

Tennes-Sierran

The monthly state newsletter for the Tennessee Chapter Sierra Club

Volume 47, Number 4 - July/August, 2015

Watts Bar Unit 2: The Last Old Reactor of the 20th Century?

TVA is finally getting close to completing Watts Bar Unit 2 (WB2) over 40 years after receiving the construction license in 1973. The Watts Bar reactors were designed in the 1960's. They are located along the Tennessee River near Spring City. Unit 1 was finished in 1996. Despite TVA's public relations campaign to spin Unit 2 as "the first new reactor of the 21st century" it is a clearly relic of the past century.

The history of the Watts Bar reactors is one of a dangerously flawed basic design, quality control breakdowns, failed timelines, and incredible, multiple cost overruns. It is a cautionary tale to temper the unjustified optimism of nuclear power boosters and their promises for the next nuclear boondoggle (like small modular reactors or finishing the Bellefonte reactors). Watts Bar 1 and 2 were supposed to be finished in 1978 at a total cost of \$685 million. Unit 1 came on line in 1996 and cost over \$6.4 billion. Unit 2 is expected to be finished this year at a cost of over \$6.3 billion. The combined cost of \$12,700,000,000 is about 18.5 times the original projections. These numbers do not include interest. The bad decision to finish WB2 in 2007 relied on the consulting analysis of the Bechtel Corporation. Bechtel said it could be completed for \$2.5 billion and be finished by 2012. Bechtel was awarded the construction contract. It will actually cost \$4.3 billion and be completed three years late.

Watts Bar 1 and 2 are "ice condenser" reactors (as are TVA's Sequoyah 1 and 2 near Chattanooga). This peculiar, archaic, discredited design relies on 2 to 3 million pounds of chipped ice hanging in baskets surrounding the reactor to allow for a weaker, smaller containment structure with half the volume and strength of dry containment. This was supposed to make ice condenser reactors cheaper to build. In the 1970's, staff of the Atomic Energy Commission recommended the design be banned. In 1990 a Nuclear Regulatory Commission study, NUREG-1150, identified ice condensers as the most likely type of U.S. reactor to suffer catastrophic containment failure. None of these exist outside the United States; nine are currently operating in the U.S. All except Watts Bar were finished in the 1970's and 80's.

Additional uncertainties and risks come from Watts Bar's troubled construction history from 1973 to 1985, which caused an 11-year delay in the start of operations of Unit 1 while numerous construction defects were addressed. Problems were so serious and widespread in the TVA nuclear program that all their nuclear reactors were shut down for years in 1985. Aging of the original construction is another serious issue. WB2 will receive a 40-year license and possibly a 20-year extension. Some key components may have to be functional for over 100 years even though they were originally designed to last 40 years.

There are serious unresolved questions about dam safety and cascading dam failures on the Tennessee River Reservoir System from previously unthinkable rain events like the Nashville flood of 2010, earthquakes, and spontaneous dam failure. TVA's hydrology study does not take into account increases in earthquake intensity since 1973.



From left: 2 TVA officials, Don Safer, Brian Paddock, and Gretel Johnston from Scottsboro, Alabama. In the reactor core before they lowered the top and well before fuel was loaded

Back in the 1970's the nuclear industry claimed that worst-case catastrophic accidents could never happen. After the meltdowns at Three Mile Island and Fukushima and the explosion at Chernobyl, we all know that is not true. The lessons of Fukushima come with a very high price for the citizens of Japan: over 150,000 people forced to leave their homes, up to \$500 billion in financial costs, widespread contamination of land and sea, and unknown numbers of victims of future cancers, deaths, and illness.

TVA and NRC assurances that a major accident is so unlikely that they don't have to seriously consider their environmental impact are contradicted by the fact that the insurance industry will not provide liability insurance for any nuclear power plant. The only indemnity available to victims is a fund of \$12 billion provided by the Price Anderson Act, originally from 1957.

The problem of protecting the biosphere from insanely radioactive used fuel rods for hundreds of thousands of years is so difficult that it is still unsolved, over 50 years after the first commercial reactors - even longer than it has taken to finish WB2.

When reactors need to be taken out of service they have to be decommissioned. TVA is not likely to have enough money set aside to cover those rapidly rising costs, which are currently over \$1 billion per reactor. Their dedicated decommissioning fund for WB1 was at \$123 million in 2013 after almost 20 years of operation. Any shortfall would be covered by increased rates at the time of decommissioning.

During WB2's long journey renewable energy and energy efficiency resources have undergone revolutionary advances and cost reductions. Renewables are being added to the grid at increasingly rapid rates. This undermines any justification of the risk and environmental harm of nuclear power.

TVA has open construction licenses from 1974 on two Bellefonte reactors near Scottsboro, Alabama, costing around \$66 million per year. TVA's 2015 Draft Integrated Resource Plan does not project finishing these reactors, yet TVA is dragging its feet in putting a stake in the heart of these Zombie reactors. The licenses were terminated in 2006 but reinstated in 2008. The story of WB2 demonstrates why TVA should not finish any more old reactors and move away from nuclear power.

Don Safer
Know Nuclear In Tennessee Committee
Tennessee Chapter

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via email



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How does it work? Monthly you will receive an email notification and download link for your new Tennes-Sierran in a special email alert. All you will have to do is click on the link and presto, your Tennes-Sierran will appear in an Adobe Acrobat PDF format. View it, download it, save it but whatever the case you will be saving trees, and freeing Tennessee Chapter club funding to work for other conservation efforts. A double whammy win situation!

So Join the Crowd
Go Paperless Today!

Tennes-Sierran

The bi-monthly newsletter of the
Tennessee Chapter of the Sierra Club.

SEND CHANGE OF ADDRESS TO:

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*Snail Mail: clip the Moving? coupon below and mail

*Address changes are processed much faster if you include your Sierra Club membership number. To find your membership number, look on the address label of this newsletter.

SEND ARTICLES TO:

E-mail: gvanhorn26@gmail.com

USPS: Gene Van Horn, Editor
895 Red Cloud Trail
Spring City, TN 37381
423-365-0692

ARTICLE SUBMISSION GUIDELINES:

Submission Target Date is July 25 for the September-October issue.

1. E-mail and e-mail attached files are preferred. Send to gvanhorn26@gmail.com either with embedded text messages, or attached files. Attached files are preferred. Word is preferred but Apple users may send articles in Pages.

