



## Rare Plants and Disease Along the Doe River Corridor

— Frosty Levy

Finding a rare species generates excitement among naturalists and field biologists because of the thrill of discovery of something new to the observer and the potential to add to knowledge about species distributions. Some individuals seem to be especially “lucky” in this regard. But serendipity is probably a more appropriate term as the lucky ones have often positioned themselves in places where they are most apt to encounter rare species. Those places are often in unusual habitats. In East Tennessee, the corridor of the Doe River is certainly one of the most promising of sites to observe and find rare species.

The Doe River of Carter County, Tennessee, traverses some of the most breathtaking sites and scenery in the south. The program will highlight some of the unusual, rare, and geographically disjunct plants found associated with this spectacular river and it will touch on some of the disease threats faced by these plants. Lilies may best epitomize the changes in habitat associated with different sections of the Doe. Of the four species of true lilies (genus *Lilium*) that occur along the corridor, Turk’s Cap Lily (*L. superbum*) and Michaux’s Lily (*L. michauxii*) are restricted to the Blue Ridge region, the Wood Lily (*L. philadelphicum*) is rare in Tennessee, and Gray’s Lily (*L. grayi*) is globally rare.

Both Turk’s Cap and Gray’s Lily populations are impacted by a fungal disease that causes plants to wilt and senesce early in the growing season. The early season decline limits seed maturation and therefore sexual reproduction is reduced. However, the implications of disease for the two species may be very different. Turk’s Cap Lily is a species of moist forests and it grows within a broad elevation range. With much available habitat and many local occurrences of Turk’s Cap, some patches escape disease or show only minimal symptoms. In contrast, Gray’s Lily is restricted to high elevation sites typified by the balds of Roan Mountain.



Image 1: Gray's Lily (*Lilium grayi*)- by Sir Joseph Dalton Hooker (1817 - 1911)

Image 2: American turk's-cap lily (*Lilium superbum*) —by Walter Hood Fitch (1817 - 1892)

Image 3: Carolina lily (*Lilium michauxii*) —by Walter Hood Fitch (1817 - 1892)

via Wikimedia Commons (PD)

With a limited amount of habitat associated with the balds, Gray's Lily is experiencing a disease epidemic where few plants remain disease-free throughout the season.

Michaux's Lily, a species more typical of drier habitats, appears to be unaffected by disease. Perhaps this species is less susceptible because the lower humidity of drier sites is less conducive to fungal growth. Or it may be that the firmer leaves with their thicker epidermis acts as a barrier to fungal penetration of leaf surfaces.

Differences in the habitats, abundance, and disease agents portend different outlooks for two coniferous trees characteristic of the Doe River Corridor. At lower elevations, eastern hemlock has been ravaged by the aphid-like hemlock woolly adelgid. Adelgids kill hemlock trees when trees react to adelgid feeding by creating a plug in the tree's conducting system. An infestation leads to loss of foliage and death. All age and size classes of hemlocks are completely susceptible to adelgids. East Tennessee will almost surely lose its natural populations of hemlocks.

At the headwaters of the Doe, the Fraser fir population near the summit of Roan is under attack by the balsam woolly adelgid, an insect related to the hemlock woolly adelgid. However, the balsam adelgid does not attack small trees. Based on observations of the impact of the balsam adelgid in other populations of Fraser firs, periodic waves of die-off may kill older trees but insect-free seedlings and saplings are freed from competition and regenerate the evergreen canopy.

