the county kicking in the remaining 25%. The match could be in-kind, using existing staff or programs. Benefits of such a plan are clear for citizens in the county. With this plan, the county can receive grants to mitigate a particular hazard or hazards; without it, these funds are simply not available. The main goal of a state climate office is based on public service, centered on providing useful and applicable climate data and products to state and federal agencies, researchers, farmers and others. They produce reports for the four National Weather Service offices in Tennessee, the U.S. Drought Monitor, and the National Oceanic and Atmospheric Administration. The office wants to run a local community resilience academy, with a toolkit for assessing where each attendee's community stands in terms of climate. Among the other many interesting facts we learned, Tennessee has four climate zones.

Ever heard of CoCoRaHS.org, the website for the Community Collaborative Rain, Snow and Hail Network? This is where YOU can participate by providing reports on precipitation where you live and see Citizen Science data from across the state and nation. The office provides a lot of information to NOAA. Find enough data on Hawkins (and any other county) to make your head spin here:

ncdc.noaa.gov/cag/county/mapping.

Then there is the Mesonet, a sophisticated technological data gathering system that depends upon a large number of weather stations. TCO would like to set up such a network here in Tennessee. TCO has built numerous (continued on page 6)



The Tennessee Climate Office is staffed by State Climatologist Dr. Andrew Joyner (right) and Assistant State Climatologist Wil Tollefson. Photo courtesy of the Tennessee Climate Office.

TVA's Unbridled Nuclear Ambitions

By Don Safer, Tennessee Chapter Know Nuclear Committee Chair, Sierra Club Grassroots Network Nuclear Free Team, Co-Chair



The Tennessee Valley Authority (TVA) currently generates 42% of its electricity with seven dangerous, leaky, old nuclear reactors along the Tennessee River, from Watts Bar to Sequoyah to Browns Ferry. They want to extend the lives of those reactors far beyond their original 40-year design life (most of them are now licensed for 60 years) to 80 or even 100 years. In addition, TVA is in the process of completing a Programmatic Environmental Impact Statement (PEIS) for an "advanced" reactor technology park at the Clinch River site near Oak Ridge. And in May, TVA announced an agreement to collaborate with Kairos Power on

a low-power demonstration reactor at the East Tennessee Technology Park near Oak Ridge. There seems to be no limit to TVA's nuclear power ambitions and willingness to spend ratepayers' money on them. They are exhibiting a blind eye to nuclear power's many environmental, environmental justice, economic and nuclear weapons proliferations problems and risks. There is no other utility in the United States going so "all in" on new nuclear.

What is an advanced reactor? In 2018 the U.S. Congress defined advanced reactors as "a nuclear fission reactor with significant improvements over the most recent generation of nuclear fission reactors" or a nuclear fusion reactor. (Fusion reactors are too far from commercialization for even TVA to consider.) It doesn't take much in the way of unproven, theoretical improvements to call a fission reactor design "advanced." Basically, any new reactor is considered to be advanced by TVA and the nuclear industry. Advanced reactors are more clever marketing terminology than actual technological improvement.

TVA is spending four million dollars on the PEIS. It is considering building more than one experimental or first-of-a-kind designs out of eight being evaluated. This includes non-light water reactor technologies, some previously tried and rejected, some wholly theoretical, and includes the light water small modular nuclear reactors they have been fascinated by and fruitlessly spending money on since at least 2009. All power generating reactors in the U.S. today are "light-water reactors," a term that refers to the use of water as the moderator to slow down the neutrons created by nuclear fission. Non-light water reactors either don't slow down the neutrons and are called "fast reactors" or use another material like graphite or liquid metals to slow them.