2. Photographs should be scanned in a .jpg or a .tif file format then either attached to e-mail or mailed via U.S. Postal Service on a 3 1/2" diskette or CD RM. Please include a stamped, self-addressed envelope if you would like your diskette or photo prints returned.

3. Hard-copy handwritten or typewritten articles may be accepted: however, pre-approval from the Editor is required.

4. Any materials submitted via USPS mail will not be returned unless a stamped, self-addressed envelope is provided.

5. Concerns or complaints should be addressed to: Barbara Kelly, Communications Committee, bk1rivers@comcast.net.

The opinions expressed in the Tennes-Sierran are those of the contributors and do not necessarily reflect the official views or policies of the Tennessee Chapter, or the Sierra Club.



It's time for America to get smart about energy and be less dependent on dwindling oil reserves. We need to increase our use of clean, renewable energy sources like wind and solar power. Let your voice be heard.

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Life	<input type="checkbox"/> \$1000	<input type="checkbox"/> \$1250
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Student/Limited Income	<input type="checkbox"/> \$25	<input type="checkbox"/> \$35

Contributions, gifts, and dues to Sierra Club are not tax deductible unless 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 to Sierra Club,
P.O. Box 471041, Palm Creek, FL 32740-1041

or visit our website www.sierraclub.org

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www.sierraclub.org/tennessee

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Please notify the Editor
when changes are needed

Target Date for
September-October is
July 25, 2015.

All meetings and outings
notices, articles, and
photographs
should be in by then.

Send material to
Gene Van Horn at
gvanhorn26@gmail.com

Become Volunteer Editor of the Tennes-Sierran

To everything, there is a season.....

Our editor, Gene Van Horn, has indicated that he wishes to step down as Editor at the end of 2015, his fourth year of editing the *Tennes-Sierran*. We will miss his gracious and discerning work with all our contributors!

This is a volunteer position. As editor you would be responsible for checking the spelling, grammar and punctuation of material submitted to the bimonthly newsletter. You need to be able to use a computer and do email. The editor needs to work well with *Tennes-Sierran* contributors and be able to handle deadlines.

If you're interested in being a volunteer editor, contact TN Chapter
Communications Chair Barbara Kelly at bk1rivers@gmail.com or 423-718-5009.

Announcements

Watauga Group calls for Executive Committee Nominations

The Nominating and Election Committee for the 2015 election cycle is composed of:

- Rita Cowan 423-534-4785
- Dean Whitworth 423-727-7214
- Bob Carlough 423-768-1170

Current Watauga Group Sierra Club members may self-nominate by contacting any Nominating Committee member above by August 18, 2015.

A total of four ExCom members, each serving two year terms, will be elected to serve JANUARY 2016 through DECEMBER 2017. Successful candidates will join returning ExCom members Bob Carlough, Dennis Shekinah, Gayle Riddervold, Gloria Griffith and Dean Whitworth.

The Nominating Committee submits candidate names to Watauga Group ExCom on Tuesday, SEPTEMBER 8.

* Deadline to submit Candidate Petitions is SEPTEMBER 22 via file doc email to Dennis Shekinah at dshekinah@centurylink.net or via USPS mail to Rita Cowan 900 Mining Town Rd, Mountain City, TN 37683.

Call for Executive Committee Nominations Chickasaw Group (Memphis & West TN)

Nominations should be made in writing until September 20, 2015 to any Nominating Committee member- Dennis Lynch, Don Richardson, or Scott Banbury- or by email to chickasawsierra@gmail.com. Elected candidates will serve two year terms: January 2016 — December 2017.

ExCom Committee members commit time and energy to actively participate in Group management to explore, enjoy and protect our planet! We hope you will nominate yourself or someone else to help organize our fun, important, and challenging efforts!

Cherokee Group Call for Nominations for 2016-2017

The Cherokee Group's nominating committee for ExCom candidates for the term of 2016-2017 are: Andy Williams, Bob Pyle, and John Doyal. Suggestions for candidates should be submitted to Andy for consideration by the committee by August 15, 2015 at jameswilliamstravel@yahoo.com. Candidates, if elected, must be willing to actively participate in Group management. Serving on the ExCom requires some commitment of time and energy, but it is also interesting and fun. Please consider becoming a candidate!

Tennessee Chapter Call for Nominations for At-Large Delegates (2016-2017 Term)

The Tennessee Chapter will elect four (4) at-large delegates for a two-year term beginning in January 2016. Members are requested to give serious consideration to running for these important offices on the Chapter Executive Committee (ExCom). This group manages the fiscal, legislative, environmental and other appropriate responsibilities for our Chapter. The at-large delegate position provides an opportunity to have an important role in the Chapter management of a large grass roots environmental organization having more than 6,000 members in the State of Tennessee.

Requirements of the office of at-large delegate are as follows:

- Commit to attending the four chapter ExCom meetings each year. These meetings require an at-large delegate's presence for the meetings each quarter.
- Commit to study issues confronting the ExCom from a Chapter or statewide perspective.
- Commit, for the term of office, to vote electronically by email on issues that require a Chapter ExCom vote.
- Serve on ExCom committees when appointed and as needed for the term of office.

If you are interested in being considered for nomination for the office of at-large delegate, please notify the Nominating Committee Chairperson Barbara Kelly (at 423.718.5009 or email bk1rivers@gmail.com) by submitting a short statement of your qualifications and reason for running. The due date for consideration is August 10. The other members of the nominating committee are Robin Hill and Brian Paddock.

Interested parties who are not selected by the nominating committee will have the opportunity to run by the petition process; contact Barbara for more information. All candidates will be expected to provide a short statement for the ballot -- details will be provided. Elections will be conducted by ballot distributed in the November/December issue of the *Tennes-Sierran*, with provisions spelled out for our "paperless subscribers."

Middle Tennessee Group (MTG)

MTG is seeking candidates for our executive committee. If you would like to become more involved in the selection of candidates, or are willing to be a candidate in the December 2015 election for a two-year term, please contact Scott Heflinger – sheflinger@aol.com or Adelle Wood – adelleintn@comcast.net.

Summer Chapter Meeting August 7-9. Grace Point Camp and Retreat Center

Our Quarterly Chapter Meetings are a great way to get to know people from across the state that share a common goal of exploring, enjoying and protecting our environment. It's also a great opportunity to learn the about conservation issues in Tennessee.

