



## A Conversation with Jennifer Frick-Ruppert

[The following is a partial reprint of A conversation with Jennifer Frick-Ruppert, author of [\*Mountain Nature: A Seasonal Natural History of the Southern Appalachians\*](#) (University of North Carolina Press, April 2010).]

**Q: How are the southern Appalachians different from any other ecological system in North America? And why is it important for people to know about them?**

**A:** The Southern Appalachians are ancient, geologically complex, biologically diverse, and wet! Biologically speaking, they are as significant as the Great Barrier Reef of Australia, but they are right here, surrounded by dozens of cities and millions of people. Too often, we ignore the world right outside our door in favor of something more "exotic." I think that people should know their neighbors, and not just the human ones. What native plants grow in your yard? What lives in the stream or river closest to you? If you live in or even visit the Southern Appalachians, this book should help you answer those questions.

**Q: Why were you drawn to the Appalachians? What is your relationship to this area?**

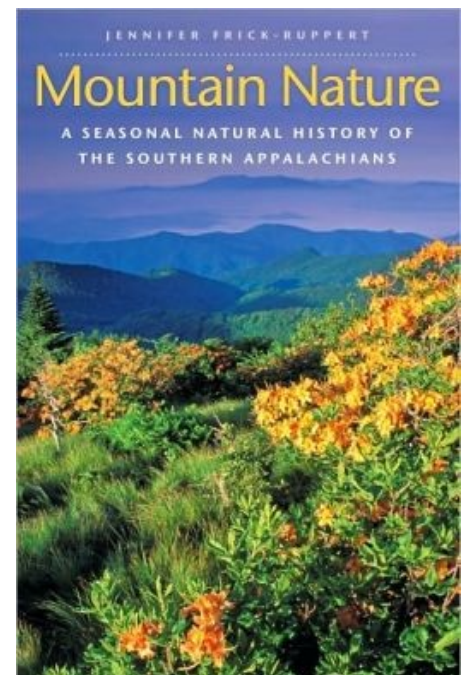
**A:** I was raised on the coastal plain of South Carolina. The biodiversity there is reduced compared to the Southern Appalachians, but my family spent many vacations at the coast, where some new animal inevitably washed up from the sea. These sea creatures captivated me for a while and I eventually studied one of them for my PhD degree, in Zoology, at Clemson University. Clemson is at the foot of the nearby Appalachian Mountains, and I soon developed an interest in the life of the mountains. My husband and I bought some land and built a tiny cabin there, which further stimulated my love and appreciation of the area.

**Q: You make quite a few artistic and musical references in your book, which seems surprising for a scientist. Why?**

**A:** Because nature is harmonious. I am a scientist, but I see nature as something to appreciate for its beauty, not just as one cog meshing with the next. The source of this sense of beauty and repose, our aesthetic response, is likely to be our shared heritage with the cosmos in general and with our environment in particular. E.O. Wilson has called it "biophilia," a love of living things. I enjoy the intellectual challenge of understanding why male cardinals are redder than the females, sing more, and help to care for young, but I also enjoy seeing and hearing a beautiful red bird in my yard.

**Q: Can you describe some of the tricks that certain plants use to survive in locations where most plants cannot survive?**

**A:** They form partnerships! Mutualisms are symbiotic relationships in which both organisms benefit.





Mutualisms allow for new structures in ecosystems, new forms of life, and colonization of new areas. Lichens are an example of a new form of life -- a mutualism between an alga and a fungus that looks nothing like either parent organism and grows where neither parent can. The fungal partners of many plants in the heath family, such as sourwood, mountain laurel, and trailing arbutus, break down the proteins in soil humus, allowing their plant partner to take up amino acids directly from the soil. These plants can grow in areas that have poor soils, but abundant sunlight and little competition from other plants. Similarly, plants in the legume family have formed partnerships with bacteria to do basically the same thing—supply them with nitrogen when there is little nitrogen in the soil. Interestingly, alders also have a bacterial symbiont, but the bacterium is different from those that form partnerships with the legumes. Mutualisms are often overlooked with regard to the important part they play in the structure of biological communities.

# Biodiversity

**Q: You are an environmental scientist. Are you also an environmentalist?**

**A:** Yes, I study our environment as a scientist, but I also advocate for its protection. My focus is mainly on the preservation of biodiversity, and this book is part of that focus. By teaching others about the organisms that live here with us, I hope that my readers will come to love and appreciate them. Before anyone will go to the trouble to preserve a species or habitat, they must first understand it. Protection implies that we care about something, and how can we care about something if we don't even know it is there? That is why I believe in the power of education. We can learn, and by learning, make a difference.