Nuclear power is a false solution for the climate crisis. It inhibits the growth of truly clean solutions: renewable energy, energy efficiency and storage. Nuclear power is dirty and dangerous. New nuclear is too expensive and too slow to come online to be able to stop increasing levels of carbon dioxide in our atmosphere. So-called "advanced nuclear" is not advanced at all. Extending the operations of existing reactors is a risky bet. They are dangerous designs that Gregory Jaczko, former Chair of the Nuclear Regulatory Commission, says are all unsafe. All reactors leak radiation and they all produce highly irradiated used fuel ("spent fuel") that is millions of times more radioactive than new enriched uranium fuel. All irradiated fuel is being stored on-site. Storage and disposal of irradiated fuel presents health and environmental challenges that become increasingly challenging as we learn more about how it deteriorates over time. The risk is far from being fully comprehended and it must be kept out of our biosphere for a million years. Nuclear reactors produce prodigious amounts of heat, both in the nuclear reaction and from the discharged irradiated fuel. Nuclear power is a gateway technology for nuclear weapons. Uranium mining creates serious health and environmental problems, often in indigenous communities. Uranium enrichment and fuel fabrication have contaminated areas of Paducah, Kentucky, Erwin, Tennessee, and other fuel chain processing sites, most often in low-income communities.

We cannot rely on the US Nuclear Regulatory Commission (NRC) to protect people and the environment. It is a textbook example of an agency that is captured by the industry it regulates, much like the Japanese Nuclear Regulation Authority. A Japanese government commission found the 2011 Fukushima Daiichi disaster was the result of collusion between the government, regulators, and the utility.

As a federally owned utility, TVA is subject to the power of the president and the Congress. With the Biden presidency and a democratically controlled Congress (at least until the 2022 mid-term election), TVA has displayed heightened awareness of the climate crisis. The good news is that TVA has finally announced plans to get off coal. The bad news is they want to replace it with more natural gas and nuclear power, while severely limiting deployment of renewables, energy efficiency and storage. More bad news: they say it will take until 2035 to complete the transition off coal.

Unfortunately, the president and Congress are still under the sway of the Department of Energy and the nuclear-military-industrial complex, and are poised to throw hundreds of billions of dollars to prop up both existing and far-fetched new nuclear projects. Those of us who see that this is a monumental mistake should raise our voices to oppose this madness.

"Kairos" is a Greek word meaning the right moment for action or a particular message. We are at our Kairos moment for action on climate. It is critical that we get this right — time is really running out. We can't afford to waste billions of dollars and precious time wishing for climate salvation through nuclear power.

Contact Don at dsafer@comcast.net

A Visit to Tennessee Climate Office (continued from page 4)

partnerships across the state and would be well qualified to run our Mesonet. Kentucky and Oklahoma have the best systems. Interestingly enough, Kentucky got funding for this through a \$5 million federal budget insert by Senator Mitch McConnell. To find out about services the Tennessee Climate Office provides to communities, go to <https://www.etsu.edu/cas/geosciences/tn-climate/>

Contact Bill at bkornrich@gmail.com

TVA's Plan to End Coal-Burning Power Plants

by Joe Schiller, Sierra Club Clarksville-Montgomery Conservation Committee County Conservation Committee



Over the course of many years of closely following the Tennessee Valley Authority (TVA) policy I have learned how to interpret TVA pronouncements with a healthy degree of skepticism. TVA is fond of making statements consisting of big-sounding numbers that end up being kind of modest upon close examination. Such is the case with TVA's supposed new-found commitment to solar in an *E&E News* article on April 29, 2021, titled "TVA shifts, weighs closing all coal plants," as reported by Kristi E. Swartz.

The article reports TVA plans to consider closing all its remaining coal plants by 2035 and make a stronger commitment to solar. It is important to place these statements in context. A quick referral

to the TVA website confirms that TVA's wind and solar assets currently make up about three percent of TVA generating capacity. TVA currently has about 2000 megawatts (MWs) of solar capacity.

Thus 1000 MWs is about one percent of TVA's capacity. Jeff Lyash's statement that he wishes to see 10,000 MWs of solar on the TVA grid by 2035 means TVA would need to add only about 800 MWs of solar capacity a year. This amount of solar will not even replace the entire coal capacity of 14,000 MWs remaining on the TVA grid by 2035. So while 10,000 MWs may sound like a big number, it is not all that impressive.

Similarly, while it is good that TVA is now willing to openly commit to phasing out all of its remaining coal generation, it is not on a schedule that the climate crisis demands, and it is not in line with the Biden administration's renewable energy commitments.

These shortcomings are exacerbated by the fact that TVA still plans to replace some of the retired coal with new natural gas and nuclear plants. In fact, a cynical interpretation of TVA's unambitious renewable goals is that it is intentionally trying to reserve load to justify the building of new nuclear capacity.