The August meeting will held at Grace Point Camp and Retreat Center located on Watts Bar Lake near Kingston TN. The camp has over 250 acres of land, and nearly two miles of shoreline along the lake. Canoes and kayaks are available for no charge. There are hiking trails, a swimming pool and a fire pit. There are bunk-style accommodations in the cabins and Retreat House.

Chapter committee meetings will be held during the weekend, as well as a business meeting on Sunday morning. Sit in on one or all, or take off and enjoy the camp and its many offerings.

The Saturday night program will be "Wildlife Viewing in Tennessee: Programs, Funding and Opportunities" presented by Bill Reeves, TWRA Chief of Biodiversity. Bill will talk about what the Biodiversity Division does, who are the wildlife watchers in Tennessee, and what they spend and contribute. He will also discuss finance and budgeting for wildlife diversity, and what we can do together to improve biodiversity in Tennessee.

Prices for the Weekend are low and include breakfasts and Saturday night dinner. You need to bring your own linens or sleeping bag, towels, toiletries, plus Saturday and Sunday lunches and beverages. There are a few restaurants in Kingston for Friday night dinner, or bring your own.

We share the cooking and cleanup duties, so be prepared to sign up for a chore when you check in with us.

Our hosts, the Harvey Broome Group, will be on site by 4 P.M. Friday evening, ready to welcome you.

Early Bird Price - email your registration by Friday, July 31st - \$40. Children 15 and under are free.

Regular Price - \$50. College Students - \$15.

SPECIAL: 1/2 price for first time attendees.

1-day only price with meals: Sat/\$15 and Sun/\$10

TO REGISTER:

Email Bob Perlack at perlack@aol.com (Specify Vegetarian or Omnivore!)

PAYMENT: Pay when you arrive and receive your sleeping assignment.

The members of the Harvey Broome Group hope to meet you there! Come prepared for an engaging, informative and fun weekend.

DIRECTIONS: See the Grace Point website for a Google map to the camp. <http://www.gracepointcamp.org/>

Take exit 352 off I-40 onto Highway 58 South. Go 5.8 miles on Hwy. 58 to Smalley Rd. Go left onto Smalley just past a large white house on the left. Go 2.1 miles on Smalley to Chamberlain Cove Rd. This road is unmarked but there is a sign for "Episcopal Church Grace Point Camp" at the intersection. Go left, then 0.3 miles on Chamberlain Cove to a fork intersection with Manley Dr. There is a sign for "Episcopal Church Grace Point Camp" at the intersection. Go right at the fork 0.4 miles to the camp entrance. The entrance is marked.

Check in at the Commons Building.

Meetings

The public is very welcome at ALL Sierra Club Meetings and Activities! All members traveling across the state should feel free to drop in and attend another Group's meetings. You will find yourself among friends and learning something interesting.

CHEROKEE GROUP (Chattanooga)

Strategy/Business Meetings: July 13 and August 10 (2nd Monday) 6:30 P.M. Held at Second Presbyterian Church, at the corner of E. 7th Street and Pine, 700 Pine Street [parking is free in their Pine Street lot, across the street from the church]. Come add your ideas and share your concerns. We'll be planning our actions on several fronts: clean energy, forest watch/protection, mining/fracking issues, and energizing our Outings program. All are welcome!

July 27, Monday, 7:00 pm at greenspaces, 63 E. Main St., Chattanooga: Mountain Goat Trail. Joel Houser, Southeastern Regional Director of The Land Trust for Tennessee and Mountain Goat Trail Alliance Board Member, will update us on the Mountain Goat Trail. The trail will be a 37 mile rail-trail connecting Sewanee to Palmer, going through Monteagle, Tracy City, Coalmont and Gruetli-Laager. This is connected with the 20+ mile University Domain Perimeter Trail. Joel will update us on the current status and pending developments for the Mountain Goat Trail and tell us how it got its name.

The public is very welcome, healthy snacks are served.

August 24, Monday, 7 P.M. greenspaces 63 E. Main Street, Chattanooga: Kids and Clean Water Mary Beth Sutton, Executive Director at Caribbean Student Environmental Alliance, will talk about local activities under the name TenNESEA! The projects involve educating local school kids about their watershed and getting them involved in its protection. This includes the Kids 4 Clean Water Camps and elementary school stormwater projects. She will also update us on water quality monitoring activities in the Chattanooga area.

The public is very welcome, healthy snacks are served.

CHICKASAW GROUP (Memphis)

Check
<http://www.facebook.com/Chickasaw.Group/>
for meeting information.

HARVEY BROOME GROUP (Knoxville)

The Harvey Broome Group offers programs the second Tuesday of each month. Please join us for tales of adventures, descriptions of conservation action, and environmental education. Check our website for the latest information at <http://www.sierraclub.org/tennessee/harvey-broome/programs>.

July 7, 7:00 P.M. (Tuesday) Tennessee Valley Unitarian Universalist Church, 2931 Kingston Pike, Knoxville
To Be Determined

August 11, 6:00 P.M. (Tuesday), Location to be determined.

Harvey Broome Group Annual Picnic. All Sierra Club members, families and friends are invited to this annual event. The HBG will provide a grill and burgers (veggie and meat). Please contact Mac Post (mpost3116@aol.com) to so that we will have enough on hand and to find out what you might contribute to the potluck (salad, fruit/vegetable, etc., and of course dessert).

MIDDLE TENNESSEE GROUP (Nashville)

ICO MEETING: July 6, 2015 (Monday) – 6:15 P.M. – Come join our Nashville Inspiring Connections Outdoors Group as we meet at the Mad Platter restaurant at 1239 6th Ave. North, Nashville. We will discuss our outings for disadvantaged kids and senior citizens, and training. Contact Craig Jervis at cmjervis@comcast.net to make sure the meeting is still on. Put "ICO" in the subject line.

PROGRAM: July 9, 2015 (Thursday) - "Residential Solar"— 7:00 P.M. at Radnor Lake Visitor Center, 1160 Otter Creek Road, Nashville. You must enter the park from Granny White Pike to reach the visitor center. The use of fossil fuels continues to escalate climate change by transferring carbon from the earth into the air. Justin Huff, from Lightwave Solar, will describe some of the environmental savings that a move to solar provides. He will also explore the varied ways solar can be used in your home, the modifications needed, and the costs associated with each project. Free and open to the public.