**Q: What is the biggest threat facing the Appalachians today? And what do you think they will look like in 100 years?**

**A:** Climate is changing and we can quit arguing about how much is human caused and how much is natural. Frankly, if we were in a natural cooling cycle and were pouring carbon into the atmosphere, it wouldn't be such a big deal. The real problem, and the reason we need to act now, is we are literally pouring fuel on the fire because we are already at the peak of a natural warming period, so every bit we add is pushing us over natural limits. We need to focus on how to mitigate the effects of a warmer earth, because that is happening now and is the reality for the near future.

In the distant past, when climate changed, animals and plants could use the Appalachian mountain chain as a natural highway for migration to better habitats, but now, human development stands in the way. Imagine a turtle trying to cross a 10-lane highway with a concrete barricade in the middle of it -- it just can't happen -- and we have miles and miles of just such barriers. We need to be designing corridors of migration so that plants and animals can move up and down the chain and get to where they need to be to survive. Roads are probably the biggest barrier, but all types of development need to be considered. And the Appalachians are extremely important as a biological reservoir for the whole of the east and midwest. In the absence of human restraint, the Appalachians will be biologically simpler, hotter, and much more populated by people rather than by other organisms. We just can't all fit into the same finite space.

**Jennifer Frick-Ruppert** is Professor of Biology and Environmental Science at Brevard College where she is Division Chair of Science and Mathematics. She and her husband lived "off the grid" for nearly 15 years in a log cabin in Balsam, NC. Jennifer's presentation, ***Why Is There Such High Biodiversity in the Southern Appalachians?***, will take place on Friday, Sept. 5, at 7:30 p.m. in the Roan Mountain State Park Conference Center.

***"In the end, we will conserve only what we love, we will love only what we understand, and we will understand only what we are taught."*** —Baba Dioum





**Beauty Spot Sunset**

# Sharing Discoveries

—Mark Peacock

Moving to northeast Tennessee from the cornfields of Illinois, I was in awe of the landscape of Appalachia. I was eager to get started. My first hike was to the Roan Balds. The seemingly endless, rolling green mountains held so many secrets I couldn't wait to discover. But that was 1995 and the internet wasn't quite what it is today.

Finding directions and information about all the amazing natural wonders of this region wasn't easy. Talking with locals and park rangers

helped, but I always knew I hadn't even scratched the surface. When visitors came to see me, I loved sharing with them all that I had discovered. But what was even more fun, was taking locals to waterfalls and overlooks they never knew existed. Discovering and sharing the beauty of this region became a passion of mine.

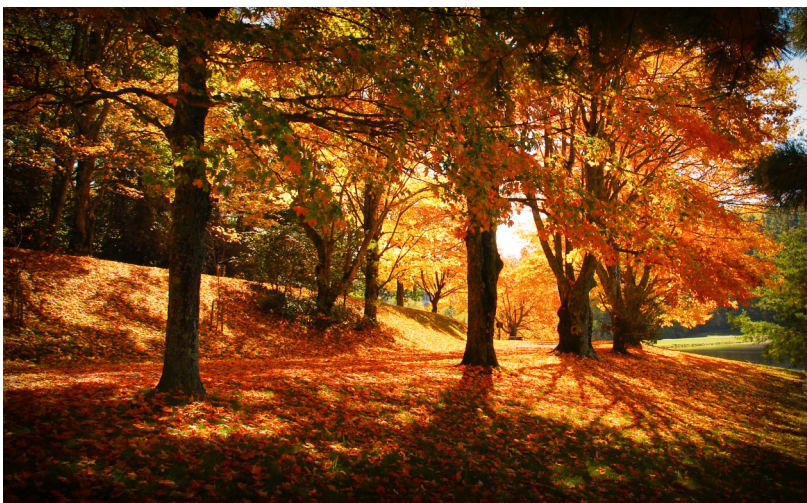
In time, my 35mm point and shoot gave way to digital, and then to a full-fledged DSLR. Many camera bodies, lenses and tripods later, I'm still finding new destinations. I started a blog in 2007 to better chronicle my discoveries and share my photos, hoping to help others in their exploration of these mountains. Over one million page views later, I get the most satisfaction hearing from folks who stumbled upon my blog, followed my directions and gained in their appreciation and enjoyment of the natural beauty of this region.

Along the way I met many other photographers and sojourners, kindred spirits who have a passion for these mountains and for local history. Favorite characters of mine from these parts are Revolutionary powder-maker Mary Patton, noted bear hunter James T. Whitehead, recluse Uncle Nick Grindstaff, a little known teacher and missionary named Jennie Moore, and a photographer and conservationist named Hugh Morton. I love the old, old stories. The frontier, the early settlements, the culture and the many characters. In the retelling of what was, we celebrate and breathe new life into history and claim for ourselves our own unique identity.