These statements are all in conflict with the long-standing TVA position that it is working to diversify its generating resources in order to enhance resilience and maintain low customer bills. Nuclear is already the most abundant resource on TVA's grid. You cannot diversify your resource by adding more of what already is your most abundant asset. This is also one of TVA's most expensive assets, while solar is already cheaper than new nuclear and at parity with gas. You also cannot lower customer bills by adding more of your most expensive resource while limiting your least expensive resource. Still, it does seem that TVA is being slowly forced to reassess its nuclear and fossil policies. Hopefully the new Biden appointees to the board will help accelerate TVA's progress in acknowledging reality.

According to Jonathan Levenshush, Sierra Club's Beyond Coal Campaign Director for Tennessee, "Moving beyond coal in Tennessee and Kentucky is an important step forward, but our climate, and our communities, cannot afford more fossil fuel gas or nuclear plants. TVA must continue ramping up renewable energy generation with battery storage to replace all of their fossil plants to achieve the goal of clean power by 2035." I completely agree with his statement. We must continue to combine limited praise, tempered by criticism of TVA's unambitious renewable goals, to pressure TVA to do more, faster. The TVA announcements are welcome, but not sufficient. The good news is that TVA has often under-promised and over-delivered in this regard. It is up to us all to keep pushing TVA hard to bring their power system into compliance with the needs of our planet and our economy.

Contact Joe at joeschiller8@gmail.com

Nuclear Winter (continued from page 4)

would start a nuclear war. Many world leaders, however, are not in their right mind. Fearful childhoods have driven cold-hearted paranoiacs like Hitler and Stalin to obsessively seize power. Privilege and jealous power corrupt many others. All make mistakes.

Robock said the Doomsday Clock is now at 100 seconds to midnight, the closest it has ever been (thanks to two threats to our climate, nuclear holocaust and global warming). A closing slide said, "We are lucky that for the past 75 years there has not been another nuclear war. Here are the immediate steps we can take to make this even less likely:

1. Take U.S. land-based missiles off hair-trigger alert.
2. Give up the sole presidential authority to launch nuclear weapons.
3. Change our nuclear policy to one of no first use of nuclear weapon
4. Stand down our land-based missiles and begin to dismantle them as part of a rapid reduction of our nuclear arsenal.

"The myth of nuclear deterrence has allowed nuclear weapons to persist for too long, but as a result of international negotiations pushed by civil society led by the International Campaign to Abolish Nuclear Weapons (ICAN), and referencing our work, the United Nations passed the Treaty on the Prohibition of Nuclear Weapons (TPNW) on July 7, 2017. On December 10, 2017, ICAN accepted the Nobel Peace Prize and the TPNW came into force on January 22, 2021. Will humanity now pressure the United States and the other eight nuclear nations to sign this treaty?"

Robock quoted Beatrice Fihn's 2017 Nobel Peace Prize acceptance speech on behalf of Sierra Club affiliate ICAN:

"The story of nuclear weapons will have an ending, and it is up to us what that ending will be. Will it be the end of nuclear weapons, or will it be the end of us? One of these things will happen. The only rational course of action is to cease living under the conditions where our mutual destruction is only one impulsive tantrum away."

Robock's Rutgers website: <http://climate.envsci.rutgers.edu/nuclear/>

Contact Alan at roboc@envsci.rutgers.edu and Todd at jtoddwaterman@gmail.com

Zero Waste: Tips and Insight into Going Green and Staying Green

by Nancy Chung, Guest Columnist



Whenever someone asks me about traditional recycling, I switch the conversation to Zero Waste. Why do I see this opportunity as an educational moment? For starters, recycling has several problematic issues: local politics, changing markets for recycled materials, and infrastructure challenges,

Recycling is a global effort, and we have failed to do our part. It is time to rethink our strategy. That is why I am a certified TRUE advisor. *The TRUE certification program enables facilities to define, pursue and achieve their zero waste goals, cutting their carbon footprint and supporting public health."It is my mission to help you improve your daily habits and achieve Zero

Waste. Together, a greener Earth is possible. In this article, we will dive into what it truly means to be Zero Waste, and how to move beyond traditional recycling methods with helpful resources to guide you along the way.

What Is Zero Waste?