LOCAL ISSUES MEETING: July 21, 2015 (Tuesday) - at 6:30 P.M. Everyone is welcome at this local issues and business meeting. Meetings are usually held at the Lucky Bamboo Restaurant, 5855 Charlotte Avenue, but there may be times we meet elsewhere. *If you are not a regular attendee*, please contact Betsy at (615) 668-1977 or garberb@hotmail.com in case the meeting location has changed. Come a bit early if you want to order dinner because we start the meeting at 6:30. We meet in a private room towards the back of the restaurant. Tell them you're looking for the Sierra Club. We look forward to seeing you.

ICO MEETING: August 3, 2015 (Monday) – 6:15 P.M. – Come join our Nashville Inspiring Connections Outdoors Group as we meet at the Mad Platter restaurant at 1239 6th Ave. North, Nashville. We will discuss our outings for disadvantaged kids and senior citizens, and training. Contact Craig Jervis at cmjervis@comcast.net to make sure the meeting is still on. Put "ICO" in the subject line.

PROGRAM: August 13, 2015 (Thursday) 7:00 P.M. "Clean Water – a national and local issue" at Radnor Lake Visitor Center, 1160 Otter Creek Road, Nashville. You must enter the park from Granny White Pike to reach the visitor center. Join us for a presentation by Kevin Key on water pollution with a focus on the Nashville Metro area. Kevin will cover the history of the Clean Water Act of 1972 along with the 1987 amendments, three areas of water pollution in Nashville, and the future of the

Overflow Abatement Program. Free and open to the public.

LOCAL ISSUES MEETING: August 18, 2015 (Tuesday) - at 6:30 P.M. Everyone is welcome at this local issues and business meeting. Meetings are usually held at the Lucky Bamboo Restaurant, 5855 Charlotte Avenue, but there may be times we meet elsewhere. *If you are not a regular attendee*, please contact Betsy at (615) 668-1977 or garberb@hotmail.com in case the meeting location has changed. Come a bit early if you want to order dinner because we start the meeting at 6:30. We meet in a private room towards the back of the restaurant. Tell them you're looking for the Sierra Club. We look forward to seeing you.

CRITICAL TENNESSEE VALLEY AUTHORITY (TVA) BOARD MEETING: August 21, 2015 (Friday) – at 8:30 A.M. At the meeting, the TVA board of directors will be voting to approve TVA's long-term energy plan, which will set the course for how TVA will generate energy for the next 20 years. Come to the TVA Board Meeting in Knoxville to show TVA that Tennessee wants to maximize solar and wind power and energy efficiency in the next five years to protect health, clean our air and water, lower utility bills, and slow climate change! Contact Chris Lunghino at 714.369.9280 or chris.lunghino@sierraclub.org for details.

ICO MEETING: September 7, 2015 (Monday) – 6:15 P.M. – Come join our Nashville Inspiring Connections Outdoors Group as we meet at the Mad Platter restaurant at 1239 6th Ave. North, Nashville. We will discuss our outings for disadvantaged kids and senior citizens, and training. Contact Craig Jervis at cmjervis@comcast.net to make sure the meeting is still on. Put "ICO" in the subject line.

PROGRAM: September 10, 2015 (Thursday) – "Watchable Wildlife" 7:00 P.M. at Radnor Lake Visitor Center at Radnor Lake Visitor Center, 1160 Otter Creek Road, Nashville. You must enter the park from Granny White Pike to reach the visitor center. Be sure to mark your calendars for this program presented by Bill Reeves on wildlife and biodiversity in Tennessee. Free and open to the public.

LOCAL ISSUES MEETING: September 15, 2015 (Tuesday) - at 6:30 P.M. Everyone is welcome at this local issues and business meeting. Meetings are usually held at the Lucky Bamboo Restaurant, 5855 Charlotte Avenue, but there may be times we meet elsewhere. *If you are not a regular attendee*, please contact Betsy at (615) 668-1977 or garberb@hotmail.com in case the meeting location has changed. Come a bit early if you want to order dinner because we start the meeting at 6:30. We meet in a private room towards the back of the restaurant. Tell them you're looking for the Sierra Club. We look forward to seeing you.

WATAUGA GROUP (Northeastern TN)

PROGRAM MEETINGS: Every second Tuesday at 7 P.M. Please contact Gloria Griffith at gla4797@embarqmail.com or 423-727-4797 for more information.

Outings

CHEROKEE GROUP (Chattanooga)

John Doyal is our Outings Chair, and point-person for outings information for our Group. Our activities are always open to the public and members of the Club from across the state! Outings are planned to take in the interests and skill levels of the participants. For more information, contact John at baldie052@yahoo.com. Also check our Meetup - Green Events page for the latest on our outings.

25 July (Sat). Sewanee, Cowan Exploratory. We will drive through the beautiful Tennessee River Gorge, passing Nickajack and Carter Caves. We'll stop at the Sewanee natural bridge before lunch at Semicola's in Cowan. Patrick Dean, with the Mountain Goat Trail Alliance, will talk with us about the plans for the Mountain Goat Trail from Cowan to Palmer, a 35-mile trail. Our final stop will be Mountain Outfitters, a great outfitting store, in Monteagle. Preregister with John Doyal, 423-596-8171, or at baldie052@yahoo.com.

22 AUGUST Stringers Ridge Hike, followed by lunch at Nikki's. We'll meet a 10 am to enjoy the easy access to the wilds right in the middle of the city! Afterwards, plan for lunch at Nikki's, a Chattanooga institution. For details and to pre-register, contact John Doyal, 423-596-8171 or baldie052@yahoo.com. (Details will be on Facebook and at Meetup-Green Events. Other outings are also in the works!)

Cherokee News

Please Like Us:
on Facebook -- our Organization Page:
<https://www.facebook.com/CherokeeSierra>
on Facebook - our Group Page:
<https://www.facebook.com/groups/65310596576/>

Join our MeetUp --Green Events-- Group:
<http://www.meetup.com/greenhome-107/>

Keep those e-mail addresses coming so you will get our E-News: send your e-mail address to Alice at demetreon1981@gmail.com

CHICKASAW GROUP (MEMPHIS)

Time and dates of outings are to be determined. Check
<http://www.facebook.com/Chickasaw.Group/>

HARVEY BROOME GROUP (Knoxville)

11 July (Sat). Take-a-Hike, Biodiversity Tour (Northern Hardwoods), Flat Creek Trail, GSMNP. Few short trails are as memorable as Flat Creek Trail. Rated easy. Great views of the Smokies Range, especially Mount Guyot, from this high elevation hike through hardwood forests typical of northeastern U.S. and Canada.