**Dr. Foster Levy, known to friends as Frosty, has been a perennial favorite trip leader at the Fall Rally for many years. A faculty member in ETSU's Department of Biological Sciences, he co-founded the ETSU Arboretum. Frosty enjoys hiking anywhere, fishing the small mountain streams, and growing trees and vegetables. His presentation, *Exciting Plants of the Doe River Corridor*, will be our Friday evening program at the RMSP Conference Center on Sept. 6th.**

## Aquatic Nuisance Species

—Bart Carter

Tennessee's aquatic fauna is the most diverse in the U.S. with over 300 species of fish, 120 species of mussels, 86 species of crayfish, and numerous aquatic insects. Landscape alteration by man has subjected these species and their habitat to many stressors that have had negative influences or in some cases eliminated them altogether. In addition, Aquatic Nuisance Species (ANS) have become more and more prominent across the country and are further impacting our native species. Many states across the country are dealing with ANS issues and have taken various actions from simple education programs to instituting moratoriums on certain vectors that transport undesirable species. Tennessee has been no exception to unwelcome invaders who in many cases upset the natural balance of native aquatic ecosystems or create unnecessary financial burdens on society. The Tennessee Wildlife Resources Agency (TWRA) has engaged issues in the state with the creation of an ANS task force and drafting a plan to combat current issues in Tennessee.

There is no doubt that many of these "new" species that have come to our state will be here to stay despite efforts by many natural resource agencies to send them packing. It will be a challenge to manage these invaders into the future to ensure that the integrity of our natural aquatic heritage is not damaged or in some cases lost. The burden lies to a great extent on the general public to be diligent in deterring the spread of these species through means that often get overlooked. Agencies will continue to confront issues with the best means possible, but it will take the combined effort of government and the public to fully arrest the spread of these species.



**Bart Carter has served since 2010 as the Tennessee Wildlife Resources Agency Fisheries Manager for Region IV, a 21-county area of East Tennessee. He began his fisheries career in the Great Smoky Mountains National Park, prior to working as this region's TWRA Stream Biologist. At the Fall Rally's Saturday evening program, *Aquatic Nuisance Species in Tennessee*, Bart will discuss what is being done to combat these invaders.**

# ANNUAL MEETING

## JOIN US!



Our annual meeting of the Friends of Roan Mountain will be held during the Fall Naturalists' Rally on Saturday, September 7th at 5:45 p.m. prior to the evening meal. At the meeting you will receive information regarding the activities, projects and finances of the organization. The election of board members will be held at this meeting.

The following slate of names has been nominated by the board for this year's election: Gary Barrigar, Ken Turner, Anne Whittemore, Pam Baldwin, Jerry Greer. Nominations from the floor may be made at the meeting.

Board meetings are scheduled as needed, generally a few weeks prior to the rallies. Any member of FORM is welcome to attend a board meeting or submit an item for the board's consideration by contacting the Friends of Roan Mountain president, Gary Barrigar, 423-543-7576.

The annual meeting also provides an opportunity for the membership to give their input concerning the policies and activities of FORM. Any member wishing to submit an item for the agenda of the annual meeting may do so by contacting Gary Barrigar.

### *Did you know ???*

- At an elevation of 2,972 feet (906 m), the outdoor swimming pool at RMSP occupies the highest elevation of any swimming pool within the Tennessee state system.
- Roan High Knob is the 17th highest point east of the Mississippi River. It holds the distinction of having the highest shelter on the Appalachian Trail at 6,285 feet.
- An "oil road" totaling 20.4 miles linking Bakersville, N.C. and Burbank, TN, and connecting to a Forest Service road from Carver's Gap to the Rhododendron Gardens was dedicated in 1952.
- Roan Mountain State Park was designated as an official Tennessee state park in 1959.



## 2013 Roan Mountain Butterfly Count



Considering the rainy weather forecast for Roan Mountain on July 20, 2013, it turned out to be a good butterfly count with 22 species and 322 individual butterflies. We only got a little wet just before taking a lunch break to eat at Mad Martha's, where we enjoyed our meal on the back porch in spite of the rain. The rain was pretty much over by dessert.

As for the butterflies, the surprise stars of the show with above average numbers were Cloudless Sulphurs (23) and Common Wood Nymphs (30). The native grass plantings in Roan Mtn. State Park with lots of forbs, especially Partridge Pea, have been very good for Cloudless Sulphurs. The Common Wood Nymphs were most abundant at Dave Miller Homestead, particularly in the top field by the cemetery.