Essentially, Zero Waste is a total conservation effort at every step of the manufacturing and consumption process. One of the best definitions of Zero Waste is from the Zero Waste International Alliance, or ZWIA. Let's break it down:

1. Conserve all resources through responsible production and consumption
2. Reuse and recover products, packaging, and materials
3. No burning or discharges to land, water, and air
4. Do not threaten the environment or human health

Think of it like this: In order to commit to Zero Waste, you must keep the end in mind. Anyone can adopt a lifestyle in support of the circular economy to make the most out of the resources we use every single day. The circular economy extends the life cycle of a product so that the item is continually used, not landfilled. This involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. Instead of concentrating on waste at the end of a product's lifecycle, the Zero Waste philosophy shifts our mindset to the front end of traditional disposal as a primary pillar of resource management.

"If a product can't be reused, repaired, rebuilt, refurbished, refinished, resold, recycled or composted, then it should be restricted, redesigned, or removed from production."

– Zero Waste International Alliance

How to Apply Zero Waste to Your Lifestyle

The original Zero Waste guru herself, Bea Johnson, practices Zero Waste successfully for her dedicated family of four. Her annual household waste? Just one jar. That is simply amazing. What can you do right now in your daily life to adopt a Zero Waste lifestyle? Here are some practical, helpful tips:

1. Conduct a trash audit in your home or business; up to 40% of landfills are food waste. Have you ever thrown away food because it is ugly or leftover from a meeting?
2. Donate to your local food bank: One in four of our neighbors are food insecure
3. Donate protein, grains, vegetables, fruit, and cooking oil to your local food bank.

When food buried in landfills decomposes anaerobically, it releases methane, a greenhouse gas 84 times more potent over 20 years than carbon dioxide. Therefore, sending less food to the landfill has a positive impact on our environment.

How Am I Tackling Zero Waste?

I am committed to practical Zero Waste education and consulting. It is why I am organizing educational webinars for high school students during the International Zero Waste Week. On September 7, 8 and 9, students can learn from local Zero Waste champions making a difference right here in our Memphis community. Here are some of this year's speakers:

- Kelsey Davis, Tennessee Department of Environment and Conservation: Kelsey is an environmental scientist with Tennessee's Office of Policy and Sustainable Practices. She is a certified LEED Green associate with extensive experience conducting awareness workshops and sustainability training. LEED stands for "Leadership in Energy and Environmental Design," and is the most widely-used green building rating system in the world.
- Ali Manning and Heidi Rupke are from Clean Memphis. Ali is the Program Manager for Project Green Fork which is committed to helping restaurants operate more sustainably in the Mid-South region. Heidi leads the Memphis Food Waste Project.

Tennessee's 2020 Inaugural Zero Waste Day

In 2018, Tennesseans produced 8.1 million tons of waste. That is 6.56 pounds of waste per person per day. Compared to the national average of 4.51 pounds per day, Tennessee citizens produce 31.7% more waste. That needs to change.

Last year, the State of Tennessee hosted its first annual October 27 Zero Waste Day, an event aimed at raising Zero Waste awareness and educating citizens on how to implement sustainable changes in their daily lives. Every October 27, commit to understanding your carbon footprint in the following ways:

- Rethink: Make purchasing choices that limit your impact on the environment.
- Reduce: Be mindful of unnecessary and wasteful items. Live a simpler life.
- Reuse: Give possessions a second life through creative reuse, repurposing, or donation.
- Re-Earth: Compost organic waste to divert the biggest landfill waste stream.

Dear Eartha : Advice from An Eco-Guru

Dear Eartha,

I've been so busy getting my business back up and running now that more of us are emerging into the daylight of eating out and socializing that I haven't kept up on what's happening to our planet. You seem to have your finger on that pulse. Can you catch me up? Thanks for all you do.

—Coming Up for Air & Information

Dear Coming Up,

Not sure if my finger on the pulse is going to revive anything anytime soon, but I'm happy to help. Here's a run-down of what I've been reading lately, which covers global conservation goals, corporate vs individual responsibility for climate change, consumerism, and food consumption.