Total hike distance out and back is 5.2 miles and rated easy to moderate. One-way drive: 85 miles. Preregister with Mac Post at 865-806-0980 or mpost3116@aol.com (email preferred).

12 July (Sun). Dayhike, Honey Creek Loop Trail, Big South Fork NRR. There are places on this hike where you have to

scramble over, around and through obstacles, which makes this my favorite hike of all time! Also by doing this hike in July it will hopefully reward us with some blueberries. This trail has some spectacular geological points along the way. Hike length is 5.5 miles and considered difficult. I do not recommend children under 12 on this hike. Bring lunch. One-way drive: 68 miles. Preregister with Denise Bivens, denisebivens@gmail.com or phone 865-384-5138.

18-19 July (Sat-Sun). Backpack, Snowbird Wilderness Study Area (North Carolina). Snowbird Creek WSA has three great waterfalls, Upper Falls, Middle Falls, and Big Falls, all with great pools below the falls. The creek is in a valley that rivals the Joyce Kilmer Wilderness (Snowbird Creek was to have also been designated wilderness but local opposition delayed any action on Snowbird Creek, which is temporally protected as a wilderness study area).

We'll do a car shuttle and start high, at Big Junction on the Cherohala Skyway, and hike down Snowbird Creek to the Junction Trailhead. We'll see each of the falls and camp near Upper Falls on Meadow Branch. It's a repeat of a 2014 trip. Hiking distance is about 10.7 miles total and it is rated Moderate because of some rough trail in the upper portions. One-way drive: 86 miles. Preregister with Will Skelton: H 523-2272; Cell 742-7327; whshome@bellsouth.net.

1 Aug (Sat). Day Hike, Anthony Creek, Bote Mountain, Appalachian, and Russell Field Trails, GSMNP. This is a difficult loop day hike based both on the distance of 12 miles and the almost 3000 foot climb to the AT from the trailhead for Anthony Creek at the back of the Cades Cove picnic area. The hike between Spence Field and Russell Field is a very pleasant high altitude stretch of trail. Preregister with Conrad Ottenfeld: co11505@charter.net; home phone 865-288-0975; cell 256-777-1675.

8-9 Aug (Sat-Sun). Backpack, Shining Rocks Wilderness, Nantahala National Forest, NC. The Shining Rocks Wilderness in North Carolina (off the Blue Ridge Parkway and near Waynesville) is one of the three original wilderness areas in the Eastern U.S., which we'll learn about on the backpack. It is certainly one of our best, and the HBG has done backpacks in the area in early August since the mid-1970's.

The wild blueberries are usually plentiful and ripe then, although in the past several years they have been not so good. We'll be doing a fairly easy backpack, with 5.5 miles on Saturday across the Black Balsam Knob (6,214 feet) to Ivester Gap and then down along Cove Ridge to a camp at Greasy Cove Gap. Sunday will be 5.3 miles down Greasy Cove Prong and the East Fork of the Pigeon River to US 276. Hiking distance will be about 10.8 miles total. Rated Moderate. One-way drive: 121 miles. Preregister with Will Skelton: H 523-2272; Cell 72-7327; whshome@bellsouth.net.

15 Aug (Sat). Take-a-Hike, Biodiversity Tour (Spruce-Fir), AT from Clingmans Dome to Mount Collins, GSMNP. Hike distance is 4.5 miles, rated easy (once you go the short but steep stretch on the paved

Ten Essentials for Hiking



Sierra Club outings offer a variety of wilderness and near-wilderness experiences. It is important to realize that while all trips are guided by a leader, it is ultimately the responsibility of the individual to operate in a safe manner. To this end, the following is a list of essential items which should be modified according to the particular type of outing. These are:

1. Adequate map
2. First aid kit
3. Compass
4. Rain gear
5. Extra clothing (it is a good idea to always have a wool hat)
6. Matches
7. Knife
8. Flashlight
9. Extra food, water
10. The tenth essential: You decide what is the most important thing to bring!

trail to the Clingmans Dome tower. From this highest point of the park, and the entire Appalachian Trail, will stay entirely in the Spruce-Fir zone of the Smokies. We will stop by the air-quality monitoring station and discuss the current trends in air pollution in the park and impacts on ecosystems. There will be a short car shuttle involved. One-way drive: 60 miles. Preregister with Mac Post: 865-806-0980; mpost3116@aol.com (email preferred).

30 Aug (Sun). Day Hike, Cummins Falls State Park. The hike itself is only about 1 mile in and 1 mile out, but difficult due to terrain. This is a hike and hangout and swim in the most awesome swimming hole in the Southeast. I generally do this hike in water shoes. Part of the hike is in the river and you have to cross the river, not very deep, depending on where you cross. Everyone must be able to swim or wear a flotation device.

This can be a very hazardous area if one is not careful. Rocks are very slick and I do not recommend young children on this hike, however if any children do come they have to wear a life jacket.

Bring lunch -- we want to get there early as this place can get pretty crowded. The plan is to hang around for a couple hours eat and play. One-way drive: 120 miles. Preregister with Denise Bivens: denisebivens@gmail.com or phone 865-384-5138.

5 Sept (Sat). Take-a-Hike, Bob's Bald, Joyce Kilmer-Slickrock Wilderness. Enjoy great views from this high elevation destination in the Joyce Kilmer-Slickrock Wilderness. We access the bald by way of Beech Gap from the Cherohala Skyway. Six miles round trip, but by starting at Beech Gap there is only an 800 foot elevation gain on the hike to a magnificent bald at 5,420 feet elevation.

Rated moderate. Driving distance/time 90 miles/2 hours. Preregister with Mac Post: 865-806-0980; mpost3116@aol.com (email preferred).

MIDDLE TENNESSEE GROUP (Nashville)

We have an active outings schedule and want you to come along! Many times our outings are planned too late to be included in this newsletter.