The two most abundant species were Pipevine Swallowtail (59) and Aphrodite Fritillary (48), but in some years their populations explode, with record highs for this count of 702 for Pipevine Swallowtail in 2010, and 585 for Aphrodite Fritillary in 2002. We hope for such a year when we next hold the Roan Mountain Butterfly Count on July 19, 2014. Hope you can join us! —Don Holt, compiler, Johnson City, TN

**Roan Mountain, TN.** Yr. 21, 36.1067°, -82.1105°, center at Carvers Gap, Carter Co., TN, and Mitchell Co., NC, at the crossing of TN Hwy. 143 / NC Hwy. 261 over TN/NC state line. See 1993 report for habitats. **20 July 2013;** 1000-1730 hrs; sun AM 10%, PM 10%; 68-73°F; wind 0-5 mi/hr. 6 observers in 1 party. **Total party-hours 6.5; total party-miles on foot 2. Observers:** D. Draper, Don Holt (910 Smalling Rd., Johnson City, TN, 37601; [dnlhlt@aol.com](mailto:dnlhlt@aol.com)), C. Moore, B. Potter, J. Potter, K. Stroud.

Pipevine Swallowtail 59, E. Tiger Sw. 11, Cabbage White 29, Clouded Sulphur 6, Orange Su. 14, Cloudless Su. 23, Sleepy Orange 2, Gray Hairstreak 1, E. Tailed-Blue 18, 'Summer' Spring Azure 4, Gr. Spangled Fritillary 3, Aphrodite Fr. 48, Meadow Fr. 6, Pearl Crescent 22, E. Comma 1, Red Admiral 1, Viceroy 1, Com. Wood-Nymph 30, Monarch 1, Silver-spotted Skipper 26, Least Sk. 2, Sachem 1. **Unidentified:** Swallowtail sp. 4, Colias sp. 5, Speyeria sp. 4. **Total** 22 species, 322 individuals. **Field Notes:** Light rain mid-day, mostly during lunch break. Weather conditions at top of Roan Mountain were dark and threatening, therefore counting in the afternoon was done at Dave Miller Homestead (ca 4,000 ft. elev.) instead of the Rhododendron Gardens (ca 6,000 ft. elev.).



# AWESOME ADVENTURES

Thirty-one families shared Adventures at the 5<sup>th</sup> Xtreme Roan Adventures.

The Adventures started off with a BIG Friday evening Adventure. Over 96 Adventurers of all ages were at the amphitheater at 8:30 p.m. for the start of the night time Adventures.

New to our line-up was Connie Deegan from the Johnson City Parks and Recreation Department. She held everyone's attention with her Bat program, even as some obliging bats flew over head.

Then as it grew darker, the Adventurers checked out Larry McDaniel's Moth Party sheets for new discoveries. Ranger Amanda Smithson led Adventurers into the dark woods for a Nature at Night hike. The rest of the Adventurers stayed at the amphitheater for the Owl Prowl led by the spell-binding Mark Hopley. Those of you who have never seen Mark mesmerize a whole passel of kids, of all ages, with his owl calls are missing a treat. You really need to be there at his next performance. It is amazing.

If that wasn't enough Adventure already, it started to rain. And like many things on Roan Mountain, it rained in a big way. The fifty-plus people on the amphitheater stage watched as the rain poured down. It did keep the Owl Prowl "indoors", so no visits to the bird-net or "communicating" with the owls in the woods.

Eventually the night hikers returned. It was awesome to see the smiling faces of the kids who were soaking wet. They were excited because now they were exempt from taking a bath.

Saturday morning also started out very damp. David Hall and Guy Mauldin handled the registration for over a hundred Adventurers that came slogging in. The five Adventures started off at 9:00 a.m. Soon the rain stopped and the ponchos came



off. The weather continued to improve for the 10:30 Adventures.