From Green Life: The Latest from the Sierra Club (5/20/2021): The eminent American biologist E.O. Wilson first suggested the idea of setting aside half of Earth for wild nature and biodiversity in his 2002 book, *The Future of Life*. He went on to expand this concept in his 2016 book, *Half Earth*, and the following year he started the Half Earth Project. In 2019, a group of researchers sought to flesh out Wilson's ambitious vision when they released the Global Deal for Nature, laying out a road map for setting aside 30 percent of land and water by 2030, with an additional 20 percent of the planet conserved as "climate stabilization areas." Since then, the "30 by 30" goal has stuck and has become the new benchmark by which to measure conservation success. So far, 50 countries and 70 US mayors have committed to the 30x30 goal, and it is echoed in President Biden's latest conservation initiative, "America the Beautiful." (See what Mac Post says about it on page 2.)

From Bill McKibben, "The Particular Psychology of Destroying a Planet" (The New Yorker, 5/19/2021): "How is it that some people, or corporations, can knowingly perpetuate the damage? Or, as people routinely ask me, "Don't they have grandchildren?" After analyzing almost 200 sources, Harvard researchers Geoffrey Supran and Naomi Oreskes concluded that Exxon officials had embraced a strategy "that downplays the reality and seriousness of climate change, normalizes fossil fuel lock-in, and individualizes responsibility." The authors found that this corporate strategy followed the same pattern the tobacco industry had used to shift responsibility away from corporations and onto consumers. The fossil fuel industry used these same "demand-as-blame arguments to oppose litigation, regulation, and activism." As Supran summarizes, "ExxonMobil tapped into America's uniquely individualist culture and brought it to bear on climate change."

From PBS' Greta Thunberg: *A Year to Change the World*: "We can't fight against climate change without individual change," says Thunberg. "The fact that it's the way we behave, the way we consume that is the problem. But it is not possible to live 100% sustainable today. Which is something that is fundamentally wrong, of course." One quarter of all of our greenhouse gas emissions are related to our food consumption. It takes 60 kg of CO2 to produce one kg of beef. It takes .04 kg of CO2 to produce a turnip. How are we feeding our cattle, or transporting the food? And what about clothing? China uses far more coal in the production of clothing, in addition to the transport of clothing across the world. Buying used clothes cuts down our carbon emissions.

I'll leave you with this thought from Michael Brune, Executive Director of the Sierra Club: "Eliminating the filibuster will open up enormous opportunities to strengthen our democracy, tackle the climate crisis, and create a more just and equitable country. This arcane Jim Crow-era rule belongs in the history books, not in the legislative chambers where our leaders are supposed to move this country forward."

Hope your pulse is not racing but pumping you towards continued peace and activism! Good luck with getting back to business

–Your partner in the struggle,

Eartha

Dear Eartha is written by Rita Bullinger.

Submit your question for Eartha to SierraTNNews@gmail.com

Challenge Yourself to Go Zero Waste

Shifting towards a Zero Waste lifestyle is the most realistic and sustainable path to a low carbon economy. Challenge yourself to adopt one change. What can you do today to reach Zero Waste? We can't change the world on our own. But that does not mean we are alone. It takes mindful, committed people — like you and me — to make a difference. Celebrate good. Acknowledge your daily green accomplishments. Be accountable to yourself, your loved ones, and your community. Be the change you wish to see in your climate. Let's move toward Zero Waste together.

Find helpful links here: <https://linktr.ee/Green365ZeroWaste>

Nancy Chung is an environmental consultant with Green 365 Education and Consulting LLC, an environmental services organization helping businesses, homes, schools and public events become ground zero for positive environmental impact.

Contact Nancy at Nancy@Green365.com.

Defenders Fund Contributor

Many thanks to Kathryn A. Hofeldt who contributed to the Defenders Fund in support of our lobbyist to the state legislature.

Poppies on the Wheat

by Helen Hunt Jackson

Along Ancona’s hills the shimmering heat,
 A tropic tide of air with ebb and flow
 Bathes all the fields of wheat until they glow
 Like flashing seas of green, which toss and beat
 Around the vines. The poppies lithe and fleet
 Seem running, fiery torchmen, to and fro
 To mark the shore.

The farmer does not know
 That they are there. He walks with heavy feet,
 Counting the bread and wine by autumn’s gain,
 But I,—I smile to think that days remain
 Perhaps to me in which, though bread be sweet
 No more, and red wine warm my blood in vain,
 I shall be glad remembering how the fleet,
 Lithe poppies ran like torchmen with the wheat.