To check out our outings, please click on the outing of choice at <http://www.meetup.com/Middle-Tennessee-Sierra-Club-Outings-and-Adventures/events/calendar/>

Remembering Margaret Olson

"Margaret Olson passed away March 20, 2015, at the Wharton Home in the Uplands Village community in Pleasant Hill. She was 84. A long-time resident of Oak Ridge, she was an avid traveler and devoted proponent of environmental causes, such as those sponsored by the Sierra Club." (http://www.crossville-chronicle.com/obituaries/margaret-olson/article_fe6cab32-d253-11e4-85df-7b2cec39491f.html)

Margaret moved with her husband to Oak Ridge in 1958, from Illinois. That is where I am from, and I well understood how the unique natural beauty of Tennessee inspired her to focus her efforts on conservation. She also enjoyed exploring the rest of our country. And the rest of the world.

I knew Margaret when I was more active in the Chapter, meeting her at the quarterly meetings. She was instrumental in helping the Tennessee Chapter Sierra Club grow, maintain its focus, and maintain unity and equanimity among the sometimes rambunctious "Excom" members. No one doubted Margaret's integrity, and her purity and kindness inspired and united us all. Her example gives us hope and purpose. Thank you, Margaret.

John Harwood, Cookeville

I attended the Memorial Service for long-time friend Margaret Olson of Pleasant Hill, TN. Margaret was active in the local Knoxville Sierra Club Group during the 1980's and much of the 1990's, before retiring to Pleasant Hill. She was a wonderful woman who loved the outdoors, travel, and (which is how I got to know her best) worked to preserve our wilderness and natural areas. A professional typist, among many other talents, she typed much of the documentation for the Cherokee National Forest wilderness campaigns of the 1980's. And, as is often the case, at

the Service I found she has an additional talent, writing poetry. Two of her poems are included, one perfectly extolling wilderness and the other being the best self-written eulogy I've ever seen.

Will Skelton, Knoxville

I just learned that Margaret Olsen passed away. Many of the newer activists do not know or remember her. But for many years she was a regular at chapter meetings, although for the last 3 or 4 years she was absent due to health issues. She was active in the HBG, and after a retirement of sorts and a move, she was active with the Upper Cumberland Group. She was an adventurous soul and traveled widely. Her service to the chapter is what I remember about her. During the years that I was chapter chair, Margaret was the perennial chapter secretary; keeping accurate records and keeping me on track. At every chapter meeting, a highlight was our quarterly hug. Rest in peace dear Margaret, your service and memory will live on as will your dedication to the work of the Sierra Club.

Bill Terry, Nashville

Also from her obituary: "An avid lover of wildlife, she enjoyed feeding birds, squirrels, raccoons and possums. She traveled widely, sometimes by freighter, to exotic locations such as Easter Island, Antarctica and Machu Picchu, Peru. She was an active camper well into her 70s, having outfitted two trucks for camping." I miss her at our Chapter meetings, and each winter I still wear her wonderful knitted hat.

At her family's request, Donations in tribute to Margaret may be sent to the Sierra Club Foundation — Tennessee Chapter, 85 Second St. Suite 750, San Francisco, CA 94105.

Barbara Kelly, Chattanooga

Wild Hearts (by Margaret Olson)

My heart is in love
With so many wild things;
Dark pine woods of winters,
Bright meadows of springs;

The last fading star
At morning first light;
The first one to greet me
Announcing the night;

The rush of the stream
Tumbling over the falls;
A far crack of thunder
Before summer squalls.

Wildness is the path
That my heart seeks to go;
But where my feet lead me
Not even I know.

Round and Round (by Margaret Olson)

Round and round this turning earth,
Dawn to dusk and dusk to dawn,
Night follows day, day follows night,
And the circle of years goes on and on.

Each day is another day of my life,
A day remembered, a day that is lost.
Whichever it is, it is over and gone.
Joyous or painful, peaceful or storm-tossed.

So round and round,
when my world turns its last,
Pray do not sorrow and pray do not grieve.
As day turns to night and night turns to day,
Cherish and savor this world that I leave.

Save the planet: One forkful at a time!

Laurel Hopwood
<lhopwood@roadrunner.com>
Volunteer in Northeast Ohio Sierra Club

Adopting a plant-based diet is the simplest and cheapest way to combat global warming, reduce water pollution and even save the rainforests.

In light of mounting evidence that the raising of cows, pigs and chicken in factories generates enormous amounts of greenhouse gases, we are calling for a Meat-Free Monday Campaign. A 2010 United Nations report concluded that a shift toward a vegan diet is necessary to combat the worst effects of climate change.

The recent shutdown of drinking water for the entire city of Toledo, Ohio, raises a huge red flag. Manure run off from factory raised animals and fertilizers used to grow feed-crops can cause algae-excreting deadly cyanobacte-

ria. Rather than spending our hard earned dollars to upgrade sewer systems, there is another way. People can take personal responsibility and chose what they put on their dinner plates.

Water depletion from the immense amount of water required to raise animals and feed-crops is depleting a crucial resource: water. If we continue pumping out the Ogallala Aquifer at current rates, it's only a matter of time before most of the wells in the Midwest and Southwest will become dry.

That's not all. Livestock production is responsible for 70% of deforestation in the Amazon region of Latin America, where rainforests are being cleared to create new pastures and crop production.

We encouraged the city of Cleveland, Ohio, to pass a resolution calling for residents to refrain from eating animal products one day per week. It recognizes the benefits of a diet

consisting of nuts, seeds, grains, legumes, fruits and vegetables to improve personal health and the health of the planet.

We encourage families, schools and restaurants to go meat-free (at least) one day per week.

To read our fact sheet, actions to take, resources, meal ideas and sample city resolution, please visit:

<http://www.neosierragroup.org/meat-free-mondays/>

Join the Grassroot Network using:
<https://content.sierraclub.org/grassrootsnetwork/teams/meat-free-monday-campaign>

(Note: Sierra Club's updated Agriculture policy includes this statement: "Personal dietary choices that minimize or eliminate meat and animal products should be encouraged, due to their many benefits, including reducing greenhouse gas impacts, water pollution and inhumane treatment of animals.")



Betsy Garber and Joy Mayfield. Photos by John Pigg



Teris Schery, and Scott Heflinger (behind butterfly kite).

Environmental Speed Dating in Memphis

"What is the Sierra Club? What do we do? How to get involved?" were topics at the Chickasaw Group's Program Meeting on May 28. "We wanted to educate attendees about the Sierra Club, and get them engaged in a fun and exciting way," said Dennis Lynch, the Chickasaw Group Chair.