My hope is that through my photography viewers will recognize what a beautiful and fascinating area of the country this is. And, what's more, that they'll be encouraged to venture out to explore and discover it first hand for themselves. For more information and to visit my gallery and blog, go to [www.markwpeacock.com](http://www.markwpeacock.com).



**Roan High Knob Shelter**



**Autumn Glow**

**Mark Peacock** is Associate Professor of Legal Studies at Milligan College where he also teaches digital photography. Recently, Mark's work was featured in photographic shows "Seasons of the Blue Ridge" and "East Meets West" at the Nelson Fine Art Center in Johnson City, TN. He often leads workshops for organizations and individuals, teaching the art and craft of photography. Mark will present ***Appalachian Treks*** on Saturday, Sept.6, at 7:30 p.m. in the Roan Mountain State Park Conference Center.





# Sixth Annual Xtreme Roan Adventures Rally

by Heather Jones

"Do you guys like magic tricks?" asks Jeremy Stout during his wonderful presentation of Skins and Skulls. The audience cheers. "Okay, then you are going to be very

disappointed with what I'm about to show you. This is the worst magic trick you have ever seen." Everyone laughs as he closes the mouth of a carnivore's skull, showing that the back teeth disappear behind the jaws. He explains that this functions to slice off chunks of meat. When Jeremy announces he is going to start throwing the skins into the audience (whole fur pelts of various mammals) everyone becomes animated as they jump around trying to catch the flying furs.



This was the Friday night kick-off party to the 6th annual Xtreme Roan Adventures. After Jeremy's presentation, the 126 attendees had a choice between naturalist Connie Deegan's Bat Adventure and a Nature at Night hike with Ranger Joe Nowotarski. Almost everyone stopped by the moth sheet behind the amphitheater, where they were introduced to some of our nighttime Lepidoptera by Larry McDaniell. The lights at the moth sheet were kept on all night. On Saturday morning, early bird campers were impressed with the beautiful, large species of moths that had appeared overnight.



Saturday's events were met by some new faces as over 150 attendees were rallied up to explore nature. Kids had their pick of activities such as a Snakes and Salamanders walk, a Geology Adventure, and Wet and Wild Adventure. Many small and large groups were seen huddled by the creek and in the trees, looking closer in wonder at tiny things we sometimes take for granted. Kids were excited to show their parents and Adventure Leaders what they had discovered.



We were especially proud of the Creepy Crawlies Adventure, which was almost entirely led by Cade Campbell, age 12; Rachel Lowman, age 14; and Yance Pruett, age 18.

At lunch, everyone headed up to the conference center, where they had a blast wandering from activity to activity. Crafts such as painted rocks and pine cone birdfeeders were a hit, as well as the fossil casting activity led by Jennifer Barber of the Gray Fossil Site. The children showed that they were quite dexterous while dissecting owl pellets with tiny bones. Everyone enjoyed seeing the Red-tailed Hawks brought by staff from the Raptor Center at Bays Mountain. Ranger Meg Guy educated us about snakes, and Blue Ridge Wildlife Institute amazed everyone with their exhibit containing screech owls, a crow, opossums, and turtles.



Adventure Leaders gathered more Adventurers after everyone had time to explore the activities. Some went on the Butterfly Adventure, and some left for the Baa-tany Goat Hike up on the balds.

This was our most successful rally yet. While we'd love to take the credit, the parents of these kids are certainly teaching them what is important. These kids amazed us all!

Thank you, volunteers, parents, and Friends of Roan Mountain, for making it possible for us to get more kids outdoors.



## **What's New in the Park?**

### **National Public Lands Day**

On Saturday, September 27, the park will be hosting a volunteer work project as part of National Public Lands Day. Please join us to participate in this national day of service by volunteering to give back to the public lands YOU love... namely, Roan Mountain State Park! Meet Park Ranger Meg Guy at Park Headquarters at 10:00 AM, and come prepared to work in the conservation plots pulling undesirable species for a few hours. Please wear sturdy shoes and bring drinking water. A hat, sunscreen, jacket, and work gloves are recommended.

### **Roan Mountain State Park Aviary Project Considered**

After obtaining the necessary permits, Roan Mountain State Park is now in the process of drawing up the plans and securing the funding for a new park aviary facility. This aviary will house 2 non-releasable programming birds, and is planned to be located on the west side of Park Headquarters. If all goes according to plan, construction of the aviary would begin in late fall. Hopefully, we will be welcoming some new avian residents come spring!