A great host of volunteers were getting the Conference Center ready for lunch. But who has time to eat? At the same time there were Fossils to be cast, Live Birds of Prey to see up close, Nature Crafts to be made, Live Reptiles to hold, and Skins and Skulls to examine. A big thank you goes to Mary Fanslow's Girl Scout troop for the 'Recycle Here' signs and for handling the door prizes like professionals.

The 1:30 Adventures took off for their separate destinations while the Conference Center activities continued. Janet Brown expertly helped Adventurers dissect and examine the contents of owl pellets and identify their discoveries. Some of the Adventurers proudly displayed their discoveries in magnifier-boxes that they could take home.

The Butterfly Adventure also benefited from the improved weather. This year Adventure leaders Nancy

Barrigar and Aubrie Abernethy included the new wildflower fields along the road in the park in addition to visiting the Miller Farmstead. Their efforts were rewarded by the Adventurers identifying six species of butterflies.

The Appalachian Trail / Baatany Goat Adventure had its largest turn-out

ever. Over thirty Adventurers made it all the way out past Jane Bald to see the new goat paddock. At least another ten Adventurers made it part of the way. Also, this was possibly the most wide-ranging groups by age of Adventurers. I'm not about to guess the oldest end of the age range but the youngest was 12-months old Josie. She was a very well-behaved Adventurer who was carried by her mother, Carrie. That meant that seven year old Jamie had to assist along the hike.

A great big Thank You goes to all the generous people who helped to make this a truly Awesome Adventure.

Thank you,  
Ken, Larry, and Nora

P.S. – More pictures can be found on the [Xtreme Roan Adventures .org site](http://XtremeRoanAdventures.org)



## What's New in the Park?

### **RMSP Increasing Native Plant Species thanks to IRIS Fund-**

Perhaps you've noticed a few vehicles sporting the Tennessee State Parks "Iris" License tag... besides looking great over car bumpers, these particular specialty plates raise revenue in support of the Tennessee State Parks' IRIS Fund program. This program is intended to re-establish native trees, flowers, plants, and shrubs for wildlife habitat, landscaping and beautification, erosion control, and resource conservation through reduced watering, mowing, and use of pesticides or herbicides. Roan Mountain State Park has recently become a beneficiary of the IRIS Fund, and is currently putting those dollars to good use at the Miller Farmstead. The exotic Butterfly Bushes and Colts Foot are being removed to make way for several native species that are both lovely to look at and beneficial to birds and butterflies. Visitors to the Farmstead can now enjoy some unique examples of our native flora such as Purple Coneflower, Swamp Milkweed, Cardinal Flower, Joe-Pye Weed, Iron Weed, Turtlehead, Chickweed, and Native Honeysuckles. Next time your license plates are up for renewal, please consider upgrading to the "Iris" specialty tag, and not only will you beautify your vehicle but Tennessee State Parks as well!

### **Native Warm-Season Grasses and Wildflower Restoration Project Update-**

We are entering our third year of the project to restore native grasses and wildflowers to conservation plots throughout the park, and visitors have been delighted with the lovely results! Black-Eyed Susans and Purple Coneflowers add a striking splash of color to the roadside plots at the southern entrance to the park, Picnic Shelter 1, and Heaton Creek/Sugar Hollow Road areas. The northern entrance to the park is dominated by Partridge Pea, which has proven to be a favorite of honeybees. At this early stage, the plots are well established beyond our original expectations, and park employees and volunteers continue to pull up undesirable species within the fields. The next step in the project will be a controlled burn in the early spring to rejuvenate the fields and further assist in the control of undesirable species. Keep watch over these conservation areas as we head into fall... wildlife viewing opportunities should abound!