Helen Hunt Jackson was born in Amherst, Massachusetts in 1830. In addition to being a poet and writer, she was an activist fighting for better treatment of Native Americans by the United States government. “Poppies on the Wheat” is in the public domain.

These Plans are Subject to Change Depending on
 Sierra Club’s Requirements Concerning In-Person Gatherings.
Save the Date: Fall Tennessee Chapter Retreat
October 29-31, Booker T. Washington State Park
 11 Miles from Downtown Chattanooga

Bring family and friends and enjoy retreat activities and cool Chattanooga area stuff as well. Stay in a camp cabin or at a nearby hotel or B&B.

The Oaks Group Camp includes six camp cabins, a dining hall, two bathhouses, a pavilion and a basketball court.

Group hikes in the park led by Randy Hedgepath, Tennessee State Naturalist. Hike leader certification program offered to those interested. Programs both Friday and Saturday evenings.

More details in the next issue.
 Questions? Contact Bill Moll at whmoll@aol.com or
 kate anthony at rainbowgardener2@gmail.com

Situated on the shores of Chickamauga Lake, the park was built largely by African-American units of the Civilian Conservation Corps. It was originally designated during segregation as one of two Tennessee State Parks for use by Black Tennesseans until the Civil Rights Act of 1964 banned discrimination in public accommodations.

Ansol Clark

Ansol Clark, a big man with a big heart, holds a dove he rescued as a Kingston coal ash cleanup driver. On Saturday, May 1, Ansol’s big heart stopped, joining in death over fifty coal-ash-sickened fellow cleanup workers. He leaves his beloved son Bergan, who shared this edited photo, and his loving, activist wife Janie, who vows never to stop fighting with us for coal ash justice everywhere.



RETREAT SCHEDULE		
	LOCATION	DATES
Fall 2021	Booker T. Washington State Park Tentative due to Covid Please check website for status www.sierraclub.org/tennessee	October 29-31
Winter 2022	Cedars of Lebanon State Park	January 14-16
Spring 2022	Fall Creek Falls State Park	April 29-May 1
Fall 2022	Pickett State Park	October 28-30

MEETINGS

The Sierra Club continues to pause all in-person meetings. We are hoping July meetings can be in person. Most groups and conservation committees are meeting online. Check a meeting status: <https://www.sierraclub.org/tennessee/sierra-club-tennessee-calendar> or scan the QR code ==>
 If you would like to attend, please contact the group or committee chair. Contact information is on page 2.



Group Program Meetings

Group	Date	Location	Time
Cherokee (Chattanooga)	Mon 7/26, 8/23, 9/27	Check for Virtual/On Line	7:00 PM
Chickasaw (Memphis)	Thu 7/15, 8/19, 9/16	Check for Virtual/On Line	6:00 PM
Harvey Broome (Knoxville)	Tue 7/13, 8/10, 9/14	Check for Virtual/On Line	7:00 PM
Middle TN (Nashville)	Thu 7/8, 8/12, 9/9	Check for Virtual/On Line	7:00 PM

Group Business Meetings

Group	Date	Location	Time
Cherokee (Chattanooga)	Mon 7/5, 8/2, 9/6	Check for Virtual/On Line	7:00 PM
Chickasaw (Memphis)	Wed 7/7, 8/4, 9/1	Check for Virtual/On Line	6:30 PM
Harvey Broome (Knoxville)	Tue 7/27, 8/24, 9/28	Check for Virtual/On Line	7:00 PM
Middle TN (Nashville)	Mon 7/19, 8/16, 9/20	Check for Virtual/On Line	6:30 PM

Regional Conservation Committee Program Meetings

Committee	Date	Location	Time
Tri-Cities	Tue 7/13, 8/10, 9/14	Check for Virtual/On Line	7:00 PM

Regional Conservation Committee Business Meetings

Committee	Date	Location	Time
Clarksville	Tue 7/20, 8/17, 9/21	Check for Virtual/On Line	6:00 PM
CareNET (Rogersville)	Thu 7/22, 8/26, 9/23	Check for Virtual/On Line	6:00 PM
Watauga (Mountain City)	Tue 7/13, 8/10, 9/14	Check for Virtual/On Line	5:00 PM
Tri-Cities	Wed 7/28, 8/25, 9/22	Check for Virtual/On Line	7:00 PM