### **Junior Ranger Camp 2014 a GREAT SUCCESS!**

Junior Ranger Camp is an annual summer day camp for kids ages 8-12 that occurs each July. This year 30 Junior Rangers got to enjoy live birds of prey, hands-on history programs at the Miller Farmstead, tie-dyed t-shirts, and the "Hunger Games" survival course. Several volunteers and visiting Rangers from other parks joined the RMSP Ranger Staff to provide the fun-filled week of events and activities. Thanks to F.O.R.M for their generous financial contribution in support of Roan Mountain State Park's Junior Ranger Program.



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## **The annual meeting of the Friends of Roan Mountain** will be held during the Fall Naturalists'

Rally on Saturday, September 6th, 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 also be held.

The following slate of names has been nominated by the board for this year's election: Aubrie Abernethy, Nancy Barrigar, Jennifer Bauer, David Hall, Guy Mauldin, Larry McDaniel, Bob Whittemore. 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.



## The 22nd annual Roan Mountain

### Butterfly Count

was rained out on the third Saturday of July. A week later on Saturday, July 26, the most fortunate combination of good weather, a good bloom of nectar plants, and the arrival of good butterflying friends led to an excellent Roan Mountain Butterfly Count for 2014.

Although the total number of individual butterflies seen (764) was not exceptional, the total number of species was very high for this Count at 34. The most abundant species this year at a respectable 236 was Pipevine Swallowtail. They were easily found on Common Milkweed blossoms in the fields at Dave Miller Homestead. Other species that broke the 50 mark included Silver-spotted Skipper (101), Aphrodite Fritillary (85), Eastern Tailed-Blue (54), and Meadow Fritillary (52). The Aphrodite Fritillary was especially abundant on the Red Clover at the Rhododendron Gardens.

Other noteworthy sightings included a male Diana Fritillary at Dave Miller Homestead; a Harvester at Hampton Creek Cove (at the same puddle where some were seen last year, just before the third gate near the big Cottonwood tree); and the ever popular Monarch which made a decent showing for midsummer with 7 individuals.

I want to thank the participants who helped make this such a memorable Count. Dianne Draper, Brookie Potter and I were the local yokels, while Richard Connors returned to help us again from Nashville, TN; and Gene and Lois Schepker joined us for the first time from Winston-Salem, NC. I hope to see everyone next year at the 23rd annual Roan Mountain Butterfly Count on Saturday, July 18, 2015.

—Don Holt, compiler

#### Region 13

Appalachians (KY, TN, WV)

William Haley, Regional Editor

**1. Roan Mountain, TN.** Yr. 22, 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. **26 July 2014;** 1000-1830 hrs; sun AM 76-100%, PM 76-100%; 67-75°F; wind 0-5 mi/hr. 6 observers in 1 party. **Total party-hours 7.5; total party-miles on foot 3. Observers:** R. Connors, D. Draper, Don Holt (910 Smalling Rd., Johnson City, TN, 37601; [dnldhlt@aol.com](mailto:dnldhlt@aol.com)), B. Potter, G. Schepker, L. Schepker.

Pipevine Swallowtail 236, E. Tiger Sw. 9, Spicebush Sw. 2, Cabbage White 40, Clouded Sulphur 9, Orange Su. 16, Cloudless Su. 9, Sleepy Orange 1, Harvester 1, Gray Hairstreak 2, E. Tailed-Blue 54, 'Summer' Spring Azure 7, Variegated Fritillary 4, Diana Fr. 1, Gr. Spangled Fr. 7, Aphrodite Fr. 85, Meadow Fr. 52, Silvery Checkerspot 1, Pearl Crescent 31, Question Mark 1, E. Comma 2, Am. Lady 3, Painted La. 2, Red Admiral 1, Com. Buckeye 3, Red-spotted Purple 2, Com. Wood-Nymph 9, Monarch 7, Silver-spotted Skipper 101, Com. Sootywing 1, Least Sk. 6, Peck's Sk. 10, N. Broken-Dash 4, Sachem 22. **Unidentified:** Swallowtail sp. 6, Colias sp. 4, Speyeria sp. 13. **Total 34 species, 764 individuals.**



Photos by Sue Farthing;;

Above: Aphrodite Fritillary

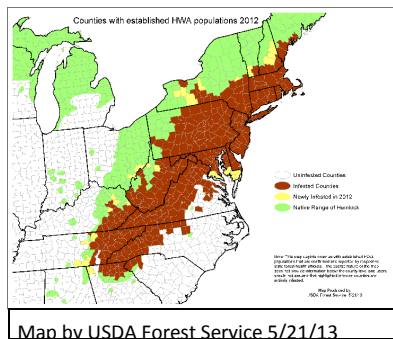
Left to right: Clouded Sulphur, Silver-spotted Skipper, Silvery Checkerspot