### **RMSP Campground Receiving an Upgrade-**

New water lines and frost-free faucets installed last spring in the Park Campground could mean a longer camping season for those hardy individuals who want to brave the Roan Mountain winter in their RVs and trailers this year. However, they may have to compete with construction crews... workers will be paving the roads and campsites and removing dead trees from the area as part of the ongoing project to improve the campground. A new, handicapped-accessible bath house is also planned for the bottom RV loop, as well as WI-FI internet access. Bear with us as we work through the winter on the campground improvement process.

### **Congratulations, New Park Manager Jacob Young!**

Please extend your congratulations to Jacob Young, whose was promoted in July from Park Ranger to Park Manager following the retirement of former Manager Pat Gagan. Jacob has served as a Ranger at RMSP for almost a decade, and now brings his enthusiasm, vitality, and energetic perspective to the leadership of Roan Mountain State Park. Manager Young is committed to continuing a supportive, collaborative relationship with the Friends of Roan Mountain, and encourages its members to likewise offer their support of the park.

For more information about Roan Mountain State Park, visit the website at <http://state.tn.us/environment/parks/RoanMtn/>

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## HOORAY FOR JACOB!

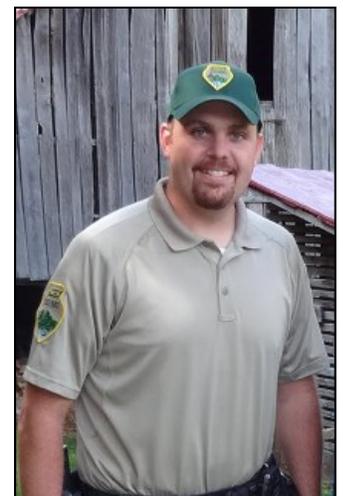
We were very happy to learn that Jacob Young has been selected as the new park manager for Roan Mountain State Park. Jacob, a native of the small town of Liberty in middle Tennessee, began working as a ranger at the park in 2005. You can read about Jacob's selection as the 2010 Tennessee Park Ranger of the Year in our [Spring 2011 newsletter](#). We have no doubt that Jacob's many skills and talents will continue to be of great benefit to the park as he fills his new position.

His love of the natural world, his knowledge of herpetology, and his friendly, relaxed personality have delighted Naturalists' Rally participants over the years. Many folks have experienced their first time touching a snake under Jacob's skilled tutelage. Kids are all smiles and squeals as they join him in turning over rocks in the stream and dipping nets in the pond while searching for what might be living there.

Jacob and his wife, Crystal, along with their young daughter, Madyson, enjoy being a part of the community of Roan Mountain where in past years Jacob served as the youth minister of the First Baptist Church.

You can watch Jacob give a short video tour of Roan Mountain State Park on the web.

<http://mshajobtour.com/jcmc/neighbor-perspectives/jacob-young/>



# Between Friends

**Deadline for Rally Meal Reservations** – All dinner and lunch meals must be prepaid. If you plan to eat the catered dinner or purchase a bag lunch at the rally, you must send your check in advance. The deadline is **Tuesday, Sept. 3rd**. The reservation form can be found in the brochure or on our website. Mail your check and reservation form to Nancy Barrigar, 708 Allen Avenue, Elizabethton, TN 37643. We greatly appreciate your cooperation in helping us plan accurately!

**Door Prizes** – We are gladly accepting items to be given away as door prizes at our Rally events on Friday and Saturday evenings. Ideas: nature-related books, photos or art; outdoor gear; plants; homemade goodies . . .

**Don't keep it quiet** – Invite a friend to the rally!

Roan Mountain Naturalists' Rallies		
Spring	Last Friday - Sunday in April	April 25-27
Youth	Last Saturday in July	July 26, 2014
Fall	Friday - Sunday in September after Labor Day	Sept. 6-8, 2013
Winter	Saturday in February nearest Valentine's Day	Feb. 15, 2014



If you would like to opt out of receiving a paper copy of our newsletter and instead read the color version online, send an email to: [nbarrigar@friendsofroanmtn.org](mailto:nbarrigar@friendsofroanmtn.org).

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