Informal networking and munching on healthy organic snacks began at 5:30 P.M. This was followed by brief film clips and presentations about the Sierra Club's history, past successful campaigns, and current campaigns. Two speakers revealed their own story of how they became involved with the Sierra Club.

Then we shifted into the major activity of the evening- "Environmental Speed Dating"- a unique activity designed to get participants energized and involved in the environment and our community.

Sierra Club activists involved in current Sierra Club campaigns sat at various locations in the room. Each location focused on a different theme (some had combined themes)- Global Warming, Beyond Coal, Our Energy Future, Communications, Outings, Membership, Healthy Foods, Transportation, Beyond Nuclear, and Sierra Club National. Guests, in groups of 7 or 8, went to the loca-

tions to brainstorm and share their thoughts on each theme. They discussed campaigns they would like to be involved in, and ideas of how the Sierra Club might use its organizing and lobbying capabilities to empower new activists. After about 10 minutes guests went to the next theme location in the room. The activity created numerous lively and engaging conversations.

Feedback from the 50 members and guests indicated that everyone had a great time, enjoyed the discussions, and learned a lot about the environment and Sierra Club campaigns. The evening went so well that early indications are that CKG will repeat this event again in about 6 months.

The event never would have been such a success without the efforts of all Excom members as well as other volunteers. Dallas Holland and Juliet Jones made a major contribution by organizing healthy organic salads and snacks that were sourced from local community gardens and local farmers. Also, Steve Sondheim organized door prizes, including books, plants, hats, and even certificates for juggling lessons.

Thanks to all who helped and to all who participated!

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Reviewing Renewable Energy Talking Points

Topline Message

- Today we have the technology and the know-how to move beyond our dependence on polluting oil and coal-fired power plants by using clean, safe, and affordable wind, solar and other renewable energy.?
- Moving to renewable energy will create jobs and keep jobs in America, make our country more energy independent, save consumers money, reduce air and water pollution and reverse global warming.?
- The technology exists to make this shift now. Right now, more than 25 states have Renewable Electricity Standards (RES), some requiring as much as 30 percent of electricity to be from renewable energy. ?
- According to a UCS report, if the federal government adopted a 20 percent Renewable Energy Standard (RES) it would create 185,000 new jobs, add \$66.7 billion in new capital investment, \$25.6 billion in income to rural landowners, and \$2 billion in new local tax revenues.

Four Primary Renewables

1. **Wind.** Wind energy is the fastest-growing source of power on the planet, and can become a major force for economic development.
2. **Solar.** The sun is the ultimate source of energy. The cost of solar technologies has plummeted in recent decades, approaching the cost of fossil fuels.
3. **Geothermal.** The uppermost six miles of the Earth's crust alone contains more energy than all the oil and gas reserves in the world. Using existing technology, geothermal power plants run more efficiently and reliably than coal and nuclear facilities.
4. **Biomass.** Sustainable Energy crops have the potential to supply a significant portion of America's energy needs and provide farmers a valuable new market for their crops.

Wind

- Wind energy is the fastest-growing source of power on the planet. With our tremendous wind resources, the United States can become a world leader in wind energy.
- First, clean energy is already replacing coal

around the country. The state of Iowa has more than 20 percent wind power and wind is providing low-cost reliable power to keep that state humming. Already, wind turbines in this country produce enough electricity to meet the needs of more than 1 million households.

- In recent years the price of wind has fallen dramatically, making it increasingly competitive with fossil fuels, particularly because the costs for constructing some coal plants has nearly doubled in recent years.
- The federal government's National Renewable Energy Laboratory projects that the price of wind energy will fall even further over the next decade, making it the most economically competitive renewable energy technology and competitive with coal today and the clear winner tomorrow if even a modest price is attached to the global warming emissions produced by coal-fired power plants.
- As a growing power source, wind energy can become a major force for economic development. Wind development can save consumers money and bring construction jobs, leasing royalties, and increased tax revenues to local communities and rural land owners.

Solar

- The sun is the ultimate source of energy. Only 20 days of sunshine is equal to all the energy stored in the earth's reserves of coal, oil, and natural gas.
- The U.S. solar industry is a powerful economic engine, with the potential to create millions of good American jobs. The U.S. solar industry's net exports totaled \$723 million in 2009, and domestic solar installations created \$2.6 billion in direct value to the U.S. economy, according to a recent report: <http://bit.ly/eeV6Or>
- Using existing technologies, we can harness this energy to produce electricity. While some parts of the country are sunnier than others, most areas receive enough sunshine to make solar energy a powerful source of clean and affordable electricity.
- The cost of solar technologies has plummeted in recent decades, approaching the cost of fossil fuels, and is likely to fall even further.

One nanosolar company in California recently began shipping solar panels at \$1/kilowatt, the price at which solar becomes competitive with coal.

- The Sierra Club is deeply committed to moving America off of dirty energy, and that will include building large-scale renewable energy projects in the smartest way possible while eliminating or minimizing harm to wildlife and natural resources. We have a chance now to get clean energy right, from the start.

Biomass

- Biomass energy provides plant-powered heat and electricity. Plants absorb and store energy from the sun as they grow. With the right technologies and careful attention to responsible land-management practices, the energy contained in plants can be harnessed to produce heat and electricity.
- Sustainable, dedicated energy crops have the potential to supply a significant portion of America's energy needs while providing farmers with a valuable new market for their crops.

Geothermal

- Geothermal energy is right under our feet. Steaming water and rock beneath the Earth's surface can be used to generate heat and electricity. The uppermost six miles of the Earth's crust alone contains more energy than all the oil and gas reserves in the world.
- Geothermal resources are abundant, affordable and available 24 hours a day, 365 days a year. Currently, geothermal energy provides enough electricity to power nearly 4 million American homes. Using existing technology, geothermal power plants run more efficiently and reliably than coal and nuclear facilities.
- The U.S. Department of Energy estimates that geothermal power plants prevent some 22 million tons of carbon dioxide from escaping into the atmosphere every year, helping curb global warming by reducing pollution from our nation's biggest culprits, coal-fired power plants.

Don't Fall for the Nuclear Trap

By Steven Sondheim-Nuclear Free Sierra

Recently Tennessee Senators questioned TVA's power generation mix that called for adding wind power as a cheaper option—estimated 4 to 4.5 cents per kilowatt hour. Instead, ramping up nuclear power was advocated, attempting to pass off nuclear energy as clean and making renewables unnecessary.