# Cold Winter of 2014 Gives Hemlocks a Helping Hand

The Hemlock Woolly Adelgid may be tiny, but it has caused huge damage to the eastern and Carolina hemlocks that tower in the forest of the Southern Appalachians. The invasive Asian insect which harbors in white specks of fluff at the base of the tree's needles has reduced great stands of hemlocks to tall, ghostly skeletons on mountainsides and along streams. The degradation of the hemlock's ecological niche threatens myriad plants, birds, mammals and fish which have adapted to live in the cooling shade of these forest giants.



According to the [University of Tennessee Institute of Agriculture](http://www.utk.edu/~forestry/extension/forest_health/HWA/HWA.html)



*To date, approximately 25 percent of the 1.3 million hectares of host type has been infested. The most obvious sign of infestation is the presence of **white, woolly egg masses** on the underside of hemlock needles. The entire range of eastern hemlocks is at risk within the next **20 to 30 years**. Immature nymphs and adults damage trees by sucking sap from the twigs. The tree loses vigor and prematurely drops needles, to the point of defoliation, which may lead to death. If left uncontrolled, the adelgids can kill a tree within three to four years. Trees of all sizes and ages are attacked, but natural stands of hemlock are at greatest risk for death.*

A positive result of the 2014 "polar vortex" frigid temperatures is that it caught the hemlock wooly adelgid in its icy grip. Jesse Webster, coordinator of the GSMNP program to control the HWA, says the frigid temperatures produced from 80 to 97 percent mortality of adelgid. The pests which survived are also producing fewer eggs, thus slowing their reproductive rate for the time being. Link here for video coverage: <http://www.wbir.com/story/news/local/2014/05/15/hemlock-adelgid-spring-growth/9145363/>



## SAY NO TO BOTTLED WATER

Why is bottled water a concern? Here are just a few reasons...

- Making bottles to meet America's demand for bottled water uses more than 17 million barrels of oil annually, enough to fuel 1.3 million cars for a year<sup>1</sup>. And that's not even including the oil used for transportation.
- The energy we waste using bottled water would be enough to power 190,000 homes<sup>2</sup>.
- Americans used about 50 billion plastic water bottles last year. However, the U.S.'s recycling rate for plastic is only 23 percent, which means 38 billion water bottles – more than \$1 billion worth of plastic – are wasted each year<sup>3</sup>.
- The recommended eight glasses of water a day, at U.S. tap rates equals about \$.49 per year; that same amount of bottled water is about \$1,400.



Image by  
[Education News PNG](http://www.educationnews.com)

### Estimated Annual Cost for a Family of Four

Bottled water = **\$3,114.67**

Pitcher-style water filtration system = \$120 (filters) + \$30 (pitcher) + \$1.10 (tap water) = **\$151.10**

**\$3,114.67 minus \$151.10 = \$2,963.57 SAVINGS**

Source: Ban the Bottle, <http://www.banthebottle.net/bottled-water-facts/>

# Between Friends

**Deadline for Rally Meal Reservations** – All dinner and lunch meals must be prepaid. If you plan to eat a catered dinner or purchase a bag lunch at the Fall Rally, you must send your check in advance. The deadline is **Tuesday, Sept. 2**. 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!



We gladly accept 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 . . .



FORM welcomes a new corporate member! [Bob's Dairyland](#) in Roan Mountain, established in 1956, is one of the oldest restaurants in Carter County. We encourage you to stop by and enjoy some of their "southern comfort food" and thank them for supporting Friends of Roan Mountain!



<http://www.roanmountainradio.com/>

Get the latest updates on FORM events and listen to interviews with Rally presenters and leaders on [Roan Mountain Radio](#) by Ken Turner.

 <b>MARK YOUR CALENDAR</b>	Fall Rally	Friday - Sunday in September after Labor Day	Sept. 5-7, 2014
	Winter Rally	Saturday in February nearest Valentine's Day	Feb. 14, 2015
	Spring Rally	Last Friday - Sunday in April	April 24-26, 2015
	Youth - XRA	Last Saturday in July	July 25, 2015



*Editor*  
*Nancy Barrigar*  
 708 Allen Avenue  
 Elizabethton, TN 37643  
 (423) 543-7576  
[nbarrigar@friendsofroanmtn.org](mailto:nbarrigar@friendsofroanmtn.org)