Wind energy produced by windmills in Oklahoma and delivered to TVA by Clean Line Energy would cost less than other new generation, including new nuclear plants being built in Tennessee, Georgia and South Carolina.

But Sen. Lamar Alexander, long a nuclear power supporter, ignored those figures and admonished TVA to cut off its "romance" with renewable power -- especially wind power.

"The most expensive path you could take is to maximize energy efficiency and renewable power."

This is just not true. Wind is NOT more expensive, Solar is quickly becoming competitive, and energy efficiency (EE) is the least expensive.

Nuclear is NOT Clean Power as it uses large amounts of CO2 in the front end process of procuring fuel, then in building and maintaining reactors, and the back end process of waste storage and decommissioning.

Why would a U.S. senator spurn promoting energy efficiency and cheaper, carbon-free power?

TVA should ramp up EE and Renewables as replacement while transitioning out of fossil and nuclear power. Currently plans for this are anemic. Right now, renewable energy and efficiency each make up less than 1 percent of TVA's power generation, instead locking in dependence on nuclear and gas. TVA says renewables aren't needed because of nuclear. We say visa versa. Let's gear up for a clean future. TVA can buy the wind power cheaply, encourage solar energy and sponsor efficiency. TVA's new long-range energy plan being developed this year could call for boosting renewables to a significant percentage of the portfolio.

The Clean Power Plan proposed by EPA

requires Tennessee to cut carbon emissions by nearly 40 percent. Each state must develop its own SIP (State Implementation Plan) in 2016.

New nuclear power is given clean carbon credits, unfortunately, as it is counted as carbon free. If states choose to reduce their carbon footprint by choosing nuclear, we could end up reducing fossil less and producing less renewables, especially solar. Money could be spent on very expensive new nuclear instead of ramping up solar for a better long-term future. States need to be aware of this and choose not to count on nuclear.

In addition, arguments could be made that we've ready filled the gap with nuclear and renewables aren't needed. The answer is to transfer effort and monies from nuclear to a crash program, developing replacement efficiency and renewables as we retire the most dirty, expensive and dangerous fossil and nuclear. As an example, California had enough clean replacement power when San Onofre had to shut down permanently.

Nuclear power does not help achieve greater carbon emission (although it would have a large effect on the increase of radioactive emissions) according to the Energy Information Administration. Nukes will knockout renewables as replacement for fossil and take us longer in dealing with climate change — so much for the nuclear industry's pitch for nuclear power as a climate solution.

In other words, increased investment in nuclear power means decreased

investment in cleaner solar power. We can have a nuclear future or we can have a solar future: we can't have both. And a solar future is cleaner, cheaper and safer.

The choice is obvious. The question of whether EPA will bow to nuclear industry pressure and choose the nuclear path is less so.

To Join the Nuclear Free Campaign contact:

StevenSondheim@yahoo.com

Dsafer@comcast.net Tenn Nuclear Chair

Resources-to learn more:

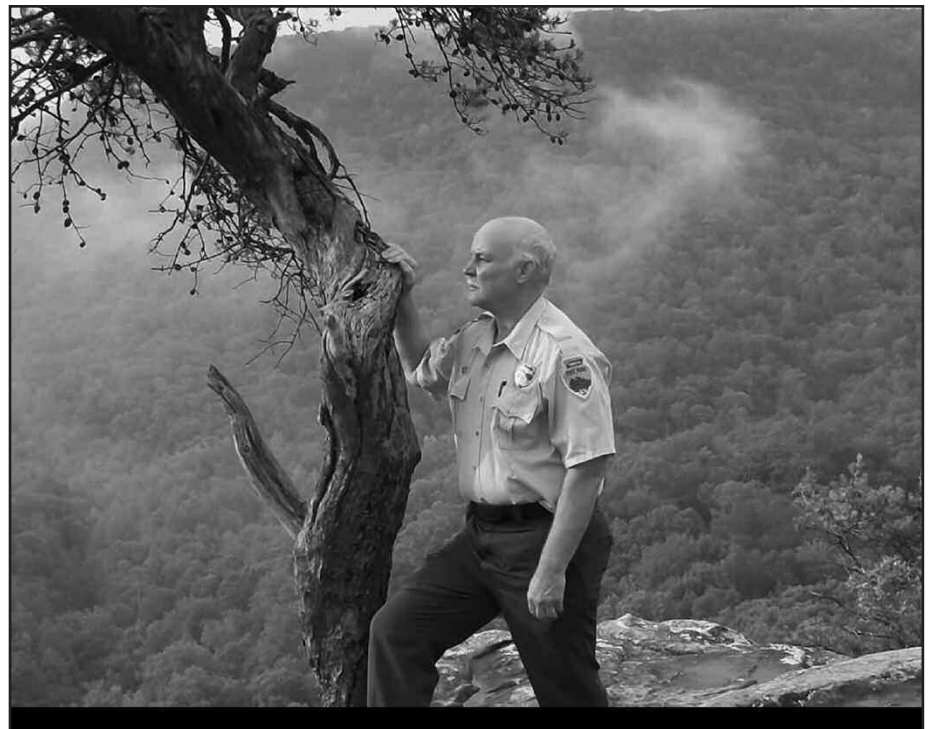
Nuclear & Climate Change

nirs.org/factsheets/nukesclimatefact614.pdf

A Cleaner South

sierraclub.org/sierra/2014-6-november-december/feature/cleaner-south

Search Google: Nuclear Worsens Climate



Tennessee Chapter Fall Family Retreat

- Join the Tennessee Chapter at our Fall retreat
- Enjoy the warm afternoons and the cool crisp nights of late October in Pickett State Park, adjacent to the Big South Fork National River & Recreation Area
- Explore more than 58 miles of hiking trails that meander through the wilderness of park and the surrounding 19,200 acre state forest
- Experience views of sandstone bluffs, natural bridges, waterfalls and diverse plant life
- Some say Pickett State Park is second only to the Great Smoky Mountains National Park in biodiversity
- Hike with the Tennessee State Naturalist and learn about the flora and fauna
- Mark your calendar today – October 23rd thru 25th, Friday thru Sunday
- Registration information will be in the next issue of the Tenne-Sierran
- Group lodge accommodations – \$40 for the weekend, \$20 for first time attendees

Moving?



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